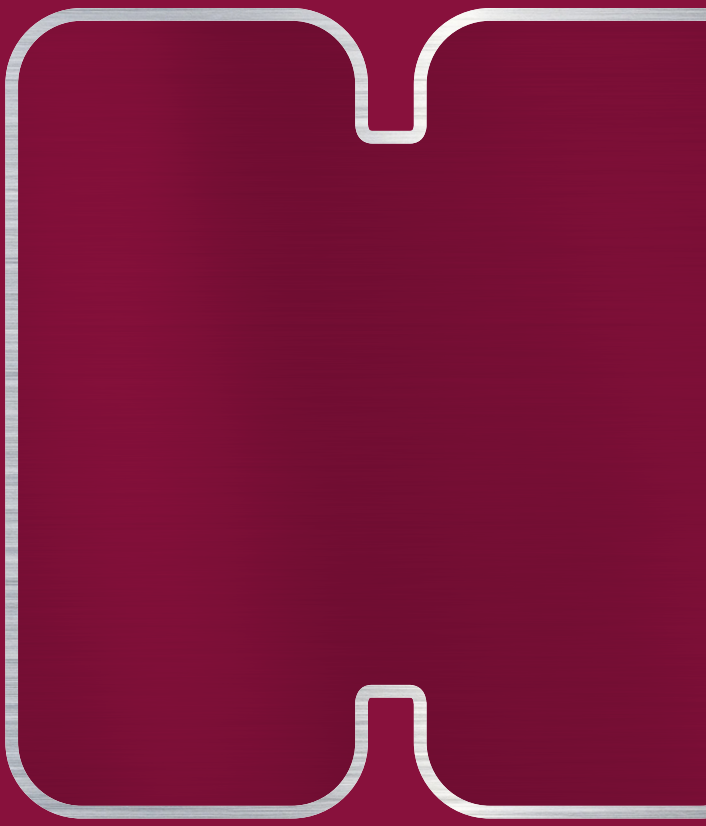
HYUNDAI WELDING

WELDING CONSUMABLES CATALOG



www.hyundaiwelding.com

INDEX BY PRODUCTS

Available diameters and packaging specifications may vary by manufacturing plant.
For detailed information, please contact your local sales representative. More detailed
Technical Test Reports on welding conditions by wire diameter can also be provided upon request.

SMAW [Stick Electrodes]

ILMENITE

LIME-TITANIA

CELLULOSIC

RUTILE

RUTILE-CELLULOSIC

HIGH RECOVERY

BASIC ELECTRODE, LOW HYDROGEN IRON POWDER

BASIC ELECTRODE, LOW HYDROGEN

WEATHER PROOF STEEL

HYUNDAI WELDING

SMAW [Stick Electrodes]

HEAT-RESISTANT & LOW-ALLOY STEEL

HARDFACING

STAINLESS STEEL

NI BASED ALLOY

CAST IRON

GMAW [Solid Wire]

MILD STEEL & 490 MPa HIGH TENSILE STEELS

HIGH TENSILE STEELS

GMAW [Solid Wire]

LOW-TEMPERATURE SERVICE STEEL

STAINLESS STEEL

NI BASED ALLOY

OTHER

GTAW [TIG Rod]

MILD STEEL & 490 MPa HIGH TENSILE STEELS

LOW-TEMPERATURE SERVICE STEEL

STAINLESS STEEL

NI BASED ALLOY

OTHER

FCAW [Flux Cored Wire]

MILD STEEL & 490 MPa HIGH TENSILE STEELS

HIGH TENSILE STEELS

LOW-TEMPERATURE SERVICE STEEL

WEATHER PROOF STEEL

HEAT-RESISTANT & LOW-ALLOY STEEL

FCAW [Flux Cored Wire]

SELF-SHIELDED

STAINLESS STEEL

HARDFACING

Metal-cored Wire

MILD STEEL & 490 MPa HIGH TENSILE STEELS

HIGH TENSILE STEELS

LOW-TEMPERATURE SERVICE STEEL

HEAT-RESISTANT & LOW-ALLOY STEEL

STAINLESS STEEL

SAW Wire [Submerged Arc Welding Wire]

MILD STEEL & 490 MPa HIGH TENSILE STEELS

HEAT-RESISTANT & LOW-ALLOY STEEL

SAW Wire [Submerged Arc Welding Wire]

STAINLESS STEEL

NI BASED ALLOY

SAW Flux [Submerged Arc Welding Flux]

NEUTRAL TYPE FLUX FOR CARBON STEEL

NEUTRAL TYPE FLUX FOR ONE SIDE WELDING

SAW Flux [Submerged Arc Welding Flux]

NEUTRAL TYPE FLUX FOR STAINLESS

PRODUCT	WIRE	AWS	EN ISO 14174 / 14171	JIS Z3352	PAGE
SUPERFLUX 300S	YS-308L YS-309L YS-316L			JIS Z 3352 SA AB2	387
S-300B	YS-308L YS-316L YS-347			JIS Z 3352 SA AF2	388
SUPERFLUX 209	YS-2209			JIS Z 3352 S A AF 2	389

NEUTRAL TYPE FLUX FOR 9% NI STEEL

PRODUCT	WIRE	AWS	EN ISO 14174 / 14171	JIS Z3352	PAGE
S-Ni2	SA-08			JIS Z 3333 FS9Ni-H	390

NEUTRAL TYPE FLUX FOR HARDFACING

PRODUCT	WIRE	AWS	EN ISO 14174 / 14171	JIS Z3352	PAGE
S-401HF	SC-414S SC-423S SC-420S SC-420SG SC-430				391
S-402HF	SC-414S SC-423S SC-420S SC-420SG SC-430S SC-423S(B) SC-414S(B) SC-423S(N) SC-414S(N)				392

SMAW

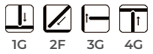
Stick Electrodes

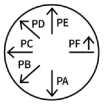
S-4301.I

Classification

AWS A5.1/ASME SFA-5.1 E6019
JIS Z 3211 E4319
EN ISO 2560-A E35 2 RA 1 2
KS D7004 E4301

Welding Positions





Features

- Suitable for butt and fillet welding of thin and medium-thick plates (up to 20mm)
- Good crack resistance, pitting resistance
- Good X-ray performance

Polarity

AC or DC ±

Application Areas

- General fabrication
- Shipbuilding
- Suitable for high impact value required parts

Redrying Conditions

70~100°C (158~212°F) X 0.5~1hr

Approvals

ABS	BV	DNV	KR	LR	NK
✓	✓	✓	✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S
0.07	0.17	0.50	0.021	0.008

Typical Mechanical Properties of All-Weld Metal

Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
380(55)	458(66)	28	-20(0)	52(38)

Ilmenite HYUNDAI WELDING

Diameter / Welding Parameters / Packaging

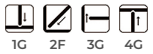
Diameter mm(in)	Length mm(in)	F & HF	V-up, OH	Packaging
2.6(3/32)	350(14)	50-85	45-70	Standard/Vacuum - Packet 5kg (11lbs), Carton 20kg (44lbs)
3.2(1/8)	350(14)/400(16)	80-130	60-110	
4.0(5/32)	400(16)/450(18)	120-180	110-150	
5.0(3/16)	400(16)/450(18)	170-250	130-200	
6.0(15/64)	450(18)	240-310	-	

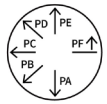
S-4303.T

Classification

JIS Z 3211 E4303
EN ISO 2560-A E38 0 RA 1 2
KS D7004 E4303

Welding Positions





Features

- Suitable for butt and fillet welding of thin plates
- Good restriking properties and high welding efficiency
- Suitable for tack welding
- Good mechanical properties

Polarity

AC or DC ±

Application Areas

- General fabrication
- Automotive
- Machinery
- Bridges & construction

Redrying Conditions

70~100°C (158~212°F) X 0.5~1hr

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S
0.06	0.19	0.48	0.020	0.007

Typical Mechanical Properties of All-Weld Metal

Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft · lbs)
380(55)	452(66)	29	0(32)	80(59)

Diameter / Welding Parameters / Packaging

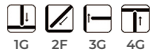
Diameter mm(in)	Length mm(in)	F & HF	V-up, OH	Packaging
2.6 (3/32)	350(14)	65-100	50-90	Standard/Vacuum - Packet 5kg (11lbs), Carton 20kg (44lbs)
3.2 (1/8)	350(14)	100-140	80-130	
4.0 (5/32)	400(16)	140-190	110-170	
5.0 (3/16)	400(16)	200-250	140-210	
6.0(15/64)	450(18)	250-330	-	

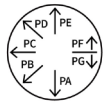
S-6010.D

Classification

AWS A5.1/ASME SFA-5.1 E6010
JIS Z 3211 E4310
EN ISO 2560-A E38 0 C 2 1

Welding Positions





Features

- Standard in the pipe welding industry
- Deep penetration
- High ductility (root pass)
- Pipe welding positions 5G-Up and 5G-Down are applicable

Polarity

DC +

Application Areas

- Pipeline
- General fabrication

Redrying Conditions

70~100°C (158~212°F) X 0.5~1hr

Approvals

ABS	BV	DNV	KR	LR	NK	CWB	CE	DB	TUV
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S
0.16	0.25	0.65	0.017	0.009

Typical Mechanical Properties of All-Weld Metal

Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft · lbs)
470(68)	590(86)	28	-30(-20)	47(35)

Diameter / Welding Parameters / Packaging

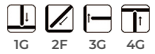
Diameter mm(in)	Length mm(in)	F & HF	V-up, OH	Packaging
2.6(3/32)	300(12)	50-75	50-75	Standard/Vacuum - Packet 5kg (11lbs), Carton 20kg (44lbs)
3.2(1/8)	350(14)	75-125	75-125	
4.0(5/32)	350(14)	90-165	90-165	
5.0(3/16)	350(14)	140-220	140-220	

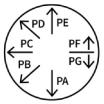
S-6011.D

Classification

AWS A5.1/ASME SFA-5.1 E6011
JIS Z 3211 E4311
EN ISO 2560-A E38 0 C 1 1
KS D7004 E4311

Welding Positions





Features

- Standard in the pipe welding industry
- Deep penetration
- High ductility (root pass)
- AC and DC welding
- Pipe welding positions 5G-Up and 5G-Down are applicable

Polarity

AC or DC +

Application Areas

- Pipeline
- General fabrication
- Shipbuilding

Redrying Conditions

70~100°C (158~212°F) X 0.5~1hr

Approvals

ABS	BV	DNV	KR	LR	NK
✓	✓	✓	✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S
0.09	0.30	0.45	0.015	0.008

Typical Mechanical Properties of All-Weld Metal

Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
428(62)	513(74)	26	-30(-20)	47(35)

Diameter / Welding Parameters / Packaging

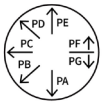
Diameter mm(in)	Length mm(in)	F & HF	V-up, OH	Packaging
2.6(3/32)	300(12)	50-75	50-75	Standard/Vacuum - Packet 5kg (11lbs), Carton 20kg (44lbs)
3.2(1/8)	350(14)	75-125	75-125	
4.0(5/32)	350(14)	90-165	90-165	
5.0(3/16)	350(15)	140-221	140-220	

S-7010.P1

Classification

AWS A5.5/ASME SFA-5.5 E7010-P1

Welding Positions



Features

- Standard in the pipe welding industry
- Deep penetration High ductility (root pass).
- Pipe welding positions 5G-Up and 5G-Down are applicable

Polarity

DC +

Application Areas

- Root pass welding for pipeline
- General fabrication
- Vertical down welding

Redrying Conditions

70~100°C (158~212°F) X 0.5~1hr

Approvals

CWB
✓

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S	Ni	Cr	Mo	V
0.17	0.24	0.68	0.017	0.007	0.18	0.03	0.01	0.01

Typical Mechanical Properties of All-Weld Metal

Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
421(61)	523(76)	26	-30(-20)	47(35)

Diameter / Welding Parameters / Packaging

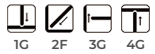
Diameter mm(in)	Length mm(in)	F & HF	V-up, OH	Packaging
2.6(3/32)	300(12)	50-75	40-70	Standard/Vacuum - Packet 5kg (11lbs), Carton 20kg (44lbs)
3.2(1/8)	350(14)	75-125	65-115	
4.0(5/32)	350(14)	90-165	90-145	
5.0(3/16)	350(14)	140-220	125-185	

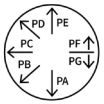
S-8010.P1

Classification

AWS A5.5/ASME SFA-5.5 E8010-P1
EN ISO 2560-A E46 2 ZNi C 2 1

Welding Positions





Features

- S-8010.P1 is a high cellulose type electrode for welding with direct current.
- Vertical downward welding can be performed easily
- Suitable for all position welding of pipes
- Deep penetration and fast freezing

Polarity

AC or DC +

Application Areas

- Root pass welding for pipeline
- General fabrication

Redrying Conditions

70~100°C (158~212°F) X 0.5~1hr

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S	Ni	Cr	Mo	V
0.17	0.25	0.80	0.017	0.005	0.66	0.04	0.01	0.01

Typical Mechanical Properties of All-Weld Metal

Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
499(72)	613(89)	26	-30(-20)	47(35)

Diameter / Welding Parameters / Packaging

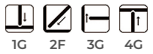
Diameter mm(in)	Length mm(in)	F & HF	V-up, OH	Packaging
3.2 (1/8)	350 (14)	75~120	65~115	Standard/Vacuum - Packet 5kg (11lbs), Carton 20kg (44lbs)
4.0 (5/32)	350 (14)	90~165	90~145	
5.0 (3/16)	350 (14)	140~220	125~185	

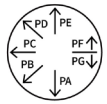
S-6013.LF

Classification

AWS A5.1/ASME SFA-5.1 E6013
JIS Z 3211 E4313
EN ISO 2560-A E38 0 R 1 2
KS D7004 E4313

Welding Positions





Features

- Suitable for butt and fillet welding of thin plates
- Good restriking
- Good bead appearance
- Easy to remove slag
- Smooth arc and low fume
- AC welding with low ocv

Polarity

AC or DC +

Application Areas

- General fabrication

Redrying Conditions

70~100°C (158~212°F) X 0.5~1hr

Approvals

ABS	BV	DNV	KR	LR	NK	CE
✓	✓	✓	✓	✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S
0.06	0.26	0.34	0.020	0.011

Typical Mechanical Properties of All-Weld Metal

Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
418(61)	497(72)	26	0(32)	57(42)

Rutile
HYUNDAI WELDING

Diameter / Welding Parameters / Packaging

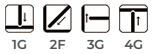
Diameter mm(in)	Length mm(in)	F & HF	V-up, OH	Packaging
2.6(3/32)	350(14)	55-95	45-90	Standard/Vacuum - Packet 5kg (11lbs), Carton 20kg (44lbs)
3.2(1/8)	350(14)	80-130	60-120	
4.0(5/32)	400(16)/450(18)	120-180	100-160	
5.0(3/16)	400(16)/450(18)	160-260	120-200	
6.0(15/64)	450(18)	220-300	-	

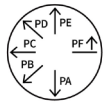
S-6013.RR

Classification

AWS A5.1/ASME SFA-5.1 E6013
EN ISO 2560-A E42 0 RR 1 2

Welding Positions





Features

- Excellent weldabillity in all positions welding
- Suitable for welding of light structural steels because of its stable arc, shallow penetration and smooth weld bead

Polarity

DC ±

Redrying Conditions

70~100°C (158~212°F) X 0.5~1hr

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S
0.08	0.32	0.48	0.025	0.009

Typical Mechanical Properties of All-Weld Metal

Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
480(70)	549(80)	23	0(32)	55(41)

Diameter / Welding Parameters / Packaging

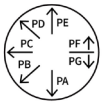
Diameter mm(in)	Length mm(in)	F & HF	V-up, OH	Packaging
2.6 (3/32)	300 (12)	80~100	70~90	Standard/Vacuum - Packet 5kg (11lbs), Carton 20kg (44lbs)
3.2 (1/8)	350 (14)	120~150	100~140	
4.0 (5/32)	400 (16)	160~200	140~180	
5.0 (3/16)	400 (16)	220~250	200~230	

S-6013.V

Classification

AWS A5.1/ASME SFA-5.1 E6013
JIS Z 3211 E4313
EN ISO 2560-A E38 0 RC 1 1
KS D7004 E4313

Welding Positions



Features

- Suitable for butt and fillet welding of thin plates
- Good at vertical down
- Good bead appearance
- Good restriking
- Easy to remove slag

Polarity

AC or DC ±

Application Areas

- General fabrication

Redrying Conditions

70~100°C (158~212°F) X 0.5~1hr

Approvals

ABS	KR	LR	NK	CWB	CE	DB	TUV
✓	✓	✓	✓	✓	✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S
0.06	0.29	0.47	0.019	0.010

Typical Mechanical Properties of All-Weld Metal

Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
411(60)	481(70)	27	0(32)	60(44)

Diameter / Welding Parameters / Packaging

Diameter mm(in)	Length mm(in)	F & HF	V-up, OH	Packaging
2.6(3/32)	350(14)	55-95	45-90	Standard/Vacuum - Packet 5kg (11lbs), Carton 20kg (44lbs)
3.2(1/8)	350(14)	80-130	60-120	
4.0(5/32)	400(16)/450(18)	120-180	100-160	
5.0(3/16)	400(16)/450(18)	160-230	120-200	
6.0(15/64)	450(18)	220-300	-	

S-6027.LF

Classification

AWS A5.1/ASME SFA-5.1 E6027
JIS Z 3211 E4327
EN ISO 2560-A E38 0 R 1 4
KS D7004 E4327

Welding Positions

Features

- High efficient fillet welding
- Low fume
- Good welding performance in manual and gravity welding

Polarity

AC or DC ±

Application Areas

- General fabrication

Redrying Conditions

70~100°C (158~212°F) X 0.5~1hr

Approvals

ABS	BV	DNV	KR	LR	NK
✓	✓	✓	✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S
0.06	0.32	0.78	0.023	0.009

Typical Mechanical Properties of All-Weld Metal

Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
401(58)	493(71)	30	-30(-20)	47(35)

Diameter / Welding Parameters / Packaging

Diameter mm(in)	Length mm(in)	F & HF	Packaging
4.0(5/32)	550(22)	140-180	Standard/Vacuum - Packet 5kg (11lbs), Carton 20kg (44lbs)
4.5(11/64)	550(22)/700(28)	170-210	
5.0(3/16)	700(28)	180-230	
5.5(7/32)	700(28)	210-250	
6.0(15/64)	700(28)	240-290	
6.4(1/4)	700(28)	260-310	
7.0(9/32)	700(28)	280-330	

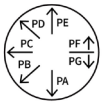
High recovery
HYUNDAI WELDING

S-7014.F

Classification

AWS A5.1/ASME SFA-5.1 E7014
EN ISO 2560-A E42 0 R 1 2

Welding Positions



Features

- High welding speed
- Easy horizontal fillet and groove welding

Polarity

AC or DC ±

Application Areas

- General fabrication

Redrying Conditions

70~100°C (158~212°F) X 0.5~1hr

Approvals

ABS	BV	DNV	KR	LR	NK
✓	✓	✓	✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S
0.08	0.27	0.70	0.020	0.007

Typical Mechanical Properties of All-Weld Metal

Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
423(61)	510(74)	31	0(32)	72(53)

Diameter / Welding Parameters / Packaging

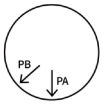
Diameter mm(in)	Length mm(in)	F & HF	Packaging
3.2 (1/8)	400(16)	95-140	Standard/Vacuum - Packet 5kg (11lbs), Carton 20kg (44lbs)
4.0 (5/32)	400 (16)	140-200	
5.0 (3/16)	400 (16)	180-250	
6.0 (15/64)	450 (18)	240-310	

S-7024.F

Classification

AWS A5.1/ASME SFA-5.1 E7024
JIS Z 3211 E4924
EN ISO 2560-A E42 0 RR 7 4
KS D7004 E4324

Welding Positions



Features

- Highly efficient fillet welding
- High welding speed
- Good bead appearance
- Easy to remove slag

Polarity

AC or DC ±

Application Areas

- Heavy steel fabrication
- Shipbuilding

Redrying Conditions

70~100°C (158~212°F) X 0.5~1hr

Approvals

ABS	DNV	LR	NK	CWB
✓	✓	✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S
0.06	0.37	0.69	0.021	0.009

Typical Mechanical Properties of All-Weld Metal

Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
477(69)	556(81)	24	0(32)	61(45)

High recovery HYUNDAI WELDING

Diameter / Welding Parameters / Packaging

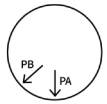
Diameter mm(in)	Length mm(in)	F & HF	Packaging
3.2(1/8)	400 (16)	100-150	Standard/Vacuum - Packet 5kg (11lbs), Carton 20kg (44lbs)
4.0(5/32)	450 (18)	140-200	
4.5(11/64)	450 (18)/700 (28)	180-230	
5.0(3/16)	450 (18)/700 (28)	200-250	
6.0(15/64)	450 (18)/700 (28)	260-300	

S-7028.F

Classification

AWS A5.1/ASME SFA-5.1 E7028
JIS Z 3211 E4928
EN ISO 2560-A E42 2 B 7 4
KS D7006 E5026

Welding Positions



Features

- Heavy iron powder type electrode
- High deposition rate
- Easy to remove slag

Polarity

AC or DC +

Application Areas

- Heavy steel fabrication

Redrying Conditions

300~350°C (572~662°F) X 0.5~1hr

Approvals

ABS	BV	DNV	KR	LR	NK
✓	✓	✓	✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S
0.06	0.28	0.98	0.028	0.007

Typical Mechanical Properties of All-Weld Metal

Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft · lbs)
449(65)	527(76)	24	-20(0)	48(35)

High recovery HYUNDAI WELDING

Diameter / Welding Parameters / Packaging

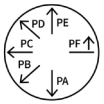
Diameter mm(in)	Length mm(in)	F & HF	Packaging
4.0(5/32)	550(22)	150-220	Standard/Vacuum - Packet 5kg (11lbs), Carton 20kg (44lbs)
4.5(11/64)	550(22)/700(28)	170-220	
5.0(3/16)	700(28)	190-250	
5.5(7/32)	700(28)	220-270	
6.0(15/64)	700(28)	250-320	
6.4(1/4)	700(28)	270-340	
7.0(9/32)	700(28)	300- 360	

S-7018.G

Classification

AWS A5.1/ASME SFA-5.1 E7018
JIS Z 3211 E4918
EN ISO 2560-A E42 3 B 1 2
KS D7006 E5016

Welding Positions



Features

- Suitable for butt and fillet welding of heavy structure
- Good crack resistance and X-ray performance-
Good mechanical properties
- Iron powder and low hydrogen type electrode (high efficiency)

Polarity

AC or DC +

Application Areas

- Heavy steel fabrication
- Shipbuilding
- Pressure vessels

Redrying Conditions

300~350°C (572~662°F) X 0.5~1hr

Approvals

ABS	BV	DNV	KR	LR	NK	CWB	CE	DB	TUV
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S
0.06	0.32	1.01	0.017	0.008

Typical Mechanical Properties of All-Weld Metal

Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft · lbs)
445(64)	532(77)	30	-30(-20)	111(82)

Basic Electrode, Low hydrogen iron powder

Diameter / Welding Parameters / Packaging

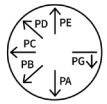
Diameter mm(in)	Length mm(in)	F & HF	V-up, OH	Packaging
2.6(3/32)	350(14)	60-90	50-80	Standard/Vacuum - Packet 5kg (11lbs), Carton 20kg (44lbs)
3.2(1/8)	350(14)/400(16)	90-140	80-120	
4.0(5/32)	400(16)/450(18)	130-190	120-170	
5.0(3/16)	400(16)/450(18)	180-240	150-200	
6.0(15/64)	450(18)	250-310	-	

S-7048.V

Classification

AWS A5.1/ASME SFA-5.1 E7048
JIS Z 3211 E4948
EN ISO 2560-A E42 3 B 3 5
KS D7006 E5016

Welding Positions



Features

- Suitable for tack welding
- Good at vertical down
- Good restriking
- Good bead appearance
- Easy to remove slag

Polarity

AC or DC +

Application Areas

- Heavy steel fabrication
- Automotive
- Machinery

Redrying Conditions

300~350°C (572~662°F) X 0.5~1hr

Approvals

ABS	BV	DNV	KR	LR	NK
✓	✓	✓	✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S
0.10	0.65	1.01	0.016	0.007

Typical Mechanical Properties of All-Weld Metal

Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
486(70)	598(87)	31	-30(-20)	58(43)

Basic Electrode, Low hydrogen iron powder

Diameter / Welding Parameters / Packaging

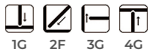
Diameter mm(in)	Length mm(in)	F & HF	Packaging
3.2(1/8)	350(14)	100-160	Standard/Vacuum - Packet 5kg (11lbs), Carton 20kg (44lbs)
4.0(5/32)	400(16)	140-210	
5.0(3/16)	400(16)	220-270	

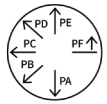
S-8018.G

Classification

AWS A5.5/ASME SFA-5.5 E8018-G
JIS Z 3211 E5518
EN ISO 2560-A E46 2 B 3 2
KS D7006 E5316

Welding Positions





Features

- Good bead appearance
- Good crack resistance
- Good X-ray performance
- Good mechanical properties
- Iron powder and low hydrogen type electrode (high efficiency)

Polarity

AC or DC +

Application Areas

- Heavy steel fabrication
- Shipbuilding
- Offshore structure

Redrying Conditions

300~350°C (572~662°F) X 0.5~1hr

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S
0.10	0.37	1.71	0.012	0.008

Typical Mechanical Properties of All-Weld Metal

Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
562(81)	666(97)	24	0(32) -30(-20)	127(94) 103(76)

Diameter / Welding Parameters / Packaging

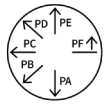
Diameter mm(in)	Length mm(in)	F & HF	V-up, OH	Packaging
2.6(3/32)	350(14)	60-90	50-80	Standard/Vacuum - Packet 5kg (11lbs), Carton 20kg (44lbs)
3.2(1/8)	350(14)	90-140	80-120	
4.0(5/32)	400(16)	130-190	120-170	
5.0(3/16)	400(16)	180~240	150-200	
6.0(15/64)	450(18)	250-300	-	

S-9018.M

Classification

AWS A5.5/ASME SFA-5.5 E9018-M
EN ISO 18275-A E50 4 Z1.5NiMo B 4 2

Welding Positions



Features

- Good crack resistance
- Good X-ray performance
- Good impact value at -50°C
- Iron powder and low hydrogen type electrode (high efficiency)

Polarity

AC or DC +

Application Areas

- Heavy steel fabrication
- Pressure vessels

Redrying Conditions

300~350°C (572~662°F) X 0.5~1hr

Approvals

ABS
✓

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S	Ni	Cr	Mo
0.05	0.46	1.01	0.017	0.011	1.61	0.05	0.20

Typical Mechanical Properties of All-Weld Metal

Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
585(85)	646(94)	28	-50(-60)	72(53)

Diameter / Welding Parameters / Packaging

Diameter mm(in)	Length mm(in)	F & HF	V-up, OH	Packaging
2.6(3/32)	350(14)	70-100	60-80	Standard/Vacuum - Packet 5kg (11lbs), Carton 20kg (44lbs)
3.2(1/8)	350(14)	90-140	80-120	
4.0(5/32)	400(16)	130-190	120-170	
5.0(3/16)	400(16)	180-240	150-200	

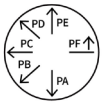
Basic Electrode, Low hydrogen iron powder

S-11018.M

Classification

AWS A5.5/ASME SFA-5.5 E11018-M
EN ISO 18275-A E62 4 ZMn2NiMo B 4 2

Welding Positions



Features

- Iron powder and low hydrogen type electrode (high efficiency)
- Good crack resistance
- Good X-ray performance
- Good impact value at -50°C

Polarity

AC or DC +

Application Areas

- Low alloy high tensile steels

Redrying Conditions

300~350°C (572~662°F) X 0.5~1hr

Approvals

ABS
✓

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S	Ni	Cr	Mo
0.05	0.41	1.49	0.018	0.008	1.99	0.04	0.41

Typical Mechanical Properties of All-Weld Metal

Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
707(103)	793(115)	22	-50(-60)	50(37)

Diameter / Welding Parameters / Packaging

Diameter mm(in)	Length mm(in)	F & HF	V-up, OH	Packaging
2.6(3/32)	350(14)	55-90	50-80	Standard/Vacuum - Packet 5kg (11lbs), Carton 20kg (44lbs)
3.2(1/8)	350(14)	90-130	80-120	
4.0(5/32)	400(16)	130-190	120-170	
5.0(3/16)	400(16)	190~240	150-200	

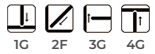
Basic Electrode, Low hydrogen iron powder

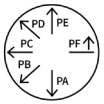
S-7018.1

Classification

AWS A5.1/ASME SFA-5.1 E7018-1
JIS Z 3211 E4918
EN ISO 2560-A E42 4 B 3 2
KS D7006 E5016

Welding Positions





Features

- Suitable for butt and fillet welding of thin and medium-thick plates (up to 20mm)
- Iron powder and low hydrogen type electrode (high efficiency)
- Good impact value at -45°C

Polarity

AC or DC +

Application Areas

- Heavy steel fabrication
- Low temperature strength steel
- Offshore structure

Redrying Conditions

300~350°C (572~662°F) X 0.5~1hr

Approvals

ABS	BV	DNV	LR	RINA
✓	✓	✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S
0.12	0.33	1.33	0.017	0.006

Typical Mechanical Properties of All-Weld Metal

Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
455(66)	561(81)	31	-45(-50)	74(55)

Diameter / Welding Parameters / Packaging

Diameter mm(in)	Length mm(in)	F & HF	V-up, OH	Packaging
2.6(3/32)	350(14)	60-90	50-80	Standard/Vacuum - Packet 5kg (11lbs), Carton 20kg (44lbs)
3.2(1/8)	350(14)	90-140	80-120	
4.0(5/32)	400(16)	130-190	120-170	
5.0(3/16)	400(16)	180-240	150-200	
6.0(15/64)	450(18)	250-300	-	

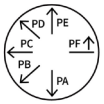
Basic Electrode, Low hydrogen iron powder

S-7018.1H

Classification

AWS A5.1/ASME SFA-5.1 E7018-1 H4R
A5.1/ASME SFA-5.1 E7018 H4R
JIS Z 3211 E4918 H5
EN ISO 2560-A E42 4 B 3 2 H5
KS D7006 E5016

Welding Positions



Features

- Extra low hydrogen electrode
- Good impact value at -45°C
- Vacuum sealed package available (HDM ≤ 4ml/100g)

Polarity

AC or DC +

Application Areas

- Heavy steel fabrication
- Low temperature strength steel
- Offshore structure

Redrying Conditions

350~400°C (662~752°F) X 0.5~1hr

Approvals

ABS	BV	DNV	LR	CWB	CE
✓	✓	✓	✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S	Ni
0.09	0.25	1.27	0.017	0.005	0.02

Typical Mechanical Properties of All-Weld Metal

PWHT	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
As-weld	461(67)	570(83)	31	-45(-50)	100(74)
620°C*7hr	451(65)	551(80)	31	-45(-50)	82(61)

Diameter / Welding Parameters / Packaging

Diameter mm(in)	Length mm(in)	F & HF	V-up, OH	Packaging
2.6(3/32)	350(14)	60-90	50-80	Standard/Vacuum - Packet 5kg (11lbs), Carton 20kg (44lbs)
3.2(1/8)	350(14)/400(16)	90-140	80-120	
4.0(5/32)	400(16)/450(18)	130-190	120-170	
5.0(3/16)	400(16)/450(18)	180-240	150-200	

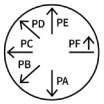
Basic Electrode, Low hydrogen iron powder
HYUNDAI WELDING

S-8018.C1

Classification

AWS A5.5/ASME SFA-5.5 E8018-C1
JIS Z 3211 E5518-N5 AP L
EN ISO 2560-A E46 5 2Ni B 3 2

Welding Positions



Features

- Good impact value at -60°C
- Iron powder and low hydrogen type electrode (high efficiency)

Polarity

AC or DC +

Application Areas

- Low temperature strength steel (2.5% Ni)
- Offshore structure

Redrying Conditions

300~350°C (572~662°F) X 0.5~1hr

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S	Ni
0.05	0.31	0.93	0.015	0.008	2.31

Typical Mechanical Properties of All-Weld Metal

PWHT	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
605°C*2hr	485(70)	590(86)	27	-60(-75)	82(60)

Diameter / Welding Parameters / Packaging

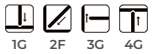
Diameter mm(in)	Length mm(in)	F & HF	V-up, OH	Packaging
3.2(1/8)	350(14)	90-130	80-120	Standard/Vacuum - Packet 5kg (11lbs), Carton 20kg (44lbs)
4.0(5/32)	400(16)	130-190	110-170	
5.0(3/16)	400(16)	190-250	150-200	
6.0(15/64)	450(18)	250-310	-	

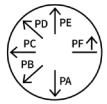
S-8018.C3

Classification

AWS A5.5/ASME SFA-5.5 E8018-C3 H4R
JIS Z 3211 E5518-N2 H5
EN ISO 2560-A E46 4 1Ni B 3 2 H5

Welding Positions





Features

- Good impact value at -40°C
- Iron powder and low hydrogen type electrode (high efficiency

Polarity

AC or DC +

Application Areas

- Low temperature strength steel (1% Ni)
- Offshore structure

Redrying Conditions

350~400°C (662~752°F) X 0.5~1hr

Approvals

ABS	CE
✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S	Ni
0.10	0.45	1.15	0.014	0.006	1.03

Typical Mechanical Properties of All-Weld Metal

Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
520(75)	612(89)	28	-40(-40)	55(41)

Basic Electrode, Low hydrogen iron powder

Diameter / Welding Parameters / Packaging

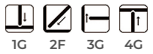
Diameter mm(in)	Length mm(in)	F & HF	V-up, OH	Packaging
2.6(3/32)	350(14)	55-90	50-80	Standard/Vacuum - Packet 5kg (11lbs), Carton 20kg (44lbs)
3.2(1/8)	350(14)	90-130	80-120	
4.0(5/32)	400(16)	130-190	110-170	
5.0(3/16)	400(16)	190-250	-	
6.0(15/64)	450(18)	250-310	-	

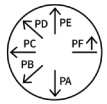
S-10018.D2

Classification

AWS A5.5/ASME SFA-5.5 E10018-D2 H4R

Welding Positions





Features

- Low hydrogen electrode
- Welding 690MPa class Low alloy steel

Polarity

AC or DC +

Application Areas

- Carbon-Manganese and Chromium-Molybdenum steel pipng (AISI 4130, 4140)

Redrying Conditions

350~400°C (662~752°F) X 0.5~1hr

Approvals

ABS
✓

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S	Ni	Mo
0.06	0.42	1.75	0.015	0.007	0.73	0.27

Typical Mechanical Properties of All-Weld Metal

PWHT	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
620°Cx1Hr	646(94)	712(103)	26	-50(-60)	62(46)

Diameter / Welding Parameters / Packaging

Diameter mm(in)	Length mm(in)	F & HF	V-up, OH	Packaging
3.2(1/8)	350(14)	90-130	85-120	Standard/Vacuum - Packet 5kg (11lbs), Carton 20kg (44lbs)
4.0(5/32)	400(16)	130-180	110-170	
5.0(3/16)	400(16)	180-240		

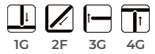
Basic Electrode, Low hydrogen iron powder
HYUNDAI WELDING

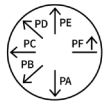
S-8018.GH

Classification

AWS A5.5/ASME SFA-5.5 E8018-G
JIS Z 3211 E5518
EN ISO 2560-A E50 4 ZMo B 4 2 H5

Welding Positions





Features

- Good bead appearance
- Good crack resistance
- Good X-ray performance
- Good mechanical properties
- Iron powder and low hydrogen type electrode (high efficiency)

Polarity

AC or DC +

Application Areas

- Heavy steel fabrication
- Shipbuilding
- Offshore structure

Redrying Conditions

350~400°C (662~752°F) X 0.5~1hr

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S	Mo
0.04	0.30	1.45	0.011	0.005	0.35

Typical Mechanical Properties of All-Weld Metal

Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
580(84)	640(93)	30	-20(0) -40(-40)	116(86) 85(63)

Diameter / Welding Parameters / Packaging

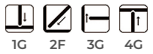
Diameter mm(in)	Length mm(in)	F & HF	V-up, OH	Packaging
2.6(3/32)	350(14)	60-90	50-80	Standard/Vacuum - Packet 5kg (11lbs), Carton 20kg (44lbs)
3.2(1/8)	350(14)	90-140	80-120	
4.0(5/32)	400(16)	130-190	120-170	
5.0(3/16)	400(16)	180~240	150-200	

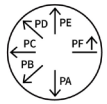
S-7016.O

Classification

AWS A5.1/ASME SFA-5.1 E7016
JIS Z 3211 E4316
EN ISO 2560-A E42 2 B 1 2
KS D7004 E4316

Welding Positions





Features

- Suitable for one side welding of pipe
- Stable arc
- Relatively low current

Polarity

AC or DC +

Application Areas

- Pipeline

Redrying Conditions

300~350°C (572~662°F) X 0.5~1hr

Approvals

ABS	DNV	KR	LR	NK	CE
✓	✓	✓	✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S
0.10	0.41	1.05	0.015	0.006

Typical Mechanical Properties of All-Weld Metal

Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
518(75)	611(89)	30	-20(0) -30(-20)	115(85) 90(66)

Diameter / Welding Parameters / Packaging

Diameter mm(in)	Length mm(in)	F & HF	V-up, OH	Packaging
2.6(3/32)	350(14)	60-90	50-80	Standard/Vacuum - Packet 5kg (11lbs), Carton 20kg (44lbs)
3.2(1/8)	350(14)	90-130	80-120	
4.0(5/32)	400(16)	130-180	110-180	
5.0(3/16)	400(16)	180-240	150-210	

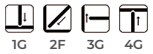
Basic Electrode, Low hydrogen
HYUNDAI WELDING

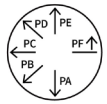
S-7016.M

Classification

AWS A5.1/ASME SFA-5.1 E7016
JIS Z 3211 E4316
EN ISO 2560-A E42 2 B 1 2
KS D7004 E4316

Welding Positions





Features

- Suitable for butt and fillet welding of heavy structure
- Good X-ray performance
- Good mechanical properties

Polarity

AC or DC +

Application Areas

- Heavy steel fabrication
- Shipbuilding
- Pressure vessels

Redrying Conditions

300~350°C (572~662°F) X 0.5~1hr

Approvals

ABS	KR	NK
✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S
0.10	0.46	1.01	0.018	0.006

Typical Mechanical Properties of All-Weld Metal

Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
453(66)	620(90)	32	-20(0)	111(82)

Diameter / Welding Parameters / Packaging

Diameter mm(in)	Length mm(in)	F & HF	V-up, OH	Packaging
2.6(3/32)	350(14)	55-85	50-80	Standard/Vacuum - Packet 5kg (11lbs), Carton 20kg (44lbs)
3.2(1/8)	350(14)	90-130	80-130	
4.0(5/32)	400(16)	130-180	110-170	
5.0(3/16)	400(16)	180-240	160-210	
6.0(15/64)	400(18)	250-310	-	

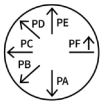
Basic Electrode, Low hydrogen
HYUNDAI WELDING

S-7016.H

Classification

AWS A5.1/ASME SFA-5.1 E7016
JIS Z 3211 E4916
EN ISO 2560-A E42 2 B 1 2
KS D7006 E5016

Welding Positions



Features

- Suitable for butt and fillet welding of heavy structure
- Good crack resistance and X-ray performance
- Good mechanical properties

Polarity

AC or DC +

Application Areas

- Heavy steel fabrication
- Shipbuilding
- Pressure vessels

Redrying Conditions

300~350°C (572~662°F) X 0.5~1hr

Approvals

ABS	BV	DNV	KR	LR	NK	RS	CWB	CE
✓	✓	✓	✓	✓	✓	✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S
0.08	0.36	1.01	0.017	0.006

Typical Mechanical Properties of All-Weld Metal

Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
500(73)	610(88)	29	-30(-20)	95(70)

Diameter / Welding Parameters / Packaging

Diameter mm(in)	Length mm(in)	F & HF	V-up, OH	Packaging
2.6(3/32)	350(14)	55-85	50-80	Standard/Vacuum - Packet 5kg (11lbs), Carton 20kg (44lbs)
3.2(1/8)	350(14)	90-130	80-120	
4.0(5/32)	400(16)	130-180	110-170	
5.0(3/16)	400(16)	180-240	150-200	
6.0(15/64)	400(18)	250-310	-	

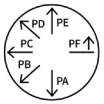
Basic Electrode, Low hydrogen
HYUNDAI WELDING

S-7016.LF

Classification

AWS A5.1/ASME SFA-5.1 E7016
JIS Z 3211 E4916
EN ISO 2560-A E42 3 B 1 2
KS D7006 E5016

Welding Positions



Features

- Suitable for butt and fillet welding of heavy structure
- Good crack resistance and X-ray performance
- Good mechanical properties
- Low fume

Polarity

AC or DC +

Application Areas

- Heavy steel fabrication
- Shipbuilding
- Pressure vessels

Redrying Conditions

300~350°C (572~662°F) X 0.5~1hr

Approvals

ABS	BV	DNV	KR	LR	NK
✓	✓	✓	✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S
0.08	0.62	1.29	0.016	0.007

Typical Mechanical Properties of All-Weld Metal

Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
550(80)	605(88)	29	-30(-20)	68(50)

Diameter / Welding Parameters / Packaging

Diameter mm(in)	Length mm(in)	F & HF	V-up, OH	Packaging
2.6(3/32)	350(14)	55-85	50-80	Standard/Vacuum - Packet 5kg (11lbs), Carton 20kg (44lbs)
3.2(1/8)	350(14)	90-130	80-120	
4.0(5/32)	400(16)	130-180	110-170	
5.0(3/16)	400(16)	180-240	150-200	
6.0(15/64)	400(18)	250-310	-	

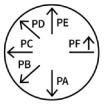
Basic Electrode, Low hydrogen
HYUNDAI WELDING

S-7016.G

Classification

AWS A5.1/ASME SFA-5.1 E7016
JIS Z 3211 E4916
EN ISO 2560-A E42 3 B 1 2
KS D7006 E5316

Welding Positions



Features

- Suitable for butt and fillet welding of heavy structure
- Good crack resistance and X-ray performance
- Good mechanical properties.

Polarity

AC or DC +

Application Areas

- Heavy steel fabrication
- Shipbuilding
- Pressure vessels

Redrying Conditions

300~350°C (572~662°F) X 0.5~1hr

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S
0.07	0.45	1.15	0.016	0.006

Typical Mechanical Properties of All-Weld Metal

Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
515(75)	588(85)	27	-30(-20)	75 (55)

Diameter / Welding Parameters / Packaging

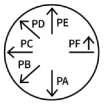
Diameter mm(in)	Length mm(in)	F & HF	V-up, OH	Packaging
2.6(3/32)	350(14)	55-85	50-80	Standard/Vacuum - Packet 5kg (11lbs), Carton 20kg (44lbs)
3.2(1/8)	350(14)	90-130	80-120	
4.0(5/32)	400(16)	130-180	110-170	
5.0(3/16)	400(16)	180-240	150-200	
6.0(15/64)	400(18)	250-310	-	

S-8016.G

Classification

AWS A5.5/ASME SFA-5.5 E8016-G
JIS Z 3211 E5516
EN ISO 2560-A E46 3 1Ni B 1 2
KS D7006 E5316

Welding Positions



Features

- Good bead appearance
- Good crack resistance
- Good X-ray performance
- Good mechanical properties

Polarity

AC or DC +

Application Areas

- Heavy steel fabrication
- Shipbuilding
- Offshore structure

Redrying Conditions

300~350°C (572~662°F) X 0.5~1hr

Approvals

ABS
✓

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S	Ni
0.08	0.34	1.42	0.011	0.009	0.91

Typical Mechanical Properties of All-Weld Metal

Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
519(75)	613(89)	29	-20(0) -30(-20)	140(103) 121(89)

Basic Electrode, Low hydrogen
HYUNDAI WELDING

Diameter / Welding Parameters / Packaging

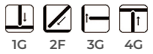
Diameter mm(in)	Length mm(in)	F & HF	V-up, OH	Packaging
2.6(3/32)	350(14)	55-90	50-80	Standard/Vacuum - Packet 5kg (11lbs), Carton 20kg (44lbs)
3.2(1/8)	350(14)	90-130	85-120	
4.0(5/32)	400(16)	130-190	110-170	
5.0(3/16)	400(16)	190~250	150-200	
6.0(15/64)	450(18)	250-310	-	

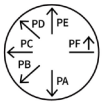
S-9016.G

Classification

AWS A5.5/ASME SFA-5.5 E9016-G
JIS Z 3211 E5716
EN ISO 2560-A E50 2 B 1 2
KS D7006 E5816

Welding Positions





Features

- Good bead appearance
- Good crack resistance
- Good X-ray performance
- Good mechanical properties

Polarity

AC or DC +

Application Areas

- Heavy steel fabrication
- Shipbuilding
- Offshore structure

Redrying Conditions

300~350°C (572~662°F) X 0.5~1hr

Approvals

ABS
✓

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S	Ni	Mo
0.05	0.62	1.22	0.012	0.007	0.60	0.32

Typical Mechanical Properties of All-Weld Metal

Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
579(84)	659(96)	28	0(32) -20(0)	115(85) 78(58)

Basic Electrode, Low hydrogen

Diameter / Welding Parameters / Packaging

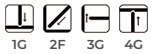
Diameter mm(in)	Length mm(in)	F & HF	V-up, OH	Packaging
2.6(3/32)	350(14)	55-90	50-80	Standard/Vacuum - Packet 5kg (11lbs), Carton 20kg (44lbs)
3.2(1/8)	350(14)	90-130	85-120	
4.0(5/32)	400(16)	130-180	110-170	
5.0(3/16)	400(16)	180~240	150-200	
6.0(15/64)	450(18)	250-310	-	

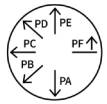
S-10016.G

Classification

AWS A5.5/ASME SFA-5.5 E10016-G
JIS Z 3211 E6916-N4CM1 U
EN ISO 18275-A E55 0 Z 1.5NiMo B 1 2
KS D7006 E7016

Welding Positions





Features

- Good crack resistance
- Good X-ray performance
- Good mechanical properties.

Polarity

AC or DC +

Application Areas

- Heavy steel fabrication
- Pressure vessels
- Power plant

Redrying Conditions

300~350°C (572~662°F) X 0.5~1hr

Approvals

ABS
✓

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S	Ni	Cr	Mo	V
0.07	0.69	1.41	0.013	0.012	1.49	0.01	0.12	0.11

Typical Mechanical Properties of All-Weld Metal

Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
710(103)	762(111)	24	0(32)	100(74)

Basic Electrode, Low hydrogen

Diameter / Welding Parameters / Packaging

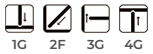
Diameter mm(in)	Length mm(in)	F & HF	V-up, OH	Packaging
2.6(3/32)	350(14)	60-90	50-80	Standard/Vacuum - Packet 5kg (11lbs), Carton 20kg (44lbs)
3.2(1/8)	350(14)	90-130	85-120	
4.0(5/32)	400(16)	130-180	110-170	
5.0(3/16)	400(16)	180~240	150-200	
6.0(15/64)	450(18)	250-310	-	

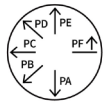
S-11016.G

Classification

AWS A5.5/ASME SFA-5.5 E11016-G
EN ISO 18275-A E62 2 Mn2NiMo B 1 2
KS D7006 E8016

Welding Positions





Features

- Good crack resistance
- Good mechanical properties

Polarity

AC or DC +

Application Areas

- Heavy steel fabrication
- Pressure vessels
- Power plant

Redrying Conditions

300~350°C (572~662°F) X 0.5~1hr

Approvals

ABS
✓

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S	Ni	Cr	Mo
0.06	0.59	1.49	0.017	0.007	1.87	0.22	0.36

Typical Mechanical Properties of All-Weld Metal

Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
729(106)	805(117)	27	-20(0)	121(89)

Basic Electrode, Low hydrogen

Diameter / Welding Parameters / Packaging

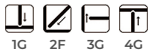
Diameter mm(in)	Length mm(in)	F & HF	V-up, OH	Packaging
2.6(3/32)	350(14)	60-90	50-80	Standard/Vacuum - Packet 5kg (11lbs), Carton 20kg (44lbs)
3.2(1/8)	350(14)	90-130	85-120	
4.0(5/32)	400(16)	130-180	110-170	
5.0(3/16)	400(16)	180~240	150-200	
6.0(15/64)	450(18)	250-310	-	

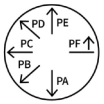
S-7016.HR

Classification

AWS A5.1/ ASME SFA-5.1 E7016 H4R
A5.1/ ASME SFA-5.1 E7016-1 H4R
JIS Z 3211 E4916 H5
EN ISO 2560-A E42 3 B 1 2 H5
KS D7006 E5016

Welding Positions





Features

- Extra low hydrogen electrode
- Good mechanical properties
- Vacuum sealed package available (HDM ≤ 4ml/100g)

Polarity

AC or DC +

Application Areas

- Heavy steel fabrication
- Shipbuilding
- Pressure vessels

Redrying Conditions

350~400°C (662~752°F) X 0.5~1hr

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S
0.07	0.37	1.11	0.019	0.005

Typical Mechanical Properties of All-Weld Metal

Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
499(72)	600(87)	30	-45(-50)	88(65)

Diameter / Welding Parameters / Packaging

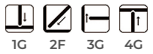
Diameter mm(in)	Length mm(in)	F & HF	V-up, OH	Packaging
2.6(3/32)	350(14)	55-85	50-80	Standard/Vacuum - Packet 5kg (11lbs), Carton 20kg (44lbs)
3.2(1/8)	350(14)	90-130	80-120	
4.0(5/32)	400(16)	130-180	110-170	
5.0(3/16)	400(16)	180-240	150-200	
6.0(15/64)	450(18)	250-310	-	

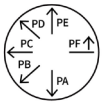
S-76LTH

Classification

AWS A5.5/ASME SFA-5.5 E7016-G
JIS Z 3211 E4916-N1 AP L
EN ISO 2560-A E42 6 Z B 1 2 H5
KS D7023 DL5016-6AP1

Welding Positions





Features

- Low hydrogen electrode (HDM ≤ 5ml/100g)
- Good impact value at -60°C
- CTOD properties at -40°C (-40°F) temperature

Polarity

AC or DC +

Application Areas

- Low temperature strength steel
- Offshore structure
- LPG, LNG storage tank

Redrying Conditions

350~400°C (662~752°F) X 0.5~1hr

Approvals

ABS	DNV	LR	CE
✓	✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S	Ni	Ti	B
0.06	0.31	1.17	0.015	0.005	0.46	0.03	0.002

Typical Mechanical Properties of All-Weld Metal

PWHT	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
As-weld	472(68)	570(83)	32	-45(-50) -60(-75)	153(113) 106(78)
625°C*8hr	439(64)	526(76)	32	-45(-50) -60(-75)	156(115) 112(83)

Diameter / Welding Parameters / Packaging

Diameter mm(in)	Length mm(in)	F & HF	V-up, OH	Packaging
2.6(3/32)	350(14)	60-90	50-80	Standard/Vacuum - Packet 5kg (11lbs), Carton 20kg (44lbs)
3.2(1/8)	350(14)	90-140	80-120	
4.0(5/32)	400(16)	130-190	120-170	
5.0(3/16)	400(16)	180-240	150-200	

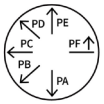
Basic Electrode, Low hydrogen
HYUNDAI WELDING

S-7016.LS

Classification

AWS A5.5/ASME SFA-5.5 E7016-G H4R
JIS Z 3211 E4916-N1 AP L
EN ISO 2560-A E46 6 1Ni B 1 2
KS D7023 DL5016-6AP1

Welding Positions



Features

- Extra low hydrogen electrode
- Good impact value at -60°C
- CTOD properties at -10°C (14°F) temperature

Polarity

AC or DC +

Application Areas

- Low temperature strength steel
- Offshore structure
- LPG, LNG storage tank

Redrying Conditions

350~400°C (662~752°F) X 0.5~1hr

Approvals

ABS	BV	DNV	KR	LR	RS
✓	✓	✓	✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S	Ni	Ti	B
0.06	0.37	0.99	0.014	0.006	0.76	0.02	0.003

Typical Mechanical Properties of All-Weld Metal

Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
508(74)	597(87)	28	-45(-50) -60(-75)	90(66) 68(50)

Diameter / Welding Parameters / Packaging

Diameter mm(in)	Length mm(in)	F & HF	V-up, OH	Packaging
2.6(3/32)	350(14)	55-85	50-80	Standard/Vacuum - Packet 5kg (11lbs), Carton 20kg (44lbs)
3.2(1/8)	350(14)	90-130	80-120	
4.0(5/32)	400(16)	130-180	110-170	
5.0(3/16)	400(16)	180-240	150-200	
6.0(15/64)	450(18)	250-310	-	

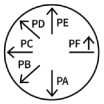
Basic Electrode, Low hydrogen
HYUNDAI WELDING

S-8016.C1

Classification

AWS A5.5/ASME SFA-5.5 E8016-C1
JIS Z 3211 E5516-N5 AP L
EN ISO 2560-A E46 5 2Ni B 1 2

Welding Positions



Features

- Good impact value at -60°C

Polarity

AC or DC +

Application Areas

- Low temperature strength steel (2.5% Ni)
- Offshore structure

Redrying Conditions

300~350°C (572~662°F) X 0.5~1hr

Approvals

ABS
✓

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S	Ni
0.06	0.23	1.00	0.012	0.006	2.15

Typical Mechanical Properties of All-Weld Metal

PWHT	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
605°C*1hr	498(72)	606(88)	29	-60(-75)	68(50)

Diameter / Welding Parameters / Packaging

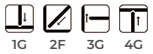
Diameter mm(in)	Length mm(in)	F & HF	V-up, OH	Packaging
2.6(3/32)	350(14)	55-90	50-80	Standard/Vacuum - Packet 5kg (11lbs), Carton 20kg (44lbs)
3.2(1/8)	350(14)	90-130	80-120	
4.0(5/32)	400(16)	130-190	120-170	
5.0(3/16)	400(16)	180-250	-	
6.0(15/64)	450(18)	250-310	-	

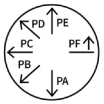
S-8016.C2

Classification

AWS A5.5/ASME SFA-5.5 E8016-C2
JIS Z 3211 E5516-N7 AP L
EN ISO 2560-A E46 6 3Ni B 1 2

Welding Positions





Features

- Good impact value at -60~-75°C

Polarity

AC or DC +

Application Areas

- Low temperature strength steel (3.5% Ni)
- Offshore structure

Redrying Conditions

300~350°C (572~662°F) X 0.5~1hr

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S	Ni
0.06	0.50	0.90	0.011	0.006	3.20

Typical Mechanical Properties of All-Weld Metal

PWHT	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
605°C*1hr	530(77)	630(91)	30	-75(-100)	50(37)

Diameter / Welding Parameters / Packaging

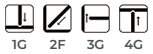
Diameter mm(in)	Length mm(in)	F & HF	V-up, OH	Packaging
2.6(3/32)	350(14)	55-90	50-80	Standard/Vacuum - Packet 5kg (11lbs), Carton 20kg (44lbs)
3.2(1/8)	350(14)	90-130	80-120	
4.0(5/32)	400(16)	130-190	120-170	
5.0(3/16)	400(16)	180-250	-	
6.0(15/64)	450(18)	250-310	-	

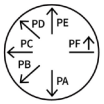
S-8016.C3

Classification

AWS A5.5/ASME SFA-5.5 E8016-C3
JIS Z 3211 E5516-N2
EN ISO 2560-A E46 4 1Ni B 1 2

Welding Positions





Features

- Good impact value at -40°C

Polarity

AC or DC +

Application Areas

- Low temperature strength steel (1% Ni)
- Offshore structures

Redrying Conditions

300~350°C (572~662°F) X 0.5~1hr

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S	Ni
0.06	0.54	1.12	0.015	0.006	0.96

Typical Mechanical Properties of All-Weld Metal

Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
540(78)	620(90)	26	-40(-40)	70(52)

Diameter / Welding Parameters / Packaging

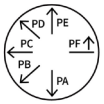
Diameter mm(in)	Length mm(in)	F & HF	V-up, OH	Packaging
2.6(3/32)	350(14)	55-90	50-80	Standard/Vacuum - Packet 5kg (11lbs), Carton 20kg (44lbs)
3.2(1/8)	350(14)	90-130	80-120	
4.0(5/32)	400(16)	130-190	120-170	
5.0(3/16)	400(16)	190-250	-	
6.0(15/64)	450(18)	250-310	-	

S-86LTH

Classification

AWS A5.5/ASME SFA-5.5 E8016-G

Welding Positions



Features

- 55kg grade low-hydrogen high tensile electrode (-60°C)
- Ni, Ti, B contained in the weld-metal.
- Great tensile strength in low-temperature
- Anti-low temperature crack (Low hydrogen)

Polarity

AC or DC +

Application Areas

- Offshore structures
- LPG vessels, LPG storage
- Heat exchangers

Redrying Conditions

350~400°C (662~752°F) X 0.5~1hr

Approvals

ABS
✓

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S	Ni	Ti	B
0.06	0.40	1.42	0.015	0.005	0.93	0.02	0.003

Typical Mechanical Properties of All-Weld Metal

PWHT	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
As-weld	531(77)	616(89)	30	-45(-50) -60(-75)	103(76) 73(54)
625*8hr	503(73)	588(85)	31	-45(-50) -60(-75)	106(78) 74(55)

Basic Electrode, Low hydrogen

Diameter / Welding Parameters / Packaging

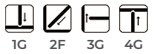
Diameter mm(in)	Length mm(in)	F & HF	Packaging
2.6(3/32)	350(14)	60-90	Standard/Vacuum - Packet 5kg (11lbs), Carton 20kg (44lbs)
3.2(1/8)	350(14)	90-140	
4.0(5/32)	400(16)	130-190	
5.0(3/16)	400(16)	180-250	

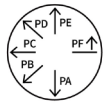
S-7018.W

Classification

AWS A5.5/ASME SFA-5.5 E7018-W1
JIS Z 3214 DA5026G
EN ISO 2560-A E42 2 B 3 2

Welding Positions





Features

- Suitable for off- and on-shore construction
- High resistance to corrosion caused by seawater or combinations of oil, gas and seawater
- Contains Cu, Ni and Cr (All-weld metal)

Polarity

AC or DC +

Application Areas

- High tensile weathering steel

Redrying Conditions

300~350°C (572~662°F) X 0.5~1hr

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S	Cu	Ni	Cr
0.06	0.54	0.65	0.014	0.006	0.36	0.23	0.24

Typical Mechanical Properties of All-Weld Metal

Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
505(73)	573(83)	26	-20(0)	100(74)

Diameter / Welding Parameters / Packaging

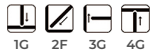
Diameter mm(in)	Length mm(in)	F & HF	V-up, OH	Packaging
2.6(3/32)	350(14)	60-90	50-80	Standard/Vacuum - Packet 5kg (11lbs), Carton 20kg (44lbs)
3.2(1/8)	350(14)	90-140	80-120	
4.0(5/32)	400(16)	130-190	110-170	
5.0(3/16)	400(16)	180-240	150-200	
6.0(15/64)	450(18)	250-300	-	

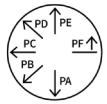
S-8018.W

Classification

AWS A5.5/ASME SFA-5.5 E8018-W2
JIS Z 3214 DA5826W
EN ISO 2560-A E50 2 ZNiCrCu B 3 2

Welding Positions





Features

- Suitable for off- and on-shore construction
- High resistance to corrosion caused by seawater or combinations of oil, gas and seawater
- Contains Cu, Ni and Cr (All-weld metal)

Polarity

AC or DC +

Application Areas

- High tensile weathering steel

Redrying Conditions

300~350°C (572~662°F) X 0.5~1hr

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S	Cu	Ni	Cr
0.06	0.50	0.72	0.016	0.008	0.42	0.49	0.62

Typical Mechanical Properties of All-Weld Metal

Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
578(84)	639(93)	30	-20(0)	117(87)

Diameter / Welding Parameters / Packaging

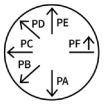
Diameter mm(in)	Length mm(in)	F & HF	V-up, OH	Packaging
2.6(3/32)	350(14)	60-90	50-80	Standard/Vacuum - Packet 5kg (11lbs), Carton 20kg (44lbs)
3.2(1/8)	350(14)	90-140	80-120	
4.0(5/32)	400(16)	130-190	110-170	
5.0(3/16)	400(16)	190-240	150-200	
6.0(15/64)	450(18)	250-300	-	

S-7016.A1

Classification

AWS A5.5/ASME SFA-5.5 E7016-A1
JIS Z 3223 E4916-1M3
EN ISO 3580-A E Mo B 1 2

Welding Positions



Features

- Good mechanical properties
- Good bead appearance

Polarity

AC, DC ±

Application Areas

- Low alloy steel (0.5% Mo)
- Pressure vessels

Redrying Conditions

300~350°C (572~662°F) X 0.5~1hr

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S	Mo
0.08	0.44	0.83	0.013	0.005	0.42

Typical Mechanical Properties of All-Weld Metal

PWHT	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)
620°C*1hr	509(74)	622(90)	28

Diameter / Welding Parameters / Packaging

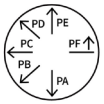
Diameter mm(in)	Length mm(in)	F & HF	V-up, OH	Packaging
2.6 (3/32)	350 (14)	55~90	50~80	Standard/Vacuum - Packet 5kg (11lbs), Carton 20kg (44lbs)
3.2 (1/8)	350 (14)	90~130	80~120	
4.0 (5/32)	400 (16)	130~190	120~170	
5.0 (3/16)	400 (16)	190~240	-	
6.0 (15/64)	450 (18)	250~300	-	

S-7018.A1

Classification

AWS A5.5/ASME SFA-5.5 E7018-A1
JIS Z 3223 E4918-1M3
EN ISO 3580-A E Mo B 3 2

Welding Positions



Features

- Good mechanical properties
- Good bead appearance
- Iron powder type electrode (high efficiency)

Polarity

AC, DC ±

Application Areas

- Low alloy steel (0.5% Mo)
- Pressure vessels

Redrying Conditions

300~350°C (572~662°F) X 0.5~1hr

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S	Mo
0.05	0.65	0.70	0.016	0.007	0.51

Typical Mechanical Properties of All-Weld Metal

PWHT	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)
620°C*1hr	525(76)	627(91)	31

Diameter / Welding Parameters / Packaging

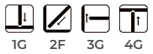
Diameter mm(in)	Length mm(in)	F & HF	V-up, OH	Packaging
2.6 (3/32)	350 (14)	55~90	50~80	Standard/Vacuum - Packet 5kg (11lbs), Carton 20kg (44lbs)
3.2 (1/8)	350 (14)	90~130	80~120	
4.0 (5/32)	400 (16)	130~190	120~170	
5.0 (3/16)	400 (16)	190~240	-	
6.0 (15/64)	450 (18)	250~300	-	

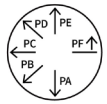
S-8016.B2

Classification

AWS A5.5/ASME SFA-5.5 E8016-B2
JIS Z 3223 E5516-1CM
EN ISO 3580-A E CrMo1 B 1 2

Welding Positions





Features

- Maximum service temperature at 550°C (1022°F)
- Good mechanical properties
- Good creep resistance

Polarity

AC, DC ±

Application Areas

- Low alloy steel (1.25% Cr-0.5% Mo)
- Pressure vessels
- Power plants

Redrying Conditions

300~350°C (572~662°F) X 0.5~1hr

Approvals

ABS	CE
✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S	Cr	Mo
0.06	0.28	0.45	0.013	0.007	1.12	0.54

Typical Mechanical Properties of All-Weld Metal

PWHT	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)
690°C*1hr	537(78)	622(90)	29

Heat-Resistant & Low-Alloy Steel
HYUNDAI WELDING

Diameter / Welding Parameters / Packaging

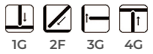
Diameter mm(in)	Length mm(in)	F & HF	V-up, OH	Packaging
2.6 (3/32)	350 (14)	55~90	50~80	Standard/Vacuum - Packet 5kg (11lbs), Carton 20kg (44lbs)
3.2 (1/8)	350 (14)	90~130	80~120	
4.0 (5/32)	400 (16)	130~190	120~170	
5.0 (3/16)	400 (16)	190~240	-	
6.0 (15/64)	450 (18)	250~300	-	

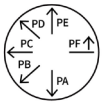
S-8018.B2

Classification

AWS A5.5/ASME SFA-5.5 E8018-B2
JIS Z 3223 E5518-1CM
EN ISO 3580-A E CrMo1 B 3 2

Welding Positions





Features

- Iron powder and low hydrogen type electrode (high efficiency)
- Good mechanical properties
- Good creep resistantance

Polarity

AC, DC ±

Application Areas

- Low alloy steel (1.25% Cr-0.5% Mo)
- Pressure vessels
- Power plants

Redrying Conditions

300~350°C (572~662°F) X 0.5~1hr

Approvals

ABS
✓

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S	Cr	Mo
0.07	0.29	0.61	0.012	0.006	1.21	0.53

Typical Mechanical Properties of All-Weld Metal

PWHT	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)
690°C*1hr	588(85)	681(99)	27

Diameter / Welding Parameters / Packaging

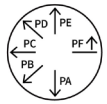
Diameter mm(in)	Length mm(in)	F & HF	V-up, OH	Packaging
2.6 (3/32)	350 (14)	55~90	50~80	Standard/Vacuum - Packet 5kg (11lbs), Carton 20kg (44lbs)
3.2 (1/8)	350 (14)	90~130	80~120	
4.0 (5/32)	400 (16)	130~190	120~170	
5.0 (3/16)	400 (16)	190~240	-	
6.0 (15/64)	450 (18)	250~300	-	

S-9016.B3

Classification

AWS A5.5/ASME SFA-5.5 E9016-B3
JIS Z 3223 E6216-2C1M
EN ISO 3580-A E CrMo2 B 1 2

Welding Positions



Features

- Maximum service temperature at 600°C (1112°F)
- Good mechanical properties
- Good creep resistantance

Polarity

AC, DC ±

Application Areas

- Low alloy steel (2.25% Cr-1% Mo)
- Pressure vessels
- Power plants

Redrying Conditions

300~350°C (572~662°F) X 0.5~1hr

Approvals

CE
✓

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S	Cr	Mo
0.06	0.36	0.67	0.015	0.007	2.36	1.03

Typical Mechanical Properties of All-Weld Metal

PWHT	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)
690°C*1hr	622(90)	710(103)	25

Heat-Resistant & Low-Alloy Steel
HYUNDAI WELDING

Diameter / Welding Parameters / Packaging

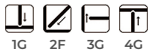
Diameter mm(in)	Length mm(in)	F & HF	V-up, OH	Packaging
2.6 (3/32)	350 (14)	50~90	50~80	Standard/Vacuum - Packet 5kg (11lbs), Carton 20kg (44lbs)
3.2 (1/8)	350 (14)	90~130	80~120	
4.0 (5/32)	400 (16)	130~190	120~170	
5.0 (3/16)	400 (16)	190~250	-	
6.0 (15/64)	450 (18)	250~300	-	

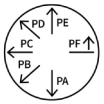
S-9018.B3

Classification

AWS A5.5/ASME SFA-5.5 E9018-B3
JIS Z 3223 E6218-2C1M
EN ISO 3580-A E CrMo2 B 3 2

Welding Positions





Features

- Maximum service temperature at 600°C (1112°F)
- Good mechanical properties
- Good creep resistance
- Iron powder low hydrogen type electrode (high efficiency)

Polarity

AC, DC ±

Application Areas

- Low alloy steel (2.25% Cr-1% Mo)
- Pressure vessels
- Power plants

Redrying Conditions

300~350°C (572~662°F) X 0.5~1hr

Approvals

ABS	DNV	KR	LR
✓	✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S	Cr	Mo
0.08	0.21	0.58	0.015	0.011	2.13	1.10

Typical Mechanical Properties of All-Weld Metal

PWHT	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)
690°C*1hr	564(82)	674(98)	24

Heat-Resistant & Low-Alloy Steel
HYUNDAI WELDING

Diameter / Welding Parameters / Packaging

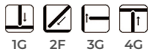
Diameter mm(in)	Length mm(in)	F & HF	V-up, OH	Packaging
2.6 (3/32)	350 (14)	50~90	50~80	Standard/Vacuum - Packet 5kg (11lbs), Carton 20kg (44lbs)
3.2 (1/8)	350 (14)	90~130	80~120	
4.0 (5/32)	400 (16)	130~190	120~170	
5.0 (3/16)	400 (16)	190~250	-	
6.0 (15/64)	450 (18)	250~300	-	

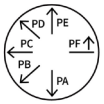
S-9015.B9

Classification

AWS A5.5/ASME SFA-5.5 E9015-B91
JIS Z 3223 E6215-9C1MV
EN ISO 3580-A E CrMo91 B 4 2 H5

Welding Positions





Features

- Good creep resistance at high temperature
- Maximum service temperature at 650°C (1202°F)
- Low-Hydrogen electrode (HDM ≤5ml/100g)
- Good performance with DCEP

Polarity

DC ±

Application Areas

- Low alloy steel (9%Cr-1%Mo)
- Pressure vessels
- Power plants

Redrying Conditions

300~350°C (572~662°F) X 0.5~1hr

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S	Cu	Ni	Cr	Mo	Nb	Al	V	N
0.10	0.27	0.85	0.009	0.006	0.03	0.29	8.9	0.99	0.04	0.01	0.20	0.03

Typical Mechanical Properties of All-Weld Metal

PWHT	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
760°C*2hr	603(87)	747(108)	24	RT	55(41)
760°C*4hr	611(89)	732(106)	24	RT	60(44)

Diameter / Welding Parameters / Packaging

Diameter mm(in)	Length mm(in)	F & HF	V-up, OH	Packaging
2.6 (3/32)	350 (14)	55~90	50~80	Standard/Vacuum - Packet 5kg (11lbs), Carton 20kg (44lbs)
3.2 (1/8)	400 (14)	90~130	80~120	
4.0 (5/32)	400 (16)	130~190	120~180	
5.0 (3/16)	450 (18)	190~240	-	

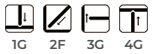
Heat-Resistant & Low-Alloy Steel
HYUNDAI WELDING

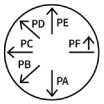
S-9016.B9

Classification

AWS A5.5/ASME SFA-5.5 E9016-B91
JIS Z 3223 E6216-9C1MV
EN ISO 3580-A E CrMo91 B 3 2 H5

Welding Positions





Features

- Good creep resistance at high temperature
- Maximum service temperature at 650°C (1202°F)
- Low-Hydrogen electrode (HDM ≤5ml/100g)

Polarity

AC, DC ±

Application Areas

- Low alloy steel (9%Cr-1%Mo)
- Pressure vessels
- Power plants

Redrying Conditions

350~400°C (662~752°F) X 0.5~1hr

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S	Cu	Ni	Cr	Mo	Nb	Al	V	N
0.09	0.23	0.80	0.009	0.006	0.05	0.27	8.2	0.88	0.02	0.01	0.19	0.04

Typical Mechanical Properties of All-Weld Metal

PWHT	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
760°C*2hr	612(89)	727(105)	28	RT	71(52)

Diameter / Welding Parameters / Packaging

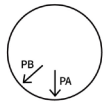
Diameter mm(in)	Length mm(in)	F & HF	V-up, OH	Packaging
2.6 (3/32)	350 (14)	100~140	90~130	Standard/Vacuum - Packet 5kg (11lbs), Carton 20kg (44lbs)
3.2 (1/8)	400 (14)	120~160	110~150	
4.0 (5/32)	400 (16)	150~190	140~180	
5.0 (3/16)	450 (18)	180~240	-	

S-600B.B

Classification

JIS Z 3251 DF2B-600-B

Welding Positions



Features

- Under-lay with low hydrogen type carbon steel electrode
- Preheat at more than 150°C(302°F)
- Suitable for soil abrasion
- Martensite structure (All-weld metal)

Polarity

AC or DC ±

Application Areas

- Hardfacing of rollers, gears, crane wheels and abrasive parts

Redrying Conditions

350°C (662°F) X 1hr

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S	Cr	Mo
0.42	0.94	2.14	0.020	0.008	2.49	0.01

Typical Mechanical Properties of All-Weld Metal

Preheat & Interpass Temp. °C(°F)	Hardness(HB)
150(302)	540
300(572)	500
600(1,112)	450

Hardfacing
HYUNDAI WELDING

Diameter / Welding Parameters / Packaging

Diameter mm(in)	Length mm(in)	F & HF	Packaging
2.6 (3/32)	350 (14)	55~90	Standard/Vacuum - Packet 5kg (11lbs), Carton 20kg (44lbs)
3.2 (1/8)	350 (14)	90~140	
4.0 (5/32)	400 (16)	140~190	
5.0 (3/16)	400 (16)	190~240	
6.0 (15/64)	450 (18)	220~300	

S-700B.B

Classification

JIS Z 3251 DF3C-600-B

Welding Positions

Features

- Preheat at more than 150°C(302°F)
- Postheat at about 600°C(1,112°F), if possible
- Martensite structure (All-weld metal)
- Machining impossible (As welded)
- Mostly suitable for soil abrasion

Polarity

AC or DC ±

Application Areas

- Hardfacing of rollers, gears, crane wheels and abrasive parts

Redrying Conditions

350°C (662°F) X 1hr

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S	Cr	Mo
0.55	1.11	1.40	0.018	0.006	5.16	1.72

Typical Mechanical Properties of All-Weld Metal

Preheat & Interpass Temp. °C(°F)	Hardness(HB)
150(302)	610
300(572)	580

Diameter / Welding Parameters / Packaging

Diameter mm(in)	Length mm(in)	F & HF	Packaging
2.6 (3/32)	350 (14)	55~90	Standard/Vacuum - Packet 5kg (11lbs), Carton 20kg (44lbs)
3.2 (1/8)	350 (14)	90~140	
4.0 (5/32)	400 (16)	140~190	
5.0 (3/16)	400 (16)	190~240	
6.0 (15/64)	450 (18)	220~300	

S-307.16

Classification

EN ISO 3581-A E 18 8 Mn R 1 2

Welding Positions

Features

- Low crack sensitivity in high temperature
- Easy to remove slag
- Low spatter
- Good bead appearance

Polarity

AC or DC ±

Application Areas

- Stainless steel(18%Cr-8%), 13% Mn steel, Dissimilar welding

Redrying Conditions

350°C (662°F) X 1hr

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S	Ni	Cr
0.10	0.90	7.0	0.024	0.010	8.4	19.4

Typical Mechanical Properties of All-Weld Metal

Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
643(93)	38	-20°(0F)	50(37)

Diameter / Welding Parameters / Packaging

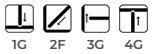
Diameter mm(in)	Length mm(in)	F & HF	V-up, OH	Packaging
2.0 (5/64)	300 (12)	25~55	20~50	PVC - Packet 2.5kg(5.5lbs), Carton 10kg (22lbs)
2.6 (3/32)	300 (12)	50~85	45~80	
3.2 (1/8)	350 (14)	70~115	65~110	
4.0 (5/32)	400 (16)	95~145	85~135	
5.0 (3/16)	400 (16)	135~180	-	

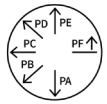
S-308.16N

Classification

AWS A5.4/ASME SFA-5.4 E308-16
JIS Z 3221 ES308-16
EN ISO 3581- A E 19 9 R
KS D7014 E308-16

Welding Positions





Features

- Good resistance to corrosion and oxidizing environments
- Easy to remove slag
- Low spatter
- Good bead appearance

Polarity

AC or DC ±

Application Areas

- Stainless steel (18%Cr-8%Ni)

Redrying Conditions

350°C (662°F) X 1hr

Approvals

ABS	DNV	KR
✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S	Cu	Ni	Cr	Mo
0.04	0.57	0.8	0.027	0.018	0.04	10.1	18.4	0.04

Typical Mechanical Properties of All-Weld Metal

Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
570(83)	44	-60(-75)	43(32)

Stainless steel
HYUNDAI WELDING

Diameter / Welding Parameters / Packaging

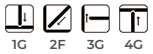
Diameter mm(in)	Length mm(in)	F & HF	V-up, OH	Packaging
2.0 (5/64)	300 (12)	25~55	20~50	PVC - Packet 2.5kg(5.5lbs), Carton 10kg (22lbs)
2.6 (3/32)	300 (12)	50~85	45~80	
3.2 (1/8)	350 (14)	70~115	65~110	
4.0 (5/32)	350 (14)	95~145	85~135	
5.0 (3/16)	350 (14)	135~180	-	

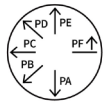
S-308L.16N

Classification

AWS A5.4/ASME SFA-5.4 E308L-16
JIS Z 3221 ES308L-16
EN ISO 3581- A E 19 9 L R
KS D7014 E308L-16

Welding Positions





Features

- Good resistance to corrosion and oxidizing environments
- Easy to remove slag
- Good bead appearance
- High moisture resistance (17 type)

Polarity

AC or DC ±

Application Areas

- Stainless steel (low carbon 18%Cr-8%Ni)

Redrying Conditions

350°C (662°F) X 1hr

Approvals

ABS	BV	CCS	DNV	KR	LR	NK	CWB	CE	DB	TUV
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S	Cu	Ni	Cr	Mo
0.03	0.58	0.8	0.028	0.018	0.04	10.0	18.5	0.04

Typical Mechanical Properties of All-Weld Metal

Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)	LE(mm)
561(81)	44	-60(-75) -196(-320)	43(32) 30(22)	0.40

Diameter / Welding Parameters / Packaging

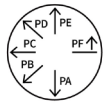
Diameter mm(in)	Length mm(in)	F & HF	V-up, OH	Packaging
2.0 (5/64)	300 (12)	25~55	20~50	PVC - Packet 2.5kg(5.5lbs), Carton 10kg (22lbs)
2.6 (3/32)	300 (12)	50~85	45~80	
3.2 (1/8)	350 (14)	70~115	65~110	
4.0 (5/32)	350 (14)	95~145	85~135	
5.0 (3/16)	350 (14)	135~180	-	

S-308Mo.16

Classification

AWS A5.4/ASME SFA-5.4 E308Mo-16
JIS Z 3221 ES308Mo-16
EN ISO 3581- A E 20 10 3

Welding Positions



Features

- Easy to remove slag
- Smooth welding
- Low spatter

Polarity

AC or DC ±

Application Areas

- Stainless steel (ASTM CF8M)

Redrying Conditions

350°C (662°F) X 1hr

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S	Cu	Ni	Cr	Mo
0.03	0.65	0.8	0.025	0.015	0.04	9.6	18.5	2.2

Typical Mechanical Properties of All-Weld Metal

Tensile Strength MPa(ksi)	Elongation (%)
621(90)	42

Diameter / Welding Parameters / Packaging

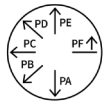
Diameter mm(in)	Length mm(in)	F & HF	V-up, OH	Packaging
2.0 (5/64)	300 (12)	25~55	20~50	PVC - Packet 2.5kg(5.5lbs), Carton 10kg (22lbs)
2.6 (3/32)	300 (12)	50~85	45~80	
3.2 (1/8)	350 (14)	70~115	65~110	
4.0 (5/32)	350 (14)	95~145	85~135	
5.0 (3/16)	350 (14)	135~180	-	

S-309.16N

Classification

AWS A5.4/ASME SFA-5.4 E309-16
JIS Z 3221 ES309-16
EN ISO 3581- A E 23 12 R
KS D7014 E309-16

Welding Positions



Features

- Good resistance to heat and corrosion
- Easy to remove slag
- Low spatter

Polarity

AC or DC ±

Application Areas

- Welding of dissimilar steels

Redrying Conditions

350°C (662°F) X 1hr

Approvals

ABS	DNV	KR	LR
✓	✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S	Cu	Ni	Cr	Mo
0.03	0.60	1.1	0.024	0.017	0.04	12.5	23.2	0.04

Typical Mechanical Properties of All-Weld Metal

Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
579(84)	40	-20(0) -60(-75)	50(37) 42(32)

Diameter / Welding Parameters / Packaging

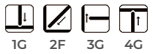
Diameter mm(in)	Length mm(in)	F & HF	V-up, OH	Packaging
2.0 (5/64)	300 (12)	25~55	20~50	PVC - Packet 2.5kg(5.5lbs), Carton 10kg (22lbs)
2.6 (3/32)	300 (12)	50~85	45~80	
3.2 (1/8)	350 (14)	70~115	65~110	
4.0 (5/32)	350 (14)	95~145	85~135	
5.0 (3/16)	350 (14)	135~180	-	

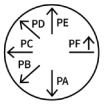
S-309L.16

Classification

AWS A5.4/ASME SFA-5.4 E309L-16
JIS Z 3221 ES309L-16
EN ISO 3581- A E 23 12 L R
KS D7014 E309L-16

Welding Positions





Features

- Good resistance to heat and corrosion
- Good crack resistance
- Easy to remove slag
- High moisture resistance (17 type)

Polarity

AC or DC ±

Application Areas

- Welding of dissimilar steels
- Buffer layer for bulid-up

Redrying Conditions

350°C (662°F) X 1hr

Approvals

ABS	BV	CCS	DNV	KR	LR	NK	CWB	CE	DB	TUV
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S	Cu	Ni	Cr	Mo
0.03	0.63	1.2	0.024	0.018	0.04	12.6	23.0	0.04

Typical Mechanical Properties of All-Weld Metal

Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
573(83)	43	-20(0) -60(-75)	50(37) 42(32)

Diameter / Welding Parameters / Packaging

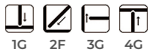
Diameter mm(in)	Length mm(in)	F & HF	V-up, OH	Packaging
2.0 (5/64)	300 (12)	25~55	20~50	PVC - Packet 2.5kg(5.5lbs), Carton 10kg (22lbs)
2.6 (3/32)	300 (12)	50~85	45~80	
3.2 (1/8)	350 (14)	70~115	65~110	
4.0 (5/32)	350 (14)	95~145	85~135	
5.0 (3/16)	350 (14)	135~180	-	

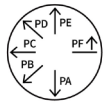
S-309Mo.16

Classification

AWS A5.4/ASME SFA-5.4 E309Mo-16
JIS Z 3221 ES309Mo-16
EN ISO 3581- A E 23 12 2 R
KS D7014 E309Mo-16

Welding Positions





Features

- Good resistance to heat and crack
- Easy to remove slag
- Good bead appearance

Polarity

AC or DC ±

Application Areas

- Welding of dissimilar steels
- Welding of low carbon 22%Cr-12%Ni-2.5%Mo stainless steel

Redrying Conditions

350°C (662°F) X 1hr

Approvals

ABS
✓

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S	Cu	Ni	Cr	Mo
0.03	0.60	1.0	0.026	0.015	0.04	12.6	22.7	2.4

Typical Mechanical Properties of All-Weld Metal

Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
716(104)	32	-20(0) -60(-75)	42(31) 37(27)

Diameter / Welding Parameters / Packaging

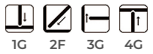
Diameter mm(in)	Length mm(in)	F & HF	V-up, OH	Packaging
2.0 (5/64)	300 (12)	25~55	20~50	PVC - Packet 2.5kg(5.5lbs), Carton 10kg (22lbs)
2.6 (3/32)	300 (12)	50~85	45~80	
3.2 (1/8)	350 (14)	70~115	65~110	
4.0 (5/32)	350 (14)	95~145	85~135	
5.0 (3/16)	350 (14)	135~180	-	

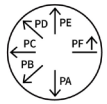
S-309MoL.16

Classification

AWS A5.4/ASME SFA-5.4 E309LMo-16
JIS Z 3221 ES309LMo-16
EN ISO 3581- A E 23 12 2 L R
KS D7014 E309MoL-16

Welding Positions





Features

- Good resistance to heat and crack
- Easy to remove slag
- Good bead appearance

Polarity

AC or DC ±

Application Areas

- Welding of dissimilar steels
- Welding of low carbon 22%Cr-12%Ni-2.5%Mo stainless steel

Redrying Conditions

350°C (662°F) X 1hr

Approvals

DNV	CE	DB	TUV
✓	✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S	Cu	Ni	Cr	Mo
0.02	0.62	1.0	0.026	0.016	0.04	12.6	22.8	2.3

Typical Mechanical Properties of All-Weld Metal

Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
710(103)	33	-20(0) -60(-75)	45(33) 35(26)

Stainless steel
HYUNDAI WELDING

Diameter / Welding Parameters / Packaging

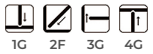
Diameter mm(in)	Length mm(in)	F & HF	V-up, OH	Packaging
2.0 (5/64)	300 (12)	25~55	20~50	PVC - Packet 2.5kg(5.5lbs), Carton 10kg (22lbs)
2.6 (3/32)	300 (12)	50~85	45~80	
3.2 (1/8)	350 (14)	70~115	65~110	
4.0 (5/32)	350 (14)	95~145	85~135	
5.0 (3/16)	350 (14)	135~180	-	

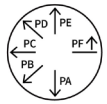
S-312.16

Classification

AWS A5.4/ASME SFA-5.4 E312-16
JIS Z 3221 ES312-16
EN ISO 3581- A E 29 9 R
KS D7014 E312-16

Welding Positions





Features

- Good crack resistance
- Excellent buffer effect against stress
- Easy to remove slag

Polarity

AC or DC ±

Application Areas

- Welding of dissimilar steels
- Buffer layer for bulid-up

Redrying Conditions

350°C (662°F) X 1hr

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S	Cu	Ni	Cr	Mo
0.10	0.55	0.7	0.025	0.011	0.09	10.3	28.3	0.12

Typical Mechanical Properties of All-Weld Metal

Tensile Strength MPa(ksi)	Elongation (%)
803(117)	25

Diameter / Welding Parameters / Packaging

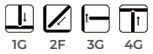
Diameter mm(in)	Length mm(in)	F & HF	V-up, OH	Packaging
2.0 (5/64)	300 (12)	25~55	20~50	PVC - Packet 2.5kg(5.5lbs), Carton 10kg (22lbs)
2.6 (3/32)	300 (12)	50~85	45~80	
3.2 (1/8)	350 (14)	70~115	65~110	
4.0 (5/32)	350 (14)	95~145	85~135	
5.0 (3/16)	350 (14)	135~180	-	

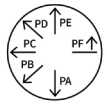
S-316.16N

Classification

AWS A5.4/ASME SFA-5.4 E316-16
JIS Z 3221 ES316-16
EN ISO 3581- A E 19 12 3 R
KS D7014 E316-16

Welding Positions





Features

- Good resistance to corrosion and oxidizing environments
- Good heat resistance
- Easy to remove slag
- Low spatter

Polarity

AC or DC ±

Application Areas

- Stainless steel (18%Cr-12%Ni-2%Mo)

Redrying Conditions

350°C (662°F) X 1hr

Approvals

ABS	BV	DNV	KR
✓	✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S	Cu	Ni	Cr	Mo
0.03	0.77	0.9	0.030	0.019	0.02	12.3	18.7	2.5

Typical Mechanical Properties of All-Weld Metal

Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
572(83)	41	-20(0) -60(-75) -196(-320)	50(37) 42(31) 27(20)

Diameter / Welding Parameters / Packaging

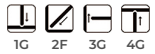
Diameter mm(in)	Length mm(in)	F & HF	V-up, OH	Packaging
2.0 (5/64)	300 (12)	25~55	20~50	PVC - Packet 2.5kg(5.5lbs), Carton 10kg (22lbs)
2.6 (3/32)	300 (12)	50~85	45~80	
3.2 (1/8)	350 (14)	70~115	65~110	
4.0 (5/32)	350 (14)	95~145	85~135	
5.0 (3/16)	350 (14)	135~180	-	

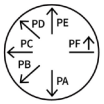
S-316L.16N

Classification

AWS A5.4/ASME SFA-5.4 E316L-16
JIS Z 3221 ES316L-16
EN ISO 3581- A E 19 12 3 L R
KS D7014 E316L-16

Welding Positions





Features

- Good resistance to corrosion and oxidizing environments
- Good heat resistance
- Easy to remove slag

Polarity

AC or DC ±

Application Areas

- Stainless steel (low carbon 18%Cr-12%Ni-2%Mo)

Redrying Conditions

350°C (662°F) X 1hr

Approvals

ABS	BV	CCS	DNV	KR	LR	NK	CWB	CE	DB	TUV
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S	Cu	Ni	Cr	Mo
0.02	0.75	0.9	0.018	0.012	0.02	12.7	18.5	2.7

Typical Mechanical Properties of All-Weld Metal

Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
557(81)	45	-20(0) -60(-75) -196(-320)	53(39) 43(32) 28(21)

Diameter / Welding Parameters / Packaging

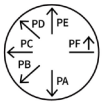
Diameter mm(in)	Length mm(in)	F & HF	V-up, OH	Packaging
2.0 (5/64)	300 (12)	25~55	20~50	PVC - Packet 2.5kg(5.5lbs), Carton 10kg (22lbs)
2.6 (3/32)	300 (12)	50~85	45~80	
3.2 (1/8)	350 (14)	70~115	65~110	
4.0 (5/32)	350 (14)	95~145	85~135	
5.0 (3/16)	350 (14)	135~180	-	

S-316LT.16

Classification

AWS A5.4/ASME SFA-5.4 E316L-16
JIS Z 3221 ES316L-16
EN ISO 3581- A E 19 12 3 L R
KS D7014 E316L-16

Welding Positions



Features

- Good impact value up to -196°C
- Good resistance to inter-crystalline corrosion Easy to remove slag
- Low spatter

Polarity

AC or DC ±

Application Areas

- Stainless steel (18%Cr-12%Ni-2%Mo)
- LPG, LNG storage tank

Redrying Conditions

350°C (662°F) X 1hr

Approvals

ABS
✓

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S	Cu	Ni	Cr	Mo
0.030	0.78	1.7	0.021	0.016	0.02	13.5	17.9	2.3

Typical Mechanical Properties of All-Weld Metal

Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
556(81)	41	-196(-320)	32(24)

Diameter / Welding Parameters / Packaging

Diameter mm(in)	Length mm(in)	F & HF	V-up, OH	Packaging
2.0 (5/64)	300 (12)	25~55	20~50	PVC - Packet 2.5kg(5.5lbs), Carton 10kg (22lbs)
2.6 (3/32)	300 (12)	50~85	45~80	
3.2 (1/8)	350 (14)	70~115	65~110	
4.0 (5/32)	350 (14)	95~145	85~135	
5.0 (3/16)	350 (14)	135~180	-	

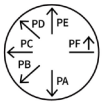
Stainless steel HYUNDAI WELDING

S-317L.16

Classification

AWS A5.4/ASME SFA-5.4 E317L-16
JIS Z 3221 ES317L-16
KS D7014 E317L-16

Welding Positions



Features

- Good resistance to nitroxide and sulfide
- Good heat resistance
- Easy to remove slag

Polarity

AC or DC ±

Application Areas

- Stainless steel (317L)

Redrying Conditions

350°C (662°F) X 1hr

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S	Cu	Ni	Cr	Mo
0.02	0.58	0.9	0.025	0.015	0.04	12.4	18.3	3.3

Typical Mechanical Properties of All-Weld Metal

Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
601(87)	38	-60(-75)	43(32)

Diameter / Welding Parameters / Packaging

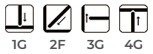
Diameter mm(in)	Length mm(in)	F & HF	V-up, OH	Packaging
2.0 (5/64)	300 (12)	25~55	20~50	PVC - Packet 2.5kg(5.5lbs), Carton 10kg (22lbs)
2.6 (3/32)	300 (12)	50~85	45~80	
3.2 (1/8)	350 (14)	70~115	65~110	
4.0 (5/32)	350 (14)	95~145	85~135	
5.0 (3/16)	350 (14)	135~180	-	

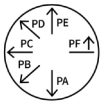
S-347.16

Classification

AWS A5.4/ASME SFA-5.4 E347-16
JIS Z 3221 ES347-16
EN ISO 3581- A E 19 9 Nb R
KS D7014 E347-16

Welding Positions





Features

- Contains stabilizing element(Nb)
- High temperature strength
- Suitable for welding of boiler and gas turbine
- Easy to remove slag

Polarity

AC or DC ±

Application Areas

- Stainless steel (321, 347)

Redrying Conditions

350°C (662°F) X 1hr

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S	Cu	Ni	Cr	Mo
0.03	0.67	0.8	0.030	0.014	0.03	9.8	18.6	0.03

Typical Mechanical Properties of All-Weld Metal

Tensile Strength MPa(ksi)	Elongation (%)
603(88)	41

Diameter / Welding Parameters / Packaging

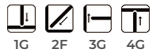
Diameter mm(in)	Length mm(in)	F & HF	V-up, OH	Packaging
2.0 (5/64)	300 (12)	25~55	20~50	PVC - Packet 2.5kg(5.5lbs), Carton 10kg (22lbs)
2.6 (3/32)	300 (12)	50~85	45~80	
3.2 (1/8)	350 (14)	70~115	65~110	
4.0 (5/32)	350 (14)	95~145	85~135	
5.0 (3/16)	350 (14)	135~180	-	

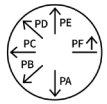
S-2209.16

Classification

AWS A5.4/ASME SFA-5.4 E2209-16
JIS Z 3221 ES2209-16
EN ISO 3581- A E 22 9 3 N L

Welding Positions





Features

- Ferritic/austenitic structure (All-weld metal)
- Service temperature up to 250°C
- High resistance to pitting, intergranular and stress corrosion
- PREN 35
- Easy to remove slag, good bead appearance

Polarity

AC or DC ±

Application Areas

- Welding of duplex stainless steel (SAF2205, UNS S31803)

Redrying Conditions

350°C (662°F) X 1hr

Approvals

ABS	CCS	KR	NK	RINA	CE
✓	✓	✓	✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S	Cu	Ni	Cr	Mo	N
0.03	0.76	0.9	0.017	0.012	0.04	8.9	22.6	3.2	0.13

Typical Mechanical Properties of All-Weld Metal

Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
830(120)	28	-20(0) -45(-50)	38(28) 30(22)

Diameter / Welding Parameters / Packaging

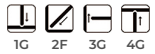
Diameter mm(in)	Length mm(in)	F & HF	V-up, OH	Packaging
2.0 (5/64)	300 (12)	25~55	20~50	PVC - Packet 2.5kg(5.5lbs), Carton 10kg (22lbs)
2.6 (3/32)	300 (12)	50~85	45~80	
3.2 (1/8)	350 (14)	70~115	65~110	
4.0 (5/32)	350 (14)	95~145	85~135	
5.0 (3/16)	350 (14)	135~180	-	

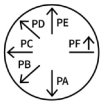
S-308L.17

Classification

AWS A5.4/ASME SFA-5.4 E308L-17
JIS Z 3221 ES308L-17
EN ISO 3581- A E 19 9 L R

Welding Positions





Features

- Good resistance to corrosion and oxidizing environments
- Easy to remove slag, good bead appearance
- High moisture resistance (17 type)

Polarity

AC or DC ±

Application Areas

- Stainless steel (low carbon 18%Cr-8%Ni)

Redrying Conditions

350°C (662°F) X 1hr

Approvals

ABS
✓

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S	Cu	Ni	Cr	Mo
0.03	0.51	0.6	0.026	0.017	0.03	9.9	18.7	0.04

Typical Mechanical Properties of All-Weld Metal

Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
570(83)	50	-60(-75) -196(-320)	50(37) 26(19)

Diameter / Welding Parameters / Packaging

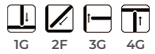
Diameter mm(in)	Length mm(in)	F & HF	V-up, OH	Packaging
2.0 (5/64)	300 (12)	25~55	20~50	PVC - Packet 2.5kg(5.5lbs), Carton 10kg (22lbs)
2.6 (3/32)	300 (12)	50~85	45~80	
3.2 (1/8)	350 (14)	70~115	65~110	
4.0 (5/32)	350 (14)	95~145	85~135	
5.0 (3/16)	350 (14)	135~180	-	

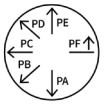
S-309L.17

Classification

AWS A5.4/ASME SFA-5.4 E309L-17
JIS Z 3221 ES309L-17
EN ISO 3581- A E 23 12 L R

Welding Positions





Features

- Good resistance to heat and corrosion
- Good crack resistance
- Easy to remove slag
- High moisture resistance (17 type)

Polarity

AC or DC ±

Application Areas

- Welding of dissimilar steels
- Buffer layer for bulid-up

Redrying Conditions

350°C (662°F) X 1hr

Approvals

ABS
✓

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S	Cu	Ni	Cr	Mo
0.03	0.63	1.1	0.024	0.015	0.03	12.9	23.9	0.04

Typical Mechanical Properties of All-Weld Metal

Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
570(83)	41	-20(0) -60(-75)	48(35) 40(30)

Diameter / Welding Parameters / Packaging

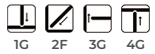
Diameter mm(in)	Length mm(in)	F & HF	V-up, OH	Packaging
2.0 (5/64)	300 (12)	25~55	20~50	PVC - Packet 2.5kg(5.5lbs), Carton 10kg (22lbs)
2.6 (3/32)	300 (12)	50~85	45~80	
3.2 (1/8)	350 (14)	70~115	65~110	
4.0 (5/32)	350 (14)	95~145	85~135	
5.0 (3/16)	350 (14)	135~180	-	

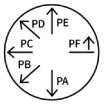
S-316L.17

Classification

AWS A5.4/ASME SFA-5.4 E316L-17
JIS Z 3221 ES316L-17
EN ISO 3581- A E 19 12 3 L R

Welding Positions





Features

- Good resistance to corrosion and oxidizing environments
- Good heat resistance
- Easy to remove slag
- High moisture resistance (17 type)

Polarity

AC or DC ±

Application Areas

Redrying Conditions

350°C (662°F) X 1hr

Approvals

ABS
✓

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S	Cu	Ni	Cr	Mo
0.02	0.60	1.0	0.029	0.016	0.02	11.9	18.2	2.5

Typical Mechanical Properties of All-Weld Metal

Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
560(81)	41	-20(0) -60(-75)	54(40) 46(34)

Diameter / Welding Parameters / Packaging

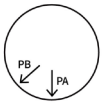
Diameter mm(in)	Length mm(in)	F & HF	V-up, OH	Packaging
2.0 (5/64)	300 (12)	25~55	20~50	PVC - Packet 2.5kg(5.5lbs), Carton 10kg (22lbs)
2.6 (3/32)	300 (12)	50~85	45~80	
3.2 (1/8)	350 (14)	70~115	65~110	
4.0 (5/32)	350 (14)	95~145	85~135	
5.0 (3/16)	350 (14)	135~180	-	

S-2594.16

Classification

AWS A5.4/ASME SFA-5.4 E2594-16
EN ISO 3581- A E 25 9 4 N L

Welding Positions



Features

- Service temperature up to 250°C
- High resistance to Pitting corrosion and embrittlement
- PREN 41
- Easy to remove slag, good bead appearance

Polarity

AC or DC ±

Application Areas

- Welding of super duplex stainless steel (UNS S32750, S32760)

Redrying Conditions

350°C (662°F) X 1hr

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S	Cu	Ni	Cr	Mo	N
0.02	0.75	0.7	0.018	0.010	0.05	9.5	25.2	3.8	0.23

Typical Mechanical Properties of All-Weld Metal

Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
927(134)	25	-20(0)	30(22)

Diameter / Welding Parameters / Packaging

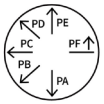
Diameter mm(in)	Length mm(in)	F & HF	V-up, OH	Packaging
2.0 (5/64)	300 (12)	25~55	20~50	PVC - Packet 2.5kg(5.5lbs), Carton 10kg (22lbs)
2.6 (3/32)	300 (12)	50~85	45~80	
3.2 (1/8)	350 (14)	70~115	65~110	
4.0 (5/32)	350 (14)	95~145	85~135	
5.0 (3/16)	350 (14)	135~180	-	

S-316H.16

Classification

AWS A5.4/ASME SFA-5.4 E316H-16
JIS Z 3221 ES316H-16
EN ISO 3581- A E 19 12 3 H

Welding Positions



Features

- Good resistance to corrosion and oxidizing environments
- Good heat resistance
- Easy to remove slag

Polarity

AC or DC ±

Redrying Conditions

350°C (662°F) X 1hr

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S	Ni	Cr	Mo
0.06	0.82	0.93	0.022	0.015	12.1	18.6	2.7

Typical Mechanical Properties of All-Weld Metal

Tensile Strength MPa(ksi)	Elongation (%)
620(90)	42

Diameter / Welding Parameters / Packaging

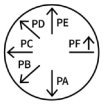
Diameter mm(in)	Length mm(in)	F & HF	V-up, OH	Packaging
2.0 (5/64)	300 (12)	25~55	20~50	PVC - Packet 2.5kg(5.5lbs), Carton 10kg (22lbs)
2.6 (3/32)	300 (12)	50~85	45~80	
3.2 (1/8)	350 (14)	70~115	65~110	
4.0 (5/32)	350 (14)	95~145	85~135	
5.0 (3/16)	350 (14)	135~180	-	

SR-182

Classification

AWS A5.11/ASME SFA-5.11 ENiCrFe-3
JIS Z 3224 DNiCrFe-3
EN ISO 14172 Ni 6182

Welding Positions



Features

- Good crack resistance
- Good arc stability and good slag removal
- Good bead appearance

Polarity

DC +, AC

Application Areas

- Inconel 600, 601 and stainless steels & low-alloy steel & nickel-alloy steel.
- Ni-Cr-Fe alloy clad steels

Redrying Conditions

250~300□(482~572□) X 2~3hr

Approvals

ABS
✓

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S	Ni	Cr	Ti	Nb_Ta	Fe
0.06	0.44	5.7	0.013	0.010	73.0	14.8	0.01	1.7	3.8

Typical Mechanical Properties of All-Weld Metal

Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)	LE(mm)
560(81)	33	0(32) -196(-320)	100(74) 76(56)	0.93

Diameter / Welding Parameters / Packaging

Diameter mm(in)	Length mm(in)	F & HF	V-up, OH	Packaging
2.6 (3/32)	300 (12)	60~90	60~90	PVC - Packet 2.5kg(5.5lbs), Carton 10kg (22lbs)
3.2 (1/8)	350 (14)	70~115	65~110	
4.0 (5/32)	350 (14)	100~140	100~130	
5.0 (3/16)	350 (14)	120~160	110~140	

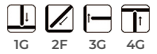
Ni based alloy
HYUNDAI WELDING

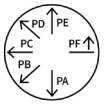
SR-625

Classification

AWS A5.11/ASME SFA-5.11 ENiCrMo-3
JIS Z 3224 DNiCrMo-3
EN ISO 14172 Ni 6625

Welding Positions





Features

- Good corrosion resistance to crevice and pitting, SCC
- Good Tensile Strength at high temperature
- Good Impact value at cryogenic temperature

Polarity

DC +, AC

Application Areas

- Inconel 60+ 625, steel and Nickel alloys Hardfacing of steel, 9% Nickel steel
- LNG storage tank manufactures and desulfurizations
- Heat exchanger Building of chemical carrier

Redrying Conditions

350~400□(662~752□) X 1hr

Approvals

ABS
✓

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S	Ni	Cr	Mo	Nb	Fe
0.06	0.40	0.1	0.001	0.004	63.4	21.7	9.0	3.3	1.5

Typical Mechanical Properties of All-Weld Metal

Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
770(112)	36	-196(-320)	48(35)

Diameter / Welding Parameters / Packaging

Diameter mm(in)	Length mm(in)	F & HF	V-up, OH	Packaging
2.6 (3/32)	300 (12)	60~90	60~90	PVC - Packet 2.5kg(5.5lbs), Carton 10kg (22lbs)
3.2 (1/8)	350 (14)	70~110	70~110	
4.0 (5/32)	350 (14)	110~140	100~130	
5.0 (3/16)	350 (14)	120~150	110~140	

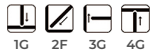
Ni based alloy
HYUNDAI WELDING

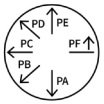
SR-08

Classification

AWS A5.11/ASME SFA-5.11 ENiMo-8

Welding Positions





Features

- Good impact toughness at extra low temperature

Polarity

AC

Application Areas

- Repair welding and tack welding of 9%Ni steel
- LNG storage tanks

Redrying Conditions

250~300□(482~572□) X 1hr

Approvals

KOGAS
✓

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S	Ni	Cr	Mo	W	Fe
0.04	0.36	0.2	0.001	0.001	71.3	1.6	17.5	3.0	6.0

Typical Mechanical Properties of All-Weld Metal

Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
745(108)	37	-196(-320)	70(52)

Diameter / Welding Parameters / Packaging

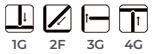
Diameter mm(in)	Length mm(in)	F & HF	V-up, OH	Packaging
2.6 (3/32)	300 (12)	70~90	70~90	PVC - Packet 2.5kg(5.5lbs), Carton 10kg (22lbs)
3.2 (1/8)	350 (14)	110~140	100~130	
4.0 (5/32)	350 (14)			
5.0 (3/16)	350 (14)			

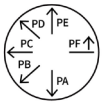
SR-134

Classification

AWS A5.11/ASME SFA-5.11 ENiCrFe-4
JIS Z 3225 D9Ni-1

Welding Positions





Features

- Good strength and toughness at cryogenic temperatures
- Meets specifications of API and NV for the welding of 9%Ni steel With AC

Polarity

AC

Application Areas

- 9%Ni steel for cryogenic storage tanks for LNG
- Liquified nitrogen tanks

Redrying Conditions

300~350°C (572~662°F) X 1hr

Approvals

DNV	KOGAS
✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S	Ni	Cr	Mo	Fe
0.10	0.5	3.0	0.003	0.002	66.4	15.7	2.5	10.3

Typical Mechanical Properties of All-Weld Metal

Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
705(102)	40	-196(-320)	58(43)

Diameter / Welding Parameters / Packaging

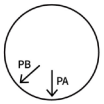
Diameter mm(in)	Length mm(in)	F & HF	V-up, OH	Packaging
2.6 (3/32)	300 (12)	70~90	70~90	PVC - Packet 2.5kg(5.5lbs), Carton 10kg (22lbs)
3.2 (1/8)	350 (14)	110~140	100~130	
4.0 (5/32)	350 (14)	120~150	110~140	
5.0 (3/16)	350 (14)			

S-NCI

Classification

AWS A5.15/ASME SFA-5.15 ENi-CI
JIS Z 3252 DFCNi
EN ISO 1071 E C Ni-CI 1
KS D7008 DGCNi

Welding Positions



Features

- Graphite coated electrode
- Preheat at 150°C (302°F)

Polarity

AC or DC ±

Application Areas

- Repairing and joining of cast iron

Redrying Conditions

350°C (662°F) X 1hr

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S	Ni	Fe
1.38	0.79	0.30	0.004	0.003	98.3	0.58

Typical Mechanical Properties of All-Weld Metal

Hardness(HRB)
77.6

Diameter / Welding Parameters / Packaging

Diameter mm(in)	Length mm(in)	F & HF	Packaging
2.6 (3/32)	300 (12)	55~80	PVC - Packet 2.5kg(5.5lbs), Carton 10kg (22lbs)
3.2 (1/8)	350 (14)	80~130	
4.0 (5/32)	350 (14)	110~160	

S-NFC

Classification

AWS A5.15/ASME SFA-5.15 ENiFe-CI
JIS Z 3252 DFCNiFe
EN ISO 1071 E C NiFe-CI 1
KS D7008 DGCNiFe

Welding Positions

Features

- Good crack resistance
- Preheat at 100~200°C (212~392°F)
- Easy to remove slag

Polarity

AC or DC ±

Application Areas

- Welding of normal grades of cast iron

Redrying Conditions

350°C (662°F) X 1hr

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S	Ni	Fe
1.73	0.59	1.34	0.005	0.001	Bal.	45.7

Typical Mechanical Properties of All-Weld Metal

Hardness(HRB)
90

Diameter / Welding Parameters / Packaging

Diameter mm(in)	Length mm(in)	F & HF	Packaging
2.6 (3/32)	300 (12)	55~80	PVC - Packet 2.5kg(5.5lbs), Carton 10kg (22lbs)
3.2 (1/8)	350 (14)	80~130	
4.0 (5/32)	350 (14)	110~160	

S-FCF

Classification

AWS A5.15/ASME SFA-5.15 Est
JIS Z 3252 DFCFe
EN ISO 1071 E Z 1
KS D7008 DGCFe

Welding Positions

Features

- Machining impossible (As welded)
- Easy to remove slag
- Preheat at 200~350°C (392~662°F)
- Stable arc and good bead appearance

Polarity

AC or DC ±

Application Areas

- Repairing of cast iron

Redrying Conditions

350°C (662°F) X 1hr

Typical Chemical Composition of All-Weld Metal (wt%)

C	Si	Mn	P	S	Fe
2.47	0.41	0.45	0.024	0.024	96.6

Typical Mechanical Properties of All-Weld Metal

Hardness(HB)
450~510

Diameter / Welding Parameters / Packaging

Diameter mm(in)	Length mm(in)	F & HF	Packaging
2.6 (3/32)	300 (12)	55~80	PVC - Packet 2.5kg(5.5lbs), Carton 10kg (22lbs)
3.2 (1/8)	350 (14)	80~130	
4.0 (5/32)	350 (14)	110~160	
5.0 (3/16)	400 (16)	150~200	

GMAW

Solid Wire

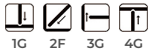
HYUNDAI WELDING

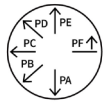
SM-70S

Classification

AWS A5.18/ ASME SFA-5.18 ER70S-3
JIS Z 3312 YGW16
EN ISO 14341-A G2Si

Welding Positions





Features

- All position welding by short-circuiting type transfer
Mixed gas
- Galvanized steel applicable
- Stable arc and low spatter
- Good bead appearance

Polarity

DC +

Application Areas

- Automotive
- Shipbuilding
- Machinery

Shielding Gas

Ar + 20% CO2

Approvals

ABS	LR
✓	✓

Typical Chemical Composition of the Wire (wt%)

C	Si	Mn	P	S
0.07	0.65	1.14	0.015	0.009

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
Ar + 20% CO2	440 (64)	540 (78)	28	-20 (0)	125 (92)

Diameter / Welding Parameters / Packaging

Wire Diameter mm(in)	Packaging
0.8 (0.030), 0.9 (0.035), 1.0 (0.039), 1.2 (0.045), 1.4 (0.052), 1.6(1/16)	Spool 15kg(33lbs), 20kg (44lbs) Drum 250kg (551lbs), 300kg (661lbs), 350kg (771lbs)

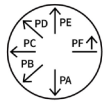
Mild Steel & 490 MPa high tensile steels
HYUNDAI WELDING

SM-70

Classification

AWS A5.18/ASME SFA-5.18 ER70S-6
JIS Z 3312 YGW12
EN ISO 14341-A G 42 2 C1 3Si1 / 14341-A G 42 5 M21 3Si1

Welding Positions



Features

- All position welding by short-circuiting type transfer
- Stable arc and low spatter
- Good Bead Appearance

Polarity

DC +

Application Areas

- Structural fabrication
- Automotive
- Machinery

Shielding Gas

100% CO2
Ar + 20% CO2

Approvals

ABS	BV	DNV	KR	LR	NK	RINA	RS	CWB	CE	DB	TUV
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Typical Chemical Composition of the Wire (wt%)

C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V
0.08	0.85	1.52	0.019	0.009	0.21	0.02	0.03	0.01	0.01

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
100% CO2	460 (67)	560 (81)	28	0 (32) -30 (-20)	120 (89) 70 (52)
Ar + 20% CO2	470 (68)	570 (83)	26	0 (32) -30 (-20)	140 (103) 90 (66)

Diameter / Welding Parameters / Packaging

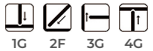
Wire Diameter mm(in)	Packaging
0.8 (0.030), 0.9 (0.035), 1.0 (0.039), 1.2 (0.045), 1.4 (0.052), 1.6(1/16)	Spool 15kg(33lbs), 20kg (44lbs) Drum 250kg (551lbs), 300kg (661lbs), 350kg (771lbs)

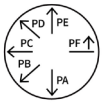
SM-70EN

Classification

AWS A5.18/ ASME SFA-5.18 ER70S-6
JIS Z 3312 YGW12
EN ISO 14341-A G 42 2 C1 4Si1 / ISO 14341-A G 46 5 M21 4Si1

Welding Positions





Features

- All position welding by short-circuiting type transfer
- Mixed gas
- Good Bead Appearance and low spatter

Polarity

DC +

Application Areas

- Structural fabrication
- Automotive
- Machinery

Shielding Gas

100% CO2
Ar + 20% CO2

Approvals

DNV	CE	DB	TUV
✓	✓	✓	✓

Typical Chemical Composition of the Wire (wt%)

C	Si	Mn	P	S
0.08	0.95	1.65	0.019	0.015

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
100% CO2	460 (67)	560 (81)	29	-20 (0) -30 (-20)	95 (70) 55 (41)
Ar + 20% CO2	520 (75)	620 (90)	27	-20 (0) -50 (-60)	110 (81) 70 (52)

Diameter / Welding Parameters / Packaging

Wire Diameter mm(in)	Packaging
0.9 (0.035), 1.0 (0.039), 1.2 (0.045), 1.4 (0.052), 1.6 (1/16)	Spool 15kg(33lbs), 20kg (44lbs) Drum 250kg (551lbs), 300kg (661lbs), 350kg (771lbs)

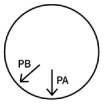
Mild Steel & 490 MPa high tensile steels

SM-70G

Classification

AWS A5.18/ ASME SFA-5.18 ER70S-8
JIS Z 3312 YGW11
EN ISO 14341-A G3Si1

Welding Positions



Features

- Good performance with high current
- High deposition rate
- Deep penetration

Polarity

DC +

Application Areas

- Structural fabrication
- Shipbuilding
- Automotive
- Machinery

Shielding Gas

100% CO2
Ar + 20% CO2

Approvals

ABS	BV	DNV	KR	LR	NK
✓	✓	✓	✓	✓	✓

Typical Chemical Composition of the Wire (wt%)

C	Si	Mn	P	S	Ti
0.06	0.82	1.53	0.013	0.009	0.19

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
100% CO2	460 (67)	560 (81)	29	0 (32) -30 (-20)	155 (114) 90 (66)
Ar + 20% CO2	470 (68)	570 (83)	27	0 (32) -30 (-20)	130 (96) 70 (52)

Diameter / Welding Parameters / Packaging

Wire Diameter mm(in)	Packaging
1.0 (0.039), 1.2 (0.045), 1.4 (0.052), 1.6 (1/16)	Spool 15kg(33lbs), 20kg (44lbs) Drum 250kg (551lbs), 300kg (661lbs), 350kg (771lbs)

SM-70GS

Classification

AWS A5.18/ ASME SFA-5.18 ER70S-G
JIS Z 3312 YGW15
EN ISO 14341-A G2Si

Welding Positions

Features

- Mixed gas
- Good performance high-current

Polarity

DC +

Application Areas

- Shipbuilding
- Structural fabrication
- Machinery

Shielding Gas

Ar + 20% CO2

Approvals

LR
✓

Typical Chemical Composition of the Wire (wt%)

C	Si	Mn	P	S	Ti
0.04	0.62	1.21	0.015	0.006	0.11

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
Ar + 20% CO2	480 (70)	550 (80)	28	0 (32) -30 (-20)	155 (114) 100 (74)

Diameter / Welding Parameters / Packaging

Wire Diameter mm(in)	Packaging
1.2 (0.045), 1.4 (0.052), 1.6 (1/16)	Spool 15kg(33lbs), 20kg (44lbs) Drum 250kg (551lbs), 300kg (661lbs), 350kg (771lbs)

SM-55H

Classification

JIS Z 3312 YGW18
EN ISO 14341-B G S18

Welding Positions

Features

- Good performance with high-current COgas
- High Efficiency
- Deep penetration

Polarity

DC +

Application Areas

- Shipbuilding
- Automotive
- Structural fabrication

Shielding Gas

100% CO2

Typical Chemical Composition of the Wire (wt%)

C	Si	Mn	P	S	Ti
0.06	0.95	1.95	0.016	0.005	0.19

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
100% CO2	550 (80)	620 (90)	28	0 (32) -20 (0)	160 (118) 140 (103)

Diameter / Welding Parameters / Packaging

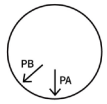
Wire Diameter mm(in)	Packaging
1.2 (0.045), 1.4 (0.052), 1.6 (1/16)	Spool 15kg(33lbs), 20kg (44lbs) Drum 250kg (551lbs), 300kg (661lbs), 350kg (771lbs)

SM-80G

Classification

AWS A5.28/ ASME SFA-5.28 ER80S-G
JIS Z 3312 G 59J A 1 U C 3M1T
EN ISO 14341-B G 57A 5 C1 S3M1T

Welding Positions



Features

- High deposition rate
- Special alloying elements added

Polarity

DC +

Application Areas

- General fabrication
- Pressure vessels
- Machinery

Shielding Gas

100% CO2

Approvals

ABS	CE
✓	✓

Typical Chemical Composition of the Wire (wt%)

C	Si	Mn	P	S	Mo
0.05	0.76	1.91	0.013	0.003	0.28

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
100% CO2	570 (83)	640 (93)	28	-30 (-20) -50 (-60)	95 (70) 35 (26)

Diameter / Welding Parameters / Packaging

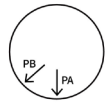
Wire Diameter mm(in)	Packaging
1.0 (0.039), 1.2 (0.045), 1.4 (0.052), 1.6 (1/16)	Spool 15kg(33lbs), 20kg (44lbs) Drum 250kg (551lbs), 300kg (661lbs), 350kg (771lbs)

SM-100

Classification

AWS A5.28/ ASME SFA-5.28 ER100S-G
EN ISO 16834-B-G 69A 4 M21 G

Welding Positions



Features

- Excellent TS and impact value at low temperature
- Stable arc with High-Current
- Low spatter

Polarity

DC +

Application Areas

- 0.3Cr-1.7Ni-0.25Mo-alloyed, High strength steel

Shielding Gas

Ar + 20% CO2

Typical Chemical Composition of the Wire (wt%)

C	Si	Mn	P	S	Ni	Cr	Mo
0.07	0.52	1.71	0.007	0.008	1.78	0.29	0.22

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
Ar + 20% CO2	790 (115)	850 (123)	18	-20 (0) -40 (-40)	70 (52) 40 (30)

Diameter / Welding Parameters / Packaging

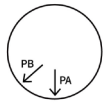
Wire Diameter mm(in)	Packaging
1.0 (0.039), 1.2 (0.045), 1.4 (0.052), 1.6 (1/16)	Spool 5kg(11lbs), 15kg(33lbs), 20kg (44lbs) Drum 250kg (551lbs), 300kg (661lbs), 350kg (771lbs)

SM-110

Classification

AWS A5.28/ASME SFA-5.28 ER110S-G

Welding Positions



Features

- Excellent TS and impact value at low temperature
- Stable arc with High-Current
- Low spatter

Polarity

DC +

Application Areas

- 0.3Cr-1.9Ni-0.5Mo-alloyed, High strength steel

Shielding Gas

Ar + 20% CO2

Typical Chemical Composition of the Wire (wt%)

C	Si	Mn	P	S	Ni	Cr	Mo
0.09	0.80	1.89	0.009	0.004	1.95	0.34	0.58

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
Ar + 20% CO2	640 (93)	810 (117)	22	-20 (0)	75 (55)

Diameter / Welding Parameters / Packaging

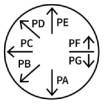
Wire Diameter mm(in)	Packaging
1.0 (0.039), 1.2 (0.045), 1.4 (0.052), 1.6 (1/16)	Spool 5kg(11lbs), 15kg(33lbs), 20kg (44lbs) Drum 250kg (551lbs), 300kg (661lbs), 350kg (771lbs)

SM-1N

Classification

AWS A5.28/ ASME SFA-5.28 ER80S-Ni1

Welding Positions



Features

- Impact value in low temp. is good
- Excellent bead appearance & weldability

Polarity

DC +

Application Areas

- Oil & gas industry
- Offshore industry
- Power plant, chemical industry

Shielding Gas

Ar + 20% CO2

Approvals

ABS
✓

Typical Chemical Composition of the Wire (wt%)

C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V
0.11	0.66	1.11	0.019	0.001	0.14	0.95	0.05	0.01	0.01

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
Ar + 20% CO2	500 (73)	590 (86)	28	-45 (-50) -60 (-75)	115 (85) 40 (30)

Diameter / Welding Parameters / Packaging

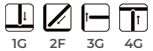
Wire Diameter mm(in)	Packaging
1.0 (0.039), 1.2 (0.045), 1.4 (0.052), 1.6 (1/16)	Spool 15kg(33lbs)

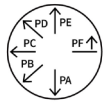
SM-308

Classification

AWS A5.9/ ASME SFA-5.9 ER308
JIS Z 3321 YS308
EN ISO 14343-A G 19 9

Welding Positions





Features

- Resistance to crack
- High efficiency
- Resistance to corrosion

Polarity

DC +

Application Areas

- Steel structures
- Vehicles, machinery and bridges

Shielding Gas

Ar + 2% O2

Typical Chemical Composition of the Wire (wt%)

C	Si	Mn	P	S	Cu	Ni	Cr	Mo
0.04	0.41	1.7	0.01	0.01	0.01	9.8	19.9	0.01

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
Ar + 2% O2	590 (86)	40	0 (32) -20 (0)	100 (74) 50 (37)

Diameter / Welding Parameters / Packaging

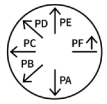
Wire Diameter mm(in)	Packaging
0.9 (0.035), 1.0 (0.039), 1.2 (0.045), 1.4 (0.052), 1.6 (1/16)	Spool 12.5kg(28lbs) Drum 250kg (551lbs)

SM-308L

Classification

AWS A5.9/ASME SFA-5.9 ER308L
JIS Z 3321 YS308L
EN ISO 14343-A G 19 9L

Welding Positions



Features

- Resistance to crack
- High efficiency
- Resistance to corrosion

Polarity

DC +

Application Areas

- Steel structures
- Vehicles, machinery and bridges

Shielding Gas

Ar + 2% O2

Approvals

CE
✓

Typical Chemical Composition of the Wire (wt%)

C	Si	Mn	P	S	Cu	Ni	Cr	Mo
0.02	0.38	1.9	0.02	0.01	0.16	9.8	20.4	0.17

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
Ar + 2% O2	560 (81)	42	0 (32) -196 (-320)	80 (59) 40 (29)

Diameter / Welding Parameters / Packaging

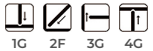
Wire Diameter mm(in)	Packaging
0.9 (0.035), 1.0 (0.039), 1.2 (0.045), 1.4 (0.052), 1.6 (1/16)	Spool 12.5kg(28lbs) Drum 250kg (551lbs)

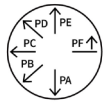
SM-309

Classification

AWS A5.9/ASME SFA-5.9 ER309
JIS Z 3321 YS309

Welding Positions





Features

- Resistance to crack
- High Efficiency
- Excellent resistance to heat

Polarity

DC +

Application Areas

- Steel structures
- Vehicles, machinery and bridges

Shielding Gas

Ar + 2% O2

Approvals

ABS
✓

Typical Chemical Composition of the Wire (wt%)

C	Si	Mn	Ni	Cr	Mo
0.05	0.32	1.7	13.3	23.7	0.15

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft · lbs)
Ar + 2% O2	570 (83)	37	-60 (-75)	75 (55)

Diameter / Welding Parameters / Packaging

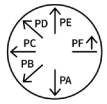
Wire Diameter mm(in)	Packaging
0.9 (0.035), 1.0 (0.039), 1.2 (0.045), 1.4 (0.052), 1.6 (1/16)	Spool 12.5kg(28lbs) Drum 250kg (551lbs)

SM-309L

Classification

AWS A5.9/ASME SFA-5.9 ER309L
JIS Z 3321 YS309L
EN ISO 14343-A-G 23 12L

Welding Positions



Features

- Resistance to crack
- High Efficiency
- Excellent resistance to heat

Polarity

DC +

Application Areas

- Steel structures
- Vehicles, machinery and bridges

Shielding Gas

Ar + 2% O2

Approvals

CE
✓

Typical Chemical Composition of the Wire (wt%)

C	Si	Mn	P	S	Cu	Ni	Cr	Mo
0.02	0.46	1.6	0.02	0.01	0.07	13.7	23.2	0.12

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft · lbs)
Ar + 2% O2	565 (82)	45	-60 (-75)	100 (74)

Diameter / Welding Parameters / Packaging

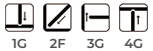
Wire Diameter mm(in)	Packaging
0.9 (0.035), 1.0 (0.039), 1.2 (0.045), 1.4 (0.052), 1.6 (1/16)	Spool 12.5kg(28lbs) Drum 250kg (551lbs)

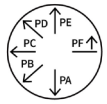
SM-316

Classification

AWS A5.9/ASME SFA-5.9 ER316
JIS Z 3321 YS316
EN ISO 14343-A G 19 12 3

Welding Positions





Features

- Excellent corrosion resistance
- Excellent resistance to heat
- Excellent Arc stabillity and bead wetting

Polarity

DC +

Application Areas

- Steel structures
- Chemical industries and nuclear reactors

Shielding Gas

Ar + 2% O2

Typical Chemical Composition of the Wire (wt%)

C	Si	Mn	P	S	Cu	Ni	Cr	Mo
0.06	0.39	1.7	0.01	0.01	0.02	12.6	19.4	2.5

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Tensile Strength MPa(ksi)	Elongation (%)
Ar + 2% O2	580 (84)	39

Diameter / Welding Parameters / Packaging

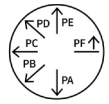
Wire Diameter mm(in)	Packaging
0.9 (0.035), 1.0 (0.039), 1.2 (0.045), 1.4 (0.052), 1.6 (1/16)	Spool 12.5kg(28lbs) Drum 250kg (551lbs)

SM-316L

Classification

AWS A5.9/ASME SFA-5.9 ER316L
JIS Z 3321 YS316L
EN ISO 14343-A-G 19 12 3L

Welding Positions



Features

- Excellent corrosion resistance
- Excellent resistance to heat
- Excellent Arc stabillity and bead wetting

Polarity

DC +

Application Areas

- Steel structures
- Chemical industries and nuclear reactors

Shielding Gas

Ar + 2% O2

Approvals

ABS	CE
✓	✓

Typical Chemical Composition of the Wire (wt%)

C	Si	Mn	P	S	Cu	Ni	Cr	Mo
0.02	0.46	1.8	0.02	0.01	0.12	11.5	18.5	2.2

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
Ar + 2% O2	555 (80)	45	0 (32) -196 (-320)	105 (77) 50 (37)

Diameter / Welding Parameters / Packaging

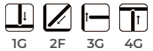
Wire Diameter mm(in)	Packaging
0.9 (0.035), 1.0 (0.039), 1.2 (0.045), 1.4 (0.052), 1.6 (1/16)	Spool 12.5kg(28lbs) Drum 250kg (551lbs)

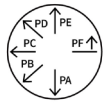
SM-82

Classification

AWS A5.14/ ASME SFA-5.14 ERNiCr-3
JIS Z 3334 SNi6082
EN ISO 18274 S Ni 6082

Welding Positions





Features

- Corrosion and heat resistant
- Excellent strength and toughness
- No preheat is required

Polarity

DC + (PULSE)

Application Areas

- LNG and LPG storage plant, boilers of thermal power stations
- Ni-based alloys and high temperature alloys

Shielding Gas

Ar, Ar + He

Typical Chemical Composition of the Wire (wt%)

C	Si	Mn	P	S	Ni	Cr	Nb
0.04	0.09	3.2	0.01	0.001	72.9	19.9	2.5(Nb+Ta)

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
Ar, Ar + He	660 (96)	35	-196 (-320)	80 (59)

Diameter / Welding Parameters / Packaging

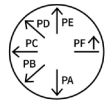
Wire Diameter mm(in)	Packaging
0.9 (0.035), 1.0 (0.039), 1.2 (0.045), 1.4 (0.052), 1.6 (1/16)	Spool 12.5kg(27.6lbs)

SMT-625

Classification

AWS A5.14/ ASME SFA-5.14 ERNiCrMo-3
JIS Z 3334 SNi6625
EN ISO 18274 Ni 6625

Welding Positions



Features

- Good impact toughness at extra low temperature
- Dissimilar steels(B24Inconel 601, Incoloy800/800H or combination of these with other alloys)

Polarity

DC + (PULSE)

Application Areas

- LNG Storage Tank, equipment for gas desulfurization
- Petrochmical plants
- Heat exchangers
- 9% nickel steel

Shielding Gas

Ar, Ar + He

Approvals

ABS	BV	DNV	KR	LR	NK
✓	✓	✓	✓	✓	✓

Typical Chemical Composition of the Wire (wt%)

C	Si	Mn	P	S	Cu	Ni	Cr	Mo	Ti	Nb	Al	Fe
0.03	0.08	0.03	0.01	0.001	0.03	63.9	22.7	9.1	0.21	3.55	0.09	0.3

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
Ar, Ar + He	770 (112)	45	-196 (-320)	150 (111)

Diameter / Welding Parameters / Packaging

Wire Diameter mm(in)
1.2 (0.045), 1.6 (1/16)

SM-CUSI A

Classification

AWS A5.7/ ASME SFA-5.7 ERCuSi-A

Welding Positions

Features

- Used primarily for oxyacetylene welding of copper-silicon and copper-zinc metals to themselves and to steel
- HWC Silicon Bronze is excellent for plain or galvanized steel sheet metal as well as other coated steels.
- Preheating is not recommended

Polarity

DC + (PULSE)

Application Areas

- Use for welding of Silicon Bronze Copper

Shielding Gas

Ar

Typical Chemical Composition of the Wire (wt%)

Si	Mn	Cu	Al	Fe	others
2.80-4.00	1.5	Bal	0.01	0.5	0.5

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Tensile Strength MPa(ksi)	Elongation (%)
Ar, Ar + He	330~370 (48~54)	40

Diameter / Welding Parameters / Packaging

Wire Diameter mm(in)	Packaging
0.9 (0.035), 1.0 (0.039), 1.2 (0.045), 1.4 (0.052), 1.6 (1/16)	Spool 12.5kg(28lbs), 15kg(33lbs) Drum 250kg(551lb)

SMT-7030

Classification

AWS A5.7/ ASME SFA-5.7 ERCuNi
JIS Z 3341 YCuNi-3

Welding Positions

Features

- No preheat & PWHT required, maximum interpass temperature 150°C
- Contamination of the weld zone with foreign material, particularly any source of lead, tin or zinc must be avoided to prevent weld metal cracking

Polarity

DC + (PULSE)

Application Areas

- Desalination plant
- Evaporators and etc in salt and sea water processing system

Shielding Gas

Ar

Approvals

ABS	RS
✓	✓

Typical Chemical Composition of the Wire (wt%)

Mn	Cu	Ni	Ti	Fe	others
1	Rest	30.5	0.4	1	≤0.50

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Tensile Strength MPa(ksi)	Elongation (%)
Ar, Ar + He	420 (71)	36

Diameter / Welding Parameters / Packaging

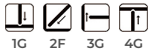
Wire Diameter mm(in)	Packaging
1.0 (0.039), 1.2 (0.045), 1.4 (0.052), 1.6 (1/16)	Spool 12.5kg(28lbs), 15kg(33lbs) Drum 250kg(551lb)

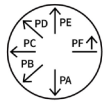
SMT-4043

Classification

AWS A5.10/ ASME SFA-5.10 ER4043
JIS Z 3232 A4043-WY
EN ISO 18273 S Al 4043 (AlSi5)

Welding Positions





Features

- This silicon-aluminum filler material is one of the oldest and most widely used welding alloys.
- Can be classified as a general purpose type filler alloy that matches well in color with the parent metal after anodizing
- Shipbuilding, automobile, railway
- Excellent feedability by controlling impurities

Polarity

DC + (PULSE)

Application Areas

- All industrial manufacturing sectors, such automotive, mobile equipment, shipbuilding, etc.

Shielding Gas

Ar

Approvals

CE	DB
✓	✓

Typical Chemical Composition of the Wire (wt%)

Si	Mn	Cu	Ti	Al	Fe
5.07	0.02	0.03	0.02	Rem	0.12

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Tensile Strength MPa(ksi)	Elongation (%)
Ar	183 (27)	40

Diameter / Welding Parameters / Packaging

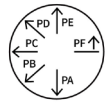
Wire Diameter mm(in)	Packaging
0.9 (0.035), 1.0 (0.039), 1.2 (0.045), 1.4 (0.052), 1.6 (1/16)	Spool 7kg(15lbs) Spool 2kg(4.4lbs) Spool 0.5kg(1.1lbs)

SMT-5183

Classification

AWS A5.10/ ASME SFA-5.10 ER5183
JIS Z 3232 A5183-WY0
EN ISO 18273 S Al 5183 (AlMg4.5Mn0.7(A))

Welding Positions



Features

- ER5183 is a about 5% Magnesium and 0.6% Manganese
- Aluminum filler metal which has high strength, high corrosion resistance, and matches the color well with the parent metal after anodizing.
- Shipbuilding, automobile, railway
- Excellent feedability by controlling impurities

Polarity

DC + (PULSE)

Application Areas

- Railroad cars and transportation equipmen
- pressure vessels

Shielding Gas

Ar

Approvals

CE	DB
✓	✓

Typical Chemical Composition of the Wire (wt%)

Si	Mn	Cu	Cr	Ti	Al	Fe
0.06	0.65	0.02	0.08	0.02	Rem	0.09

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Tensile Strength MPa(ksi)	Elongation (%)
Ar	281 (40)	40

Diameter / Welding Parameters / Packaging

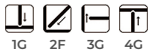
Wire Diameter mm(in)	Packaging
0.9 (0.035), 1.0 (0.039), 1.2 (0.045), 1.4 (0.052), 1.6 (1/16)	Spool 7kg(15lbs) Spool 2kg(4.4lbs) Spool 0.5kg(1.1lbs)

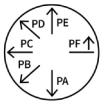
SMT-5356

Classification

AWS A5.10/ ASME SFA-5.10 ER5356
JIS Z 3232 A5356-WY
EN ISO 18273 S Al 5356 (AlMg5Cr(A))

Welding Positions





Features

- ER5356 is about 5% Magnesium Aluminum filler metal which has high strength, high corrosion resistance, and matches the color well with the parent metal after anodizing
- Shipbuilding, automobile, railway
- Excellent feedability by controlling impurities

Polarity

DC + (PULSE)

Application Areas

- Used for welding casting Al-Mg alloys with maximum 5% Magnesium and parts of wrought alloy of 5000 series, 6000 and 7000 series.

Shielding Gas

Ar

Approvals

CE	DB
✓	✓

Typical Chemical Composition of the Wire (wt%)

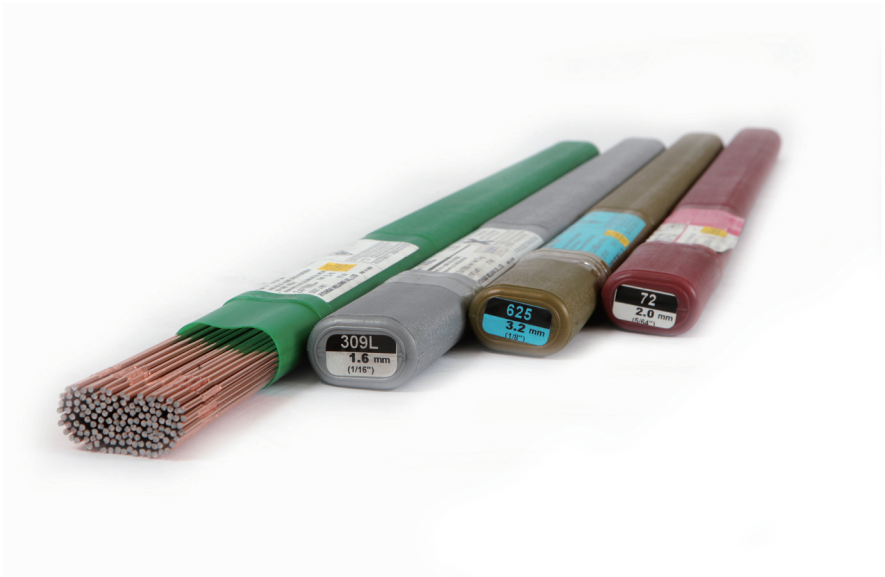
Si	Mn	Cu	Cr	Ti	Al	Fe
0.07	0.11	0.005	0.11	0.08	Rem	0.14

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Tensile Strength MPa(ksi)	Elongation (%)
Ar	274 (40)	60

GTAW

TIG Rod



ST-72

Classification

AWS A5.18/ASME SFA-5.18 ER70S-2
JIS Z 3316 YGT50
EN ISO 636-A-W2Ti

Features

- Good performance in all position
- One-side welding(tube)
- Ar 100% gas

Current

DC -

Application Areas

- Pressure vessels
- Shipbuilding

Shielding Gas

100% Ar

Approvals

CWB
✓

Typical Chemical Composition of the Wire (wt%)

C	Si	Mn	P	S	Ti
0.05	0.52	1.15	0.014	0.004	0.07

Typical Mechanical Properties of All-Weld Metal

Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
560 (81)	640 (93)	31	-30 (-20) -50 (-60)	155 (114) 60 (44)

Wire Diameter & Packaging

Wire Diameter mm(in)	Packaging
1.2 (0.045)	5kg(11lbs)*1000
1.6 (1/16)	
2.0 (5/64)	
2.4 (3/32)	
3.2 (1/8)	

ST-50.3

Classification

AWS A5.18/ASME SFA-5.18 ER70S-3
EN ISO 636-A-W2Si

Features

- Good impact value at low temperature
- Gread workability and Bead Appearance
- Good performance

Current

DC -

Application Areas

- Pressure vessels
- Nuclear reactors
- Rail road car
- Shipbuilding
- Pipeline

Shielding Gas

100% Ar

Approvals

ABS
✓

Typical Chemical Composition of the Wire (wt%)

C	Si	Mn	P	S	Cu
0.07	0.65	1.15	0.009	0.009	0.05

Typical Mechanical Properties of All-Weld Metal

Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
430 (62)	540 (78)	30	-20 (0) -40 (-40)	150 (111) 105 (77)

Wire Diameter & Packaging

Wire Diameter mm(in)	Packaging
1.2 (0.045)	5kg(11lbs)*1000
1.6 (1/16)	
2.0 (5/64)	
2.4 (3/32)	
2.6 (0.10)	
3.2 (1/8)	

Mild Steel & 490 MPa high tensile steels

ST-50.6

Classification

AWS A5.18/ASME SFA-5.18 ER70S-6
JIS Z 3316 YGT50
EN ISO 636-A-W3Si1

Features

- Good impact value at low temperature
- Gread workability and Bead Appearance
- Good performance

Current

DC -

Application Areas

- Pressure vessels
- Nuclear reactors
- Rail road car
- Shipbuilding
- Pipeline

Shielding Gas

100% Ar

Approvals

ABS	CWB	CE	DB	TUV
✓	✓	✓	✓	✓

Typical Chemical Composition of the Wire (wt%)

C	Si	Mn	P	S	Cu
0.08	0.79	1.45	0.011	0.012	0.12

Typical Mechanical Properties of All-Weld Metal

Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
480 (70)	580 (84)	31	-30 (-20)	120 (89)

Wire Diameter & Packaging

Wire Diameter mm(in)	Packaging
1.2 (0.045)	5kg(11lbs)*1000
1.6 (1/16)	
2.0 (5/64)	
2.4 (3/32)	
3.2 (1/8)	

Mild Steel & 490 MPa high tensile steels
HYUNDAI WELDING

ST-50G

Classification

AWS A5.18/ASME SFA-5.18 ER70S-G
JIS Z 3316 YGT50
EN ISO 636-A-W3Si1

Features

- Good impact value at low temperature
- Gread workability and Bead Appearance
- Good performance

Current

DC -

Application Areas

- Pressure vessels
- Nuclear reactors
- Rail road car
- Shipbuilding
- Pipeline

Shielding Gas

100% Ar

Approvals

ABS	BV	CCS	DNV	KR	LR	NK
✓	✓	✓	✓	✓	✓	✓

Typical Chemical Composition of the Wire (wt%)

C	Si	Mn	P	S
0.08	0.86	1.47	0.011	0.018

Typical Mechanical Properties of All-Weld Metal

Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
470 (68)	560 (81)	29	-20 (0)	100 (74)

Wire Diameter & Packaging

Wire Diameter mm(in)	Packaging
1.2 (0.045)	5kg(11lbs)*1000
1.6 (1/16)	
2.0 (5/64)	
2.4 (3/32)	
3.2 (1/8)	

ST-1N

Classification

AWS A5.28/ASME SFA-5.28 ER80S-Ni1

Features

- Impact value in low temp. is good
- Bead appearance & weldability are excellent

Current

DC -

Application Areas

- Oil & gas industry
- offshore industry
- Power plant, chemical industry

Shielding Gas

100% Ar

Approvals

ABS	BV	DNV	LR	NK	RS	CWB
✓	✓	✓	✓	✓	✓	✓

Typical Chemical Composition of the Wire (wt%)

C	Si	Mn	P	S	Cu	Ni	Cr	Fe
0.07	0.54	1.03	0.013	0.006	0.17	0.96	0.05	0.01

Typical Mechanical Properties of All-Weld Metal

Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
480 (70)	580 (84)	31	-50 (-50)	84 (62)

Wire Diameter & Packaging

Wire Diameter mm(in)	Packaging
1.6 (1/16)	5kg(11lbs)*1000
2.0 (5/64)	
2.4 (3/32)	
2.6 (0.10)	
3.2 (1/8)	

ST-308

Classification

AWS A5.9/ASME SFA-5.9 ER308
JIS Z 3321 YS308
EN ISO 14343-A-W 19 9
KS D7026 Y308

Features

- Resistance to crack
- High Efficiency
- Resistance to corrosion

Current

DC -

Application Areas

- Steel structures
- Oil, nuclear reactor

Shielding Gas

100% Ar

Approvals

ABS	DNV	KR	CE
✓	✓	✓	✓

Typical Chemical Composition of the Wire (wt%)

C	Si	Mn	P	S	Cu	Ni	Cr	Mo
0.04	0.36	1.8	0.02	0.01	0.05	9.5	19.9	0.13

Typical Mechanical Properties of All-Weld Metal

Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
630 (91)	45	-60 (-75)	105 (77)

Wire Diameter & Packaging

Wire Diameter mm(in)	Packaging
1.6 (1/16)	5kg(11lbs)*1000
2.0 (5/64)	
2.4 (3/32)	
2.6 (0.10)	
3.2 (1/8)	

ST-308L

Classification

AWS A5.9/ASME SFA-5.9 ER308L
JIS Z 3321 YS308L
EN ISO 14343-A-W 19 9L
KS D7026 Y308L

Features

- Resistance to crack
- High Efficiency
- Resistance to corrosion

Current

DC -

Application Areas

- Shipbuilding
- Offshore structures
- Energy & power plants
- Pipe industry
- Steel structures
- Oil, textile industries, nuclear reactor

Shielding Gas

100% Ar

Approvals

ABS	BV	CCS	DNV	KR	LR	NK	RS	CE
✓	✓	✓	✓	✓	✓	✓	✓	✓

Typical Chemical Composition of the Wire (wt%)

C	Si	Mn	P	S	Cu	Ni	Cr	Mo
0.02	0.39	1.9	0.01	0.01	0.01	10.2	19.9	0.01

Typical Mechanical Properties of All-Weld Metal

Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
595 (86)	46	-60 (-75) -196 (-320)	115 (85) 55 (41)

Wire Diameter & Packaging

Wire Diameter mm(in)	Packaging
1.6 (1/16)	5kg(11lbs)*1000
2.0 (5/64)	
2.4 (3/32)	
2.6 (0.10)	
3.2 (1/8)	

ST-309

Classification

AWS A5.9/ASME SFA-5.9 ER309
JIS Z 3321 YS309
EN ISO 14343-A-W Z(23 12)

Features

- Resistance to crack
- High Efficiency
- Excellent resistance to heat

Current

DC -

Application Areas

- Steel structures
- Oil, nuclear reactor

Shielding Gas

100% Ar

Approvals

ABS	CE
✓	✓

Typical Chemical Composition of the Wire (wt%)

C	Si	Mn	Ni	Cr	Mo
0.05	0.32	1.7	13.3	23.7	0.15

Typical Mechanical Properties of All-Weld Metal

Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
620 (90)	44	-60 (-75)	145 (107)

Wire Diameter & Packaging

Wire Diameter mm(in)	Packaging
1.6 (1/16)	5kg(11lbs)*1000
2.0 (5/64)	
2.4 (3/32)	
2.6 (0.10)	
3.2 (1/8)	

ST-309L

Classification

AWS A5.9/ASME SFA-5.9 ER309L
JIS Z 3321 YS309L
EN ISO 14343-A-W 23 12L
KS D7026 Y309L

Features

- Resistance to crack
- High Efficiency
- Excellent resistance to heat

Current

DC -

Application Areas

- Shipbuilding
- Offshore structures
- Energy & power plants
- Pipe industry
- Steel structures
- Oil, textile industries, nuclear reactor

Shielding Gas

100% Ar

Approvals

ABS	BV	CCS	DNV	KR	LR	NK	RS	CE
✓	✓	✓	✓	✓	✓	✓	✓	✓

Typical Chemical Composition of the Wire (wt%)

C	Si	Mn	P	S	Ni	Cr
0.02	0.52	2.3	0.02	0.01	13.7	23.5

Typical Mechanical Properties of All-Weld Metal

Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
580 (84)	43	-60 (-75)	85 (63)

Stainless steel
HYUNDAI WELDING

Wire Diameter & Packaging

Wire Diameter mm(in)	Packaging
1.6 (1/16)	5kg(11lbs)*1000
2.0 (5/64)	
2.4 (3/32)	
2.6 (0.10)	
3.2 (1/8)	

ST-316

Classification

AWS A5.9/ASME SFA-5.9 ER316
JIS Z 3321 YS316
EN ISO 14343-A-W 19 12 3
KS D7026 Y316

Features

- Excellent crack resistance
- Excellent resistance to heat
- Excellent Arc stabillity and bead wetting

Current

DC -

Application Areas

- Steel structures
- Chemical industries and nuclear reactors

Shielding Gas

100% Ar

Approvals

ABS	CE
✓	✓

Typical Chemical Composition of the Wire (wt%)

C	Si	Mn	P	S	Cu	Ni	Cr	Mo
0.05	0.36	1.9	0.01	0.01	0.02	12.9	18.5	2.62

Typical Mechanical Properties of All-Weld Metal

Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
630 (91)	45	-60 (-75)	90 (66)

Wire Diameter & Packaging

Wire Diameter mm(in)	Packaging
1.6 (1/16)	5kg(11lbs)*1000
2.0 (5/64)	
2.4 (3/32)	
2.6 (0.10)	
3.2 (1/8)	

ST-316L

Classification

AWS A5.9/ASME SFA-5.9 ER316L
JIS Z 3321 YS316L
EN ISO 14343-A-W 19 12 3L
KS D7026 Y316L

Features

- Excellent crack resistance
- Excellent resistance to heat
- Excellent Arc stability and bead wetting

Current

DC -

Application Areas

- Shipbuilding
- Offshore structures
- Energy & power plants
- Pipe industry
- Steel structures
- Chemical industries and nuclear reactors

Shielding Gas

100% Ar

Approvals

ABS	BV	CCS	DNV	KR	LR	NK	RS	CWB	CE
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Typical Chemical Composition of the Wire (wt%)

C	Si	Mn	P	S	Cu	Ni	Cr	Mo
0.02	0.43	1.9	0.01	0.01	0.02	12.9	18.9	2.63

Typical Mechanical Properties of All-Weld Metal

Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
590 (86)	45	-60 (-75) -196 (-320)	100 (74) 55 (41)

Wire Diameter & Packaging

Wire Diameter mm(in)	Packaging
1.6 (1/16)	5kg(11lbs)*1000
2.0 (5/64)	
2.4 (3/32)	
2.6 (0.10)	
3.2 (1/8)	

ST-347

Classification

AWS A5.9/ASME SFA-5.9 ER347
JIS Z 3321 Y347
EN ISO 14343-A-W 19 9 Nb
KS D7026 Y347

Features

- Resistance to crack is good
- Nb contents improves corrosion resistance and heat resistance

Current

DC -

Application Areas

- Boiler and gas turbine

Shielding Gas

100% Ar

Approvals

ABS
✓

Typical Chemical Composition of the Wire (wt%)

C	Si	Mn	Cu	Ni	Cr	Mo	Nb
0.05	0.41	1.6	0.09	9.1	19.2	0.06	0.7

Typical Mechanical Properties of All-Weld Metal

Tensile Strength MPa(ksi)	Elongation (%)
730 (106)	32

Wire Diameter & Packaging

Wire Diameter mm(in)	Packaging
1.6 (1/16)	5kg(11lbs)*1000
2.0 (5/64)	
2.4 (3/32)	
2.6 (0.10)	
3.2 (1/8)	

ST-2209

Classification

AWS A5.9/ASME SFA-5.9 ER2209
JIS Z 3321 YS2209
EN ISO 14343-A-W 22 9 3 NL

Features

- Good general corrosion restance
- High resistance to chloride induced stress corrosion cracking(CSCC)

Current

DC -

Application Areas

- Welidng of offshore oil/gas, chemical and petrochemical industries

Shielding Gas

100% Ar

Approvals

ABS	BV	DNV	KR	LR
✓	✓	✓	✓	✓

Typical Chemical Composition of the Wire (wt%)

C	Si	Mn	P	S	Cu	Ni	Cr	Mo	others
0.02	0.47	1.68	0.01	0.01	0.09	8.8	22.9	3.2	0.17

Typical Mechanical Properties of All-Weld Metal

Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
810 (117)	27	-20 (0) -50 (-60)	190 (140) 180 (133)

Wire Diameter & Packaging

Wire Diameter mm(in)	Packaging
1.6 (1/16)	5kg(11lbs)*1000
2.0 (5/64)	
2.4 (3/32)	
2.6 (0.10)	
3.2 (1/8)	

SMT-2594

Classification

AWS A5.9/ASME SFA-5.9 ER2594
EN ISO 14343-A-G 25 9 4 NL

Features

- Excellent corrosion restance
- Superior pitting resistance

Current

DC -

Application Areas

- Offshore structure & FPSO, chemical and petrochemical plants

Shielding Gas

Ar / Ar+ O2

Approvals

ABS	BV	DNV	LR
✓	✓	✓	✓

Typical Chemical Composition of the Wire (wt%)

C	Si	Mn	P	S	Cu	Ni	Cr	Mo	others
0.01	0.4	0.5	0.02	0.01	0.2	9.1	25.3	3.9	0.26

Typical Mechanical Properties of All-Weld Metal

Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
890 (129)	29	-50 (-60)	290 (214)

Wire Diameter & Packaging

Wire Diameter mm(in)	Packaging
1.6 (1/16)	5kg(11lbs)*1000
2.0 (5/64)	
2.4 (3/32)	
2.6 (0.10)	
3.2 (1/8)	

ST-82

Classification

AWS A5.14/ ASME SFA-5.14 ERNiCr-3
JIS Z 3334 SNi6082
EN ISO 18274 S Ni 6082

Features

- Good corrosion-resistant and heat-resistant
- Excellent strength and toughness
- No preheat is required

Current

DC -

Application Areas

- LNG and LPG storage plants, boilers of thermal power stations

Shielding Gas

Ar, Ar + He

Typical Chemical Composition of the Wire (wt%)

C	Si	Mn	P	S	Ni	Cr	Ti	Nb	Mg
0.04	0.04	3.1	0.01	0.001	72.2	20.5	0.35	2.4	1.4

Typical Mechanical Properties of All-Weld Metal

Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
660 (96)	43	-196 (-320)	170 (125)

Wire Diameter & Packaging

Wire Diameter mm(in)	Packaging
2.0 (5/64)	5kg(11lbs)*1000
2.4 (3/32)	
3.2 (1/8)	

SMT-08

Classification

AWS A5.14/ ASME SFA-5.14 ERNiMo-8
JIS Z 3334 SNi1008(NiMo19WCr)
EN ISO 18274 - S Ni 1008

Features

- For the automatic welding processes for a LNG storage tank with a method of GTAW for vertical joints of side plates

(ASTM A333,A334,A353,A553)

- Impact toughness at extra low temperature

Current

DC -

Application Areas

- Ni-based alloys and high temperature alloys

Shielding Gas

100% Ar

Approvals

ABS	BV	DNV	LR	NK	RS
✓	✓	✓	✓	✓	✓

Typical Chemical Composition of the Wire (wt%)

C	Si	Mn	P	S	Cu	Ni	Cr	Mo	Mg	N
0.02	0.18	0.1	0.007	0.001	0.01	68.9	2.3	19.2	5.7	3.2

Typical Mechanical Properties of All-Weld Metal

Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
550 (80)	750 (109)	45	-196 (-320)	135 (100)

Wire Diameter & Packaging

Wire Diameter mm(in)	Packaging
1.6 (1/16)	5kg(11lbs)*1000
2.0 (5/64)	
2.4 (3/32)	
2.6 (0.10)	
3.2 (1/8)	

SMT-625

Classification

AWS A5.14/ ASME SFA-5.14 ERNiCrMo-3
JIS Z 3334 SNi6625
EN ISO 18274 Ni 6625

Features

- Good impact toughness at extra low temperature
- Dissimilar steels(B24Inconel 601, Incoloy800/800H or combination of these with other alloys)

Current

DC -

Application Areas

- LNG Storage Tank, equipments for gas desulfurization,
- Petrochmical plants
- Heat exchangers
- 9% nickel steel

Shielding Gas

Ar, Ar + He

Approvals

ABS	BV	DNV	KR	LR	NK
✓	✓	✓	✓	✓	✓

Typical Chemical Composition of the Wire (wt%)

C	Si	Mn	P	S	Cu	Ni	Cr	Mo	Ti	Nb	Al	Mg
0.03	0.08	0.03	0.01	0.001	0.03	63.9	22.7	9.1	0.21	3.55	0.09	0.3

Typical Mechanical Properties of All-Weld Metal

Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
785 (114)	45	-60 (-75) -196 (-320)	150 (111) 130 (96)

Wire Diameter & Packaging

Wire Diameter mm(in)	Packaging
1.0 (0.040)	Spool : 12.5kg, 5kg(11lbs)*1000
1.2 (0.045)	
1.4 (0.052)	
1.6 (1/16)	
2.0 (5/64)	
2.4 (3/32)	
3.2 (1/8)	

SMT-7030

Classification

AWS A5.7/ASME SFA-5.7 ERCuNi
JIS Z 3341 YCuNi-3

Features

- No preheat & PWHT required, maximum interpass temperature '- 50°C
- Contamination of the weld zone with foreign material, particularly any source of lead, tin or zinc must be scrupulosly avoided to prevent weld metal cracking

Current

DC -

Application Areas

- Desalination plant
- Evaporators and etc in salt and sea water processing system

Shielding Gas

Ar, Ar+He

Approvals

ABS	RS
✓	✓

Typical Chemical Composition of the Wire (wt%)

Mn	Cu	Ni	Ti	Mg
1	66.5	30.5	0.4	1

Typical Mechanical Properties of All-Weld Metal

Tensile Strength MPa(ksi)	Elongation (%)
420(61)	36

Wire Diameter & Packaging

Wire Diameter mm(in)	Packaging
1.6 (1/16)	5kg(11lbs)*1000
2.0 (5/64)	
2.4 (3/32)	
2.6 (0.10)	
3.2 (1/8)	

SMT-4043

Classification

AWS A5.10/ ASME SFA-5.10 ER4043
JIS Z 3232 A4043-WY
EN ISO 18273 S Al 4043 (AlSi5)

Features

- This silicon-aluminum filler material is one of the oldest and most widely used welding alloys.
- Can be classified as a general purpose type filler alloy that matches well in color with the parent metal after anodizing
- Shipbuilding, automobile, railway
- Excellent feedability by controlling impurities

Current

DC -

Application Areas

- All the industrial manufacturing sectors, such as the automotive industry, the production of mobile equipments, the shipbuilding sector, etc.

Shielding Gas

Ar, Ar+He

Approvals

CE	DB
✓	✓

Typical Chemical Composition of the Wire (wt%)

Si	Mn	Cu	Ti	Al	Mg	Zn	W
5.07	0.02	0.03	0.02	Rem	0.12	0.01	0.03

Typical Mechanical Properties of All-Weld Metal

Tensile Strength MPa(ksi)	Elongation (%)
183(27)	8

Wire Diameter & Packaging

Wire Diameter mm(in)	Packaging
1.6 (1/16)	5kg(11lbs)*1000
2.0 (5/64)	
2.4 (3/32)	
2.6 (0.10)	
3.2 (1/8)	

SMT-5183

Classification

AWS A5.10/ ASME SFA-5.10 ER5183
JIS Z 3232 A5183-WY
EN ISO 18273 S Al 5183 (AlMg4.5Mn0.7(A))

Features

- ER5183 is about 5% Magnesium and 0.6% Manganese
- Aluminum filler metal that has high strength, high corrosion resistance, and matches well in color with the parent metal after anodizing
- Shipbuilding, automobile, railway
- Excellent feedability by controlling impurities

Current

DC -

Application Areas

- Railroad cars and transportation equipment, pressure vessels

Shielding Gas

Ar

Approvals

CE	DB
✓	✓

Typical Chemical Composition of the Wire (wt%)

Si	Mn	Cu	Cr	Ti	Al	Mg	Zn	W
0.06	0.65	0.02	0.08	0.02	Rem	0.09	4.96	0.03

Typical Mechanical Properties of All-Weld Metal

Tensile Strength MPa(ksi)	Elongation (%)
275 (39)	17

Wire Diameter & Packaging

Wire Diameter mm(in)	Packaging
1.6 (1/16)	5kg(11lbs)*1000
2.0 (5/64)	
2.4 (3/32)	
2.6 (0.10)	
3.2 (1/8)	

SMT-5356

Classification

AWS A5.10/ ASME SFA-5.10 ER5356
JIS Z 3232 A5356-WY
EN ISO 18273 S Al 5356 (AlMg5Cr(A))

Features

- ER5356 is about 5% Magnesium Aluminum filler metal which has high strength, high corrosion resistance, and matches the color well with the parent metal after anodizing
- Shipbuilding, automobile, railway
- Excellent feedability by controlling impurities

Current

DC -

Application Areas

- Used for welding casting Al-Mg alloys with maximum 5% Magnesium and parts of wrought alloy of 5000 series, 6000
and 7000 series.

Shielding Gas

Ar

Approvals

CE	DB
✓	✓

Typical Chemical Composition of the Wire (wt%)

Si	Mn	Cu	Cr	Ti	Al	Mg	Zn	W
0.07	0.11	0.005	0.11	0.08	Rem	0.14	4.7	0.01

Typical Mechanical Properties of All-Weld Metal

Tensile Strength MPa(ksi)	Elongation (%)
275 (39)	17

Wire Diameter & Packaging

Wire Diameter mm(in)	Packaging
1.6 (1/16)	5kg(11lbs)*1000
2.0 (5/64)	
2.4 (3/32)	
2.6 (0.10)	
3.2 (1/8)	

ST-9010

Classification

JIS Z 3341 YCuNi-1
EN 24373 Cu7061 CuNi10

Features

- No preheat & PWHT required, maximum interpass temperature 150°C
- Contamination of the weld zone with foreign material,
particularly any source of lead, tin or zinc must be scrupulosly
avoided to prevent weld metal cracking

Current

DC -

Application Areas

- Desalination plant
- Offshore applications for ship building in the chemical industry

Shielding Gas

Ar

Typical Chemical Composition of the Wire (wt%)

Mn	Cu	Ni	Ti	Mg
1	87	10.5	0.4	1

Typical Mechanical Properties of All-Weld Metal

Tensile Strength MPa(ksi)	Elongation (%)
300 (43)	34

Wire Diameter & Packaging

Wire Diameter mm(in)	Packaging
2.0 (5/64)	5kg(11lbs)*1000
2.4 (3/32)	
2.6 (0.10)	
3.2 (1/8)	

FCAW

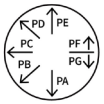
Flux Cored Wire

SF-71

Classification

AWS AWS A5.20 / ASME SFA-5.20 E71T-1C
JIS Z 3313 T49J 0 T1-1 C A-U
EN ISO 17632-A T42 0 P C1 1
KS D7104 YFW-C50DR

Welding Positions



Features

- Designed for welding with 100%CO2 shielding gas
- Good performance and low spatter
- Smooth and stable arc with a fast freezing slag

Polarity

DC +

Application Areas

- Shipbuilding
- General fabrication
- Structural fabrication

Shielding Gas

100%CO_2

Approvals

ABS	BV	CCS	CR	DNV	KR	LR	NK	RINA	RS	CWB	CE	TUV
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S
100%CO_2	0.04	0.49	1.29	0.013	0.011

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
100%CO_2	548 (79)	582 (84)	28	0 (32) -20 (0)	75 (55) 40 (30)

Diameter / Welding Parameters / Packaging

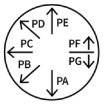
Wire Diameter mm(in)	Current (A)	Packaging
1.2 (0.045)	110-280	Spool 5kg (11lbs), 12.5kg (28lbs), 15kg (33lbs), 20kg (44lbs) Drum 100kg (221lbs), 200kg (441lbs), 250kg (551lbs)
1.4 (0.052)	110-280	
1.6 (1/16)	120-300	

Supercored 71

Classification

AWS AWS A5.20 / ASME SFA-5.20 E71T-1C
JIS Z 3313 T49 2 T1-1 C A
EN ISO 17632-A T42 2 P C1 1

Welding Positions



Features

- Designed for welding with 100%CO2 shielding gas
- Good performance and low spatter
- Smooth and stable arc with a fast freezing slag

Polarity

DC +

Application Areas

- Shipbuilding
- General fabrication
- Structural fabrication

Shielding Gas

100%CO_2

Approvals

ABS	BV	CRS	DNV	KR	LR	NK	RINA	RS	CWB	CE	DB	TUV
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S
100%CO_2	0.036	0.51	1.26	0.012	0.011

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
100%CO_2	545 (79)	572 (83)	28	-20 (0)	70 (52)

Diameter / Welding Parameters / Packaging

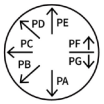
Wire Diameter mm(in)	Current (A)	Packaging
1.2 (0.045)	110-280	Spool 5kg (11lbs), 12.5kg (28lbs), 15kg (33lbs), 20kg (44lbs) Drum 100kg (221lbs), 200kg (441lbs), 250kg (551lbs)
1.4 (0.052)	110-280	
1.6 (1/16)	120-300	

SC-71LH

Classification

AWS AWS A5.20 / ASME SFA-5.20 E71T-1C, -9C
JIS Z 3313 T49 3 T1-1 C A
EN ISO 17632-A T42 2 P C1 1 H5

Welding Positions



Features

- Designed for welding with 100% CO2 shielding gas
- low Hydrogen level(H5) and Good crack resistance
- Smooth and stable arc with a fast freezing slag

Polarity

DC +

Application Areas

- Shipbuilding
- General fabrication
- Structural fabrication

Shielding Gas

100%CO_2

Approvals

ABS	BV	CRS	DNV	KR	LR	NK	RINA	RS	CE	DB	TUV
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S
100%CO_2	0.06	0.47	1.35	0.011	0.011

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
100%CO_2	550 (80)	590 (86)	27	-20 (0) -30 (-20)	64 (47) 44 (32)

Diameter / Welding Parameters / Packaging

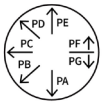
Wire Diameter mm(in)	Current (A)	Packaging
1.2 (0.045)	110-280	Spool 5kg (11lbs), 12.5kg (28lbs), 15kg (33lbs), 20kg (44lbs) Drum 100kg (221lbs), 200kg (441lbs), 250kg (551lbs)
1.4 (0.052)	110-280	
1.6 (1/16)	120-300	

Supercored 71MAG

Classification

AWS AWS A5.20 / ASME SFA-5.20 E71T-1M,-9M
EN ISO 17632-A T46 3 P M21 1

Welding Positions



Features

- Designed for welding with Ar+20~25%CO2 shielding gas
- Smooth arc and low spatter, good weldability
- Good bead appearance

Polarity

DC +

Application Areas

- Shipbuilding
- General fabrication
- Structural fabrication

Shielding Gas

Ar+20~25% CO2

Approvals

ABS	BV	DNV	LR	RINA	CWB	CE	DB	TUV
✓	✓	✓	✓	✓	✓	✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S
Ar+20~25% CO2	0.04	0.62	1.30	0.011	0.011

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
Ar+20~25% CO2	569 (83)	615 (89)	28	-30 (-20)	85 (62)

Diameter / Welding Parameters / Packaging

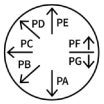
Wire Diameter mm(in)	Current (A)	Packaging
1.2 (0.045)	110-280	Spool 5kg (11lbs), 12.5kg (28lbs), 15kg (33lbs), 20kg (44lbs) Drum 100kg (221lbs), 200kg (441lbs), 250kg (551lbs)
1.4 (0.052)	110-280	
1.6 (1/16)	120-300	

SC-71LHM Cored

Classification

AWS AWS A5.20 / ASME SFA-5.20 E71T-1M,-9M
JIS Z 3313 T49 3 T1-1 M A-U
EN ISO 17632-A T46 3 P M21 1 H5

Welding Positions



Features

- Designed for welding with Ar+20~25%CO2 shielding gas
- Smooth and stable arc with a fast freezing slag
- Low hydrogen level(H5)

Polarity

DC +

Application Areas

- Shipbuilding
- General fabrication
- Structural fabrication

Shielding Gas

Ar+20~25% CO2

Approvals

ABS	BV	DNV	LR	CWB	CE	DB	TUV
✓	✓	✓	✓	✓	✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S
Ar+20~25% CO2	0.05	0.5	1.20	0.011	0.011

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
Ar+20~25% CO2	580 (84)	600 (87)	28	-30 (-20)	75 (55)

Diameter / Welding Parameters / Packaging

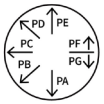
Wire Diameter mm(in)	Current (A)	Packaging
1.2 (0.045)	110~280	Spool 5kg (11lbs), 12.5kg (28lbs), 15kg (33lbs), 20kg (44lbs) Drum 100kg (221lbs), 200kg (441lbs), 250kg (551lbs)
1.4 (0.052)	110~280	
1.6 (1/16)	120~300	

SF-71MC

Classification

AWS AWS A5.20 / ASME SFA-5.20
E71T-1C,-1M,-9C,-9M,-12C,-12M
EN ISO 17632-A T46 2 P C1 1 H10, T46 3 P M21 1 H10

Welding Positions



Features

- Designed for welding with 100%CO2 and Ar+20~25%CO2 shielding gas
- Smooth arc and low spatter, good weldability
- Good bead appearance

Polarity

DC +

Application Areas

- Shipbuilding
- General fabrication
- Structural fabrication

Shielding Gas

100% CO2
Ar+20~25% CO2

Approvals

ABS	BV	DNV	LR	CWB	CE	DB	TUV
✓	✓	✓	✓	✓	✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S
100% CO2	0.05	0.40	1.15	0.010	0.010
Ar+20~25% CO2	0.05	0.51	1.32	0.010	0.010

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
100% CO2	518 (75)	575 (83)	28	-30 (-20)	63 (46)
Ar+20~25% CO2	575 (83)	610 (88)	25	-30 (-20)	86 (63)

Diameter / Welding Parameters / Packaging

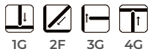
Wire Diameter mm(in)	Current (A)	Packaging
1.2 (0.045)	110~280	Spool 5kg (11lbs), 12.5kg (28lbs), 15kg (33lbs), 20kg (44lbs) Drum 100kg (221lbs), 200kg (441lbs), 250kg (551lbs)
1.6 (1/16)	120~300	

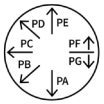
SC-420MC

Classification

AWS AWS A5.20 / ASME SFA-5.20 E71T-1C,-9C H4
AWS A5.20 / ASME SFA-5.20 E71T-1M,-9M H8
EN ISO 17632-A T46 3 P C1 1 H5, T46 3 P M21 1 H5

Welding Positions





Features

- Designed for welding with 100%CO2 and Ar+20~25%CO2 shielding gas
- Smooth arc and low spatter, good weldability
- Good bead appearance

Polarity

DC +

Application Areas

- Shipbuilding
- General fabrication
- Structural fabrication

Shielding Gas

100% CO2
Ar+20~25% CO2

Approvals

ABS	BV	DNV	LR	RINA	CE	DB	TUV
✓	✓	✓	✓	✓	✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S
100% CO2	0.04	0.40	1.20	0.010	0.010
Ar+20~25% CO2	0.04	0.50	1.41	0.010	0.010

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
100% CO2	520 (76)	570 (83)	28	-20 (0) -30 (-20)	60 (44) 52 (38)
Ar+20~25% CO2	575 (83)	630 (91)	26	-20 (0) -30 (-20)	82 (61) 70 (52)

Diameter / Welding Parameters / Packaging

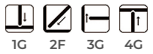
Wire Diameter mm(in)	Current (A)	Packaging
1.2 (0.045)	110~280	Spool 5kg (11lbs), 12.5kg (28lbs), 15kg (33lbs), 20kg (44lbs) Drum 100kg (221lbs), 200kg (441lbs), 250kg (551lbs)
1.6 (1/16)	120~300	

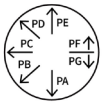
Supercored 71H

Classification

AWS AWS A5.20 / ASME SFA-5.20 E71T-1C,-9C-J
JIS Z 3313 T49 4 T1-1 C A
EN ISO 17632-A T42 4 P C1 1

Welding Positions





Features

- Designed for welding with 100%CO2 shielding gas
- Smooth and stable arc with a fast freezing slag

Polarity

DC +

Application Areas

- Shipbuilding
- General fabrication
- Structural fabrication

Shielding Gas

100%CO_2

Approvals

ABS	BV	CCS	DNV	KR	LR	NK	RINA	RS	CWB	CE	DB	TUV
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Ni
100%CO_2	0.03	0.46	1.36	0.011	0.011	0.40

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
100%CO_2	550 (80)	570 (83)	28	-40 (-40)	60 (44)

Diameter / Welding Parameters / Packaging

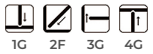
Wire Diameter mm(in)	Current (A)	Packaging
1.2 (0.045)	110~280	Spool 5kg (11lbs), 12.5kg (28lbs), 15kg (33lbs), 20kg (44lbs) Drum 100kg (221lbs), 200kg (441lbs), 250kg (551lbs)
1.4 (0.052)	110~280	
1.6 (1/16)	120~300	

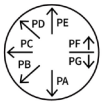
SC-71HJ

Classification

AWS AWS A5.20 / ASME SFA-5.20 E71T-1C,-9C-J
JIS Z 3313 T 49 4 T1-1 C A
EN ISO 17632-A T42 4 P C1 1

Welding Positions





Features

- Designed for welding with 100%CO2 shielding gas
- Smooth and stable arc with a fast freezing slag

Polarity

DC +

Application Areas

- Shipbuilding
- General fabrication
- Structural fabrication

Shielding Gas

100%CO_2

Approvals

ABS	BV	DNV	KR	LR	NK	RS
✓	✓	✓	✓	✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Ni
100%CO_2	0.04	0.51	1.61	0.010	0.010	0.40

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
100%CO_2	585 (85)	635 (92)	27	-40 (-40)	85 (63)

Diameter / Welding Parameters / Packaging

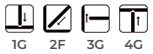
Wire Diameter mm(in)	Current (A)	Packaging
1.2 (0.045)	110~280	Spool 5kg (11lbs), 12.5kg (28lbs), 15kg (33lbs), 20kg (44lbs) Drum 100kg (221lbs), 200kg (441lbs), 250kg (551lbs)
1.4 (0.052)	110~280	
1.6 (1/16)	120~300	

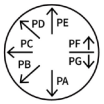
SC-71MJ

Classification

AWS AWS A5.20 / ASME SFA-5.20 E71T-9M-J H4
AWS A5.29 / ASME SFA-5.29 E81T1-GM
EN ISO 17632-A T46 4 P M21 1 H5

Welding Positions





Features

- Designed for welding with Ar+20~25%CO2 shielding gas
- Smooth and stable arc with a fast freezing slag
- Low hydrogen level(H4)

Polarity

DC+

Application Areas

- Shipbuilding
- General fabrication
- Structural fabrication

Shielding Gas

Ar+20~25% CO2

Approvals

ABS	BV	DNV	LR	CE
✓	✓	✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Ni
Ar+20~25% CO2	0.05	0.30	1.10	0.010	0.010	0.40

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
Ar+20~25% CO2	545(79)	583(85)	25	-40(-40)	80(59)

Diameter / Welding Parameters / Packaging

Wire Diameter mm(in)	Current (A)	Packaging
1.2 (0.045)	110~280	Spool 5kg (11lbs), 12.5kg (28lbs), 15kg (33lbs), 20kg (44lbs) Drum 100kg (221lbs), 200kg (441lbs), 250kg (551lbs)
1.4 (0.052)	110~280	
1.6 (1/16)	120~300	

SF-70MX

Classification

AWS AWS A5.20 / ASME SFA-5.20 E70T-1C
JIS Z 3313 T49 J 0 T1-0 C A-U
EN ISO 17632-A T 42 0 R C1 3

Welding Positions

Features

- Designed for welding with 100% CO2 shielding gas
- Good high deposition rate
- Good penetration and good arc stability
- Good anti-porosity

Polarity

DC +

Application Areas

- Shipbuilding
- Structural fabrication
- General fabrication
- Transportation equipment

Shielding Gas

100% CO2

Approvals

ABS	BV	CCS	CR	DNV	KR	LR	NK	RINA	CWB	CE
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S
100% CO2	0.05	0.50	1.50	0.011	0.013

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
100% CO2	560 (81)	590 (85)	28	0 (32) -20 (0)	60 (44) 50 (37)

Diameter / Welding Parameters / Packaging

Wire Diameter mm(in)	Current (A)	Packaging
1.2 (0.045)	110~280	Spool 5kg (11lbs), 12.5kg (28lbs), 15kg (33lbs), 20kg (44lbs) Drum 100kg (221lbs), 200kg (441lbs), 250kg (551lbs)
1.4 (0.052)	110~280	
1.6 (1/16)	120~300	

SC-70H Cored

Classification

AWS AWS A5.20 / ASME SFA-5.20 E70T-1C,-9C
JIS Z 3313
T49 3 T1-0 C A
EN ISO 17632-A T42 2 R C1 3

Welding Positions

Features

- High deposition in the flat and horizontal positions
- Designed for welding with 100% CO2 shielding gas

Polarity

DC +

Application Areas

- Shipbuilding
- Structural fabrication
- Machinery
- Heavy equipment
- Transportation equipment

Shielding Gas

100% CO2

Approvals

ABS	CCS	DNV	LR	CWB
✓	✓	✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S
100% CO2	0.05	0.48	1.42	0.011	0.010

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
100% CO2	520 (75)	575 (83)	26.2	-20 (0) -30 (-20)	65 (48) 53 (39)

Diameter / Welding Parameters / Packaging

Wire Diameter mm(in)	Current (A)	Packaging
1.2 (0.045)	110~280	Spool 5kg (11lbs), 12.5kg (28lbs), 15kg (33lbs), 20kg (44lbs) Drum 100kg (221lbs), 200kg (441lbs), 250kg (551lbs)
1.4 (0.052)	110~280	
1.6 (1/16)	120~300	
2.0 (5/64)	350~450	
2.4 (3/32)	400~500	

Mild Steel & 490 MPa high tensile steels
HYUNDAI WELDING

Supercored 70MXH

Classification

AWS AWS A5.20 / ASME SFA-5.20 E70T-1C,-9C
JIS Z 3313 T49 J 2 T1-0 C A –U H5
EN ISO 17632-A T 42 2 R C1 3 H5

Welding Positions

Features

- Designed for welding with 100% CO2 shielding gas
- High speed single or twin tandem welding
- Low hydrogen level (H5)
- Good anti-porosity to zinc primer

Polarity

DC +

Application Areas

- Shipbuilding
- Structural fabrication
- General fabrication
- Heavy equipment
- Offshore structure

Shielding Gas

100% CO2

Approvals

ABS	BV	CCS	DNV	KR	LR	NK	RINA	RS
✓	✓	✓	✓	✓	✓	✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S
100% CO2	0.067	0.55	1.65	0.014	0.008

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
100% CO2	565 (82)	620 (90)	26.5	-20 (0) -30 (-20)	72 (53) 54 (40)

Diameter / Welding Parameters / Packaging

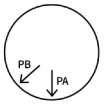
Wire Diameter mm(in)	Current (A)	Packaging
1.4 (0.052)	300~380	Spool 5kg (11lbs), 12.5kg (28lbs), 15kg (33lbs), 20kg (44lbs) Drum 100kg (221lbs), 200kg (441lbs), 250kg (551lbs)
1.6 (1/16)	300~450	

Supercored 70B

Classification

AWS AWS A5.20 / ASME SFA-5.20 E71T-5M-J
JIS Z 3313 T49 4 T5-1 M A-U
EN ISO 17632-A T42 4 B M21 3 H5

Welding Positions



Features

- Designed for welding with Ar+20~25%CO2 shielding gas
- Good crack resistance
- Good impact value at low temperature

Polarity

DC -

Application Areas

- Shipbuilding
- Structural fabrication

Shielding Gas

Ar+20~25% CO2

Approvals

ABS	BV	DNV	LR	CE	DB	TUV
✓	✓	✓	✓	✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S
Ar+20~25% CO2	0.06	0.43	1.33	0.011	0.013

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
Ar+20~25% CO2	450 (65)	520 (75)	32	-40 (-40)	78 (58)

Diameter / Welding Parameters / Packaging

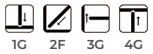
Wire Diameter mm(in)	Current (A)	Packaging
1.2 (0.045)	110~280	Spool 5kg (11lbs), 12.5kg (28lbs), 15kg (33lbs), 20kg (44lbs) Drum 100kg (221lbs), 200kg (441lbs), 250kg (551lbs)
1.4 (0.052)	110~280	
1.6 (1/16)	120~300	

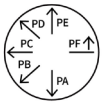
Supercored 70SB

Classification

AWS AWS A5.20 / ASME SFA-5.20 E71T-5C
JIS Z 3313 T49 3 T5-1 C A-U
EN ISO 17632-A T42 3 B C1 2

Welding Positions





Features

- Designed for welding with 100%CO2 shielding gas
- Good crack resistance
- Good impact value at low temperature

Polarity

DC + DC -

Application Areas

- Shipbuilding
- Structural fabrication

Shielding Gas

100% CO2

Approvals

ABS	BV	DNV	KR	LR	NK
✓	✓	✓	✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S
100% CO2	0.06	0.39	1.42	0.011	0.011

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Condition	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
100% CO2	DC+	500 (73)	565 (82)	31	-30 (-20)	80 (59)
100% CO2	DC-	570 (83)	620 (90)	26	-30 (-20)	70 (52)

Diameter / Welding Parameters / Packaging

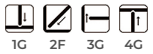
Wire Diameter mm(in)	Current (A)	Packaging
1.2 (0.045)	110~280	Spool 5kg (11lbs), 12.5kg (28lbs), 15kg (33lbs), 20kg (44lbs) Drum 100kg (221lbs), 200kg (441lbs), 250kg (551lbs)
1.4 (0.052)	110~280	
1.6 (1/16)	120~300	

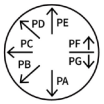
SF-71R

Classification

AWS AWS A5.20 / ASME SFA-5.20 E71T-1C H4
EN ISO 17632-A T42 2 P C1 1 H5

Welding Positions





Features

- Designed for welding with 100%CO2 shielding gas
- Good impact value at low temperature (As Welded and PHWT)

Polarity

DC +

Application Areas

- Shipbuilding
- Offshore structure
- Pipe & Pipeline
- Pressure vessel

Shielding Gas

100% CO2

Approvals

ABS	CE
✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S
100% CO2	0.05	0.50	1.38	0.010	0.010

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Condition	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
100% CO2	As Welded	520 (75)	585 (84)	28	-20 (0)	90 (66)
100% CO2	PWHT 620°C×2hr	473 (69)	553 (80)	30	-20 (0)	60 (44)

Diameter / Welding Parameters / Packaging

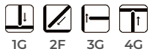
Wire Diameter mm(in)	Current (A)	Packaging
1.2 (0.045)	110~280	Spool 5kg (11lbs), 12.5kg (28lbs), 15kg (33lbs), 20kg (44lbs) Drum 100kg (221lbs), 200kg (441lbs), 250kg (551lbs)
1.4 (0.052)	110~280	

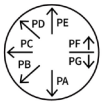
SL-71

Classification

AWS AWS A5.20 / ASME SFA-5.20 E71T-1C/-9C H4
EN ISO 17632-A T 46 3 P C1 1 H5

Welding Positions





Features

- Designed for welding with 100%CO2 shielding gas
- Prevents the weld from hydrogen induced cracking or cold cracking.

Polarity

DC +

Application Areas

- Shipbuilding
- Steel construction
- Offshore

Shielding Gas

100% CO2

Approvals

LR	RINA	CE
✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S
100% CO2	0.03	0.34	1.44	0.022	0.003

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
100% CO2	536 (77)	599 (86)	25	-20 (0) -30(-20)	86(60) 65(48)

Diameter / Welding Parameters / Packaging

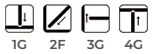
Wire Diameter mm(in)	Current (A)	Packaging
1.2 (0.045)	120~300	Spool 5kg(11lbs), 12.5(27.6lbs), 15kg(33lbs)
1.4 (0.052)	150~350	
1.6 (1/16)	150~366	

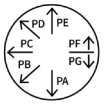
SL-71MAG

Classification

AWS AWS A5.20 / ASME SFA-5.20 E71T-1M/-9M H4
EN ISO 17632-A T46 4 P M21 1 H5

Welding Positions





Features

- Designed for welding with Ar+20~25%CO2 shielding gas
- Prevents the weld from hydrogen induced cracking or cold

cracking.

Polarity

DC +

Application Areas

- Shipbuilding
- Steel construction
- Offshore

Shielding Gas

Ar+20~25% CO2

Approvals

BV	DNV	LR	RINA	CE
✓	✓	✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S
Ar+20~25% CO2	0.03	0.42	1.45	0.019	0.006

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
Ar+20~25% CO2	574 (83)	623 (90)	26	-30 (-20) -40(-40)	102(75) 88(65)

Diameter / Welding Parameters / Packaging

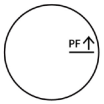
Wire Diameter mm(in)	Current (A)	Packaging
1.2 (0.045)	220~300	Spool 5kg(11lbs), 12.5(27.6lbs), 15kg(33lbs)
1.6 (1/16)	300~400	

SC-EG2 Cored

Classification

AWS AWS A5.26/ ASME SFA-5.26 EG70T-2
JIS Z 3319 YFEG-22C

Welding Positions



Features

- Electro gas arc welding process
- Hig deposition(Vertical up butt welding)

Polarity

DC +

Application Areas

- Shipbuilding
- Storage Tank

Shielding Gas

100% CO2

Approvals

ABS	BV	CCS	DNV	KR	LR	NK	RINA
✓	✓	✓	✓	✓	✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V
100% CO2	0.08	0.41	1.5	0.010	0.010	0.01	0.02	0.03	0.11	0.02

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
100% CO2	475 (69)	586 (85)	25	-20 (0)	60 (44)

Diameter / Welding Parameters / Packaging

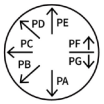
Wire Diameter mm(in)	Current (A)	Packaging
1.6 (1/16)	330~380	Spool 5kg (11lbs), 20kg (44lbs)

SC-55 Cored

Classification

AWS AWS A5.29 / ASME SFA-5.29 E81T1-GC
JIS Z 3313 T55 2 T1-1 C A-U
KS D7104 YFW-C55DR

Welding Positions



Features

- Designed for welding with 100% CO2 shielding gas
- Smooth and stable arc with a fast freezing slag

Polarity

DC +

Application Areas

- General fabrication
- Structural fabrication

Shielding Gas

100%CO_2

Approvals

ABS
✓

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S
100%CO_2	0.05	0.45	1.40	0.011	0.011

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
100%CO_2	560 (81)	610 (88)	27	-20 (0)	80 (59)

Diameter / Welding Parameters / Packaging

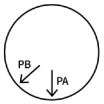
Wire Diameter mm(in)	Current (A)	Packaging
1.2 (0.045)	110~280	Spool 5kg (11lbs), 12.5kg (28lbs), 15kg (33lbs), 20kg (44lbs) Drum 100kg (221lbs), 200kg (441lbs), 250kg (551lbs)
1.4 (0.052)	110~280	
1.6 (1/16)	120~300	

SC-55F Cored

Classification

AWS AWS A5.29 / ASME SFA-5.29 E80T1-GC
JIS Z 3313 T55 2 T1-0 C A-N1-U
KS D7104 YFW-C55DM

Welding Positions



Features

- Minimum spatter level
- Easy to remove slag
- Good anti-porosity

Polarity

DC +

Application Areas

- Steel Fabrication

Shielding Gas

100% CO2

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S
100% CO2	0.05	0.48	1.56	0.012	0.010

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
100% CO2	545 (79)	610 (88)	24.5	0 (32) -20 (0)	89 (66) 78 (58)

Diameter / Welding Parameters / Packaging

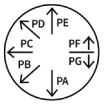
Wire Diameter mm(in)	Current (A)	Packaging
1.2 (0.045)	200~350	Spool 5kg (11lbs), 12.5kg (28lbs), 15kg (33lbs), 20kg (44lbs) Drum 100kg (221lbs), 200kg (441lbs), 250kg (551lbs)
1.4 (0.052)	300~380	
1.6 (1/16)	300~400	

Supercored 81

Classification

AWS AWS A5.29 / ASME SFA-5.29 E81T1-Ni1C
JIS Z 3313 T55 3 T1-1 C A-N2
EN ISO 17632-A T 46 2 1Ni P C1 1
KS D7104 YFW-C602R

Welding Positions



Features

- Designed for welding with 100% CO2 shielding gas
- Smooth and stable arc and good weldability

Polarity

DC +

Application Areas

- General fabrication
- Structural fabrication

Shielding Gas

100% CO2

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Ni
100% CO2	0.03	0.35	1.25	0.011	0.011	0.95

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
100% CO2	570 (83)	640 (93)	25	-30 (-20)	90 (66)

Diameter / Welding Parameters / Packaging

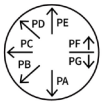
Wire Diameter mm(in)	Current (A)	Packaging
1.2 (0.045)	110~280	Spool 5kg (11lbs), 15kg (33lbs)
1.4 (0.052)	110~280	
1.6 (1/16)	120~300	

SC-91K2 Cored

Classification

AWS AWS A5.29 / ASME SFA-5.29 E91T1-K2C
JIS Z 3313 T57 4 T1-1 C A-N3
EN ISO 17632-A T 50 4 1.5Ni P C1 1
KS D7104 YFW-C602R

Welding Positions



Features

- Designed for welding with 100% CO2 shielding gas
- Smooth and stable arc and good weldability

Polarity

DC +

Application Areas

- General fabrication
- Structural fabrication

Shielding Gas

100% CO2

Approvals

ABS	CCS	DNV	CWB
✓	✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Ni	Mo
100% CO2	0.04	0.35	1.25	0.011	0.011	1.55	0.09

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
100% CO2	620 (90)	650 (94)	27	-20 (0) -40 (-40)	110 (81) 60 (44)

Diameter / Welding Parameters / Packaging

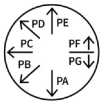
Wire Diameter mm(in)	Current (A)	Packaging
1.2 (0.045)	110~280	Spool 5kg (11lbs), 12.5kg (28lbs), 15kg (33lbs), 20kg (44lbs) Drum 100kg (221lbs), 200kg (441lbs), 250kg (551lbs)
1.4 (0.052)	110~280	
1.6 (1/16)	120~300	

SC-91

Classification

AWS AWS A5.29 / ASME SFA-5.29 E91T1-GC
JIS Z 3313 T57 2 T1-1 C A-N1 H10
EN ISO 17632-A T50 2 1Ni P C1 1
KS D7104 YFW-C602R

Welding Positions



Features

- Designed for welding with 100% CO2 shielding gas
- Smooth and stable arc and good weldability

Polarity

DC +

Application Areas

- General fabrication
- Structural fabrication

Shielding Gas

100% CO2

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Ni	Mo
100% CO2	0.05	0.50	1.20	0.011	0.011	0.84	0.15

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
100% CO2	640 (93)	655 (95)	24	0 (32) -20 (0)	105 (77) 72 (53)

Diameter / Welding Parameters / Packaging

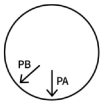
Wire Diameter mm(in)	Current (A)	Packaging
1.2 (0.045)	110~280	Spool 5kg (11lbs), 12.5kg (28lbs), 15kg (33lbs), 20kg (44lbs) Drum 100kg (221lbs), 200kg (441lbs), 250kg (551lbs)
1.4 (0.052)	110~280	
1.6 (1/16)	120~300	

SC-90

Classification

AWS AWS A5.29 / ASME SFA-5.29 E90T1-GC
JIS Z 3313 T62 2 T 1-0 C A H10
EN ISO 17632-A T50 2 R C 3 H10

Welding Positions



Features

- Designed for welding with 100% CO2 shielding gas
- High speed single welding in flat and horizontal positions

Polarity

DC +

Application Areas

- Steel Fabrication

Shielding Gas

100% CO2

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Ni	Mo
100% CO2	0.08	0.55	1.75	0.014	0.014	0.35	0.12

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
100% CO2	600 (87)	650 (94)	22.5	0 (32) -20 (0)	80 (59) 60 (44)

Diameter / Welding Parameters / Packaging

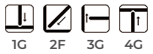
Wire Diameter mm(in)	Current (A)	Packaging
1.2 (0.045)	110~280	Spool 5kg (11lbs), 12.5kg (28lbs), 15kg (33lbs), 20kg (44lbs) Drum 100kg (221lbs), 200kg (441lbs), 250kg (551lbs)
1.4 (0.052)	110~280	
1.6 (1/16)	120~300	

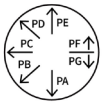
SC-91LP

Classification

AWS AWS A5.29 / ASME SFA-5.29 E91T1-GM
EN ISO 17632-A T50 4 1Ni P M21 1 H5

Welding Positions





Features

- Designed for welding with Ar+20~25%CO2 shielding gas
- Good performance in all positions (Pipe welding)
- Good impact value at low temperature

Polarity

DC +

Application Areas

- Pipe & Pipeline
- General fabrication
- Structural fabrication

Shielding Gas

Ar+20~25% CO2

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Ni
Ar+20~25% CO2	0.05	0.40	1.40	0.011	0.011	0.90

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
Ar+20~25% CO2	650 (94)	690 (100)	24	-40 (-40)	65 (48)

Diameter / Welding Parameters / Packaging

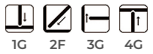
Wire Diameter mm(in)	Current (A)	Packaging
1.2 (0.045)	110~280	Spool 5kg (11lbs), 12.5kg (28lbs), 15kg (33lbs), 20kg (44lbs) Drum 100kg (221lbs), 200kg (441lbs), 250kg (551lbs)

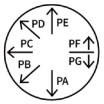
Supercored 110

Classification

AWS AWS A5.29 / ASME SFA-5.29 E111T1-GC H4
EN ISO 18276-A T69 4 ZMn2.5NiMo P C1 1

Welding Positions





Features

- Designed for welding with 100% CO2 shielding gas
- High strength steel(HT-80)

Polarity

DC +

Application Areas

- Shipbuilding
- Offshore structure
- Structural fabrication

Shielding Gas

100% CO2

Approvals

ABS	DNV	KR	CE
✓	✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Ni	Mo
100% CO2	0.06	0.35	1.55	0.010	0.010	2.20	0.50

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
100% CO2	780 (113)	830 (120)	20	-40 (-40)	60 (44)

Diameter / Welding Parameters / Packaging

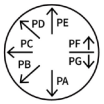
Wire Diameter mm(in)	Current (A)	Packaging
1.2 (0.045)	110~280	Spool 5kg (11lbs), 12.5kg (28lbs), 15kg (33lbs), 20kg (44lbs) Drum 100kg (221lbs), 200kg (441lbs), 250kg (551lbs)

Supercored 120

Classification

AWS AWS A5.29 / ASME SFA-5.29 E121T1-GC H4

Welding Positions



Features

- Designed for welding with 100% CO2 shielding gas
- High strength steel(HT-80)

Polarity

DC +

Application Areas

- Structural fabrication

Shielding Gas

100% CO2

Approvals

KR
✓

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Ni	Mo
100% CO2	0.04	0.33	1.80	0.010	0.010	2.20	0.60

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
100% CO2	790 (115)	855 (124)	18	-20 (0)	84 (62)

Diameter / Welding Parameters / Packaging

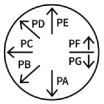
Wire Diameter mm(in)	Current (A)	Packaging
1.2 (0.045)	110~280	Spool 5kg (11lbs), 12.5kg (28lbs), 15kg (33lbs), 20kg (44lbs) Drum 100kg (221lbs), 200kg (441lbs), 250kg (551lbs)
1.4 (0.052)	110~280	

SF-71P

Classification

AWS AWS A5.20 / ASME SFA-5.20 E71T-1C/-9C-J H4
EN ISO 17632-A T42 4 P C1 1 H5

Welding Positions



Features

- Designed for welding with 100%CO2 shielding gas
- Good impact value at low temperature (As Welded and PHWT)

Polarity

DC+

Application Areas

- Shipbuilding
- Offshore structure
- Pipe & Pipeline
- Pressure vessel

Shielding Gas

100% CO2

Approvals

ABS
✓

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Ni
100% CO2	0.04	0.45	1.30	0.010	0.010	0.45

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Condition	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
100% CO2	As Welded	550(80)	600(87)	28	-30(-20) -40(-40)	86(63) 73(54)
100% CO2	PWHT 620°C×2hr	530(77)	560(81)	30	-30(-20) -40(-40)	73(54) 57(42)

Diameter / Welding Parameters / Packaging

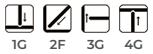
Wire Diameter mm(in)	Current (A)	Packaging
1.2 (0.045)	110~280	Spool 5kg (11lbs), 12.5kg (28lbs), 15kg (33lbs), 20kg (44lbs) Drum 100kg (221lbs), 200kg (441lbs), 250kg (551lbs)
1.4 (0.052)	110~280	

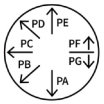
SC-71SR

Classification

AWS AWS A5.20 / ASME SFA-5.20 E71T-1C/-9C-J/-12C-J H4
JIS Z 3313 T49 4 T1-1 C AP
EN ISO 17632-A T42 4 P C1 1 H5
KS 7104 YFL-C503R

Welding Positions





Features

- Designed for welding with 100%CO2 shielding gas
- Good impact value at low temperature (As Welded and PHWT)

Polarity

DC +

Application Areas

- Shipbuilding
- Offshore structure
- Pipe & Pipeline
- Pressure vessel

Shielding Gas

100% CO2

Approvals

ABS	BV	CCS	DNV	KR	LR	NK	CWB
✓	✓	✓	✓	✓	✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Ni
100% CO2	0.05	0.40	1.20	0.010	0.010	0.38

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Condition	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
100% CO2	As Welded	560 (81)	580 (84)	28	-40 (-40) -50 (-60)	80 (59) 65 (48)
100% CO2	PWHT 620°C×2hr	540 (78)	560 (81)	30	-40 (-40) -50 (-60)	60 (44) 45 (33)

Diameter / Welding Parameters / Packaging

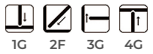
Wire Diameter mm(in)	Current (A)	Packaging
1.2 (0.045)	110~280	Spool 5kg (11lbs), 12.5kg (28lbs), 15kg (33lbs), 20kg (44lbs) Drum 100kg (221lbs), 200kg (441lbs), 250kg (551lbs)
1.4 (0.052)	110~280	

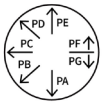
SC-71MSR

Classification

AWS AWS A5.20 / ASME SFA-5.20 E71T-12M-J
EN ISO 17632-A T46 4 P M21 1 H5

Welding Positions





Features

- Designed for welding with Ar+20~25%CO2 shielding gas
- Good impact value at low temperature (As Welded and PHWT)

Polarity

DC +

Application Areas

- Shipbuilding
- Offshore structure
- Pipe & Pipeline
- Pressure vessel

Shielding Gas

Ar+20~25% CO2

Approvals

ABS	BV	DNV	LR	CWB	CE	DB	TUV
✓	✓	✓	✓	✓	✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Ni
Ar+20~25% CO2	0.06	0.35	1.24	0.010	0.010	0.45

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Condition	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
Ar+20~25% CO2	As Welded	542 (79)	577 (84)	30	-40 (-40) -50 (-60)	81 (60) 64 (47)
Ar+20~25% CO2	PWHT 620°C×2hr	523 (76)	552 (80)	33	-40 (-40) -50 (-60)	57 (42) 49 (36)

Diameter / Welding Parameters / Packaging

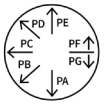
Wire Diameter mm(in)	Current (A)	Packaging
1.2 (0.045)	110~280	Spool 5kg (11lbs), 12.5kg (28lbs), 15kg (33lbs), 20kg (44lbs) Drum 100kg (221lbs), 200kg (441lbs), 250kg (551lbs)
1.4 (0.052)	110~280	

SC-81M

Classification

AWS AWS A5.29 / ASME SFA-5.29 E81T1-Ni1M-J H4
EN ISO 17632-A T50 6 1Ni P M21 1 H5

Welding Positions



Features

- Designed for welding with Ar+20~25%CO2 shielding gas
- Smooth and stable arc with a fast freezing slag
- Good impact value at low temperature

Polarity

DC+

Application Areas

- Construction machinery
- Bridge structures
- Mining

Shielding Gas

Ar+20~25% CO2

Approvals

CE
✓

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Ni
Ar+20~25% CO2	0.04	0.32	1.15	0.010	0.010	0.90

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
Ar+20~25% CO2	540(78)	580(84)	25	-40(-40) -60(-75)	105(77) 73(54)

Diameter / Welding Parameters / Packaging

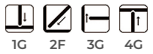
Wire Diameter mm(in)	Current (A)	Packaging
1.2 (0.045)	110~280	Spool 5kg (11lbs), 12.5kg (28lbs), 15kg (33lbs), 20kg (44lbs) Drum 100kg (221lbs), 200kg (441lbs), 250kg (551lbs)
1.4 (0.052)	110~280	
1.6 (1/16)	120~300	

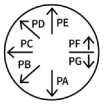
SC-81BF

Classification

AWS AWS A5.29 / ASME SFA-5.29 E81T1-Ni1C-J, -Ni1M-J H4
EN ISO 17632-A T46 4 1Ni P C1/M21 1 H5

Welding Positions





Features

- Designed for welding with 100%CO2 and Ar+20~25%CO2 shielding gas
- Smooth arc and low spatter, good weldability
- Good bead appearance
- Slag covering is uniform and easy to remove

Polarity

DC +

Application Areas

- Mining machinery
- Steel industry

Shielding Gas

100% CO2
Ar+20% CO2

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Ni
100% CO2	0.04	0.38	0.98	0.010	0.010	0.85
Ar+20% CO2	0.05	0.50	1.15	0.010	0.010	0.83

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
100% CO2	505 (73)	560 (81)	31	-40 (-40)	55 (41)
Ar+20% CO2	580 (84)	640 (93)	29	-40 (-40)	75 (55)

Diameter / Welding Parameters / Packaging

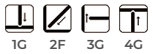
Wire Diameter mm(in)	Current (A)	Packaging
1.2 (0.045)	110~280	Spool 5kg (11lbs), 12.5kg (28lbs), 15kg (33lbs), 20kg (44lbs) Drum 100kg (221lbs), 200kg (441lbs), 250kg (551lbs)
1.6 (1/16)	120~300	

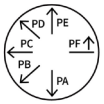
Supercored 81MAG

Classification

AWS AWS A5.29 / ASME SFA-5.29 E81T1-Ni1M H4
EN ISO 17632-A T50 6 1Ni P M21 2 H5

Welding Positions





Features

- Designed for welding with Ar+20~25%CO2 shielding gas
- Good impact value at low temperature (As welded and PHWT)
- low hydrogen level (H4)

Polarity

DC+

Application Areas

- Shipbuilding
- Oil and gas construction
- Pipe & Pipeline
- Offshore structure

Shielding Gas

Ar+20~25% CO2

Approvals

ABS	BV	DNV	LR	RINA	RS	CWB	CE	DB	TUV
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Ni
Ar+20~25% CO2	0.05	0.28	1.20	0.010	0.010	0.93

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Condition	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
Ar+20~25% CO2	As Welded	550(80)	590(86)	26	-30 (-20) -60 (-75)	100 (74) 60 (44)
Ar+20~25% CO2	PWHT 620°C×2hr	510(74)	570(83)	28	–46(-50)	90(66)

Diameter / Welding Parameters / Packaging

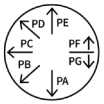
Wire Diameter mm(in)	Current (A)	Packaging
1.2 (0.045)	110~280	Spool 5kg (11lbs), 12.5kg (28lbs), 15kg (33lbs), 20kg (44lbs) Drum 100kg (221lbs), 200kg (441lbs), 250kg (551lbs)
1.4 (0.052)	110~300	
1.6 (1/16)	110~320	

Supercored 81-K2

Classification

AWS AWS A5.29 / ASME SFA-5.29 E81T1-K2C H4
JIS Z 3313 T55 6 T1-1 C A-N3
EN ISO 17632-A T46 6 1.5Ni P C1 1 H5
KS D7104 YFL-C506R

Welding Positions



Features

- Designed for welding with 100%CO2 shielding gas
- Good impact value at low temperature
- Low hydrogen level (H4)

Polarity

DC+

Application Areas

- Shipbuilding
- LPG storage tank
- Offshore structure

Shielding Gas

100% CO2

Approvals

ABS	BV	CCS	DNV	KR	LR	NK	RINA	RS	CWB	CE
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Ni
100% CO2	0.04	0.35	1.35	0.010	0.010	1.50

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
100% CO2	540(78)	620(90)	28	-30 (-20) -60 (-75)	110(81) 60(44)

Diameter / Welding Parameters / Packaging

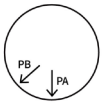
Wire Diameter mm(in)	Current (A)	Packaging
1.2 (0.045)	110~280	Spool 5kg (11lbs), 12.5kg (28lbs), 15kg (33lbs), 20kg (44lbs) Drum 100kg (221lbs), 200kg (441lbs), 250kg (551lbs)
1.4 (0.052)	110~280	
1.6 (1/16)	120~300	

SC-80K2

Classification

AWS AWS A5.29 / ASME SFA-5.29 E80T1-K2C
JIS Z 3313 T55 6 T1-0 C A-N3
EN ISO 17632-A-T 46 6 1.5Ni R C1 3 H5
KS D 7104 YFL- C506R

Welding Positions



Features

- High speed single or twin tandem welding
- Low hydrogen level (H4)
- Low temperature service

Polarity

DC+

Application Areas

- Shipbuilding
- LPG and LNG storage tank
- Offshore structure

Shielding Gas

100% CO2

Approvals

ABS	BV	CCS	DNV	KR	LR	NK	RS
✓	✓	✓	✓	✓	✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Ni
100% CO2	0.06	0.48	1.48	0.011	0.008	1.50

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
100% CO2	580(84)	640(93)	26	-40(-40) -60(-75)	103(76) 65(48)

Diameter / Welding Parameters / Packaging

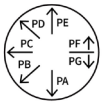
Wire Diameter mm(in)	Current (A)	Packaging
1.2 (0.045)	200~350	Spool 5kg (11lbs), 12.5kg (28lbs), 15kg (33lbs), 20kg (44lbs) Drum 100kg (221lbs), 200kg (441lbs), 250kg (551lbs)
1.4 (0.052)	300~380	

SC-81LT

Classification

AWS AWS A5.29 / ASME SFA-5.29 E81T1-K2C
JIS Z 3313 T55 6 T1-1 C A-N3
EN ISO 17632-A-T46 6 1.5Ni P C1 1 H5

Welding Positions



Features

- Designed for welding with 100%CO2 shielding gas
- Good impact value at low temperature

Polarity

DC+

Application Areas

- Shipbuilding
- Offshore structure

Shielding Gas

100% CO2

Approvals

ABS	BV	DNV	KR	LR	NK	RS	CE
✓	✓	✓	✓	✓	✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Ni
100% CO2	0.04	0.26	1.10	0.010	0.010	1.50

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
100% CO2	520(75)	610(88)	28	-30 (-20) -60 (-75)	130(96) 85(63)

Diameter / Welding Parameters / Packaging

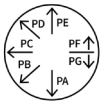
Wire Diameter mm(in)	Current (A)	Packaging
1.2 (0.045)	110~280	Spool 5kg (11lbs), 12.5kg (28lbs), 15kg (33lbs), 20kg (44lbs) Drum 100kg (221lbs), 200kg (441lbs), 250kg (551lbs)
1.4 (0.052)	110~280	

SC-81SR

Classification

AWS AWS A5.29 / ASME SFA-5.29 E81T1-K2C
JIS Z 3313 T55 6 T1-1 C A-N3-U
EN ISO 17632-A T46 6 1.5Ni P C1 1 H5

Welding Positions



Features

- Designed for welding with 100%CO2 shielding gas
- Good impact value at low temperature (As Welded and PHWT)

Polarity

DC+

Application Areas

- Shipbuilding
- Offshore structure
- Pressure vessel

Shielding Gas

100% CO2

Approvals

ABS	DNV	LR
✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Ni
100% CO2	0.05	0.28	1.20	0.010	0.010	1.50

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Condition	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
100% CO2	As Welded	580(84)	620(90)	28	-30 (-20) -60 (-75)	125(92) 90(66)
100% CO2	PWHT 620°C×2hr	560(81)	600(87)	32	-30 (-20) -60 (-75)	90(66) 70(52)

Diameter / Welding Parameters / Packaging

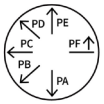
Wire Diameter mm(in)	Current (A)	Packaging
1.2 (0.045)	110~280	Spool 5kg (11lbs), 12.5kg (28lbs), 15kg (33lbs), 20kg (44lbs) Drum 100kg (221lbs), 200kg (441lbs), 250kg (551lbs)

Supercored 81-K2MAG

Classification

AWS AWS A5.29 / ASME SFA-5.29 E81T1-K2M
JIS Z 3313 T55 6 T1-1 M A-N3
EN ISO 17632-A T50 6 1.5Ni P M21 2 H5

Welding Positions



Features

- Designed for welding with Ar+20~25%CO2 shielding gas
- Good impact value at low temperature

Polarity

DC+

Application Areas

- Shipbuilding
- Offshore structure

Shielding Gas

Ar+20~25% CO2

Approvals

ABS	BV	DNV	LR	RS	CE	DB	TUV
✓	✓	✓	✓	✓	✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Ni
Ar+20~25% CO2	0.03	0.35	1.25	0.012	0.010	1.55

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
Ar+20~25% CO2	590(86)	610(88)	27	-30 (-20) -60 (-75)	110(81) 70(52)

Diameter / Welding Parameters / Packaging

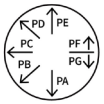
Wire Diameter mm(in)	Current (A)	Packaging
1.2 (0.045)	110~280	Spool 5kg (11lbs), 12.5kg (28lbs), 15kg (33lbs), 20kg (44lbs) Drum 100kg (221lbs), 200kg (441lbs), 250kg (551lbs)
1.4 (0.052)	110~280	

SC-460

Classification

AWS AWS A5.29 / ASME SFA-5.29 E81T1-K2C
JIS Z 3313 T55 6 T1-1 C A-N3
EN ISO 17632-A T46 6 1.5Ni P C1 1 H5
KS D7104 YFL-C506R

Welding Positions



Features

- Designed for welding with 100%CO2 shielding gas
- Good impact value at low temperature service steel
- High tensile steel (EH47 Grade)

Polarity

DC +

Application Areas

- Shipbuilding
- Offshore structure

Shielding Gas

100% CO2

Approvals

ABS	BV	DNV	KR	LR	NK
✓	✓	✓	✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Ni
100% CO2	0.06	0.35	1.20	0.010	0.010	1.50

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
100% CO2	580(84)	630(91)	26	-30 (-20) -60 (-75)	125(92) 60(44)

Diameter / Welding Parameters / Packaging

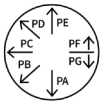
Wire Diameter mm(in)	Current (A)	Packaging
1.2 (0.045)	110~280	Spool 5kg (11lbs), 12.5kg (28lbs), 15kg (33lbs), 20kg (44lbs) Drum 100kg (221lbs), 200kg (441lbs), 250kg (551lbs)
1.4 (0.052)	110~280	

SC-71Ni2

Classification

AWS AWS A5.29 / ASME SFA-5.29 E71T1-GC
JIS Z 3313 T49 6 T1-1 C A-N5 H5
EN ISO 17632-A T42 6 2Ni P C1 1

Welding Positions



Features

- Designed for welding with 100%CO2 shielding gas
- Good impact value at low temperature

Polarity

DC+

Application Areas

- Shipbuilding
- Offshore structure

Shielding Gas

100% CO2

Approvals

ABS	BV	DNV	KR	LR	NK
✓	✓	✓	✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Ni
100% CO2	0.04	0.23	1.11	0.010	0.010	2.20

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
100% CO2	535(76)	595(86)	27	-60(-75)	80(59)

Diameter / Welding Parameters / Packaging

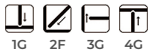
Wire Diameter mm(in)	Current (A)	Packaging
1.2 (0.045)	110~280	Spool 5kg (11lbs), 12.5kg (28lbs), 15kg (33lbs), 20kg (44lbs) Drum 100kg (221lbs), 200kg (441lbs), 250kg (551lbs)
1.4 (0.052)	110~280	

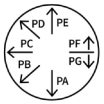
SC-71Ni2SR

Classification

AWS AWS A5.29 / ASME SFA-5.29 E71T1-GC
JIS Z 3313 T49 6 T1-1 C A-N5
EN ISO 17632-A T42 6 2Ni P C1 1 H5

Welding Positions





Features

- Designed for welding with 100%CO2 shielding gas
- Good impact value at low temperature (As Welded and PWHT)

Polarity

DC+

Application Areas

- Shipbuilding
- Offshore structure

Shielding Gas

100% CO2

Approvals

ABS	BV	DNV	KR	LR	NK
✓	✓	✓	✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Ni
100% CO2	0.04	0.28	0.90	0.010	0.010	2.10

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Condition	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
100% CO2	As-Welded	530(77)	570(83)	30	-60(-75)	110(81)
100% CO2	PWHT 550°C×2hr	510(74)	550(80)	32	-60(-75)	102(75)

Diameter / Welding Parameters / Packaging

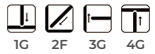
Wire Diameter mm(in)	Current (A)	Packaging
1.2 (0.045)	110~280	Spool 5kg (11lbs), 12.5kg (28lbs), 15kg (33lbs), 20kg (44lbs) Drum 100kg (221lbs), 200kg (441lbs), 250kg (551lbs)
1.4 (0.052)	110~280	

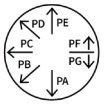
SC-81Ni2

Classification

AWS AWS A5.29 / ASME SFA-5.29 E81T1-Ni2C
JIS Z 3313 T55 6 T1-1 C A-N5 H5
EN ISO 17632-A T46 6 2Ni P C1 1 H5

Welding Positions





Features

- Designed for welding with 100%CO2 shielding gas
- Good impact value at low temperature

Polarity

DC +

Application Areas

- Shipbuilding
- Offshore structure

Shielding Gas

100% CO2

Approvals

ABS	BV	DNV	KR	LR	NK	CWB	CE
✓	✓	✓	✓	✓	✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Ni
100% CO2	0.05	0.27	1.35	0.010	0.010	2.20

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
100% CO2	590 (86)	630 (91)	25	-40 (-40) -60 (-75)	100 (74) 80 (59)

Diameter / Welding Parameters / Packaging

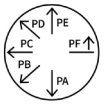
Wire Diameter mm(in)	Current (A)	Packaging
1.2 (0.045)	110~280	Spool 5kg (11lbs), 12.5kg (28lbs), 15kg (33lbs), 20kg (44lbs) Drum 100kg (221lbs), 200kg (441lbs), 250kg (551lbs)

SC-81Ni2M

Classification

AWS AWS A5.29 / ASME SFA-5.29 E81T1-Ni2M
JIS Z 3313 T55 6 T1-1 M A-N5 H5
EN ISO 17632-A T46 6 2Ni P M21 2 H5

Welding Positions



Features

- Designed for welding with Ar+20~25%CO2 shielding gas
- Good impact value at low temperature

Polarity

DC+

Application Areas

- Shipbuilding
- Offshore structure

Shielding Gas

Ar+20~25% CO2

Approvals

BV	DNV	LR	CWB
✓	✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Ni
Ar+20~25% CO2	0.05	0.24	1.15	0.010	0.010	2.25

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
Ar+20~25% CO2	580(84)	620(90)	25	-40(-40) -60(-75)	120(89) 90(66)

Diameter / Welding Parameters / Packaging

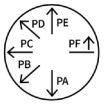
Wire Diameter mm(in)	Current (A)	Packaging
1.2 (0.045)	110~280	Spool 5kg (11lbs), 12.5kg (28lbs), 15kg (33lbs), 20kg (44lbs) Drum 100kg (221lbs), 200kg (441lbs), 250kg (551lbs)

SC-91LT

Classification

AWS AWS A5.29 / ASME SFA-5.29 E91T1-Ni2C-J
EN ISO 17632-A T50 6 Z P C1 2 H5

Welding Positions



Features

- Designed for welding with 100%CO2 shielding gas
- Good impact value at low temperature

Polarity

DC +

Application Areas

- Shipbuilding
- Offshore structure

Shielding Gas

100% CO2

Approvals

ABS	DNV	LR	RS	CWB
✓	✓	✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Ni
100% CO2	0.04	0.25	1.25	0.010	0.010	2.30

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
100% CO2	644 (93)	676 (98)	23	-40 (-40) -60 (-75)	95 (70) 80 (59)

Diameter / Welding Parameters / Packaging

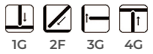
Wire Diameter mm(in)	Current (A)	Packaging
1.2 (0.045)	110~280	Spool 5kg (11lbs), 12.5kg (28lbs), 15kg (33lbs), 20kg (44lbs) Drum 100kg (221lbs), 200kg (441lbs), 250kg (551lbs)

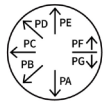
SL-81MAG

Classification

AWS AWS A5.29 E81T1-Ni1M-J
EN ISO 17632-A T50 6 1Ni P M21 1 H5

Welding Positions





Features

- Designed for welding with Ar+20~25%CO2 shielding gas
- Prevents the weld from hydrogen induced cracking or cold cracking

Polarity

DC +

Application Areas

- Shipbuilding
- Steel construction
- Offshore

Shielding Gas

Ar+20~25% CO2

Approvals

DNV
✓

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Ni
Ar+20~25% CO2	0.03	0.40	1.26	0.017	0.002	0.86

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
Ar+20~25% CO2	586(84)	634(91)	25	-40(-40) -60(-76)	112(83) 92(68)

Diameter / Welding Parameters / Packaging

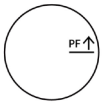
Wire Diameter mm(in)	Current (A)	Packaging
1.2 (0.045)	120~300	Spool 5kg(11lbs), 12.5(27.6lbs), 15kg(33lbs)
1.4 (0.052)	150~350	
1.6 (1/16)	150~360	

SC-EG3

Classification

AWS AWS A5.26/ ASME SFA-5.26 EG82T-NM2
EN ISO 17632-A T46 4 ZMn1.5NiMo M C1 2 H5

Welding Positions



Features

- Electro gas arc welding process
- High deposition(vertical up butt welding)
- Low temperature service

Polarity

DC+

Application Areas

- Shipbuilding
- LPG and LNG storage tank

Shielding Gas

100% CO2

Approvals

ABS	BV	CCS	DNV	KR	LR	NK	RS	CE
✓	✓	✓	✓	✓	✓	✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V
100% CO2	0.07	0.26	1.7	0.010	0.010	0.01	1.5	0.03	0.17	0.02

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
100% CO2	570 (83)	650 (94)	23.8	-60 (-75)	78 (58)

Diameter / Welding Parameters / Packaging

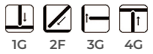
Wire Diameter mm(in)	Current (A)
1.6 (1/16)	330~380

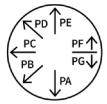
SF-70W

Classification

JIS Z 3320 T49 2 T1-1 C A-NCC1 H10
EN ISO 17632-B
T49 2 T1-1 C1 A-NCC

Welding Positions





Features

- Designed for welding with 100% CO2 shielding gas
- All position welding of bridges, building using atmospheric corrosion resisting steels

Polarity

DC +

Application Areas

- Structural fabrication

Shielding Gas

100% CO2

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Cu	Ni	Cr
100% CO2	0.04	0.45	1.09	0.011	0.011	0.4	0.35	0.52

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
100% CO2	518 (75)	580 (84)	28	0 (32) -20 (0)	66 (49) 46 (34)

Diameter / Welding Parameters / Packaging

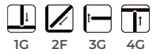
Wire Diameter mm(in)	Current (A)	Packaging
1.2 (0.045)	110~280	Spool 5kg (11lbs), 12.5kg (28lbs), 15kg (33lbs), 20kg (44lbs) Drum 100kg (221lbs), 200kg (441lbs), 250kg (551lbs)
1.4 (0.052)	110~280	
1.6 (1/16)	120~300	

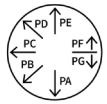
SF-80W

Classification

AWS AWS A5.29 / ASME SFA-5.29 E81T1-W2C
JIS Z 3320 T55 3 T1-1 C A-NCC1 H10
EN ISO 17632-B
T55 3 T1-1 C1 A-NCC1

Welding Positions





Features

- Designed for welding with 100% CO2 shielding gas
- All position welding of bridges, building using atmospheric corrosion resisting steels

Polarity

DC +

Application Areas

- Structural fabrication

Shielding Gas

100% CO2

Approvals

CE
✓

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Cu	Ni	Cr
100% CO2	0.04	0.40	0.92	0.011	0.011	0.4	0.50	0.52

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
100% CO2	540 (75)	615 (84)	28	-20 (0) -30 (-20)	66 (49) 46 (34)

Diameter / Welding Parameters / Packaging

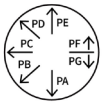
Wire Diameter mm(in)	Current (A)	Packaging
1.2 (0.045)	110~280	Spool 5kg (11lbs), 12.5kg (28lbs), 15kg (33lbs), 20kg (44lbs) Drum 100kg (221lbs), 200kg (441lbs), 250kg (551lbs)
1.4 (0.052)	110~280	
1.6 (1/16)	120~300	

SC-81WM

Classification

AWS AWS A5.29 / ASME SFA-5.29 E81T1-W2M
EN ISO 17632-A T50 3 ZCrNiCu P M21 1 H5

Welding Positions



Features

- Designed for welding with Ar+20~25%CO2 shielding gas
- Slag covering is uniform and easy to remove.
- Corrosion resistance of weathering steels

Polarity

DC +

Application Areas

- Structural fabrication

Shielding Gas

Ar+20~25% CO2

Approvals

CE
✓

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Cu	Ni	Cr
Ar+ 20~25% CO2	0.04	0.38	1.04	0.005	0.004	0.4	0.55	0.54

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
Ar+20~25%CO2	620 (90)	671 (97)	24.9	-30 (-20)	60 (44)

Diameter / Welding Parameters / Packaging

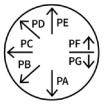
Wire Diameter mm(in)	Current (A)	Packaging
1.2 (0.045)	110~280	Spool 5kg (11lbs), 12.5kg (28lbs), 15kg (33lbs), 20kg (44lbs) Drum 100kg (221lbs), 200kg (441lbs), 250kg (551lbs)

SC-81A1

Classification

AWS AWS A5.29 / ASME SFA-5.29 E81T1-A1C
JIS Z 3318 T55T1-1C-2M3
EN ISO 17634-B T55 T1-1 C1-2M3

Welding Positions



Features

- Designed for welding with 100%CO2 shielding gas
- 0.5%Mo type heat resistant steel steel
- Stable arc and low spatter level

Polarity

DC +

Application Areas

- Petrochemical industry
- Pressure vessel

Shielding Gas

100% CO2

Approvals

CE
✓

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Mo
100% CO2	0.06	0.44	0.83	0.016	0.012	0.51

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Condition	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)
100% CO2	PWHT 620±15°C x 1hr	571 (83)	628 (91)	24

Diameter / Welding Parameters / Packaging

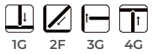
Wire Diameter mm(in)	Current (A)	Packaging
1.2 (0.045)	110~280	Spool 5kg (11lbs), 12.5kg (28lbs), 15kg (33lbs), 20kg (44lbs) Drum 100kg (221lbs), 200kg (441lbs), 250kg (551lbs)
1.4 (0.052)	110~280	

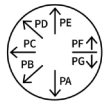
SC-81B2

Classification

AWS AWS A5.29 / ASME SFA-5.29 E81T1-B2C
EN ISO 17634-B T55 T1-1C1-1CM

Welding Positions





Features

- Designed for welding with 100%CO2 shielding gas
- 1.25%Cr-0.5%Mo type heat resistant steel steel
- Stable arc and low spatter level

Polarity

DC+

Application Areas

- Petrochemical industry
- Pressure vessel

Shielding Gas

100% CO2

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Cr	Mo
100% CO2	0.06	0.40	0.83	0.015	0.009	1.20	0.50

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Condition	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)
100% CO2	PWHT 690±15°C x 1hr	575(83)	655(95)	22

Diameter / Welding Parameters / Packaging

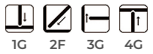
Wire Diameter mm(in)	Current (A)	Packaging
1.2 (0.045)	120~300	Spool 5kg(11lbs), 12.5(27.6lbs), 15kg(33lbs)
1.4 (0.052)	200~350	
1.6 (1/16)	200~400	

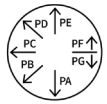
SC-91B3

Classification

AWS AWS A5.29 / ASME SFA-5.29 E91T1-B3C
EN ISO 17634-B T62 T1-1C1-2C1M

Welding Positions





Features

- Designed for welding with 100%CO2 shielding gas
- 2.25%Cr-1.0%Mo type heat resistant steel steel
- Stable arc and low spatter level

Polarity

DC+

Application Areas

- Petrochemical industry
- Pressure vessel

Shielding Gas

100% CO2

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Cr	Mo
100% CO2	0.06	0.47	0.63	0.015	0.009	2.30	0.98

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Condition	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)
100% CO2	PWHT 690±15°C x 1hr	640(93)	728(106)	20

Diameter / Welding Parameters / Packaging

Wire Diameter mm(in)	Current (A)	Packaging
1.2 (0.045)	120~300	Spool 5kg(11lbs), 12.5(27.6lbs), 15kg(33lbs)
1.4 (0.052)	200~350	
1.6 (1/16)	200~400	

Supershield 4

Classification

AWS AWS A5.20/ ASME SFA-5.20 E70T-4

Welding Positions

Features

- Self-shielded flux cored wire for flat and horizontal welding
- High deposition rate

Polarity

DC+

Application Areas

- Structural fabrication
- Steel industry
- Heavy equipment & Machinery

Shielding Gas

None

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Al
None	0.22	0.39	0.40	0.010	0.010	1.3

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)
None	458 (66)	582 (84)	25

Diameter / Welding Parameters / Packaging

Wire Diameter mm(in)	Current (A)	Packaging
2.0 (5/64)	260~350	Spool 5kg(11lbs), 12.5(27.6lbs), 15kg(33lbs)
2.4 (3/32)	300~450	

Supershield 7

Classification

AWS AWS A5.20/ ASME SFA-5.20 E70T-7

Welding Positions

Features

- Self-shielded flux cored wire for flat and horizontal welding
- High deposition rate

Polarity

DC-

Application Areas

- Structural fabrication
- Steel industry
- Heavy equipment & Machinery

Shielding Gas

None

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Al
None	0.21	0.32	0.23	0.010	0.010	1.2

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)
None	504 (73)	590 (86)	26

Diameter / Welding Parameters / Packaging

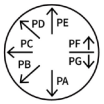
Wire Diameter mm(in)	Current (A)	Packaging
2.0 (5/64)	200~400	Bucket 25kg (57lbs)
2.4 (3/32)	250~450	

Supershield 11

Classification

AWS AWS A5.20/ ASME SFA-5.20 E71T-11
JIS Z 3313 T49 T14-1 N A
EN ISO 17632-A T42 Z Z NO 1

Welding Positions



Features

- Self-shielded flux cored wire for all position welding
- Single & multi-pass welding of thin plate

Polarity

DC-

Application Areas

- Light fabrication
- Short weld assembly
- Machinery

Shielding Gas

None

Approvals

CE
✓

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Al
None	0.18	0.36	0.53	0.010	0.010	1.6

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)
None	503 (73)	574 (83)	21

Diameter / Welding Parameters / Packaging

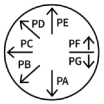
Wire Diameter mm(in)	Current (A)	Packaging
1.0 (0.040)	160~200	Coil 25kg (55lbs)
1.2 (0.045)	160~220	
1.6 (1/16)	200~280	

Supershield 71GS

Classification

AWS AWS A5.20/ ASME SFA-5.20 E71T-GS
JIS Z 3313 T49 T14-1 N S
EN ISO 17632-A T42 Z Z V NO 1

Welding Positions



Features

- Self-shielded flux cored wire for all position welding
- Single pass welding of thin plate

Polarity

DC-

Application Areas

- Light fabrication
- Short weld assembly
- Machinery

Shielding Gas

None

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Al
None	0.25	0.38	0.89	0.010	0.010	2.0

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Condition	Tensile Strength MPa(ksi)
None	Transverse Tensile Strength (AWS A5.20, Test for Single-Pass Electrode)	582 (84)

Diameter / Welding Parameters / Packaging

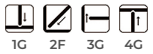
Wire Diameter mm(in)	Current (A)	Packaging
1.2 (0.045)	160~220	Spool 5kg(11lbs), 15kg(33lbs) Coil 25kg (55lbs)

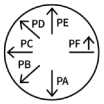
Supershield 71-T8

Classification

AWS AWS A5.20/ ASME SFA-5.20 E71T-8
EN ISO 17632-A T42 3 Y NO 2 H10

Welding Positions





Features

- Self-shielded flux cored wire for all position welding
- Good impact value at low temperature
- Meets AWS D1.8 seismic requirements

Polarity

DC-

Application Areas

- Structural fabrication
- Steel industry
- AWS D1.8 Seismic requirements

Shielding Gas

None

Approvals

CWB	CE
✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Al
None	0.16	0.17	0.65	0.010	0.010	0.5

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
None	452 (66)	571 (83)	31	-30 (-20)	54 (40)

Diameter / Welding Parameters / Packaging

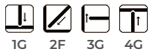
Wire Diameter mm(in)	Current (A)	Packaging
1.6 (1/16)	200~260	Spool 12.5kg (28lbs) Coil 25kg (55lbs)
1.8 (0.072)	230~290	
2.0 (5/64)	240~300	

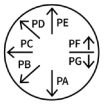
Supershield 71-K6

Classification

AWS AWS A5.29/ ASME SFA-5.29 E71T8-K6-J
EN ISO 17632-A T42 4 1Ni Y NO 1 H5

Welding Positions





Features

- Self-shielded flux cored wire for all position welding
- Good impact value at low temperature

Polarity

DC-

Application Areas

- Offshore construction
- Shipbuilding
- PIPE TKY Joints

Shielding Gas

None

Approvals

ABS
✓

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Ni	Cr	Mo	Al	V
None	0.06	0.12	1.25	0.009	0.001	0.85	0.17	0.01	0.9	0.01

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
None	455 (66)	560 (81)	28	-40 (-40)	108 (80)

Diameter / Welding Parameters / Packaging

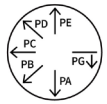
Wire Diameter mm(in)	Current (A)	Packaging
2.0 (5/64)	200~280	Spool 12.5kg (28lbs) Coil 25kg (55lbs)

Pipecored 71

Classification

AWS AWS A5.29/ ASME SFA-5.29 E71T8-K6
EN ISO 17632-A T42 6 1Ni Y NO 5

Welding Positions



Features

- Self-shielded flux cored wire for vertical down welding of pipeline
- Good impact value at low temperature

Polarity

DC-

Application Areas

- Oil & gas, water pipeline constructions

Shielding Gas

None

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Ni	Cr	Mo	Al	V
None	0.04	0.11	1.32	0.010	0.002	0.87	0.02	0.01	0.9	0.01

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
None	445 (65)	545 (79)	29	-30 (-20) -60 (-75)	105 (77) 60 (44)

Diameter / Welding Parameters / Packaging

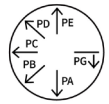
Wire Diameter mm(in)	Current (A)	Packaging
1.6 (1/16)	180~230	Spool 15kg (33lbs), 20kg (44lbs)
2.0 (5/64)	200~280	

Pipecored 81

Classification

AWS AWS A5.29/ ASME SFA-5.29 E81T8-Ni2-J
EN ISO 17632-A T46 5 2Ni Y NO 5

Welding Positions



Features

- Self-shielded flux cored wire for vertical down welding of pipeline
- Good impact value at low temperature

Polarity

DC -

Application Areas

- Oil & gas pipeline constructions

Shielding Gas

None

Approvals

CWB	CE
✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Ni	Al
None	0.04	0.12	1.35	0.008	0.002	1.98	0.9

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
None	520 (75)	595 (86)	29	-40 (-40) -50 (-60)	95 (70) 65 (48)

Diameter / Welding Parameters / Packaging

Wire Diameter mm(in)	Current (A)	Packaging
2.0 (5/64)	200~280	Spool 12.5kg (28lbs), 15kg (33lbs) Coil 25kg (55lbs), Bucket 19.5kg(6.5kg Basket)

Supershield EG-72T

Classification

AWS AWS A5.26/ ASME SFA-5.26 EG72T-1

Welding Positions

Features

- Self-shielded flux cored wire for electrogas welding process(EGW)
- Highly efficient welding (Vertical-up, V-groove joint single pass welding)

Polarity

DC+

Application Areas

- Storage tank fabrication

Shielding Gas

None

Approvals

CE
✓

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V
None	0.04	0.35	1.4	0.010	0.010	0.02	0.02	0.03	0.18	0.01

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
None	453 (66)	574 (83)	26	-30 (-20)	41 (30)

Diameter / Welding Parameters / Packaging

Wire Diameter mm(in)	Current (A)	Packaging
2.4 (2/32)	380~550	Spool 12.5kg (28lbs), 15kg (33lbs) Coil 25kg (55lbs), Bucket 19.5kg(6.5kg Basket)

Supershield EG-82T

Classification

AWS AWS A5.26/ ASME SFA-5.26 EG82T-G

Welding Positions

Features

- Self-shielded flux cored wire for electrogas welding process(EGW)
- Highly efficient welding (Vertical-up, V-groove joint single pass welding)

Polarity

DC+

Application Areas

- Storage tank fabrication

Shielding Gas

None

Approvals

CE
✓

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V
None	0.04	0.35	1.5	0.010	0.010	0.02	1.05	0.03	0.32	0.01

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
None	505 (73)	637 (92)	27	-30 (-20)	43 (30)

Diameter / Welding Parameters / Packaging

Wire Diameter mm(in)	Current (A)
2.4 (2/32)	380~550

Supershield 308L

Classification

AWS AWS A5.22/ ASME SFA-5.22 E308LT0-3
EN ISO 17633-A T19 9 L U NO 3

Welding Positions

Features

- Self-shielded flux cored wire for flat and horizontal welding
- Designed for welding of 18%Cr-8%Ni stainless steel.

Polarity

DC+

Application Areas

- Light fabrication
- Short weld assembly

Shielding Gas

None

Approvals

CE
✓

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Cu	Ni	Cr	Mo
None	0.02	0.6	1.0	0.020	0.010	0.01	10.3	19.9	0.04

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
None	463 (67)	630 (91)	40	-20 (0)	42 (31)

Diameter / Welding Parameters / Packaging

Wire Diameter mm(in)	Current (A)	Packaging
1.2 (0.045)	120~200	Spool 5kg(11lbs), 12.5(27.6lbs), 15kg(33lbs)

SW-308L Cored

Classification

AWS AWS A5.22/ ASME SFA-5.22 E308LT1-1/-4
JIS Z 3323 TS308L-FB1
EN ISO 17633-A-T 19 9 L P M21/C1 2

Welding Positions

Features

- Good porosity resistance
- Good performance in all positions

Polarity

DC+

Application Areas

- 18%Cr-8%Ni stainless steel

Shielding Gas

100% CO2
Ar+20~25% CO2

Approvals

ABS	BV	DNV	KR	LR	NK	RS	CWB	CE	DB	TUV
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Cu	Ni	Cr	Mo
100% CO2	0.02	0.8	1.5	0.015	0.010	0.09	10.7	18.4	0.02
Ar+20~25% CO2	0.02	0.8	1.5	0.015	0.010	0.08	9.7	18.4	0.02

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
100% CO2	567(82)	48	-20(0) -60(-75)	68(50) 53(39)
Ar+20~25% CO2	573(83)	48	-20(0) -60(-75)	69(51) 54(40)

Diameter / Welding Parameters / Packaging

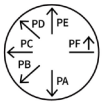
Wire Diameter mm(in)	Current (A)	Packaging
1.2 (0.045)	160~220	Spool 5kg(11lbs), 12.5(27.6lbs), 15kg(33lbs)
1.6 (1/16)	250~290	

SW-308LT

Classification

AWS AWS A5.22/ ASME SFA-5.22 E308LT1-1/-4
JIS Z 3323 TS308L-FB1
EN ISO 17633-A-T 19 9 L P M21/C1 2

Welding Positions



Features

- Good impact value at cryogenic temperatures
- Good performance in all positions

Polarity

DC+

Application Areas

- 18%Cr-8%Ni stainless steel
- Cryogenic service such as LNG storage tank

Shielding Gas

100% CO2
Ar+20~25% CO2

Approvals

ABS
✓

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Cu	Ni	Cr	Mo
100% CO2	0.02	0.8	1.5	0.015	0.010	0.09	10.7	18.4	0.02
Ar+20~25% CO2	0.02	0.8	1.5	0.015	0.010	0.08	9.7	18.4	0.02

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
100% CO2	567(81)	48	-60(-75) -196(-320)	36(27) 34(25)
Ar+20~25% CO2	573(83)	48	-60(-75) -196(-320)	38(28) 36(26)

Diameter / Welding Parameters / Packaging

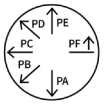
Wire Diameter mm(in)	Current (A)	Packaging
1.2 (0.045)	140~210	Spool 5kg(11lbs), 12.5(27.6lbs), 15kg(33lbs)

SW-309L Cored

Classification

AWS AWS A5.22/ ASME SFA-5.22 E309LT1-1/-4
JIS Z 3323 TS309L-FB1
EN ISO 17633-A-T 23 12 L P M21/C1 2

Welding Positions



Features

- Good performance in all positions

Polarity

DC+

Application Areas

- 23.5%Cr-13%Ni stainless steel
- Dissimilar welds between carbon, low alloy steels to stainless steels
- Buffer layer welding for cladding, overlays

Shielding Gas

100% CO2
Ar+20~25% CO2

Approvals

ABS	BV	CCS	CRS	DNV	KR	LR	NK	RINA	RS	CWB	CE	DB	TUV
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Cu	Ni	Cr	Mo
100% CO2	0.03	0.7	1.3	0.021	0.006	0.13	12.9	23.4	0.13
Ar+20~25% CO2	0.03	0.8	1.4	0.021	0.006	0.12	12.8	23.5	0.13

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
100% CO2	540(78)	41	-20(0) -60(-75)	49(36) 46(34)
Ar+20~25% CO2	555(80)	37	-20(0) -60(-75)	46(34) 40(30)

Diameter / Welding Parameters / Packaging

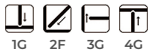
Wire Diameter mm(in)	Current (A)	Packaging
1.2 (0.045)	160~220	Spool 5kg(11lbs), 12.5(27.6lbs), 15kg(33lbs)
1.6 (1/16)	250~290	

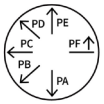
SW-309MoL Cored

Classification

AWS AWS A5.22/ ASME SFA-5.22 E309LMoT1-1/-4
JIS Z 3323 TS309LMo-FB1
EN ISO 17633-A-T 23 12 2 L P M21/C1 2

Welding Positions





Features

- Good performance in all positions

Polarity

DC+

Application Areas

- 22%Cr-12%Ni-2.5%Mo stainless steel
- Dissimilar welds between carbon, low alloy steels to stainless steels
- Buffer layer welding for cladding, overlays

Shielding Gas

100% CO2
Ar+20~25% CO2

Approvals

ABS	BV	CR	DNV	KR	LR	NK	RINA	RS	CWB	CE
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Cu	Ni	Cr	Mo
100% CO2	0.03	0.6	1.3	0.021	0.010	0.08	12.4	22.2	2.3
Ar+20% CO2	0.03	0.7	1.3	0.021	0.015	0.12	12.4	22.3	2.2

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Tensile Strength MPa(ksi)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
100% CO2	693(100)	-20(0) -60(-75)	47(35) 44(32)
Ar+20~25% CO2	661(96)	-20(0) -60(-75)	47(35) 44(32)

Diameter / Welding Parameters / Packaging

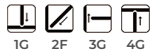
Wire Diameter mm(in)	Current (A)	Packaging
1.2 (0.045)	160~220	Spool 5kg(11lbs), 12.5(27.6lbs), 15kg(33lbs)
1.6 (1/16)	250~290	

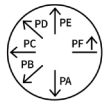
SW-316L Cored

Classification

AWS AWS A5.22/ ASME SFA-5.22 E316LT1-1/-4
JIS Z 3323 TS316L-FB1
EN ISO 17633-A-T 19 12 3 L P M21/C1 2

Welding Positions





Features

- Good performance in all positions

Polarity

DC +

Application Areas

- 18%Cr-12%Ni-2%Mo stainless steels

Shielding Gas

100% CO2
Ar+20~25% CO2

Approvals

ABS	BV	CCS	DNV	KR	LR	NK	RINA	RS	CWB	CE	DB	TUV
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Cu	Ni	Cr	Mo
100% CO2	0.02	0.9	1.3	0.013	0.008	0.03	11.8	17.5	2.6
Ar+20% CO2	0.02	0.9	1.4	0.013	0.008	0.03	11.7	17.5	2.6

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
100% CO2	550(80)	45	-20(0) -60(-75)	55(41) 45(33)
Ar+20~25% CO2	555(80)	42	-20(0) -60(-75)	55(41) 45(33)

Diameter / Welding Parameters / Packaging

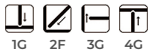
Wire Diameter mm(in)	Current (A)	Packaging
1.2 (0.045)	160~220	Spool 5kg(11lbs), 12.5(27.6lbs), 15kg(33lbs)
1.6 (1/16)	250~290	

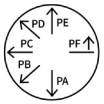
SW-316LT

Classification

AWS AWS A5.22/ ASME SFA-5.22 E316LT1-1/-4
JIS Z 3323 TS316L-FB1

Welding Positions





Features

- Good impact value at cryogenic temperature
- Good performance in all position

Polarity

DC +

Application Areas

- Cryogenic service such as LNG storage tank
- 18%Cr-12%Ni-2%Mo stainless steels

Shielding Gas

100% CO2
Ar+20~25% CO2

Approvals

ABS
✓

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Cu	Ni	Cr	Mo
100% CO2	0.02	0.8	1.5	0.015	0.009	0.02	12.2	17.2	2.2
Ar+20% CO2	0.02	0.8	1.5	0.015	0.009	0.02	12.2	17.2	2.2

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
100% CO2	535(78)	47	-196(-320)	32(24)
Ar+20~25% CO2	542(79)	46	-196(-320)	33(24)

Diameter / Welding Parameters / Packaging

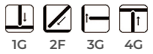
Wire Diameter mm(in)	Current (A)	Packaging
1.2 (0.045)	160~220	Spool 5kg(11lbs), 12.5(27.6lbs), 15kg(33lbs)
1.6 (1/16)	250~290	

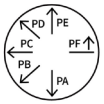
SW-308HBF Cored

Classification

AWS AWS A5.22/ ASME SFA-5.22 E308HT1-1/-4
JIS Z 3323 TS308H-BiF-FB1
EN ISO 17633-B T 308H F M21/C1 2

Welding Positions





Features

- Designed for welding with 100% CO2 or Ar+15~25%CO2 shielding gas
- Excellent all position weldability
- Smooth and stable arc with a fast freezing slag

Polarity

DC+

Application Areas

- Welding of 18%Cr-8%Ni stainless steels for high temperature service

Shielding Gas

100% CO2

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Cu	Ni	Cr	Mo	Bi
100% CO2	0.05	0.6	1.0	0.014	0.009	0.01	10.2	18.5	0.01	≤ 10ppm
Ar+20% CO2	0.05	0.6	1.0	0.019	0.008	0.01	10.2	19.1	0.01	≤ 10ppm

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
100% CO2	580 (84)	41	-20 (0) -60 (-75)	59 (44) 52 (38)
Ar + 20% CO2	585 (85)	42	-20 (0) -60 (-75)	62 (46) 53 (39)

Diameter / Welding Parameters / Packaging

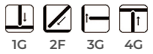
Wire Diameter mm(in)	Current (A)	Packaging
1.2 (0.045)	140~180	Spool 5kg(11lbs), 12.5(27.6lbs), 15kg(33lbs)

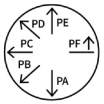
SW-309HBF

Classification

AWS AWS A5.22/ ASME SFA-5.22 E309(H)T1-1/4
JIS Z 3323 TS309H-BiF-FB1
EN 17633-B T 309H F M21/C1 2

Welding Positions





Features

- Designed for welding with 100% CO2 or Ar+-15~25% CO2 shielding gas
- Excellent all position weldability
- Smooth and stable arc with a fast freezing slag

Polarity

DC +

Application Areas

- Welding of dissimilar metals such as stainless steel and carbon steel or stainless steel and low alloy

Shielding Gas

100% CO2
Ar+20~25% CO2

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Cu	Ni	Cr	Mo	Bi
100% CO2	0.06	0.8	1.5	0.014	0.009	0.01	12.3	22.8	0.01	5ppm
Ar+20% CO2	0.06	0.8	1.5	0.015	0.008	0.01	12.2	22.7	0.01	5ppm

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
100% CO2	570 (83)	40	-20 (0) -60 (-75)	55 (41) 50 (37)
Ar+20% CO2	574 (83)	43	-20 (0) -60 (-75)	58 (43) 54 (40)

Diameter / Welding Parameters / Packaging

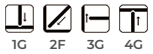
Wire Diameter mm(in)	Current (A)	Packaging
1.2 (0.045)	160~220	Spool 5kg(11lbs), 12.5(27.6lbs), 15kg(33lbs)
1.6 (1/16)	250~290	

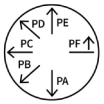
SW-316HBF

Classification

AWS AWS A5.22/ ASME SFA-5.22 E316(H)T1-1/4
JIS Z 3323 TS316H-BiF-FC1
EN ISO 17633-B T 316H F M21/C1 2

Welding Positions





Features

- Designed for welding with 100% CO2 or Ar+-15~25%CO2 shielding gas
- Excellent all position weldability
- Smooth and stable arc with a fast freezing slag

Polarity

DC +

Application Areas

- Welding of 18%Cr-12%Ni-2% Mo stainless steels for high temperature service.

Shielding Gas

100% CO2
Ar+20~25% CO2

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Cu	Ni	Cr	Mo
100% CO2	0.05	0.7	1.6	0.016	0.008	0.02	12.5	18.2	2.7
Ar+20% CO2	0.05	0.7	1.5	0.016	0.008	0.02	12.5	18.2	2.6

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
100% CO2	577 (83)	42	-20 (0) -60 (-75)	70 (52) 60 (44)
Ar+20% CO2	575 (84)	42	-20 (0) -60 (-75)	70 (52) 60 (44)

Diameter / Welding Parameters / Packaging

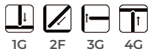
Wire Diameter mm(in)	Current (A)	Packaging
1.2 (0.045)	160~220	Spool 5kg(11lbs), 12.5(27.6lbs), 15kg(33lbs)
1.6 (1/16)	250~290	

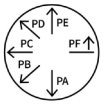
SW-317L Cored

Classification

AWS AWS A5.22/ ASME SFA-5.22 E317LT1-1/-4
JIS Z 3323 TS317L-FB1
EN ISO 17633-A-T 19 13 4 P M21/C1 2

Welding Positions





Features

- Good performance in all positions

Polarity

DC +

Application Areas

- 316, 317 type stainless steels

Shielding Gas

100% CO2
Ar+20~25% CO2

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Cu	Ni	Cr	Mo
100% CO2	0.03	0.6	1.5	0.022	0.007	0.07	12.4	18.7	3.2
Ar + 20% CO2	0.03	0.6	1.6	0.022	0.007	0.07	12.5	18.9	3.2

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft · lbs)
100% CO2	585(85)	36	-20(0)	36(27)
Ar+20~25% CO2	595(86)	35	-20(0)	35(26)

Diameter / Welding Parameters / Packaging

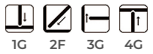
Wire Diameter mm(in)	Current (A)	Packaging
1.2 (0.045)	160~220	Spool 5kg(11lbs), 12.5(27.6lbs), 15kg(33lbs)
1.6 (1/16)	250~290	

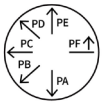
SW-347 Cored

Classification

AWS AWS A5.22/ ASME SFA-5.22 E347T1-1/-4
JIS Z 3323 TS347-FB1
EN ISO 17633-A-T 19 9 Nb P M21/C1 2

Welding Positions





Features

- Good performance in all positions

Polarity

DC +

Application Areas

- Stainless steel boilers and tubine
- 347 and 321 type stainless steels

Shielding Gas

100% CO2
Ar+20~25% CO2

Approvals

ABS
✓

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Ni	Cr	Mo	Nb
100% CO2	0.05	0.7	1.2	0.014	0.008	10.1	18.7	0.01	0.6
Ar + 20% CO2	0.05	0.7	1.2	0.014	0.008	10.1	18.8	0.01	0.6

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft · lbs)
100% CO2	640(93)	40	-20(0)	58(43)
Ar+20~25% CO2	648(94)	40	-20(0)	59(44)

Diameter / Welding Parameters / Packaging

Wire Diameter mm(in)	Current (A)	Packaging
1.2 (0.045)	160~220	Spool 5kg(11lbs), 12.5(27.6lbs), 15kg(33lbs)
1.6 (1/16)	250~290	

Supercored 308L

Classification

AWS AWS A5.22/ ASME SFA-5.22 E308LTO-1/-4
JIS Z 3323 TS308L-FB0
EN ISO 17633-A-T 19 9 L R M21/C1 3

Welding Positions

Features

- Flat and horizontal fillet position welding
- High deposition rate and efficiency

Polarity

DC +

Application Areas

- 18%Cr-8%Ni stainless steel

Shielding Gas

100% CO2
Ar+20~25% CO2

Approvals

CE	DB	TUV
✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Cu	Ni	Cr	Mo	Nb
100% CO2	0.03	0.4	1.3	0.021	0.006	0.11	9.7	19.6	0.10	0.04
Ar+20% CO2	0.03	0.4	1.4	0..021	0.006	0.11	9.6	20.0	0.10	0.04

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
100% CO2	563(82)	41	-60(-75)	39(28)
Ar+20~25% CO2	569(83)	41	-60(-75)	39(28.8)

Diameter / Welding Parameters / Packaging

Wire Diameter mm(in)	Current (A)	Packaging
0.9(0.035)	160~220	Spool 5kg(11lbs), 12.5(27.6lbs), 15kg(33lbs)
1.6(1/16)	250~290	

Supercored 309L

Classification

AWS AWS A5.22/ ASME SFA-5.22 E309LTO-1/-4
JIS Z 3323 TS309L-FB0
EN ISO 17633-A-T 23 12 L R M21/C1 3

Welding Positions

Features

- Flat and horizontal fillet position welding
- High deposition rate and efficiency

Polarity

DC +

Application Areas

- 23.5% Cr-13%Ni Stainless steels
'- Dissimilar welds between carbon, low alloy steels to stainless steels
'- Buffer layer welding for cladding, overlays

Shielding Gas

100% CO2
Ar+20~25% CO2

Approvals

ABS	BV	DNV	LR	CE	DB	TUV
✓	✓	✓	✓	✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Cu	Ni	Cr	Mo
100% CO2	0.03	0.5	1.6	0.020	0.01	0.11	12.5	23.3	0.12
Ar + 20% CO2	0.03	0.5	1.6	0.020	0.006	0.12	12.4	23.5	0.12

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
100% CO2	565(82)	34	-20(0)	42(31)
Ar+20~25% CO2	572(83)	34	-20(0)	35(26)

Diameter / Welding Parameters / Packaging

Wire Diameter mm(in)	Current (A)	Packaging
1.2(0.045)	160~220	Spool 5kg(11lbs), 12.5(27.6lbs), 15kg(33lbs)
1.6(1/16)	250~290	

Supercored 309MoL

Classification

AWS AWS A5.22/ ASME SFA-5.22 E309LMoT0-1/-4
JIS Z 3323 TS309LMo-FB0
EN ISO 17633-A-T 23 12 2 L R M21/C1 3

Welding Positions

Features

- Flat and horizontal fillet position welding
- High deposition rate and efficiency

Polarity

DC +

Application Areas

- 22%Cr-12%Ni-2.5%Mo stainless steels
- Dissimilar welds between carbon, low alloy steels to stainless steels
- Buffer layer welding for cladding, overlays

Shielding Gas

100% CO2
Ar+20~25% CO2

Approvals

BV	DNV	LR
✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Cu	Ni	Cr	Mo
100% CO2	0.03	0.6	1.4	0.02	0.007	0.11	12.6	22.6	2.5
Ar + 20% CO2	0.03	0.6	1.5	0.021	0.008	0.12	12.7	22.9	2.5

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
100% CO2	710 (103)	28	-20 (0)	34 (25)
Ar+20~25% CO2	711 (103)	31	-20 (0)	34 (25)

Diameter / Welding Parameters / Packaging

Wire Diameter mm(in)	Current (A)	Packaging
1.2 (0.045)	140~210	Spool 5kg(11lbs), 12.5(27.6lbs), 15kg(33lbs)
1.6 (1/16)	180~290	

Supercored 316L

Classification

AWS AWS A5.22/ ASME SFA-5.22 E316LT0-1/-4
JIS Z 3323 TS316L-FB0
EN ISO 17633-A-T 19 12 3 L R M21/C1 3

Welding Positions

Features

- Flat and horizontal fillet position welding
- High deposition rate and efficiency

Polarity

DC +

Application Areas

- 18%Cr-12%Ni-2%Mo stainless steels

Shielding Gas

100% CO2
Ar+20~25% CO2

Approvals

BV	DNV	LR	CE	DB	TUV
✓	✓	✓	✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Cu	Ni	Cr	Mo
100% CO2	0.02	0.5	1.3	0.018	0.007	0.03	12.4	18.8	2.6
Ar + 20% CO2	0.03	0.6	1.4	0.018	0.007	0.03	12.3	18.9	2.6

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
100% CO2	539 (78)	34	-20 (0)	49 (36)
Ar+20~25% CO2	537 (78)	42	-20 (0)	46 (34)

Diameter / Welding Parameters / Packaging

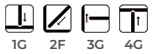
Wire Diameter mm(in)	Current (A)	Packaging
1.2 (0.045)	140~210	Spool 5kg(11lbs), 12.5(27.6lbs), 15kg(33lbs)
1.6 (1/16)	180~290	

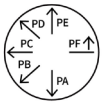
SW-410 Cored

Classification

AWS AWS A5.22/ ASME SFA-5.22 E410T1-1/-4
JIS Z 3323 TS410-FB1

Welding Positions





Features

- Weld metal of martensite stainless steel
- Good hardness and anti-abrasion properties

Polarity

DC +

Application Areas

- 410, 410S, 405 stainless steels
- Welding of ASTM CA6NM castings

Shielding Gas

100% CO2
Ar+20~25% CO2

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Cu	Ni	Cr	Mo
100% CO2	0.06	0.5	0.4	0.008	0.008	0.03	0.4	12.5	0.01
Ar + 20% CO2	0.07	0.5	0.5	0.006	0.010	0.03	0.4	12.5	0.01

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft · lbs)
100% CO2	600 (87)	22	0 (32)	14 (10)
Ar + 20% CO2	620 (90)	23	0 (32)	16 (11)

Diameter / Welding Parameters / Packaging

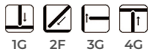
Wire Diameter mm(in)	Current (A)	Packaging
1.2 (0.045)	260~300	Spool 5kg(11lbs), 12.5(27.6lbs), 15kg(33lbs)
1.6 (1/16)	300~340	

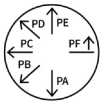
SW-410NiMo Cored

Classification

AWS AWS A5.22/ ASME SFA-5.22 E410NiMoT1-1/-4
JIS Z 3323 TS410NiMo-FB1
EN ISO 17633-A-T 13 4 P M21/C1 2

Welding Positions





Features

- Good performance in all positions

Polarity

DC +

Application Areas

- Martensite Stainless steels (ASTM, CA6NM)
- Hardfacing of continuos casting rolls, valve seat, etc
- Power plant

Shielding Gas

100% CO2
Ar+20~25% CO2

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Ni	Cr	Mo
100% CO2	0.03	0.4	0.5	0.011	0.010	4.3	12.2	0.51
Ar + 20% CO2	0.04	0.4	0.6	0.010	0.011	4.5	12.2	0.53

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Tensile Strength MPa(ksi)	Elongation (%)
100% CO2	890 (129)	20
Ar + 20% CO2	900 (132)	21

Diameter / Welding Parameters / Packaging

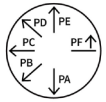
Wire Diameter mm(in)	Current (A)	Packaging
1.6(1/16)	160~220	Spool 5kg (11lbs), 12.5kg (28lbs), 15kg (33lbs), 20kg (44lbs) Drum 100kg (221lbs), 200kg (441lbs), 250kg (551lbs)

SW-307 Cored

Classification

EN ISO 17633-A/T18 8 Mn P M21/C1 2

Welding Positions



Features

- Good porosity resistance
- Good performance in all positions

Polarity

DC +

Application Areas

- Joining and overlay applications on 13Mn steels
- Cladding carbon steels
- Welding of dissimilar steels (high Mn to carbon steel)

Shielding Gas

100% CO2
Ar+20~25% CO2

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Cu	Ni	Cr	Mo
100% CO2	0.05	0.8	5.7	0.012	0.008	0.02	8.9	17.9	0.10
Ar + 20% CO2	0.04	0.8	5.2	0.012	0.007	0.02	9.1	17.9	0.10

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
100% CO2	444 (64)	595 (86)	47	-60 (-76)	67 (49)
Ar + 20% CO2	459 (67)	602 (87)	47	-60 (-76)	62 (46)

Diameter / Welding Parameters / Packaging

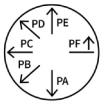
Wire Diameter mm(in)	Current (A)	Packaging
1.2 (0.045)	160~220	Spool 5kg (11lbs), 12.5kg (28lbs), 15kg (33lbs), 20kg (44lbs) Drum 100kg (221lbs), 200kg (441lbs), 250kg (551lbs)

SW-2209 Cored

Classification

AWS AWS A5.22/ ASME SFA-5.22 E2209T1-1/-4
JIS Z 3323 TS2209-FB1
EN ISO 17633-A-T 22 9 3 N L M21/C1 2

Welding Positions



Features

- Designed for welding with CO2 & Ar+CO2 mixed shielding gas.
- This wire is designed for Duplex stainless steels.
- Arc stability is excellent, so spatter loss is low and slag covering is uniform with good removability

Polarity

DC +

Application Areas

- Duplex stainless steel welding

Shielding Gas

100% CO2
Ar+20~25% CO2

Approvals

ABS	BV	CCS	DNV	KR	LR	NK	RS	CE
✓	✓	✓	✓	✓	✓	✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Ni	Cr	Mo
100% CO2	0.03	0.6	0.7	0.022	0.006	8.7	23.0	3.3
Ar+20~25% CO2	0.03	0.5	1.1	0.010	0.009	8.8	23.3	3.7

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
100% CO2	830(120)	29	-20(0) -50(-60)	45(33) 35(26)
Ar+20~25% CO2	840(121)	27	-20(0) -50(-60)	44(32) 35(26)

Diameter / Welding Parameters / Packaging

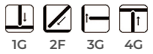
Wire Diameter mm(in)	Current (A)	Packaging
1.2(0.045)	160~220	Spool 20kg (44lbs)

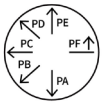
SW-2594 Cored

Classification

AWS AWS A5.22/ ASME SFA-5.22 E2594T1-1/-4
EN 17633-A T 25 9 4 N L P M21/C1 2

Welding Positions





Features

- Designed for welding with CO2 & Ar+CO2 mixed shielding gas.
- This wire is designed for Super Duplex stainless steels.
- Arc stability is excellent, so spatter loss is low and slag covering is uniform with good removability

Polarity

DC +

Application Areas

- Super Duplex stainless steel welding(NAS 329J4L, UNSS32750)

Shielding Gas

100% CO2
Ar+20~25% CO2

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Cu	Ni	Cr	Mo	N2
100% CO2	0.02	0.4	0.7	0.018	0.002	0.02	9.2	25.5	3.7	0.24
Ar + 20% CO2	0.03	0.5	0.7	0.012	0.001	0.02	9.1	25.7	3.7	0.23

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
100% CO2	688 (100)	896 (130)	24	-20(0) -50(-60)	27(20) 20(15)
Ar+20~25% CO2	680 (90)	891(129)	26	-20(0) -50(-60)	37(27) 30(22)

Diameter / Welding Parameters / Packaging

Wire Diameter mm(in)	Current (A)	Packaging
1.2(0.045)	160~220	Spool 5kg (11lbs), 12.5kg(28lbs), 15kg (33lbs)

Supercored 2594

Classification

AWS AWS A5.22/ ASME SFA-5.22 E2594T0-1

Features

- Designed for Super Duplex Stainless steels has a slow freezing slag which enables Flat and horizontal position welding
- Arc stability is excellent, so spatter loss is Low and slag covering is uniform with good removability

Polarity

DC+

Application Areas

- Welding of Super Duplex Stainless steels like UNS S32750, S32760

Shielding Gas

100% CO2

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Cu	Ni	Cr	Mo	N
100% CO2	0.02	0.6	0.6	0.014	0.003	0.03	9.0	24.8	3.9	0.21

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
100% CO2	767 (111)	882 (128)	25	-20 (-4) -50 (-58)	30 (22.1) 24 (17.7)

Diameter / Welding Parameters / Packaging

Wire Diameter mm(in)	Current (A)	Packaging
1.2 (0.045)	160~220	Spool 5kg (11lbs), 12.5kg(28lbs), 15kg (33lbs)

SC-250H

Features
- Designed for hardfacing FCAW with 100% CO2 gas
- Flat and horizontal fillet position welding
- Hardness of the weld metal : Over 250 Hv
- Suitable for metal to metal wear parts

Polarity
DC +

Application Areas
- Spindle, gear, shaft

Shielding Gas
100% CO2

Typical Chemical Composition of All-Weld Metal (wt%)

Wire size	C	Si	Mn	P	S	Cr	Mo
1.2(0.045)	0.06	0.5	1.2	0.01	0.01	1.1	0.01

Typical Mechanical Properties of All-Weld Metal

HRC (≥4Layers)
22~25

Diameter / Welding Parameters / Packaging

Wire Diameter mm(in)	Current (A)
1.2(0.045)	230~300
1.6(1/16)	260~330

Diameter / Welding Parameters / Packaging

Wire Diameter mm(in)	Packaging
1.2(0.045)	Spool 15kg (33lbs)
1.6(1/16)	

SC-350H

Features
- Designed for hardfacing FCAW with 100% CO2 gas
- Flat and horizontal fillet position welding
- Hardness of the weld metal : Over 350 Hv
- Suitable for metal to metal wear parts

Polarity
DC +

Application Areas
- Spindle, gear, shaft

Shielding Gas
100% CO2

Typical Chemical Composition of All-Weld Metal (wt%)

Wire size	C	Si	Mn	P	S	Cr	Mo
1.2(0.045)	0.10	0.5	1.4	0.01	0.01	1.3	0.40

Typical Mechanical Properties of All-Weld Metal

HRC (≥4Layers)
35~40

Diameter / Welding Parameters / Packaging

Wire Diameter mm(in)	Current (A)
1.2(0.045)	230~300
1.6(1/16)	260~330

Diameter / Welding Parameters / Packaging

Wire Diameter mm(in)	Packaging
1.2(0.045)	Spool 15kg (33lbs)
1.6(1/16)	

SC-450H

Features
- Designed for hardfacing FCAW with 100% CO2 gas
- Flat and horizontal fillet position welding
- Hardness of the weld metal : Over 450 Hv
- Suitable for metal to metal wear parts

Polarity
DC +

Application Areas
- Crane wheels, gear, shaft

Shielding Gas
100% CO2

Typical Chemical Composition of All-Weld Metal (wt%)

Wire size	C	Si	Mn	P	S	Cr	Mo
1.2(0.045)	0.20	0.7	1.6	0.01	0.01	2.2	0.50

Typical Mechanical Properties of All-Weld Metal

HRC (≥4Layers)
45~49

Diameter / Welding Parameters / Packaging

Wire Diameter mm(in)	Current (A)
1.2(0.045)	230~300
1.6(1/16)	260~330

Diameter / Welding Parameters / Packaging

Wire Diameter mm(in)	Packaging
1.2(0.045)	Spool 15kg (33lbs)
1.4(0.052)	
1.6(1/16)	

SC-600H

Features
- Designed for hardfacing FCAW with 100% CO2 gas
- Flat and horizontal fillet position welding
- Hardness of the weld metal : Over 600 Hv
- Suitable for metal to metal wear parts

Polarity
DC +

Application Areas
- Rollers, shear blades, screw conveyors

Shielding Gas
100% CO2

Typical Chemical Composition of All-Weld Metal (wt%)

Wire size	C	Si	Mn	P	S	Cr	Mo
1.2(0.045)	0.30	0.6	1.4	0.01	0.01	3.5	0.55

Typical Mechanical Properties of All-Weld Metal

HRC (≥4Layers)
55~59

Diameter / Welding Parameters / Packaging

Wire Diameter mm(in)	Current (A)
1.2(0.045)	230~300
1.6(1/16)	260~330

Diameter / Welding Parameters / Packaging

Wire Diameter mm(in)	Packaging
1.2(0.045)	Spool 15kg (33lbs)
1.4(0.052)	
1.6(1/16)	

SC-600HM

Features
- Designed for hardfacing MCW with Ar+CO2 mixed gas
- Flat and horizontal fillet position welding
- Suitable for abrasion parts

Polarity
DC +

Application Areas
- Rollers, shear blades, screw conveyors

Shielding Gas
Ar + 20~25% CO2

Typical Chemical Composition of All-Weld Metal (wt%)

Wire size	C	Si	Mn	P	S	Cr	Mo
1.2(0.045)	0.45	0.5	1.6	0.01	0.01	6.0	0.40

Typical Mechanical Properties of All-Weld Metal

HRC (≥4Layers)
58~62

Diameter / Welding Parameters / Packaging

Wire Diameter mm(in)	Current (A)
1.2(0.045)	230~300
1.6(1/16)	260~330

Diameter / Welding Parameters / Packaging

Packaging
Spool 5kg (11lbs), 15kg (33lbs)

SC-700H

Features
- Designed for hardfacing FCAW with 100% CO2 gas
- Flat and horizontal fillet position welding
- Hardness of the weld metal : Over 660 Hv
- Suitable for abrasion parts

Polarity
DC +

Application Areas
- Rollers, shear blades, screw conveyors

Shielding Gas
100% CO2

Typical Chemical Composition of All-Weld Metal (wt%)

Wire size	C	Si	Mn	P	S	Cr	Mo	W
1.2(0.045)	0.45	0.6	1.4	0.01	0.01	5.2	0.01	0.4

Typical Mechanical Properties of All-Weld Metal

HRC (≥4Layers)
58~62

Diameter / Welding Parameters / Packaging

Wire Diameter mm(in)	Current (A)
1.2(0.045)	230~300
1.6(1/16)	260~330

Diameter / Welding Parameters / Packaging

Wire Diameter mm(in)	Packaging
1.2(0.045)	Spool 15kg (33lbs)
1.4(0.052)	
1.6(1/16)	

SC-BU Cored

Features
- Open arc type hardfacing FCAW (build-up)
- Low alloy type

Polarity
DC +

Application Areas
- Crane wheels, pulleys

Shielding Gas
None

Typical Chemical Composition of All-Weld Metal (wt%)

Wire size	C	Si	Mn	Cr
2.4(3/32)	0.12	0.8	2.7	1.0

Typical Mechanical Properties of All-Weld Metal

HRC (≥4Layers)
25~30

Diameter / Welding Parameters / Packaging

Wire Diameter mm(in)	Current (A)
2.4(3/32)	300~400
2.8(7/64)	350~450

Diameter / Welding Parameters / Packaging

Wire Diameter mm(in)	Packaging
2.4(3/32)	Coil 25kg(55lbs), Drum 150kg, 250kg
2.8(7/64)	

Supershield AP-O

Features
- Open arc type hardfacing FCAW (buffer layer)
- High Mn/Cr type

Polarity
DC +

Application Areas
- Crusher rolls and hammers, cone mills

Shielding Gas
None

Typical Chemical Composition of All-Weld Metal (wt%)

Wire size	C	Si	Mn	Cr
1.6(1/16)	0.45	0.4	15.0	13.0

Typical Mechanical Properties of All-Weld Metal

HRC (≥4Layers)
15~20

Diameter / Welding Parameters / Packaging

Wire Diameter mm(in)	Current (A)
1.6 (1/16)	200~300
2.4 (3/32)	300~400
2.8 (7/64)	350~450

Diameter / Welding Parameters / Packaging

Wire Diameter mm(in)	Packaging
1.6 (1/16)	Spool 15kg (33lbs) Coil 25kg(55lbs), Drum 150kg, 250kg
2.4 (3/32)	
2.8 (7/64)	

Supershield 16Mn-O

Features
- Open arc type hardfacing FCAW (buffer layer)
- High Mn type

Polarity
DC +

Application Areas
- Crusher rolls and hammers, cone mills

Shielding Gas
None

Typical Chemical Composition of All-Weld Metal (wt%)

Wire size	C	Si	Mn	Cr
2.4(3/32)	0.55	0.4	16.0	3.5

Typical Mechanical Properties of All-Weld Metal

HRC (≥4Layers)
15~20

Diameter / Welding Parameters / Packaging

Wire Diameter mm(in)	Current (A)
2.4 (3/32)	300~400
2.8 (7/64)	350~450

Diameter / Welding Parameters / Packaging

Wire Diameter mm(in)	Packaging
2.4 (3/32)	Coil 25kg(55lbs), Drum 150kg, 250kg
2.8 (7/64)	

Supershield 309L-O

Features
- Open arc type hardfacing FCAW (buffer layer)
- High Cr/Ni stainless steel type

Polarity
DC +

Application Areas
- Welding of dissimilar metals, cladding

Shielding Gas
None

Typical Chemical Composition of All-Weld Metal (wt%)

Wire size	C	Si	Mn	Ni	Cr	Mo
2.8(7/64)	0.02	0.3	1.2	12.5	22.5	0.04

Typical Mechanical Properties of All-Weld Metal

HRC (≥4Layers)
-

Diameter / Welding Parameters / Packaging

Wire Diameter mm(in)	Current (A)
2.8 (7/64)	350~450

Diameter / Welding Parameters / Packaging

Wire Diameter mm(in)	Packaging
2.4 (3/32)	Coil 25kg(55lbs), Drum 150kg, 250kg
2.8 (7/64)	

Supershield CrC

Features
- Open arc type hardfacing FCAW
- Cr-Carbide type

Polarity
DC +

Application Areas
- Cement rolls, wear plates, bucket teeth

Shielding Gas
None

Typical Chemical Composition of All-Weld Metal (wt%)

Wire size	C	Si	Mn	Cr
1.2(0.045)	4.1	0.5	1.1	22.0
1.6(1/16)	4.3	0.5	1.2	25.0
2.4(3/32)	4.5	0.5	1.4	28.0
2.8(7/64)	4.5	0.5	1.4	28.0

Typical Mechanical Properties of All-Weld Metal

Item	HRC (≥4Layers)
1.2(0.045)	54~58
1.6(1/16)	54~58
2.4(3/32)	58~62
2.8(7/64)	58~62

Diameter / Welding Parameters / Packaging

Wire Diameter mm(in)	Current (A)
1.2(0.045)	200~300
1.6(1/16)	250~350
2.4(3/32)	300~400
2.8(7/64)	350~450

Hardfacing
HYUNDAI WELDING

Diameter / Welding Parameters / Packaging

Wire Diameter mm(in)	Packaging
1.2(0.045)	Spool 15kg (33lbs) Coil 25kg(55lbs), Drum 150kg, 250kg
1.6(1/16)	
2.4(3/32)	
2.8(7/64)	

Supershield CrCW

Features
- Open arc type hardfacing FCAW
- Cr-Carbide type

Polarity
DC +

Application Areas
- Wear plates, screw conveyrs, bucket teeth

Shielding Gas
None

Typical Chemical Composition of All-Weld Metal (wt%)

Wire size	C	Si	Mn	Cr
1.2(0.045)	4.0	0.4	0.6	22.0
1.6(1/16)	4.5	0.5	0.7	23.0
2.4(3/32)	5.0	1.0	1.7	25.0
2.8(7/64)	5.0	1.0	1.7	25.0

Typical Mechanical Properties of All-Weld Metal

Item	HRC (≥4Layers)
1.2(0.045)	53~56
1.6(1/16)	53~56
2.4(3/32)	58~62
2.8(7/64)	58~62

Diameter / Welding Parameters / Packaging

Wire Diameter mm(in)	Current (A)
1.2(0.045)	200~300
1.6(1/16)	250~350
2.4(3/32)	300~400
2.8(7/64)	350~450

Hardfacing HYUNDAI WELDING

Diameter / Welding Parameters / Packaging

Wire Diameter mm(in)	Packaging
1.2(0.045)	Spool 15kg (33lbs) Coil 25kg(55lbs), Drum 150kg, 250kg
1.6(1/16)	
2.4(3/32)	
2.8(7/64)	

Supershield CrCH

Features
- Open arc type hardfacing FCAW
- Cr-Carbide type
- High abrasion resistance right from the first layer

Polarity
DC +

Application Areas
- Cement rolls, wear plate, screw conveyors

Shielding Gas
None

Typical Chemical Composition of All-Weld Metal (wt%)

Wire size	C	Si	Mn	Cr
2.8(7/64)	5.0	0.9	0.2	28.0

Typical Mechanical Properties of All-Weld Metal

Item	HRC (≥4Layers)
1 layer	51~55
4 layers	59~63

Diameter / Welding Parameters / Packaging

Wire Diameter mm(in)	Current (A)
2.8(7/64)	350~450

Diameter / Welding Parameters / Packaging

Wire Diameter mm(in)	Packaging
2.8(7/64)	Coil 25kg(55lbs), Drum 150kg, 250kg

Supershield CrCNb

Features
- Open arc type hardfacing FCAW
- Cr-Carbide + Nb-Carbide type

Polarity
DC +

Application Areas
- Wear plates, roll mills

Shielding Gas
None

Typical Chemical Composition of All-Weld Metal (wt%)

Wire size	C	Si	Mn	Cr	Nb
1.6(1/16)	4.0	0.7	0.2	20.5	5.5
2.8(7/64)	4.8	0.9	0.2	21.0	6.5

Typical Mechanical Properties of All-Weld Metal

Item	HRC (≥4Layers)
1.6(1/16)	58~62
2.8(7/64)	60~64

Diameter / Welding Parameters / Packaging

Wire Diameter mm(in)	Current (A)
1.6(1/16)	250~350
2.8(7/64)	350~450

Diameter / Welding Parameters / Packaging

Wire Diameter mm(in)	Packaging
1.6(1/16)	Spool 15kg (33lbs) Coil 25kg(55lbs), Drum 150kg, 250kg
2.8(7/64)	
3.2(1/8)	

Supershield CrCB

Features
- Open arc type hardfacing FCAW
- Cr-Carbide + B-Carbide type

Polarity
DC +

Application Areas
- Wear plates, roll mills

Shielding Gas
None

Typical Chemical Composition of All-Weld Metal (wt%)

Wire size	C	Si	Mn	Cr
2.8(7/64)	4.5	0.5	1.3	25.5

Typical Mechanical Properties of All-Weld Metal

HRC (≥4Layers)
59~63

Diameter / Welding Parameters / Packaging

Wire Diameter mm(in)	Current (A)
2.4(3/32)	300~400
2.8(7/64)	350~450
3.2(1/8)	400~500

Diameter / Welding Parameters / Packaging

Wire Diameter mm(in)	Packaging
2.4(3/32)	Coil 25kg(55lbs), Drum 150kg, 250kg
2.8(7/64)	
3.2(1/8)	

SC-410NiMoS

Features
- Cored wire for submerged arc hardfacing
- Martensitic stainless steel type
- SAW Process (with S-717/S-401HF flux)

Polarity
DC +

Application Areas
- Continuous casting rolls, steel mill rolls

Shielding Gas
None

Typical Chemical Composition of All-Weld Metal (wt%)

Wire size	C	Si	Mn	Ni	Cr	Mo	Nb
3.2(1/8)	0.05	0.7	1.7	4.5	13.0	0.5	0.2

Typical Mechanical Properties of All-Weld Metal

Item	HRC (≥4Layers)
S-717	36~40

Diameter / Welding Parameters / Packaging

Wire Diameter mm(in)	Current (A)
3.2(1/8)	350~450

Diameter / Welding Parameters / Packaging

Wire Diameter mm(in)	Packaging
3.2(1/8)	Coil 25kg(55lbs), Drum 150kg, 250kg

SC-414S

Features
- Cored wire for submerged arc hardfacing
- Martensitic stainless steel type
- SAW Process (with S-717/S-401HF flux)

Polarity
DC +

Application Areas
- Continuous casting rolls, steel mill rolls

Shielding Gas
None

Typical Chemical Composition of All-Weld Metal (wt%)

Wire size	C	Si	Mn	Ni	Cr	Mo	Nb	V
3.2(1/8)	0.11	0.7	1.5	2.6	13.9	1.1	0.2	0.2

Typical Mechanical Properties of All-Weld Metal

Item	HRC (≥4Layers)
S-717	42~46

Diameter / Welding Parameters / Packaging

Wire Diameter mm(in)	Current (A)
2.4(3/32)	300~400
3.2(1/8)	350~450

Diameter / Welding Parameters / Packaging

Wire Diameter mm(in)	Packaging
2.4(3/32)	Coil 25kg(55lbs), Drum 150kg, 250kg
3.2(1/8)	

SC-420S

Features
- Cored wire for submerged arc hardfacing
- Martensitic stainless steel type
- SAW Process (with S-717/S-401HF flux)

Polarity
DC +

Application Areas
- Continuous casting rolls, steel mill rolls

Shielding Gas
None

Typical Chemical Composition of All-Weld Metal (wt%)

Wire size	C	Si	Mn	Ni	Cr	Mo	Nb	V	W
3.2(1/8)	0.28	0.7	1.6	0.5	12.0	1.5	0.1	0.3	1.3

Typical Mechanical Properties of All-Weld Metal

Item	HRC (≥4Layers)
S-717	49~53

Diameter / Welding Parameters / Packaging

Wire Diameter mm(in)	Current (A)
2.8(7/64)	300~400
3.2(1/8)	350~450

Diameter / Welding Parameters / Packaging

Wire Diameter mm(in)	Packaging
2.8(7/64)	Coil 25kg(55lbs), Drum 150kg, 250kg
3.2(1/8)	

SC-420SG

Features
- Cored wire for submerged arc hardfacing
- Martensitic stainless steel type
- SAW Process (with S-717/S-401HF flux)

Polarity
DC +

Application Areas
- Continuous casting rolls, steel mill rolls

Shielding Gas
None

Typical Chemical Composition of All-Weld Metal (wt%)

Wire size	C	Si	Mn	Ni	Cr	Nb
3.2(1/8)	0.2	0.6	1.5	0.2	13.0	0.1

Typical Mechanical Properties of All-Weld Metal

Item	HRC (≥4Layers)
S-717	49~53

Diameter / Welding Parameters / Packaging

Wire Diameter mm(in)	Current (A)
2.4(3/32)	300~400
3.2(1/8)	350~450

Diameter / Welding Parameters / Packaging

Wire Diameter mm(in)	Packaging
2.4(3/32)	Spool 15kg (33lbs) Coil 25kg(55lbs), Drum 150kg, 250kg
3.2(1/8)	

SC-423S

Features
- Cored wire for submerged arc hardfacing (build-up)
- Ferritic stainless steel type
- SAW(with S-717/S-401HF flux)

Polarity
DC +

Application Areas
- Continuous casting rolls, steel mill rolls

Shielding Gas
None

Typical Chemical Composition of All-Weld Metal (wt%)

Wire size	C	Si	Mn	Ni	Cr	Mo	Nb	V
3.2(1/8)	0.06	0.5	1.3	2.5	17.0	1.1	0.1	0.2

Typical Mechanical Properties of All-Weld Metal

Item	HRC (≥4Layers)
S-717	5~10

Diameter / Welding Parameters / Packaging

Wire Diameter mm(in)	Current (A)
3.2(1/8)	350~450

Diameter / Welding Parameters / Packaging

Wire Diameter mm(in)	Packaging
3.2(1/8)	Coil 25kg(55lbs), Drum 150kg, 250kg

SC-430S

Features
- Cored wire for submerged arc hardfacing (build-up)
- Ferritic stainless steel type
- SAW(with S-717/S-401HF flux)

Polarity
DC +

Application Areas
- Continuous casting rolls, steel mill rolls

Shielding Gas
None

Typical Chemical Composition of All-Weld Metal (wt%)

Wire size	C	Si	Mn	Cr
3.2(1/8)	0.06	0.9	1.5	17.0

Typical Mechanical Properties of All-Weld Metal

Item	HRC (≥4Layers)
S-717	5~10

Diameter / Welding Parameters / Packaging

Wire Diameter mm(in)	Current (A)
3.2(1/8)	350~450

Diameter / Welding Parameters / Packaging

Wire Diameter mm(in)	Packaging
2.4(3/32)	Coil 25kg(55lbs), Drum 150kg, 250kg
3.2(1/8)	

SC-30S

Features
- Cored wire for submerged arc hardfacing
- Low/Middle alloy type
- SAW(with S-717/S-401HF flux)

Polarity
DC +

Application Areas
- Crane wheels, rod wheels, tractor rollers

Shielding Gas
None

Typical Chemical Composition of All-Weld Metal (wt%)

Wire size	C	Si	Mn	Cr	Mo
3.2(1/8)	0.14	0.4	1.8	2.0	0.3

Typical Mechanical Properties of All-Weld Metal

Item	HRC (≥4Layers)
S-717	30~34

Diameter / Welding Parameters / Packaging

Wire Diameter mm(in)	Current (A)
3.2(1/8)	350~450

Diameter / Welding Parameters / Packaging

Wire Diameter mm(in)	Packaging
3.2(1/8)	Coil 25kg(55lbs), Drum 150kg, 250kg

SC-45S

Features
- Cored wire for submerged arc hardfacing
- Low/Middle alloy type
- SAW(with S-717/S-401HF flux)

Polarity
DC +

Application Areas
- Crane wheels, rod wheels, tractor rollers

Shielding Gas
None

Typical Chemical Composition of All-Weld Metal (wt%)

Wire size	C	Si	Mn	Cr	Mo
3.2(1/8)	0.20	0.5	2.1	3.4	0.5

Typical Mechanical Properties of All-Weld Metal

Item	HRC (≥4Layers)
S-717	43~48

Diameter / Welding Parameters / Packaging

Wire Diameter mm(in)	Current (A)
3.2(1/8)	350~450

Diameter / Welding Parameters / Packaging

Wire Diameter mm(in)	Packaging
3.2(1/8)	Coil 25kg(55lbs), Drum 150kg, 250kg

SC-55S

Features
- Cored wire for submerged arc hardfacing
- Middle alloy type
- SAW(with S-717/S-401HF flux)

Polarity
DC +

Application Areas
- Crane wheels, rod wheels, tractor rollers

Shielding Gas
None

Typical Chemical Composition of All-Weld Metal (wt%)

Wire size	C	Si	Mn	Cr	Mo	V	W
3.2(1/8)	0.35	0.6	1.7	6.5	1.5	0.4	1.5

Typical Mechanical Properties of All-Weld Metal

Item	HRC (≥4Layers)
S-717	50~55

Diameter / Welding Parameters / Packaging

Wire Diameter mm(in)	Current (A)
3.2(1/8)	350~450

Diameter / Welding Parameters / Packaging

Wire Diameter mm(in)	Packaging
3.2(1/8)	Coil 25kg(55lbs), Drum 150kg, 250kg

Metal-cored Wire

Metal-cored Wire

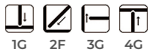
HYUNDAI WELDING

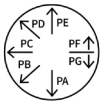
SC-70T Cored

Classification

AWS AWS A5.18/ ASME SFA-5.18 E70C-3C,-6M
JIS Z 3313 T49 2 T15-1 C A /
T49 3 T15-1 M A
EN ISO 17632-A T42 2 M C1 1 / T46 2 M M21 1

Welding Positions





Features

- Designed for welding with 100% CO2 gas or Ar+CO2 mixed gas
- High deposition rates & low slag coverage
- Good weldability in thin plate welding

Polarity

DC+

Application Areas

- Structural fabrication
- Steel industry
- Shipbuilding & Machinery

Shielding Gas

100% CO2
Ar+20~25% CO2

Approvals

BV	DNV	KR	LR	CWB	CE	DB	TUV
✓	✓	✓	✓	✓	✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S
100% CO2	0.06	0.60	1.20	0.010	0.010
Ar+20~25% CO2	0.07	0.65	1.45	0.010	0.010

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
100% CO2	452 (66)	542 (79)	29	-20 (0)	58 (43)
Ar+20~25% CO2	515 (75)	584 (85)	28	-30 (-20)	41 (30)

Diameter / Welding Parameters / Packaging

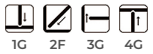
Wire Diameter mm(in)	Current (A)
1.2 (0.045)	120~300

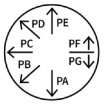
SC-70A

Classification

AWS AWS A5.18/ ASME SFA-5.18 E70C-3C,-6M
EN ISO 17632-A T42 3 M C1 1 H5 / T46 3 M M21 1 H5
ISO 17632-A T42 2 M C1 1 H5 / T42 2 M M21 1 H5

Welding Positions





Features

- Designed for welding with 100% CO2 gas or Ar+CO2 mixed gas
- High deposition rates & minimal slag coverage
- Good bead appearance

Polarity

DC+

Application Areas

- Structural fabrication
- Steel industry
- Shipbuilding & Machinery

Shielding Gas

100% CO2
Ar+20~25% CO2

Approvals

ABS	BV	DNV	LR	RINA	CWB	CE	DB	TUV
✓	✓	✓	✓	✓	✓	✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S
100% CO2	0.06	0.40	1.40	0.010	0.010
Ar+20~25% CO2	0.06	0.55	1.55	0.010	0.010

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
100% CO2	500 (73)	560 (81)	27	-20 (0)	70 (52)
Ar+20~25% CO2	540 (78)	610 (88)	26	-30 (-20)	60 (44)

Diameter / Welding Parameters / Packaging

Wire Diameter mm(in)	Current (A)
1.2 (0.045)	140~300

Supercored 70NS

Classification

AWS AWS A5.18/ ASME SFA-5.18 E70C-6M
JIS Z 3313 T49 3 T15-0 M A
EN ISO 17632-A T42 3 M M21 3 H5

Welding Positions

Features

- Designed for welding with Ar+CO2 mixed gas
- High deposition rates & minimal slag coverage
- Excellent bead appearance
- Meets AWS D1.8 seismic requirements

Polarity

DC+

Application Areas

- Structural fabrication
- Steel industry
- Heavy equipment & Machinery
- Shipbuilding

Shielding Gas

Ar+20~25% CO2

Approvals

ABS	BV	DNV	KR	LR	RINA	CWB	CE	DB	TUV
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S
Ar+20~25% CO2	0.04	0.53	1.40	0.010	0.010

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
Ar+20~25% CO2	450 (65)	542 (79)	27	-30 (-20)	54 (40)

Diameter / Welding Parameters / Packaging

Wire Diameter mm(in)	Current (A)
1.2 (0.045)	140~300

SC-70Zn

Classification

AWS AWS A5.18/ ASME SFA-5.18 E70C-GSM
EN ISO 17632-A T3T Z M M21 1

Welding Positions

Features

- Designed for welding with Ar+CO2 mixed gas
- single-pass welding of galvanized steels
- excellent bead appearance

Polarity

DC-

Application Areas

- automobile manufacturing
- light structures
- general fabrication of galvanized steels (zinc-coated steels)

Shielding Gas

Ar+20~25% CO2

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Al
Ar+20~25% CO2	0.45	0.37	1.15	0.010	0.010	2.05

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)
Ar+20~25% CO2	Transverse Tensile Strength (AWS A5.18, Test for Single-Pass Electrode)	545 (79)

Diameter / Welding Parameters / Packaging

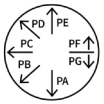
Wire Diameter mm(in)	Current (A)
1.2 (0.045)	150~300

SL-70ML

Classification

AWS AWS A5.18/ ASME SFA-5.18 E70C-6M H4
EN ISO 17632-A T46 4 M M21 1 H5

Welding Positions



Features

- Designed for welding with Ar+CO2 mixed gas
- High deposition rates & minimal slag coverage
- Good impact value at low temperature
- low diffusible hydrogen level

Polarity

DC+

Application Areas

- Structural fabrication
- Steel industry
- Heavy equipment & Machinery
- Shipbuilding

Shielding Gas

Ar+20~25% CO2

Approvals

LR	CE
✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S
Ar+20~25% CO2	0.06	0.42	1.52	0.020	0.010

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
Ar+20~25% CO2	491 (71)	556 (81)	26	-30 (-20) -40 (-40)	101(74) 82(61)

Diameter / Welding Parameters / Packaging

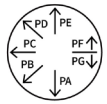
Wire Diameter mm(in)	Current (A)
1.2 (0.045)	140~300

SC-90M

Classification

AWS AWS A5.28/ ASME SFA-5.28 E90C-G
EN ISO 18276-A T55 5 ZMn1NiMo M M21 1 H5

Welding Positions



Features

- Designed for welding with Ar+CO2 mixed gas
- Good impact value at Low temperature(-50□)

Polarity

DC+

Application Areas

- Structural fabrication
- Steel industry
- Heavy equipment

Shielding Gas

Ar+20~25% CO2

Approvals

CE
✓

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Ni	Mo
Ar+20~25% CO2	0.06	0.60	1.55	0.010	0.007	1.12	0.19

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
Ar+20~25% CO2	634 (92)	706 (102)	24.8	-50 (-60)	66 (49)

Diameter / Welding Parameters / Packaging

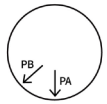
Wire Diameter mm(in)	Current (A)
1.2 (0.045)	200~300

SC-110M Cored

Classification

AWS AWS A5.28/ ASME SFA-5.28 E110C-G
EN ISO 18276-A T69 4 Mn2NiMo M M21 3 H5

Welding Positions



Features

- Designed for welding with Ar+CO2 mixed gas
- Welding of high strength low alloy steel such as HY-80, and HY-100

Polarity

DC+

Application Areas

- Structural fabrication
- Steel industry
- Heavy equipment

Shielding Gas

Ar+20~25% CO2

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Ni	Cr	Mo
Ar+ 20~25% CO2	0.04	0.50	1.75	0.010	0.005	2.03	0.05	0.50

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
Ar+20~25% CO2	730 (106)	800 (116)	20.4	-40 (-40)	55 (41)

Diameter / Welding Parameters / Packaging

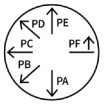
Wire Diameter mm(in)	Current (A)
1.2 (0.045)	180~280

SC-70ML

Classification

AWS AWS A5.18/ ASME SFA-5.18 E70C-6M
JIS Z 3313 T49 4 T15-1 M A-U
EN ISO 17632-A T46 4 M M21 2 H5

Welding Positions



Features

- Designed for welding with Ar+CO2 mixed gas
- High deposition rates & minimal slag coverage
- Good impact value at low temperature
- Meets AWS D1.8 seismic requirements

Polarity

DC+

Application Areas

- Structural fabrication
- Steel industry
- Heavy equipment & Machinery
- Shipbuilding

Shielding Gas

Ar+20~25% CO2

Approvals

ABS	BV	DNV	LR	RINA	CWB	CE	DB	TUV
✓	✓	✓	✓	✓	✓	✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Ni
Ar+20~25% CO2	0.04	0.56	1.57	0.010	0.010	0.34

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
Ar+20~25% CO2	476 (69)	553 (80)	26.5	-30 (-20) -40 (-40)	86 (63) 75 (55)

Diameter / Welding Parameters / Packaging

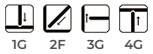
Wire Diameter mm(in)	Current (A)
1.2 (0.045)	140~300

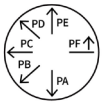
SC-460M

Classification

AWS AWS A5.18/ ASME SFA-5.18 E70C-6M
EN ISO 17632-B T55 4 T15 1 M21 A H5

Welding Positions





Features

- Designed for welding with Ar+CO2 mixed gas
- High deposition rates & minimal slag coverage
- Meets AWS D1.8 seismic requirements

Polarity

DC+

Application Areas

- Structural fabrication
- Steel industry
- Heavy equipment & Machinery
- trailer fabrication

Shielding Gas

Ar+20~25% CO2

Approvals

CWB
✓

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Ni
Ar+20~25% CO2	0.04	0.55	1.50	0.010	0.010	0.35

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
Ar+20~25% CO2	480 (70)	575 (83)	26	-40 (-40)	35 (26)

Diameter / Welding Parameters / Packaging

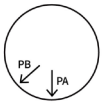
Wire Diameter mm(in)	Current (A)
1.2 (0.045)	140~300

SC-80ML

Classification

AWS AWS A5.28/ ASME SFA-5.28 E80C-Ni1
EN ISO 17632-A T50 4 Z1Ni M M21 3 H5

Welding Positions



Features

- Designed for welding with Ar+O2 mixed gas
- High deposition rates & minimal slag coverage
- Good impact value at low temperature

Polarity

DC+

Application Areas

- Structural fabrication
- Steel industry
- Heavy equipment & Machinery

Shielding Gas

Ar+1~5% O2

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Cu	Ni	Mo	V
Ar+1~5% O2	0.07	0.48	1.45	0.010	0.021	0.02	1.01	0.09	0.01

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
Ar+1~5% O2	585 (85)	663 (96)	26.2	-45 (-50)	51 (38)

Diameter / Welding Parameters / Packaging

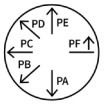
Wire Diameter mm(in)	Current (A)
1.2 (0.045)	120~300

SC-80MR

Classification

AWS AWS A5.28/ ASME SFA-5.28 E80C-G
EN ISO 17632-A T50 6 1.5Ni M M21 2 H5

Welding Positions



Features

- Designed for welding with Ar+CO2 mixed gas
- Suitable for Root-pass and multipass welding
- Good impact value at Low temperature(-60□)

Polarity

DC+

Application Areas

- Structural fabrication
- Steel industry
- Heavy equipment & Machinery
- Offshore structure

Shielding Gas

Ar+20~25% CO2

Approvals

DNV	LR	CE	TUV
✓	✓	✓	✓

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Ni
Ar+20~25% CO2	0.05	0.35	1.50	0.014	0.007	1.53

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
Ar+20~25% CO2	545 (79)	639 (93)	26.5	-60 (-75)	60 (44)

Diameter / Welding Parameters / Packaging

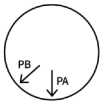
Wire Diameter mm(in)	Current (A)
1.2 (0.045)	200~300

SC-80D2

Classification

AWS AWS A5.28/ ASME SFA-5.28 E80C-G
EN ISO 17632-A T50 0 MnMo M M21 3

Welding Positions



Features

- Designed for welding with Ar+CO2 mixed gas
- High deposition rates & low slag coverage

Polarity

DC +

Application Areas

- Heavy equipment
- Petrochemical industry
- Pressure vessel

Shielding Gas

Ar+20~25% CO2

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Mo
Ar+20~25% CO2	0.03	0.60	1.59	0.010	0.005	0.52

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
Ar+20~25% CO2	595 (86)	662 (96)	24.5	0 (32)	58 (43)

Diameter / Welding Parameters / Packaging

Wire Diameter mm(in)	Current (A)
1.2 (0.045)	140~300

SW-307NS Cored

Classification

EN ISO 17633-A T18 8 Mn M M13/I1

Welding Positions

Features

- Designed for welding with 100%Ar or Ar+2~5%O2 gas
- Good Hot Cracking resistant austenite weld metal

Polarity

DC+

Application Areas

- Joining and overlay applications on 13Mn steels
- Cladding Carbon steels
- Welding of dissimilar steels (high Mn to carbon steel)

Shielding Gas

100% Ar
Ar + 2% O2

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Cu	Ni	Cr	Mo
Ar + 2% O2	0.07	0.60	7.30	0.021	0.008	0.02	8.60	18.3	0.10

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Tensile Strength MPa(ksi)	Elongation (%)	Temperature °C (°F)	Impact Toughness J (ft·lbs)
Ar + 2% O2	621 (90)	40.2	-20 (0) -60 (-75)	89 (66) 69 (51)

Diameter / Welding Parameters / Packaging

Wire Diameter mm(in)	Current (A)
1.2 (0.045)	180~250

SW-309LNS Cored

Classification

AWS AWS A5.22 / ASME SFA-5.22
EC309L
EN ISO 17633-A-T 23 12 L M M13/I1

Welding Positions

Features

- Non-slag type
- Low spatter

Polarity

DC+

Application Areas

- Automotive mufflers
- Welding of dissimilar metals such as stainless and carbon a low
alloy steels

Shielding Gas

100% Ar
Ar + 2% O2

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Cu	Ni	Cr	Mo
Ar + 2% O2	0.03	0.55	1.80	0.020	0.010	0.13	13.0	24.0	0.13

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Yield Strength MPa(ksi)	Elongation (%)
Ar + 2% O2	590 (86)	45

Diameter / Welding Parameters / Packaging

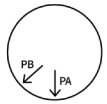
Wire Diameter mm(in)	Current (A)
1.2 (0.045)	180~250

SF-409Ti

Classification

AWS AWS A5.22 / ASME SFA-5.22
EC409

Welding Positions



Features

- Good corrosion resistance
- Low spatter
- Non-slag type

Polarity

DC+

Application Areas

- Stainless steels 409 Type
- Automotive mufflers

Shielding Gas

100% Ar
Ar + 2% O2

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Cr	Ti
Ar + 2% O2	0.03	0.50	0.60	0.010	0.010	12.5	0.8

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Tensile Strength MPa(ksi)	Elongation (%)
Ar + 2% O2	500 (73)	20

Diameter / Welding Parameters / Packaging

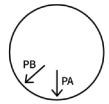
Wire Diameter mm(in)	Current (A)
1.2 (0.045)	180~250

SF-430

Classification

AWS AWS A5.22 / ASME SFA-5.22
EC430

Welding Positions



Features

- Good corrosion resistance
- Low spatter
- Non-slag type

Polarity

DC+

Application Areas

- Stainless steels 409 and 430 Type
- Automotive mufflers

Shielding Gas

100% Ar
Ar + 2% O2

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Cr	Ti
Ar + 2% O2	0.03	0.30	0.50	0.010	0.010	16.5	0.5

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Tensile Strength MPa(ksi)	Elongation (%)
Ar + 2% O2	500 (73)	40

Diameter / Welding Parameters / Packaging

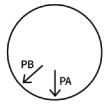
Wire Diameter mm(in)	Current (A)
1.2 (0.045)	180~250

SF-430Nb

Classification

AWS AWS A5.22 / ASME SFA-5.22
ECG
EN EN 12072 GZ 17 L Nb

Welding Positions



Features

- Good corrosion resistance
- Low spatter
- Non-slag type

Polarity

DC+

Application Areas

- Stainless steels 409 and 430 Type
- Automotive mufflers

Shielding Gas

100% Ar
Ar + 2% O2

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Cr	Ti	Nb
Ar + 2% O2	0.03	0.40	0.20	0.010	0.010	16.5	0.4	0.5

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Tensile Strength MPa(ksi)	Elongation (%)
Ar + 2% O2	520 (75)	24

Diameter / Welding Parameters / Packaging

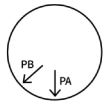
Wire Diameter mm(in)	Current (A)
1.2 (0.045)	180~250

SF-436

Classification

AWS AWS A5.22 / ASME SFA-5.22
ECG

Welding Positions



Features

- Good corrosion resistance
- Low spatter
- Non-slag type

Polarity

DC+

Application Areas

- Stainless steels 409, 430 and 436 Type
- Automotive mufflers

Shielding Gas

100% Ar
Ar + 2% O2

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Cr	Mo	Ti
Ar + 2% O2	0.03	0.60	0.40	0.010	0.010	16.8	0.78	0.5

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Tensile Strength MPa(ksi)	Elongation (%)
Ar + 2% O2	500 (73)	35

Diameter / Welding Parameters / Packaging

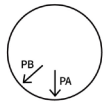
Wire Diameter mm(in)	Current (A)
1.2 (0.045)	180~250

SF-436Ti

Classification

AWS AWS A5.22 / ASME SFA-5.22
ECG

Welding Positions



Features

- Good corrosion resistance
- Low spatter
- Non-slag type

Polarity

DC+

Application Areas

- Stainless steels 409, 430 and 436 Type
- Automotive mufflers

Shielding Gas

100% Ar
Ar + 2% O2

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Cr	Mo	Ti
Ar + 2% O2	0.03	0.60	0.40	0.010	0.010	16.7	0.68	0.4

Typical Mechanical Properties of All-Weld Metal

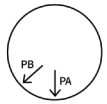
Shielding Gas	Tensile Strength MPa(ksi)	Elongation (%)
Ar + 2% O2	500 (73)	35

SC-439Ti Cored

Classification

AWS AWS A5.22 / ASME SFA-5.22
EC439

Welding Positions



Features

- Good corrosion resistance
- Low spatter
- Non-slag type

Polarity

DC+

Application Areas

- Automotive exhaust systems and Mufflers

Shielding Gas

100% Ar
Ar + 2% O2

Typical Chemical Composition of All-Weld Metal (wt%)

Shielding Gas	C	Si	Mn	P	S	Cr	Ti
Ar + 2% O2	0.03	0.30	0.60	0.010	0.010	18.5	0.6

Typical Mechanical Properties of All-Weld Metal

Shielding Gas	Tensile Strength MPa(ksi)	Elongation (%)
Ar + 2% O2	500 (73)	20

SAW Wire

Submerged Arc Welding Wire

HYUNDAI WELDING

L-8

Classification

AWS AWS A5.17 EL8
JIS JIS Z 3351 YS-S1
EN ISO 14171-A S1

Features

Submerged arc welding wire for standard Carbon steel.
Typical applications include shipbuilding.

Typical Chemical Composition of the Wire (wt%)

C	Si	Mn	P	S
0.05	0.02	0.52	0.017	0.012

Wire Diameter & Packaging

Wire Diameter mm(in)	Packaging
1.6 (1/16)	Spool 20kg(44lbs) Basket 25kg(55lbs) Coil 25kg(55lbs), 100kg(220lbs), 200kg(440lbs), 250kg(551lbs), 300kg(661lbs), 500kg(1102lbs) Drum 250kg(551lbs), 300kg(661lbs), 350kg(771lbs), 400kg(881lbs)
2.0 (5/64)	
2.4 (3/32)	
3.2 (1/8)	
4.0 (5/32)	
4.8 (3/16)	
6.4(1/4)	

Mild Steel & 490 MPa high tensile steels

L-12

Classification

AWS AWS A5.17 EL12
JIS JIS Z 3351 YS-S1
EN ISO 14171-A S1

Features

Submerged arc welding wire for standard Carbon steel.
Typical applications include shipbuilding.

Typical Chemical Composition of the Wire (wt%)

C	Si	Mn	P	S
0.06	0.02	0.51	0.016	0.002

Wire Diameter & Packaging

Wire Diameter mm(in)	Packaging
2.0 (5/64)	Coil 25kg(55lbs)
2.4 (3/32)	
3.2 (1/8)	
4.0 (5/32)	

M-12K

Classification

AWS AWS A5.17 EM12K
JIS JIS Z 3351 YS-S3
EN ISO 14171-A S2Si

Features

Submerged arc welding wire for standard Carbon steel.
Typical applications include Pressure Vessel, Wind tower,Pipe.

Typical Chemical Composition of the Wire (wt%)

C	Si	Mn	P	S
0.09	0.20	1.12	0.012	0.008

Wire Diameter & Packaging

Wire Diameter mm(in)	Packaging
1.6 (1/16)	Spool 20kg(44lbs) Basket 25kg(55lbs) Coil 25kg(55lbs), 100kg(220lbs), 200kg(440lbs), 250kg(551lbs), 300kg(661lbs), 500kg(1102lbs) Drum 250kg(551lbs), 300kg(661lbs), 350kg(771lbs), 400kg(881lbs)
2.0 (5/64)	
2.4 (3/32)	
3.2 (1/8)	
4.0 (5/32)	
4.8 (3/16)	

M-13K

Classification

AWS AWS A5.17 EM13K

Features

Submerged arc welding wire for standard Carbon steel.
Typical applications include Pressure Vessel, Steel Structure ,Pipe.

Typical Chemical Composition of the Wire (wt%)

C	Si	Mn	P	S
0.07	0.61	1.14	0.013	0.010

Wire Diameter & Packaging

Packaging
Spool 20kg(44lbs) Basket 25kg(55lbs) Coil 25kg(55lbs), 100kg(220lbs), 200kg(440lbs), 250kg(551lbs), 300kg(661lbs), 500kg(1102lbs) Drum 250kg(551lbs), 300kg(661lbs), 350kg(771lbs), 400kg(881lbs)

M-14K

Classification

AWS AWS A5.17 EM14K
EN ISO 14171-A SZ

Features

Submerged arc welding wire for standard Carbon steel.
Typical applications include Pressure Vessel, Steel Structure ,Pipe.

Typical Chemical Composition of the Wire (wt%)

C	Si	Mn	P	S	Ti
0.07	0.61	1.21	0.012	0.008	0.11

Wire Diameter & Packaging

Wire Diameter mm(in)	Packaging
1.6 (1/16)	Spool 20kg(44lbs) Basket 25kg(55lbs) Coil 25kg(55lbs), 100kg(220lbs), 200kg(440lbs), 250kg(551lbs), 300kg(661lbs), 500kg(1102lbs) Drum 250kg(551lbs), 300kg(661lbs), 350kg(771lbs), 400kg(881lbs)
2.0 (5/64)	
2.4 (3/32)	
3.2 (1/8)	
4.0 (5/32)	
4.8 (3/16)	

Mild Steel & 490 MPa high tensile steels
HYUNDAI WELDING

H-12K

Classification

AWS AWS A5.17 EH12K
JIS JIS Z 3351 YS-S5
EN ISO 14171-A S3Si

Features

Submerged arc welding wire for standard Carbon steel.
Typical applications include Pressure Vessel,Pipe.

Typical Chemical Composition of the Wire (wt%)

C	Si	Mn	P	S
0.10	0.30	1.73	0.016	0.009

Wire Diameter & Packaging

Wire Diameter mm(in)	Packaging
1.6 (1/16)	Spool 20kg(44lbs) Basket 25kg(55lbs) Coil 25kg(55lbs), 100kg(220lbs), 200kg(440lbs), 250kg(551lbs), 300kg(661lbs), 500kg(1102lbs) Drum 250kg(551lbs), 300kg(661lbs), 350kg(771lbs), 400kg(881lbs)
2.0 (5/64)	
2.4 (3/32)	
3.2 (1/8)	
4.0 (5/32)	

H-14

Classification

AWS AWS A5.17 EH14
JIS JIS Z 3351 YS-S6
EN ISO 14171-A S4

Features

Submerged arc welding wire for standard Carbon steel.
Typical applications include Shipbuilding, Steel Structure.

Typical Chemical Composition of the Wire (wt%)

C	Si	Mn	P	S
0.12	0.03	1.93	0.016	0.009

Wire Diameter & Packaging

Wire Diameter mm(in)	Packaging
1.6 (1/16)	Spool 20kg(44lbs) Basket 25kg(55lbs) Coil 25kg(55lbs), 100kg(220lbs), 200kg(440lbs), 250kg(551lbs), 300kg(661lbs), 500kg(1102lbs) Drum 250kg(551lbs), 300kg(661lbs), 350kg(771lbs), 400kg(881lbs)
2.0 (5/64)	
2.4 (3/32)	
3.2 (1/8)	
4.0 (5/32)	
4.8 (3/16)	
6.4(1/4)	

H-14L

Classification

AWS AWS A5.23 EG
JIS JIS Z 3351 YS-S6
EN ISO 14171-A SZ

Features

Submerged arc welding wire for standard Carbon steel.
Typical applications include Pipe, Steel Structure.

Typical Chemical Composition of the Wire (wt%)

C	Si	Mn	P	S
0.05	0.05	1.98	0.017	0.005

Wire Diameter & Packaging

Packaging
Basket 25kg(55lbs) Coil 25kg(55lbs), 100kg(220lbs), 200kg(440lbs), 250kg(551lbs), 300kg(661lbs), 500kg(1102lbs) Drum 250kg(551lbs), 300kg(661lbs), 350kg(771lbs), 400kg(881lbs)

A-G

Classification

AWS AWS A5.23 EG
JIS JIS Z 3351 YS-S6
EN ISO 14171-A S4

Features

Submerged arc welding wire for standard Carbon steel.
Typical applications include Shipbuilding, Steel Structure.

Typical Chemical Composition of the Wire (wt%)

C	Si	Mn	P	S
0.12	0.05	1.97	0.018	0.005

Wire Diameter & Packaging

Wire Diameter mm(in)	Packaging
4.0 (5/32)	Basket 25kg(55lbs) Coil 25kg(55lbs), 100kg(220lbs), 200kg(440lbs), 250kg(551lbs), 300kg(661lbs), 500kg(1102lbs) Drum 250kg(551lbs), 300kg(661lbs), 350kg(771lbs), 400kg(881lbs)
4.8 (3/16)	

A-2

Classification

AWS AWS A5.23 EA2
JIS JIS Z 3351 YS-M3
EN ISO 14171-A S2Mo

Features

Submerged arc welding wire for standard Carbon steel.
Typical applications include Pressure Vessel, pipe.

Typical Chemical Composition of the Wire (wt%)

C	Si	Mn	P	S	Mo
0.09	0.15	1.01	0.015	0.005	0.48

Wire Diameter & Packaging

Wire Diameter mm(in)	Packaging
1.6 (1/16)	Spool 20kg(44lbs) Basket 25kg(55lbs) Coil 25kg(55lbs), 100kg(220lbs), 200kg(440lbs), 250kg(551lbs), 300kg(661lbs), 500kg(1102lbs) Drum 250kg(551lbs), 300kg(661lbs), 350kg(771lbs), 400kg(881lbs)
2.0 (5/64)	
2.4 (3/32)	
3.2 (1/8)	
4.0 (5/32)	
4.8 (3/16)	

A-2TIB

Classification

AWS AWS A5.23 EA2TiB
EN ISO 14171-A S2MoTiB

Features

Submerged arc welding wire for standard Carbon steel.
Typical applications include pipe.

Typical Chemical Composition of the Wire (wt%)

C	Si	Mn	P	S	Mo	Ti	B
0.06	0.25	1.21	0.009	0.002	0.53	0.14	0.012

Wire Diameter & Packaging

Wire Diameter mm(in)	Packaging
4.0 (5/32)	Basket 25kg(55lbs) Coil 25kg(55lbs), 100kg(220lbs), 200kg(440lbs), 250kg(551lbs), 300kg(661lbs), 500kg(1102lbs) Drum 250kg(551lbs), 300kg(661lbs), 350kg(771lbs), 400kg(881lbs)

A-3

Classification

AWS AWS A5.23 EA3
JIS JIS Z 3351 YS-M5
EN ISO 14171-A S4Mo

Features

Submerged arc welding wire for standard Carbon steel.
Typical applications include Shipbuilding, Pipe, Pressure Vessel.

Typical Chemical Composition of the Wire (wt%)

C	Si	Mn	P	S	Mo
0.08	0.04	1.85	0.019	0.007	0.50

Wire Diameter & Packaging

Wire Diameter mm(in)	Packaging
1.6 (1/16)	Spool 20kg(44lbs) Basket 25kg(55lbs) Coil 25kg(55lbs), 100kg(220lbs), 200kg(440lbs), 250kg(551lbs), 300kg(661lbs), 500kg(1102lbs) Drum 250kg(551lbs), 300kg(661lbs), 350kg(771lbs), 400kg(881lbs)
2.0 (5/64)	
2.4 (3/32)	
3.2 (1/8)	
4.0 (5/32)	
4.8 (3/16)	

NI-5

Classification

AWS AWS A5.23 ENi5
EN ISO 14171-A S3NiMo0.2

Features

Submerged arc welding wire for standard Carbon steel.
Typical applications include Pressure Vessel, Wind tower, Pipe.

Typical Chemical Composition of the Wire (wt%)

C	Si	Mn	P	S	Ni	Mo
0.10	0.24	1.45	0.005	0.001	0.90	0.25

Wire Diameter & Packaging

Wire Diameter mm(in)	Packaging
4.0 (5/32)	Basket 25kg(55lbs) Coil 25kg(55lbs), 100kg(220lbs), 200kg(440lbs), 250kg(551lbs), 300kg(661lbs), 500kg(1102lbs) Drum 250kg(551lbs), 300kg(661lbs), 350kg(771lbs), 400kg(881lbs)

F-3

Classification

AWS AWS A5.23 EF3
EN ISO 14171-A S3Ni1Mo

Features

Submerged arc welding wire for standard Carbon steel.
Typical applications include Pressure Vessel,Wind tower.

Typical Chemical Composition of the Wire (wt%)

C	Si	Mn	P	S	Ni	Cr	Mo
0.12	0.15	1.71	0.015	0.001	0.85	0.16	0.45

Wire Diameter & Packaging

Wire Diameter mm(in)	Packaging
4.0 (5/32)	Basket 25kg(55lbs) Coil 25kg(55lbs), 100kg(220lbs), 200kg(440lbs), 250kg(551lbs), 300kg(661lbs), 500kg(1102lbs) Drum 250kg(551lbs), 300kg(661lbs), 350kg(771lbs), 400kg(881lbs)

B-2

Classification

AWS AWS A5.23 EB2
JIS JIS Z3351 YS-1CM1
EN ISO 24598-A - S S(CrMo1)

Features

Submerged arc welding wire for welding of Heat resistant steels.
Typical applications include pressure vessels

Typical Chemical Composition of the Wire (wt%)

C	Si	Mn	P	S	Cr	Mo
0.08	0.16	0.67	0.008	0.002	1.37	0.51

Wire Diameter & Packaging

Wire Diameter mm(in)	Packaging
2.0 (5/64)	-
2.4 (3/32)	
3.2 (1/8)	
4.0 (5/32)	

B-3

Classification

AWS AWS A5.23 EB3
JIS JIS Z3351 YS-2CM1
EN ISO 24598-A - S S CrMo2

Features

Submerged arc welding wire for welding of Heat resistant steels.
Typical applications include pressure vessels

Typical Chemical Composition of the Wire (wt%)

C	Si	Mn	P	S	Cr	Mo
0.06	0.24	0.55	0.009	0.004	2.35	1.01

YS-308L

Classification

AWS AWS A5.9 E308L
JIS JIS Z 3321 YS308L
EN ISO 14343-A S 19 9 L

Features

Submerged arc welding wire for stainless steel.
Typical applications include stainless steel structures.

Typical Chemical Composition of the Wire (wt%)

C	Si	Mn	P	S	Ni	Cr
0.02	0.40	1.9	0.01	0.01	10.6	20.0

Wire Diameter & Packaging

Packaging
Coil 25kg(55lbs)

YS-316L

Classification

AWS AWS A5.9 E316L
JIS JIS Z 3321 YS316L
EN ISO 14343-A S 19 12 3 L

Features

Submerged arc welding wire for stainless steel.
Typical applications include stainless steel structures.

Typical Chemical Composition of the Wire (wt%)

C	Si	Mn	P	S	Ni	Cr	Mo
0.02	0.35	1.8	0.01	0.01	13.0	18.5	2.6

Wire Diameter & Packaging

Packaging
Coil 25kg(55lbs)

YS-347

Classification

AWS AWS A5.9 E347
JIS JIS Z 3321 YS347
EN ISO 14343-A S 19 9 Nb

Features

Submerged arc welding wire for stainless steel.
Typical applications include stainless steel structures.

Typical Chemical Composition of the Wire (wt%)

C	Si	Mn	P	S	Ni	Cr	Nb
0.06	0.39	1.5	0.02	0.01	9.6	19.7	0.68

Wire Diameter & Packaging

Packaging
Coil 25kg(55lbs)

YS-2209

Classification

AWS AWS A5.9 ER2209
JIS JIS Z 3321 YS2209
EN ISO 14343-A S 22 9 3 L N

Features

Submerged arc welding wire for Duplex stainless steel.
Typical applications include Duplex stainless steel structures.

Typical Chemical Composition of the Wire (wt%)

C	Si	Mn	P	S	Ni	Cr	Mo	N
0.02	0.47	1.6	0.01	0.01	8.7	23.0	3.2	0.15

Wire Diameter & Packaging

Packaging
Coil 25kg(55lbs)

SA-625

Classification

AWS AWS A5.14 ERNiCrMo-3
JIS JIS Z 3334 YNiCrMo-3

Features

Submerged arc welding wire for cladding Inconel 625.
Typical applications include piston crown of ship engine.

Typical Chemical Composition of the Wire (wt%)

C	Si	Mn	P	S	Ni	Cr	Mo	Fe	Nb_Ta
0.01	0.04	0.10	0.01	0.001	64.5	22.4	8.9	0.3	3.65

Wire Diameter & Packaging

Wire Diameter mm(in)	Packaging
2.0 (5/64)	Coil 25kg(55lbs)
2.4 (3/32)	

SA-08

Classification

AWS AWS A5.14
ERNiMo- 8

Features

Submerged arc welding wire for welding of 9% Ni steel.
Typical applications 9% Ni LNG storage Tank

Typical Chemical Composition of the Wire (wt%)

C	Si	Mn	P	S	Ni	Cr	Mo	Fe	W
0.01	0.21	0.1	0.004	0.001	68.2	2.1	18.7	5.6	3.1

Wire Diameter & Packaging

Wire Diameter mm(in)	Packaging
2.4 (3/32)	Coil 25kg(55lbs)

SAW Flux

Submerged Arc Welding Flux

HYUNDAI WELDING

S-777MX

Flux Properties

Class. JIS Z 3352 S A AR1
EN ISO 14174 S A AR 1
Current AC, DC +
Density 1.0g/cm³
BI 0.5
Grain Size 10 x 48 Mesh

Features

- Outstanding weldability, good slag removal
- High speed welding

Wire Approvals

Wire	Approvals	AWS	EN ISO 14174 / 14171
H-14	ABS, BV, DNV, KR, LR, NK, CE	A5.17 F7A0(PZ)-EH14	S A AR 1 / S4
A-G		A5.23 F8A0-EG-G	S A AR 1 / S4

Typical Chemical Composition of All-Weld Metal (wt%)

Wire	C	Si	Mn	P	S
H-14	0.08	0.50	0.90	0.020	0.010
A-G	0.16	0.60	1.00	0.015	0.005

Typical Mechanical Properties of All-Weld Metal

Wire	Condition	YS MPa(ksi)	TS MPa(ksi)	EL (%)	Temp °C (°F)	Impact ISO-V J (ft·lbs)
H-14	AC, As-welded AC, 620°C×1hr	560(81) 515(74)	620(90) 620(90)	27 30	-20(0) 0(32)	45(35) 110(81)
A-G	AC, As-welded	515(74)	610(88)	30	-20(0)	60(44)

Wire Diameter & Packaging

Packaging
Tin Can 20kg (44lbs) PE Bag 20kg (44lbs)

S-777MXT

Flux Properties

Class. JIS Z 3352 SA AR1
EN ISO 14174-S A AR 1
Current AC, DC +
Density 1.0g/cm³
BI 0.5
Grain Size 10 x 48 Mesh

Features

- Outstanding weldability, good slag removal
- High speed welding

Wire Approvals

Wire	AWS	EN ISO 14174 / 14171
H-14	A5.17 F7A0- EH14	S A AR 1 / S4
M-12K	A5.17 F7A(P)Z-EM12K	S A AR 1 / S2Si
A-2	A5.23 F8PZ-EA2- A2	S A AR 1 / S2Mo
B-2	A5.23 F9AZ(F8PZ)-EB2-B2	S A AR 1
B-3	A5.23 F8PZ-EB3-B3	S A AR 1

Typical Chemical Composition of All-Weld Metal (wt%)

Wire	C	Si	Mn	P	S	Cr	Mo
H-14	0.06	0.60	1.15	0.028	0.015	-	-
M-12K	0.06	0.50	0.70	0.025	0.015	-	-
A-2	0.05	0.65	0.75	0.020	0.010	-	0.45
B-2	0.06	0.60	0.55	0.022	0.015	1.25	0.40
B-3	0.07	0.55	0.50	0.018	0.010	2.05	0.95

Typical Mechanical Properties of All-Weld Metal

Wire	Condition	YS MPa(ksi)	TS MPa(ksi)	EL (%)	Temp °C (°F)	Impact ISO-V J (ft·lbs)
H-14	AC, As-welded	530(76)	570(82)	32	-20(0)	40(30)
M-12K	AC, As-welded AC, 620°C×1hr	510(74) 460(66)	560(81) 540(78)	28 32	0(32) 0(32)	30(24) 60(44)
A-2	AC, 620°C×1hr	580(84)	640(92)	28	0(32)	45(33)
B-2	AC, As-welded AC, 690°C×1hr	635(92) 560(81)	722(104) 640(92)	23 25	- 0(32)	- 45(33)
B-3	AC, 690°C×1hr	570(82)	660(95)	20	0(32)	30(24)

Wire Diameter & Packaging

Packaging
Tin Can 20kg (44lbs) PE Bag 20kg (44lbs)

Mild Steel & 490 MPa high tensile steels (Neutral Flux)

S-777Q

Flux Properties

Class. JIS Z 3352 SA AR1
EN ISO 14174-S A AR 1
Current AC, DC +
Density 1.0g/cm³
BI 0.6
Grain Size 10 x 48 Mesh

Features

- Outstanding weldability, good slag removal
- High speed welding

Wire Approvals

Wire	Approvals	AWS	EN ISO 14174 / 14171
M-12K	LR, RINA, CE	A5.17 F7A2-EM12K	S A AR 1 / S2Si
H-14	LR, RINA, CE	A5.17 F7A2-EH14	S A AR 1 / S4
L-8		A5.17 F7AZ-EL8	S A AR 1 / S1
L-12		A5.17 F7AZ-EL12	S A AR 1 / S1
M-13K		A5.17 F7A0-EM13K	-

Typical Chemical Composition of All-Weld Metal (wt%)

Wire	C	Si	Mn	P	S
M-12K	0.09	0.30	1.50	0.015	0.010
H-14	0.07	0.35	1.45	0.020	0.010
L-8	0.04	0.40	0.80	0.020	0.010
L-12	0.04	0.40	0.85	0.020	0.010
M-13K	0.06	0.80	0.80	0.010	0.020

Typical Mechanical Properties of All-Weld Metal

Wire	Condition	YS MPa(ksi)	TS MPa(ksi)	EL (%)	Temp °C (°F)	Impact ISO-V J (ft·lbs)
M-12K	AC, As-welded	570(82)	630(91)	28	-30(-20)	90(66)
H-14	DC+, As-welded	510(74)	590(86)	30	-30(-20)	65(49)
L-8	AC, As-welded	440(64)	730(77)	30	0(32)	80(60)
L-12	AC, As-welded	470(68)	550(80)	31	0(32)	75(56)
M-13K	AC, As-welded	540(78)	620(90)	24	-20(0)	50(39)

Wire Diameter & Packaging

Packaging
Tin Can 20kg (44lbs)

Mild Steel & 490 MPa high tensile steels (Neutral Flux)

S-777MXH

Flux Properties

Class. JIS Z 3352 SA AB1
EN ISO 14174-S A AB 1
Current AC, DC +
Density 1.2g/cm³
BI 0.9
Grain Size 10 x 48 Mesh

Features

- Outstanding weldability, good slag removal
- High speed welding
- horizontal position welding

Wire Approvals

Wire	Approvals	AWS	EN ISO 14174 / 14171
H-14	ABS, BV, DNV, KR, LR, NK, CWB, CE	A5.17 F7A(P)2-EH14	S A AB 1 / S4
M-12K		A5.17 F7A(P)Z-EM12K	S A AB 1 / S2Si
A-3		A5.23 F8A4(P0)-EA3-A3	S A AB 1 / A S50 2 AB S4Mo

Typical Chemical Composition of All-Weld Metal (wt%)

Wire	C	Si	Mn	P	S	Mo
H-14	0.08	0.30	1.25	0.020	0.005	-
M-12K	0.07	0.40	0.90	0.020	0.020	-
A-3	0.07	0.35	1.35	0.020	0.010	0.45

Typical Mechanical Properties of All-Weld Metal

Wire	Condition	YS MPa(ksi)	TS MPa(ksi)	EL (%)	Temp °C (°F)	Impact ISO-V J (ft·lbs)
H-14	AC, As-welded	590(85)	610(88)	28	-30(-20)	80(60)
	AC, 620°C×1hr	540(78)	590(85)	30	-30(-20)	100(74)
M-12K	AC, As-welded	480(70)	570(83)	26	0(32)	80(60)
	AC, 620°C×1hr	450(65)	550(80)	30	0(32)	90(66)
A-3	AC, As-welded	650(94)	680(99)	25	-40(-40)	55(41)
	AC, 620°C×1hr	640(93)	665(97)	26	-20(0)	60(44)

Wire Diameter & Packaging

Packaging
Tin Can 20kg (44lbs) PE Bag 20kg (44lbs)

Mild Steel & 490 MPa high tensile steels (Neutral Flux)

S-900SP

Flux Properties

Class. JIS Z 3352 SA CS1
EN ISO 14174-S A CS 1
Current AC, DC +
Density 1.2g/cm³
BI 1.5
Grain Size 10 x 48 Mesh

Features

- Outstanding weldability, good slag removal
- Multi-pole pipe welding

Wire Approvals

Wire	Approvals	AWS	EN ISO 14174 / 14171
M-12K	ABS	A5.17 F7A(P)4-EM12K	S A CS 1 / S2Si
A-2	ABS	A5.23 F9A(P)2-EA2-G	S A CS 1 / S2Mo
A-2TiB		A5.23 F9TA6-EA2TiB	S A CS 1 / S2MoTiB

Typical Chemical Composition of All-Weld Metal (wt%)

Wire	C	Si	Mn	P	S	Mo
M-12K	0.09	0.35	1.55	0.025	0.005	-
A-2	0.11	0.25	1.50	0.020	0.005	0.40
A-2TiB	-	-	-	-	-	-

Typical Mechanical Properties of All-Weld Metal

Wire	Condition	YS MPa(ksi)	TS MPa(ksi)	EL (%)	Temp °C (°F)	Impact ISO-V J (ft·lbs)
M-12K	AC, As-welded AC, 620°C×1hr	530(77) 510(74)	580(84) 570(82)	28 30	-40(-40) -40(-40)	70(52) 60(44)
A-2	AC, As-welded AC, 620°C×1hr	650(94) 620(90)	710(103) 690(100)	24 24	-30(-20) -30(-20)	60(44) 50(37)
A-2TiB	AC, As-welded	600(87)	710(103)	24	-50(-60)	80(59)

Wire Diameter & Packaging

Packaging
Tin Can 20kg (44lbs) PE Bag 20kg (44lbs)

S-717

Flux Properties

Class. JIS Z 3352 SA AB1
EN ISO 14174-S A AB 1
Current AC, DC +
Density 1.1g/cm³
BI 1.6
Grain Size 10 x 48 Mesh

Features

- Outstanding multi weldability for thick plate steel
- Pressure vessels, wind towers

Wire Approvals

Wire	Approvals	AWS	EN ISO 14174 / 14171
M-12K	ABS, BV, DNV, KR, LR, NK, RS, CWB, CE, DB, TUV	A5.17 F7A(P)6-EM12K	S A AB 1 / S42 4 AB S2Si
L-8		A5.17 F6A(P)4-EL8	S A AB 1 / S1
A-2		A5.23 F8A0(PZ)-EA2-A4	S A AB 1 / S2Mo

Typical Chemical Composition of All-Weld Metal (wt%)

Wire	C	Si	Mn	P	S	Mo
M-12K	0.09	0.30	1.50	0.020	0.005	-
L-8	0.07	0.20	1.00	0.025	0.005	-
A-2	0.08	0.30	1.50	0.025	0.005	0.45

Typical Mechanical Properties of All-Weld Metal

Wire	Condition	YS MPa(ksi)	TS MPa(ksi)	EL (%)	Temp °C (°F)	Impact ISO-V J (ft·lbs)
M-12K	DC+, As-welded	470(68)	550(80)	34	-50(-60)	80(59)
	DC+, 620°C×1hr	430(62)	540(78)	35	-50(-60)	80(59)
L-8	DC+, As-welded	430(62)	510(74)	36	-40(-40)	50(37)
	DC+, 620°C×1hr	410(59)	500(73)	37	-40(-40)	50(37)
A-2	DC+, As-welded	540(78)	650(94)	29	-20(0)	60(44)
	DC+, 620°C×1hr	530(77)	640(93)	30	-20(0)	60(44)

Mild Steel & 490 MPa high tensile steels (Neutral Flux)

Wire Diameter & Packaging

Packaging
Tin Can 20kg (44lbs) PE Bag 20kg (44lbs)

S-707T

Flux Properties

Class. JIS Z 3352 S A AB 1
EN ISO 14174 S A AB 1
Current AC, DC +
Density 1.2g/cm³
BI 1.8
Grain Size 10 x 48 Mesh

Features

- Outstanding weldability for two-run welding
- Shipbuilding panel line

Wire Approvals

Wire	Approvals	AWS	EN ISO 14174 / 14171
H-14	BV, DNV, KR, LR, NK, RINA, RS, CE	A5.17 F7A(P)6-EH14	S A AB 1 / A-S4

Typical Chemical Composition of All-Weld Metal (wt%)

Wire	C	Si	Mn	P	S
H-14	0.07	0.34	1.64	0.023	0.015

Typical Mechanical Properties of All-Weld Metal

Wire	Condition	YS MPa(ksi)	TS MPa(ksi)	EL (%)	Temp °C (°F)	Impact ISO-V J (ft·lbs)
H-14	DC+, As-welded	490(71)	560(81)	30	-50(-60)	100(74)
	DC+, 620°C×1hr	440(64)	550(80)	35	-50(-60)	100(74)

Wire Diameter & Packaging

Packaging
Tin Can 20kg (44lbs) PE Bag 20kg (44lbs)

S-950S

Flux Properties

Class. JIS Z 3352 S A FB1
EN ISO 14174-S A FB1 H5
Current AC, DC +
Density 1.2g/cm³
BI 2.2
Grain Size 10 x 48 Mesh

Features

- Outstanding weldability, good slag removal
- Multi-pole pipe welding

Wire Approvals

Wire	Approvals	AWS	EN ISO 14174 / 14171
M-12K	ABS	A5.17 F7A(P)8-EM12K	S A FB1 H5 / S2Si
A-2	ABS	A5.23 F8A(P)5-EA2-A3, F8TA(P)8-EA2	S A FB1 H5 / S2Mo
A-2TiB	ABS	A5.23 F8TA(P)8-EA2TiB	S A FB1 H5 / S2MoTiB

Typical Chemical Composition of All-Weld Metal (wt%)

Wire	C	Si	Mn	P	S	Mo
M-12K	0.06	0.20	1.50	0.020	0.005	-
A-2	0.06	0.20	1.50	0.015	0.001	0.43
A-2TiB	-	-	-	-	-	-

Typical Mechanical Properties of All-Weld Metal

Wire	Condition	YS MPa(ksi)	TS MPa(ksi)	EL (%)	Temp °C (°F)	Impact ISO-V J (ft·lbs)
M-12K	DC+, As-welded	460(67)	560(81)	34	-60(-75)	100(74)
	DC+, 620°C×1hr	440(64)	540(78)	33	-60(-75)	100(74)
A-2	DC+, As-welded	570(83)	640(93)	28	-46(-50)	80(60)
	DC+, 620°C×1hr	570(83)	640(93)	31	-46(-50)	70(52)
A-2TiB	DC+, As-welded	610(88)	690(100)	31	-60(-75)	100(74)
	DC+, 620°C×1hr	610(88)	690(100)	31	-60(-75)	80(59)

Wire Diameter & Packaging

Packaging
Tin Can 20kg (44lbs) PE Bag 20kg (44lbs)

Mild Steel & 490 MPa high tensile steels (Neutral Flux)

SUPERFLUX 800T

Flux Properties

Class. JIS Z 3352 SA FB1
EN ISO 14174-S A FB 1
Current AC, DC +
Density 1.1g/cm³
BI 2.4
Grain Size 10 x 48 Mesh

Features

- Outstanding multi weldability for thick plate steel
- Wind towers

Wire Approvals

Wire	Approvals	AWS	EN ISO 14174 / 14171
M-12K	CE, DB, TUV	A5.17 F7A8-EM12K	S A AB 1 / S2Si
A-2	CE, DB, TUV	A5.23 F8A4-EA2-A3	S A AB 1 / S2Mo

Typical Chemical Composition of All-Weld Metal (wt%)

Wire	C	Si	Mn	P	S	Mo
M-12K	0.08	0.30	1.50	0.018	0.005	-
A-2	0.08	0.30	1.50	0.023	0.005	0.45

Typical Mechanical Properties of All-Weld Metal

Wire	Condition	YS MPa(ksi)	TS MPa(ksi)	EL (%)	Temp °C (°F)	Impact ISO-V J (ft·lbs)
M-12K	DC+, As-welded	450(65)	540(78)	29	-60(-75)	80(59)
A-2	DC+, As-welded	540(78)	650(94)	29	-40(-40)	50(37)

Wire Diameter & Packaging

Packaging
Tin Can 20kg (44lbs) PE Bag 20kg (44lbs)

SUPERFLUX 55ULT

Flux Properties

Class. JIS Z 3352 SA FB1
EN ISO 14174-S A FB 1
Current AC, DC +
Density 1.2g/cm³
BI 2.5
Grain Size 10 x 48 Mesh

Features

- Outstanding weldability for two-run, multi welding
- Shipbuilding panel line

Wire Approvals

Wire	Approvals	AWS	EN ISO 14174 / 14171
H-14	ABS, BV, DNV, KR, LR, NK, RINA, RS, CWB, CE, DB, TUV	A5.17 F7A(P)8-EH14	S A FB 1 / S4
A-G	DNV	A5.23 F8A(P)8-EG-G	S A FB 1 / S4
A-3	ABS, BV, DNV, KR, LR, NK, RS	A5.23 F8A6-EA3-G, F8TA8-EA3	-

Typical Chemical Composition of All-Weld Metal (wt%)

Wire	C	Si	Mn	P	S	Mo
H-14	0.07	0.40	1.55	0.018	0.003	-
A-G	0.08	0.25	1.55	0.021	0.010	-
A-3	0.09	0.30	1.43	0.022	0.002	0.43

Typical Mechanical Properties of All-Weld Metal

Wire	Condition	YS MPa(ksi)	TS MPa(ksi)	EL (%)	Temp °C (°F)	Impact ISO-V J (ft·lbs)
H-14	AC, As-welded	540(78)	610(89)	30	-60(-75)	180(132)
	AC, 620°C×1hr	520(75)	600(87)	32	-60(-75)	160(118)
A-G	AC, As-welded	540(78)	610(89)	30	-60(-75)	180(132)
	AC, 620°C×1hr	520(75)	600(87)	32	-60(-75)	160(118)
A-3	AC, As-welded	570(83)	650(94)	24	-50(-60)	70(52)

Wire Diameter & Packaging

Packaging
Tin Can 20kg (44lbs) PE Bag 20kg (44lbs)

S-800WT

Flux Properties

Class. JIS Z 3352 SA FB1
EN ISO 14174-S A FB 1
Current AC, DC +
Density 1.1g/cm³
BI 2.7
Grain Size 10 x 48 Mesh

Features

- Outstanding multi weldability for thick plate steel
- Wind towers

Wire Approvals

Wire	Approvals	AWS	EN ISO 14174 / 14171
M-12K	CWB, CE, DB, TUV	A5.17 F7A8-EM12K	S A FB 1 / S 42 5 FB S2Si

Typical Chemical Composition of All-Weld Metal (wt%)

Wire	C	Si	Mn	P	S
M-12K	0.09	0.25	1.50	0.025	0.005

Typical Mechanical Properties of All-Weld Metal

Wire	Condition	YS MPa(ksi)	TS MPa(ksi)	EL (%)	Temp °C (°F)	Impact ISO-V J (ft·lbs)
M-12K	DC+, As-welded	490(71)	570(83)	29	-60(-75)	100(74)

Wire Diameter & Packaging

Packaging
Tin Can 20kg (44lbs) PE Bag 20kg (44lbs)

SUPERFLUX 787

Flux Properties

Class. JIS Z 3352 SA FB1
EN ISO 14174-S A FB 1
Current AC, DC +
Density 1.2g/cm³
BI 2.7
Grain Size 10 x 48 Mesh

Features

- Outstanding multi weldability for thick plate steel
- Pressure vessels, wind towers, pipes

Wire Approvals

Wire	Approvals	AWS	EN ISO 14174 / 14171
H-14	ABS, BV, CCS, DNV, KR, LR, NK, CE	A5.17 F7A(P)8-EH14	S A FB 1 / S4
M-12K	ABS	A5.17 F6A(P)6-EM12K	S A FB 1 / S2Si
M-14K	ABS	A5.17 F7A(P)8-EM14K	S A FB 1 / SU24
A-2	ABS	A5.23 F8A(P)6-EA2-A2	S A FB 1 / S2Mo
B-2	ABS	A5.23 F8P2-EB2-B2	S A FB 1 / SCrMo1
B-3		A5.23 F9PZ-EB3-B3	S A FB 1 / SCrMo2
H-12K	ABS, DNV, CE	A5.17 F7A(P)8-EH12K	S A FB 1 / S 42 6 FB S3Si
A-3	ABS	A5.23 F8A6(P4)-EA3-A3	S A FB 1 / S4Mo
A-2TiB	ABS	A5.23 F8TA(P)8-EA2TiB	S A FB 1 / S2MoTiB
Ni-5	ABS, DNV, CE	A5.23 F8A(P)8-ENi5-Ni1	S A FB 1 / S 46 6 FB S3NiMo0.2
F-3		A5.23 F9A(P)8-EF3-F3	S A FB 1 / S3Ni1Mo

Mild Steel & 490 MPa high tensile steels (Neutral Flux)

Typical Chemical Composition of All-Weld Metal (wt%)

Wire	C	Si	Mn	P	S	Ni	Cr	Mo	Ti
H-14	0.07	0.26	1.65	0.018	0.003	-	-	-	-
M-12K	0.07	0.29	1.07	0.018	0.003	-	-	-	-
M-14K	0.06	0.65	1.25	0.013	0.003	-	-	-	0.02
A-2	0.08	0.25	1.14	0.020	0.002	-	-	0.41	-
B-2	0.09	0.35	0.99	0.022	0.007	-	-	0.50	-
B-3	0.06	0.31	0.95	0.021	0.009	-	1.21	0.92	-
H-12K	0.07	0.35	1.55	0.015	0.005	-	2.03	-	-
A-3	0.07	0.20	1.60	0.024	0.002	-	-	0.49	-
A-2TiB	-	-	-	-	-	-	-	-	-
Ni-5	0.06	0.35	1.40	0.015	0.003	0.83	0.05	0.25	-
F-3	0.07	0.35	1.70	0.020	0.003	0.85	-	0.50	-

Typical Mechanical Properties of All-Weld Metal

Wire	Condition	YS MPa(ksi)	TS MPa(ksi)	EL (%)	Temp °C (°F)	Impact ISO-V J (ft·lbs)
H-14	DC+, As-welded	510(74)	550(80)	30	-60(-75)	100(74)
	DC+, 620°C×1hr	460(67)	540(78)	34	-60(-75)	100(74)
M-12K	DC+, As-welded	440(65)	500(72)	36	-50(-60)	100(74)
	DC+, 620°C×1hr	400(57)	480(69)	37	-50(-60)	100(74)
M-14K	DC+, As-welded	520(75)	620(90)	30	-60(-75)	100(74)
	DC+, 620°C×1hr	500(73)	610(89)	31	-60(-75)	100(74)
A-2	DC+, As-welded	530(77)	610(88)	28	-50(-60)	80(60)
	DC+, 620°C×1hr	520(75)	610(88)	30	-50(-60)	80(68)
B-2	DC+, As-welded	530(77)	590(86)	27	-30(-20)	80(59)
	DC+, 620°C×1hr	590(86)	670(97)	25	0(32)	50(37)
H-12K	DC+, As-welded	490(71)	570(83)	32	-60(-75)	100(74)
	DC+, 620°C×1hr	450(65)	550(80)	33	-60(-75)	100(74)
A-3	DC+, As-welded	570(83)	640(93)	27	-50(-60)	50(37)
	DC+, 620°C×1hr	550(80)	630(91)	29	-40(-40)	50(37)
A-2TiB	DC+, As-welded	570(84)	650(95)	25	-60(-75)	70(52)
	DC+, 620°C×1hr	560(81)	640(93)	26	-60(-75)	60(44)
Ni-5	DC+, As-welded	590(86)	620(90)	31	-60(-75)	80(59)
	DC+, 620°C×1hr	540(78)	590(86)	33	-60(-75)	75(55)
F-3	DC+, As-welded	670(98)	730(106)	26	-60(-75)	100(73)
	DC+, 620°C×1hr	650(94)	720(104)	28	-60(-75)	70(52)

Wire Diameter & Packaging

Packaging
Tin Can 20kg (44lbs) PE Bag 20kg (44lbs)

S-705EF

Flux Properties

Class. JIS Z 3352 S A CG-I 1
EN ISO 14174-S A CG-I 1
Current AC, DC +
Density 1.3g/cm³
BI 4.2
Grain Size 20 x 80 Mesh

Features

- Outstanding weldability for one-side welding
- Shipbuilding panel line

Wire Approvals

Wire	Approvals
H-14	ABS, BV, DNV, KR, LR, NK, RS

Typical Chemical Composition of All-Weld Metal (wt%)

Wire	C	Si	Mn	P	S	Mo	B
H-14/IRN/S-22	0.10	0.25	1.23	0.011	0.004	0.20	0.001
H-14/CW/CBM-G22	0.11	0.19	1.28	0.014	0.005	0.11	0.001

Typical Mechanical Properties of All-Weld Metal

Wire	Condition	YS MPa(ksi)	TS MPa(ksi)	EL (%)	Temp °C (°F)	Impact ISO-V J (ft·lbs)
H-14/IRN/S-22	AC, Th.20mm(0.78in)	460(67)	560(81)	23	0(32)	60(44)
H-14/CW/CBM-G22	AC, Th.20mm(0.78in)	480(70)	580(84)	22	0(32)	55(33)

Wire Diameter & Packaging

Packaging
Tin Can 20kg (44lbs) PE Bag 20kg (44lbs)

One side welding (Neutral Flux)

S-705HF

Flux Properties

Class. JIS Z 3352 S A CG-I 1
EN ISO 14174-S A CG-I 1
Current AC, DC +
Density 1.3g/cm³
BI 4.2
Grain Size 20 x 80 Mesh

Features

- Outstanding weldability for one-side welding
- Shipbuilding panel line

Wire Approvals

Wire	Approvals
H-14	ABS, BV, CCS, DNV, KR, LR, NK

Typical Chemical Composition of All-Weld Metal (wt%)

Wire	C	Si	Mn	P	S	Mo	B
H-14/CW/CBM-G22	0.10	0.26	1.44	0.014	0.005	0.13	0.005
H-14/IRN/BS-3W	0.10	0.30	1.25	0.015	0.004	0.07	0.005

Typical Mechanical Properties of All-Weld Metal

Wire	Condition	YS MPa(ksi)	TS MPa(ksi)	EL (%)	Temp °C (°F)	Impact ISO-V J (ft·lbs)
H-14/CW/CBM-G22	AC, Th.25mm(0.88in)	500(73)	600(87)	22	-20(0)	100(74)
H-14/IRN/BS-3W	AC, Th.25mm(0.88in)	510(74)	620(90)	22	-20(0)	80(59)

Wire Diameter & Packaging

Packaging
Tin Can 20kg (44lbs) PE Bag 20kg (44lbs)

S-705LP

Flux Properties

Class. JIS Z 3352 S A CG-I 1
EN ISO 14174 S A CG-I1
Current AC, DC +
Density 1.2g/cm³
BI 2.7
Grain Size 10 x 48 Mesh

Features

- Outstanding weldability for one-side welding
- Shipbuilding panel line

Wire Approvals

Wire	Approvals
A-3	ABS, BV, DNV, KR, LR, NK

Typical Chemical Composition of All-Weld Metal (wt%)

Wire	C	Si	Mn	P	S	Mo	Ti	B
A-3/IRN-1/CB M-G22	0.06	0.28	1.40	0.017	0.002	0.25	0.02	0.004

Typical Mechanical Properties of All-Weld Metal

Wire	Condition	YS MPa(ksi)	TS MPa(ksi)	EL (%)	Temp °C (°F)	Impact ISO-V J (ft·lbs)
A-3/IRN-1/CBM-G22	AC, Th.16mm(0.62in)	520(75)	620(90)	24	-60(75)	75(55)

Wire Diameter & Packaging

Packaging
Tin Can 20kg (44lbs) PE Bag 20kg (44lbs)

SUPERFLUX 300S

Flux Properties

Class. JIS Z 3352 SA AB2
EN ISO 14174-S A AB 2
Current AC, DC +
Density 1.2g/cm³
BI 1
Grain Size 10 x 48 Mesh

Features

- Outstanding weldability, good slag removal
- 300 type stainless steel

Wire Approvals

Wire	Approvals
YS-308L	ABS, KR
YS-316L	ABS, BV, KR

Typical Chemical Composition of All-Weld Metal (wt%)

Wire	C	Si	Mn	P	S	Ni	Cr	Mo
YS-308L	0.03	0.8	1.0	0.020	0.010	10.4	19.0	0.1
YS-316L	0.03	0.8	1.2	0.020	0.010	11.7	17.9	2.6

Typical Mechanical Properties of All-Weld Metal

Wire	Condition	YS MPa(ksi)	TS MPa(ksi)	EL (%)	Temp °C (°F)	Impact ISO-V J (ft·lbs)
YS-308L	DC+, As-welded	440(63)	570(82)	42	-196(-320)	50(37)
YS-316L	DC+, As-welded	460(66)	580(84)	43	-196(-320)	50(37)

Wire Diameter & Packaging

Packaging
Tin Can 20kg (44lbs) PE Bag 20kg (44lbs)

S-300B

Flux Properties

Class. JIS Z 3352 SA AF2
EN ISO 14174-S A AF 2
Current AC, DC +
Density 1.2g/cm³
BI 1.7
Grain Size 12 x 48 Mesh

Features

- Outstanding weldability, good slag removal
- 300 type stainless steel

Typical Chemical Composition of All-Weld Metal (wt%)

Wire	C	Si	Mn	P	S	Ni	Cr	Mo	Nb
YS-308L	0.03	0.7	1.9	0.020	0.010	9.8	19.2	-	-
YS-316L	0.02	0.6	1.6	0.020	0.010	11.6	18.3	2.6	-
YS-347	0.06	0.6	1.3	0.020	0.010	8.6	18.7	-	0.7

Typical Mechanical Properties of All-Weld Metal

Wire	Condition	YS MPa(ksi)	TS MPa(ksi)	EL (%)	Temp °C (°F)	Impact ISO-V J (ft·lbs)
YS-308L	DC+, As-welded	440(63)	570(82)	42	-196(-320)	60(44)
YS-316L	DC+, As-welded	460(66)	580(84)	43	-196(-320)	60(44)
YS-347	DC+, As-welded	500(72)	660(95)	41	-	-

Wire Diameter & Packaging

Packaging
Tin Can 20kg (44lbs) PE Bag 20kg (44lbs)

SUPERFLUX 209

Flux Properties

Class. JIS Z 3352 S A AF 2
EN ISO 14174-S A AF 2
Current AC, DC +
Density 1.0g/cm³
BI 1.8
Grain Size 10 x 48 Mesh

Features

- Outstanding weldability, good slag removal
- Duplex stainless steel

Wire Approvals

Wire	Approvals
YS-2209	ABS, CCS, DNV, KR, NK

Typical Chemical Composition of All-Weld Metal (wt%)

Wire	C	Si	Mn	P	S	Ni	Cr	Mo	N
YS-2209	0.010	0.7	1.2	0.02	0.01	8.2	21.9	3.1	0.12

Typical Mechanical Properties of All-Weld Metal

Wire	Condition	YS MPa(ksi)	TS MPa(ksi)	EL (%)	Temp °C (°F)	Impact ISO-V J (ft·lbs)
YS-2209	DC+, As-welded	590(85)	780(113)	31	-50(-60)	50(38)

Wire Diameter & Packaging

Packaging
Tin Can 20kg (44lbs) PE Bag 20kg (44lbs)

S-Ni2

Flux Properties

Class. JIS Z 3333 FS9Ni-H
Current DC +
Density 1.0g/cm³
BI 3.5
Grain Size 10 x 48 Mesh

Features

- Outstanding weldability, good slag removal
- 9% Ni steel

Wire Approvals

Wire	Approvals
SA-08	ABS, BV, DNV, LR, RS

Typical Chemical Composition of All-Weld Metal (wt%)

Wire	C	Si	Mn	P	S	Ni	Cr	Mo	Fe	W
SA-08	0.03	0.3	0.3	0.010	0.010	68.8	2.1	17.1	8.3	2.3

Typical Mechanical Properties of All-Weld Metal

Wire	Condition	YS MPa(ksi)	TS MPa(ksi)	EL (%)	Temp °C (°F)	Impact ISO-V J (ft·lbs)
SA-08	DC+, As-welded	500(73)	730(106)	38	-196(-320)	70(51)

Wire Diameter & Packaging

Packaging
Tin Can 20kg (44lbs) PE Bag 20kg (44lbs)

S-401HF

Flux Properties

Class. EN ISO 14174 S A AB 2
Current AC, DC +
Density 1.1g/cm³
BI 2.5
Grain Size 10 x 48 Mesh

Features

- Outstanding weldability, good slag removal
- Hardfacing welding

Typical Chemical Composition of All-Weld Metal (wt%)

Wire	C	Si	Mn	Ni	Cr	Mo	Nb	W	V
SC-414S	0.10	0.6	1.2	2.6	14.8	1.0	0.20	-	0.4
SC-423S	0.05	0.4	1.0	2.5	16.7	1.2	0.20	-	0.4
SC-420S	0.33	0.8	1.8	0.5	12.6	1.9	0.18	1.4	0.4
SC-420SG	0.29	0.6	1.5	0.2	13.9	-	0.17	-	-
SC-430	0.06	0.7	1.1	-	17.4	-	-	-	-

Typical Mechanical Properties of All-Weld Metal

Wire	Hardness (HRC)
SC-414S	45
SC-423S	-
SC-420S	53
SC-420SG	53
SC-430	-

Wire Diameter & Packaging

Packaging
Tin Can 20kg (44lbs) PE Bag 20kg (44lbs)

S-402HF

Flux Properties

Class. EN ISO 14174 S A AB 2
Current AC, DC +
Density 1.1g/cm³
BI 2.5
Grain Size 10 x 48 Mesh

Features

- Outstanding weldability, good slag removal
- Hardfacing welding

Typical Chemical Composition of All-Weld Metal (wt%)

Wire	C	Si	Mn	Ni	Cr	Mo	Nb	W	V
SC-414S	0.10	0.6	1.2	2.6	14.8	1.0	0.20	-	0.4
SC-423S	0.05	0.4	1.0	2.5	16.7	1.2	0.20	-	0.4
SC-420S	0.33	0.8	1.8	0.5	12.6	1.9	0.18	1.4	0.4
SC-420SG	0.29	0.6	1.5	0.2	13.9	-	0.17	-	-
SC-430S	0.06	0.7	1.1	-	17.4	-	-	-	-
SC-423S(B)	0.08	0.8	1.2	3.7	19.9	1.4	0.14	-	0.3
SC-414S(B)	0.08	0.5	1.8	2.7	12.3	0.4	0.13	-	0.3
SC-423S(N)	0.07	0.8	1.5	4.6	19.3	2.5	0.23	-	0.3
SC-414S(N)	0.11	0.6	1.5	2.6	14.9	1.1	0.18	-	0.3

Typical Mechanical Properties of All-Weld Metal

Wire	Hardness (HRC)
SC-414S	43~47
SC-423S	-
SC-420S	50~55
SC-420SG	50~55
SC-430S	-
SC-423S(B)	-
SC-414S(B)	43~47
SC-423S(N)	-
SC-414S(N)	43~47

Hardfacing (Neutral Flux)

Wire Diameter & Packaging

Packaging
Tin Can 20kg (44lbs) PE Bag 20kg (44lbs)

APPENDIX

TYPE APPROVAL STATUS

Classification / Product	KR	ABS	LR	BV	DNV	NK	CWB	TUV	CE	DB	CCS	RINA	CR	RS	CRS
S-4301.I	3 2.6~6.0	3 2.6~6.0	3 2.6~6.0	3 2.6~6.0	3 2.6~6.0	KMW3 2.6~6.0									
S-4303.V	3 2.6~6.0	3 2.6~6.0	3 2.6~6.0	3 2.6~6.0	3 2.6~6.0	KMW3 2.6~6.0									
S-6010.D	2 2.6~6.0	2, AWS A5.1:2012 E6010 2.6~6.0	2 2.6~6.0	2 2.6~6.0	2 2.6~6.0	KMW2 2.6~6.0	CSA W48 E4310 2.6~5.0	EN ISO 2560-A E 38 0 C 21 2.6~5.0	EN ISO 2560-A E 38 0 C 21	EN ISO 2560-A E 38 0 C 21 2.6~5.0					
S-6011.D	2 2.6~6.0	2 2.6~6.0	2 2.6~6.0	2 2.6~6.0	2 2.6~6.0	KMW2 2.6~6.0									
S-6013.LF	2 2.6~6.0	2 2.6~6.0	2 2.6~6.0	2 2.6~6.0	2 2.6~6.0	KMW2 2.6~6.0			EN ISO 2560-A E 38 0 R 1 2						
S-6013.V	2 2.6~5.0	2 2.6~5.0	2 2.6~5.0			KMW2 2.6~5.0	CSA W48 E4313 2.6~5.0	ISO 2560-A E 38 0 RC 1 1 2.6~5.0	EN ISO 2560-A - E 38 0 RC 1 1	EN ISO 2560-A E 38 0 RC 1 1 2.6~5.0					
S-6027.LF	3 4.0~8.0	3 4.0~8.0	3.3G 4.0~8.0	3 4.0~8.0	3 4.0~8.0	KMW3 4.0~8.0									
S-7010.P1							CSA W48 E4910-P1 2.6~5.0								
S-7016.H	3H10,3YH10 2.6~6.0	3H10,3Y 2.6~6.0	3Y H15 2.6~6.0	3YHH 2.6~6.0	3YH10 2.6~6.0	KMW53HH 2.6~6.0	CSA W48 E4916 2.6~5.0		EN ISO 2560-A – E 42 2 B 1 2						
S-7016.LF	3H10,3Y H10 2.6~6.0	3H10,3Y 2.6~6.0	3Y H15 2.6~6.0	3,3YHH 2.6~6.0	3YH10 2.6~6.0	KMW53HH 2.6~6.0									
S-7016.LS	3H10,3YH10 (-60℃ ≥34 J) 2.6~6.0	3H10,3Y (-60℃ ≥34 J) 2.6~6.0	5Y40H15 2.6~6.0	3,3YHH (-60℃ ≥34 J) 2.6~6.0	5YH10 2.6~6.0									5YH10 2.6~5.0	
S-76LTH		5Y, 5Y400 H5 2.6~5.0	5Y40 H5 2.6~5.0		5Y40 H5 NV 4-4L 2.6~5.0				EN ISO 2560-A – E 42 6 ZNI B 1 2 H5						
S-7016.M	3H10,3YH10 2.6~6.0	3H10,3Y 2.6~6.0				KMW53HH 2.6~6.0									
S-7016.O	3H10,3YH10 3.2~5.0	3H10,3Y 2.6~5.0	3Y H15 2.6~5.0		3YH10 2.6~5.0	KMW53HH max. 5.0			EN ISO 2560-A-E 42 2 B 1 2						
S-7018.G	3H10,3Y H10 2.6~6.0	3H10,3Y AWS A5.1:2012 E7018 2.6~6.0	3Y H15 2.6~6.0	3YHH 2.6~6.0	3YH10 2.6~6.0	KMW53HH 2.6~6.0	CSA W48 E4918-H8 2.6~5.0	EN ISO 2560-A E 42 3 B 1 2 H5 2.5~5.0	EN ISO 2560-A – E 42 3 B 1 2 H5	EN ISO 2560-A E 42 3 B 1 2 H5 2.5~5.0					
S-7018.GH															
S-7018.1		3H10,3Y 2.6~5.0	3Y H15 2.6~5.0	3Y HH 2.6~5.0	3YH10 2.6~5.0							3Y H10 2.6~5.0			
S-7018.1H		4Y H5 2.6~5.0	4YH5 2.6~5.0	4Y HHH 2.6~5.0	4YH5 2.6~5.0		CSA W48 E4918-1-H4 2.6~5.0		ISO 2560-A – E 42 4 B 3 2 H5						
S-7014.F	2,2Y 2.6~6.0	2Y 2.6~6.0	2,2Y 2.6~6.0	2,2Y 2.6~6.0	2 2.6~6.0	KMW52 2.6~6.0									
S-7024.F		2 3.2~7.0	2,2Y,2YG 3.2~6.0		2 3.2~7.0	KMW2,KMW52 3.2~6.0	CSA W48 E4924 3.2~5.0								
S-7028.F	3Y 3.2~7.0	3,3Y 3.2~7.0	3,3Y,3YG 4.0~7.0	3,3Y 3.2~7.0	3 (2.5 t) 3.2~7.0	KMW3,KMW53 4.0~7.0									
S-7048.V	3H10,3YH10 3.2~6.0	3H10,3Y 3.2~6.0	3,3YH15 3.2~6.0	3,3YHH 3.2~6.0	3YH10 3.2~6.0	KMW53HH 3.2~6.0									
S-7010.A1		AWS A5.5 E7010-A1 2.6~6.0	2Y 2.6~6.0												
S-8016.B2		AWS A5.5 E8016-B2 2.6~6.0							EN ISO 3580-A-E CrMo1 B 1 2						
S-8016.B2R		AWS A5.5 E8016-B2 (-30℃ ≥27 J) 2.6~5.0													
S-8016.C1		AWS A5.5 E8016-C1 2.6~5.0													
S-8018.C3		AWS A5.5 E8018-C3 2.6~5.0							EN ISO 2560-A-E 46 4 1Ni B 3 2						
S-8018.B2		AWS A5.5 E8018-B2 2.6~6.0													

TYPE APPROVAL STATUS

Classification / Product	KR	ABS	LR	BV	DNV	NK	CWB	TUV	CE	DB	CCS	RINA	CR	RS	CRS
SMT-276 / I1		AWS A5.14 ERNiCrMo-4 1.0~3.2	AWS A5.14-2018 ERNiCrMo-4 1.0~1.6, 1.0~3.2												
SMT-625 / I1 T:1.0~1.6 M:1.0~3.2	L.92S 1.0~3.2	AWS A5.14 ERNiCrMo-3 (-196℃ ≥34 J) 1.0~3.2	9Ni H15 1.0~3.2	AWS A5.14 ERNiCrMo-3 UP KV-196 1.0~3.2	-MS NV 1.5Ni up to NV 9Ni 1.0~3.2	KSWL92 1.0~3.2									
SMT-7030 / I1		AWS A5.7 2007 ERCuNi 1.2~3.2													
ST-9010 / I1	KS D7044 YCuNi-1 1.6~3.2														
SMT-08 / I1		AWS A5.14 ERNiMo-8 1.2~3.2	9N1S 1.2~3.2	SA N90 1.2~3.2	NV 1.5Ni up to NV 9Ni 1.2~3.2	KSWL92G(I) 1.2~3.2									
ST-50G / I1	3YSG 1.2~3.2	AWS A5.18 ER70S-G 1.2~3.2	3Y H15 1.2~3.2	UP (-20℃) 1.2~3.2	IIIYM 1.2~3.2	KSW53G 1.2~3.2					3YS 1.2~3.2				
ST-50.3 / I1		AWS A5.18 ER70S-3 (-50℃ ≥27 J) 0.8~3.2													
ST-50.6 / I1		AWS A5.18 ER70S-6 (-30℃ ≥27 J) 1.6~3.2					CSA W48 ER49S-6 (ER480S-6) 2.4~3.2	EN ISO 636-A - W 42 5 W 3Si1 0.8~3.2	EN ISO 636-A - W 42 5 W3Si1	EN ISO 636-A - W 42 5 W 3Si1 0.8~3.2					
ST-1N / I1		AWS A5.28 ER80S-Ni1 (-50℃ ≥27 J) 1.6~3.2	AWS A5.28 ER80S-Ni1 1.2~3.2	SA9Y40 1.6~3.2	IV140MS 1.6~3.2		AWS A5.28/A5.28M ER55S-Ni1 (ER80S-Ni1) (-50℃) 1.6~3.2								
ST-72 / I1							CSA W48 ER49S-2(ER480S-2) 2.0~2.4								
ST-80B2 / I1		AWS A5.28 ER80S-B2 (-30℃ ≥27 J) 0.8~3.2							EN ISO 16834-B-G 62A 3 M20 4M31						
ST-90B3 / I1		AWS A5.28 ER90S-B3 (-30℃ ≥27 J) 1.6~3.2							EN ISO 16834-B-W 62A 3 I1 4M31						
SM-70 / C1	3SG, 3YSG(C) 0.8~1.6	3SA,3YSA 0.8~1.6	3YS, 3Y M H15 0.8~1.6	SA3,SA3YM 0.8~1.6	IIIYMS 0.8~1.6	KSW53G(C) 0.8~1.6	CSA W48 B-G 49A 3 C1 S6 0.8~1.6	EN ISO 14341-A - G42 2 C1 3Si1 0.8~1.6	EN ISO 14341-A - G42 2 C1 3Si1	EN ISO 14341-A -G42 2 C1 3Si1 0.8~1.6		3YS 0.8~1.6			
SM-70 / M21	3YSG(M2), 3YMG(M2) 0.8~1.6	3SA,3YSA 0.8~1.6	3YS, 3Y M H15 0.8~1.6	SA3YM 0.8~1.6	IIIYMS 0.8~1.6	KSW53G, KAW53MG (M2) 0.8~1.6		EN ISO 14341-A - G42 4 M21 3Si1 0.8~1.6	EN ISO 14341-A - G42 4 M21 3Si1	EN ISO 14341-A - G42 5 M21 3Si1 0.8~1.6		3YS 0.8~1.6			
SM-70EN / C1					III Y40MS 0.8~1.6			EN ISO 14341-A - G42 2 C1 4Si1 0.8~1.6	EN ISO 14341-A - G42 2 C1 4Si1	EN ISO 14341-A - G42 2 C1 4Si1 0.8~1.6					
SM-70EN / M21					IV140MS 0.8~1.6			EN IOS 14341-A - G 46 5 M21 4Si1 0.8~1.6	EN IOS 14341-A - G46 4 M21 4Si1	EN IOS 14341-A - G46 5 M21 4Si1 0.8~1.6					
SM-70G / C1	3SG, 3YSG , 3MG, 3YMG (C1) 0.8~1.6	3SA,3YSA 0.8~1.6	3YS H15 0.8~1.6	SA3,3YM 0.8~1.6	IIIYMS 0.8~1.6	KSW53G, KAW53MG(C) 0.8~1.6	KSW53G,KAW53MG(C) 0.8~1.6								
SM-70G / M21		3SA,3YSA 0.8~1.6			IIIYMS 0.8~1.6	KSW3G, KSW53G(M2) KAW3MG, KAW53MG(M2) 0.8~1.6									
SM-70GS / M21			3YSH15 0.8~1.6												
SM-70S / C1		3SA,3YSA 0.8~1.6	3YSH15 0.8~1.6												
SM-70S / M21		3SA,3YSA 0.8~1.6	3YSH15 0.8~1.6												
SM-80G / C1		AWS A5.28 ER80S-G (-20℃ ≥47 J) 1.0~1.6							EN ISO 14341-B-G 57A 5 C1 S3 M1T 0.8~1.6						

Classification / Product	KR	ABS	LR	BV	DNV	NK	CWB	TUV	CE	DB	CCS	RINA	CR	RS	CRS
S-316L.17		AWS A5.4 E316L-17 2.0~5.0													
SR-134					NV 9NiH5 2.6~5.0										
SR-182		AWS A5.11 ENiCrFe-3 (-196℃ ≥27 J) 2.6~5.0													
SR-625		AWS A5.11 ENiCrMo-3 (-196℃ ≥27 J) 3.2~4.0													
ST-2209 / I1	AWS A5.9 ER2209 Duples Stainless Steel 1.6~3.2	AWS A5.9 ER2209 min. TS 690MPa, EL20%, -50℃ ≥27 J 0.8~3.2	531803m 1.6~3.2	2205 1.6~3.2	- Duplex Stainless Steel* 1.6~3.2										
ST-308 / I1	RY308 0.8~3.2	AWS A5.9 ER308 min. TS 550MPa, EL 35% 0.8~3.2			NV 308M 0.8~3.2				EN ISO 14343-A-W Z 19 9						
ST-308L / I1	RY308L (-196℃ ≥29 J) 0.8~3.2	AWS A5.9 ER308L min. TS 520MPa, EL 35% 0.8~3.2	304L (-196℃) 0.8~3.2	UP (KV-196℃) 0.8~3.2	NV 308L (-196℃) 0.8~3.2	KY308L 0.8~3.2			EN ISO 14343-A-W 19 9 L		304L (-196℃) 0.8~3.2				
ST-308LSi / I1									EN ISO 14343-A-W 19 9 L Si						
ST-309 / I1		AWS A5.9 ER309 min. TS 550MPa, EL 30% 0.8~3.2							EN ISO 14343-A-W Z 23 12						
ST-309L / I1	RY309L 0.8~3.2	AWS A5.9 ER309L min. TS 520MPa, EL 30% 0.8~3.2	SS/CMn 0.8~3.2	309L min. TS 520MPa, EL 30% 0.8~3.2	NV 309L 0.8~3.2	KY309L 0.8~3.2			EN ISO 14343-A-W 23 12 L		309L 0.8~3.2				
ST-309LSi / I1									EN ISO 14343-A-W 23 12 L Si						
ST-309MoL / I1				SA 309Mo 1.6~3.2											
ST-316 / I1		AWS A5.9 ER316 min. TS 520MPa, EL 30% 0.8~3.2							EN ISO 14343-A-W Z 19 12 3						
ST-316L / I1	RY316L (-196℃ ≥29 J) 0.8~3.2	AWS A5.9 ER316L min. TS 490MPa, EL 30% 0.8~3.2	316L (-196℃) 0.8~3.2	316L (KV-196℃) 0.8~3.2	NV 316L (-196℃) 0.8~3.2	KY316L 0.8~3.2	CAS W48 ER316L 1.0~4.0		EN ISO 14343-A-W 19 12 3 L		316L (-196℃) 0.8~3.2				
ST-316LSi / I1									EN ISO 17343-A-W 19 12 3 L Si						
ST-347 / I1		AWS A5.9 ER347 0.8~3.2													
SM-308L /I1															
SM-308LSi / I1															
SM-309 / I1		AWS A5.9 ER309 0.8~3.2													
SM-309L / I1									EN ISO 14343-A-W 23 12 L						
SM-309LSi / I1									EN ISO 14343-A-G 23 12 L Si						
SM-309MoL / I1		AWS A5.9 ER309LMo 0.8~3.2													
SM-316L / I1		AWS A5.9 ER316L 0.8~3.2							EN ISO 14343-A-G 19 12 3 L						
SMT-2594 / I1		AWS A5.9 ER2594 min. TS 760MPa, EL 15% 1.0~3.2	AWS A5.9 ER2594 (JIV6R-16) 1.0~3.2	equivalent to AWS A5.9 ER2594 1.0~3.2	- Duplex Stainless Steel (-50℃) 1.0~3.2										

TYPE APPROVAL STATUS

Classification / Product	KR	ABS	LR	BV	DNV	NK	CWB	TUV	CE	DB	CCS	RINA	CR	RS	CRS
SM-70 Copper Free / C1		3SA,3YSA 0.8-1.6													
SM-70 Copper Free / M21		3SA,3YSA 0.8-1.6													
SM-70G Copper Free / C1		3SA,3YSA 0.8-1.6													
SM-70G Copper Free / M21		3SA,3YSA 0.8-1.6													
SM-80D2 / I1									EN ISO 16834-B-G 62A 3 M20 4M31						
SM-1N / 95%Ar+5%O2		AWS A5.28 ER80S-N1I 0.8-1.6													
SC-EG2 Cored/ CBM600/C1	3Y, 3YV 1.6	3,3YH10 1.6	3,3Y 1.6	AV3,AV3Y 1.6	IIY (-20℃) 1.6	KEW53 1.6					3,3Y 1.6	3Y 1.6			
SC-EG3/BS-SG/ C1	4Y40VH5 1.6	5Y400 H5 1.6	5Y40, 4Y 1.6	AV5Y40 HHH 1.6	VY40(H5) NV2-4L, NV4-4L 1.6	KEW56Y40G(C) H5 (-60℃≥39J) 1.6			EN ISO 17632-A-T 46 4 ZMn1.5NiMo M C1 2 H5		4Y40H5 1.6				
SC-EGH / CBM-8072S	3YMG(C) H5 1.4-1.6	3YM H5 1.4-1.6	3Y H5 1.4-1.6	A3YM HHH 1.4-1.6	IIIYM H5 1.4-1.6	KAW53MPG(C) H5 1.4-1.6					3YMH5 1.4-1.6				
SC-EG50F X SC-EG50R	4Y40V 1.6	4Y400 1.6	4Y2 1.6	AV4Y40 1.6	IVY40 1.6	KEW56Y40G(C) 1.6									
SC-460 / C1	5Y46SG(C1) H5 1.2-1.4	5YQ460SA H5 1.2-1.4	5Y46S H5 1.2-1.4	SA5Y46 HHH 1.2-1.4	VY46MS(H5) 1.2-1.4	KSW5Y46G(C) H5 KSW63Y-G(C) H5 (-20℃≥5.3J) 1.2-1.4									
SC-70ML / M21		4Y400SA H5 1.2-1.6	4Y40S H5 1.2-1.6	SA4Y40M HHH 1.2-1.6	IVY40 MS H5 1.2-1.6		CSA W48 E49ITT15-M21A4-CS1-H4 (E491C-6M0-H4) 0.9-1.6	EN ISO 17632-A - T 46 4 M M21 2 H5 1.0-1.6	EN ISO 17632-A - T 46 4 M M21 2 H5	DIN EN ISO 17632-A - T 46 4 M M21 2 H5 1.0-1.6		4Y40S H5 1.2-1.6			
SC-70H Cored / C1		3YSA H10 1.6-2.4	3YS H10 1.6-2.4		IIIYMS H10 1.6-2.4		CSA W48 E490T1-C1A3-CS1-H8 (E492T-9-H8) 1.6-2.4				3YSMH10 1.6-2.4				
SC-70T Cored / C1	3YSG(C) H5 1.0-1.6	3YSAH10, 3YSA 1.2	3YSH10 1.2	SA3YM HH 1.2	IIIYMS H10 1.2		CSA W48 E49ITT15-C1A2-CS1-H8 (E491C-2-H8) 1.2-1.6	EN ISO 17632-A - T42 2 2 M C 1.0-1.6	EN ISO 17632-A - T42 2 2 M C1	DIN EN ISO 17632-A - T 42 2 M C1 1.2-1.6					
SC-70T Cored / M21	3YSG(M) H5 1.0-1.6		3YSH5 1.2-1.6	SA3Y HHH 1.0-1.6	IIIYMS H5 1.2-1.6		CSA W48 E49ITT15-M20 (M21)A3-CS1-H8 (E491-6M-H8) 1.2-1.6	EN ISO 17632-A - T46 2 M M 1.0-1.6	EN ISO 17632-A - T46 2 M M21 1	DIN EN ISO 17632-A - T 45 2 M M211 1.2-1.6					
SC-70NR / M21									EN ISO 17632-A-T 38 5 3 Ni M M21 2 H5						
SC-71CA / C1	3YSG(C)H5, 3YS40G(C)H5 1.2-1.6	3YSA H5, 3Y400 SA H5 1.2-1.6	3YS H5 1.2-1.6	SA3Y HHH 1.2-1.6	IIIYMS H5 1.2-1.6	KSW53G(C)H5, KSW53Y40G(C) H5 1.2-1.6								3YSM H5 1.2-1.6	
SC-71COT / C1	2YSG(C) H10 1.2-1.4	2YSA H10 1.2-1.4	2YS H10 1.2-1.4	SA2Y HH 1.2-1.4	IIYSM (H10) 1.2-1.4	KSW52G(C)H10 1.2-1.4									
SC-71HJ / C1	4Y40SG(C1) H10 1.2-1.4	4Y400 SA H10 1.2-1.4	4Y40 S H10 1.2-1.4	SA4Y40 HH 1.2-1.4	IVY40MS H10 1.2-1.4	KSW56Y40G(C) H10 1.2-1.4								4Y40SM H5 1.0-1.6	
SC-40HJ / C1	4Y40SG(C1)H5 1.0-1.6	4Y400SA H5 1.0-1.6	4Y40 1.0-1.6	SA4Y40 HHH 1.0-1.6	IVY40 MS H5 1.0-1.6									4Y40SM H5 1.0-1.6	
SC-71LH / C1	3YSG(C) H5 1.2-1.6	3YSA H5 1.2-1.6	3YS H5 1.2-1.6	SA3Y HHH 1.2-1.6	IIIYMS H5 1.2-1.6	KSW53Y40G(C) H5 1.2-1.6		EN ISO 17632-A - T42 2 P C 1 H5 1.2-1.6	EN ISO 17632-A - T42 2 P C1 1 H5	EN ISO 17632-A - T 42 2 P C1 1 H5 1.2-1.6		3YS H5 1.2-1.6		3YS H5, 3Y40S H5 1.2-1.6	3YS H5 1.2-1.6

Classification / Product	KR	ABS	LR	BV	DNV	NK	CWB	TUV	CE	DB	CCS	RINA	CR	RS	CRS
SC-71LHM Cored / M21		3YSA H5 1.2-1.6	3YS H5 1.2-1.6	SA3Y HHH 1.0-1.6	IIIYMSH5 1.2-1.6		CSA W48 E49ITT1-M21A3-CS1-H4 (E49IT-9M-H4) 0.9-1.6	EN ISO 17632-A - T46 3 P M 1 H5 1.2-1.6	EN ISO 17632-A - T46 3 P M21 1 H5	DIN EN ISO 17632-A - T 46 3 P M21 1 H5 1.2-1.6					
SC-71Ni2 / C1	L3SG(C)H5 1.2-1.4	5YSA H5 1.2-1.4	4YS H5 1.2-1.4	SA5Y HHH 1.2-1.4	VYSM (H5) NV4-4, NV 4-4L 1.2-1.4	KSWL3G(C)H5 1.2-1.4									
SC-71Ni2SR / C1	L3SG(C)H5 (PWHT 550℃, -75℃ min.27J) 1.2-1.4	5YSA H5 (-75℃ Min. 27J) 1.2-1.4	4YS H5, 4YSrS H5 1.2-1.4	SA5YD HHH 1.2-1.4	VYMS(H5) 1.2-1.4	KSWL3G(C)H5 (-75℃ min. 27 J) 1.2-1.4									
SC-71Ni4 / C1	L3SG(C)H5, 5Y40SG(C)H5 (-75℃ min. 27 J) 1.2-1.4	5YSA H5, 5Y400SA H5 (-75℃ min. 27 J) 1.2-1.4	5Y40S H5 (-75℃ min. 27 J) 1.2-1.4	SA5Y40 HHH (-70℃ min. 27 J) 1.2-1.4	VY40MS(H5) (-75℃ min. 27 J) 1.2-1.4	KSWL3G(C) H5, KSW56Y40G(C) H5 (-70℃ min. 27 J) 1.2-1.4									
SC-71Ni4 / CBM 8061 /C1			5Y40S H5 1.2-1.4												
SC-Ni3 / C1					-MS (H5) NV 3.5Ni, -115℃* 1.2										
SC-71MJ		4YSA, 4Y400SA H5 1.2-1.6	4Y40S H5 1.2-1.6	SA4Y, SA4Y40 HHH 1.2-1.6	IVY40MS (H5) 1.2-1.6				EN ISO 17632-A-T 46 4 P M21 1						
SC-71MJ/CBM-8061			4Y40S H5 1.2-1.4												
SC-71MSR / M21		4Y400SA H5 1.2	4Y40S H5 1.2	SA4Y40M HHH 1.2	IVY40 MSH5 1.2		CSA W48 E49ITT1-M21A4-CS2-H8 (E49IT-12MJ-H8) 1.2-1.4	EN ISO 17632-A - T46 4 P M 1 H5 1.2-1.4	EN ISO 17632-A - T46 4 P M 1 H5	DIN EN ISO 17632-A - T 46 4 P M21 2 H5 1.2-1.4					
SC-71SR / C1	4Y40SG(C)H5 1.2-1.6	4Y400SA H5 1.2-1.6	4Y40S H5 1.2-1.6	SA4Y40 HHH 1.2-1.6	IV Y40MS (H5) 1.2-1.6	KSW56Y40G (C) H5 1.2-1.6	CSA W48 E49ITT1-C1A4-CS2-H8 (E49IT-12J-H4) (-45℃) 1.2-1.4		EN ISO 17632-A - T42 4 P C1 1 H5		4Y40SH5 1.2-1.6				
SC-81LT / C1	5Y40SG(C)H5, L3SG(C)H5 1.2-1.4	5Y, 5Y400SA H5 1.2-1.4	5Y40S H5 1.2-1.4	SA5Y40M HHH 1.2-1.4	VY40MS H5 VL 4-4L, V Y 1.2-1.4	KSWL3G(C)H5, KSW56Y40G(C) H5 1.2-1.4			EN ISO 17632-A-T 46 6 1.5Ni P C1 1 H5					5Y40SM H5 5Y50SM H5 1.2-1.4	
SC-80MR / M21			5Y40S 1.0-1.6		VY40MS(H5) 1.2-1.4			EN ISO 17632-A- T 50 6 1.5Ni M M21 2 H5 1.0-1.6	EN ISO 17632-A- T 50 6 1.5Ni M M21 2 H5						
SC-80K2 / C1	4Y40G(C)H5 (-60℃ ≥34 J) 1.2-1.4	5Y400SA H5 1.2-1.4	5Y40S H5 1.2-1.4	SA5Y40 HHH 1.2-1.4	VY40MS H5 NV4-4L 1.2-1.4	KAW56Y40MG(C), KSW56Y40G(C)H5 (-60℃≥34J) 1.2-1.4					5Y40SMH5 1.2-1.4			5Y40SH5 1.2-1.4	
2 X SC-80K2 / C1	4Y40MG(C) 1.2-1.4	5Y400SA H5 1.2-1.4	5Y40M H5 1.2-1.4	SA5Y40 HHH 1.2-1.4	VY40MS H5 NV4-4L 1.2-1.4	KAW56Y40MG(C)H5 (-60℃≥34J) 1.2-1.4					5Y40MH5 1.2-1.4			5Y40SH5 1.2-1.4	
SC-80LM X SC-80TF	5Y40MG(C) H5 1.4-1.6	5Y400A H5 1.4-1.6	5Y40M H5 1.4-1.6	A5Y40M HHH 1.4-1.6	VY40M H5 1.4-1.6	KAW5Y40MG(C)H5 KAWL3MG(C)H5 1.4-1.6									
SC-81Ni1 / C1		AWS A5.29 E81T1-Ni1C 1.2-1.4													
SC-81Ni2 / C1	5Y46SG(C1) H5 1.2-1.4	5YQ460SA H5 1.2-1.4	3Y47S H5 1.2-1.4	SA5Y46 HHH 1.2-1.4	VY46MS (H5) 1.2-1.4	KSW63Y47G(C) H5 1.2-1.4			EN ISO 17632-A-T46 6 2Ni P C1 1 H5						
SC-81Ni2M / M21			4Y47S H5 1.2-1.4	SA5Y46 HHH 1.2-1.4	VY46MS (H5) 1.2-1.4										
SC-81Ni4 / C1	5Y46SG(C) H5 1.2-1.4	5YQ460SA H5 1.2-1.4	3Y47S H5 1.2-1.4	SA5Y46 HHH 1.2-1.4	VY46MS (H5) 1.2-1.4	KSW63Y47G(C) H5 1.2-1.4									

TYPE APPROVAL STATUS

Classification / Product	KR	ABS	LR	BV	DNV	NK	CWB	TUV	CE	DB	CCS	RINA	CR	RS	CRS
SF-71P / C1		4YSA H5 AWS A5.36 E71T1-C1A(P)4-CS1 H4 1.2~1.4													
SC-55 Cored		AWS A5.36 E81T1-C1A0-G 1.2~1.4													
Supercored 70B / M21		3YSAH5 1.0~2.0	3S,3YSH5 1.0~2.0	SA3YM HHH 1.0~2.0	IIIYMS (H5) 1.0~2.0			EN ISO 17632-A - T42 4 B M 3 H5 1.2~1.6	EN ISO 17632-A - T42 4 B M2I 3 H5	DIN EN ISO 17632-A T 42 4 B M21 3 H5 1.2~1.6					
Supercored 70B/ CBM8061/M21			3S,3YS 1.0~2.0												
Supercored 70SB / C1	3YSG(C1)H5 1.2~1.6	3SA,3YSAH5 1.2~1.6	3YSH5 1.2~1.6	SA3YM HHH 1.2~1.6	IIIYMS H5 1.2~1.6	KSW53G(C)H5 1.2~1.6									
Supercored 70SB/ CBM8061/C1			3YSH5 1.2~1.6												
Supercored 70NS / M21	3YSG(M2) H5 0.9~1.6	3SAH5, 3YSA 0.9~1.6	3YS H5 0.9~1.6	SA3M,SA3YM HHH 0.9~1.6	IIIYMS H5 0.9~1.6		CSA W48 E490T15-M20(M21)A3-CS1-H4 (E492C-6M-H4) 0.9~1.6	EN ISO 17632-A - T42 3 M M 3 0.9~1.6	EN758 T 42 3 M M2I3	DIN EN ISO 17632-A T42 2 M M21 3 0.9~1.6		3YSH5 0.9~1.6			
Supercored 70MXH / C1	3YSG(C)H5 3YMG(C)H5 1.4~2.0	3SAH5, 3YSA 1.4~2.0	3YS H5 1.4~2.0	SA3YM,A3YM HHH 1.4~2.0	IIIYMS H5 1.4~2.0	KSW53G(C)H5 KAW53MG(C)H5 1.4~2.0					3YSMH5 1.4~2.0	3YSH5 1.4~2.0		3YSM H5 1.2~2.0	
2 X Supercored 70MXH / C1	3YMG(C) H5 1.4~2.0	3SAH5, 3YSA 1.4~2.0	3YM H5 1.4~2.0	SA3YM,A3YM HHH 1.4~2.0	IIIYMS H5 1.4~2.0	KAW53MG(C) 1.4~2.0					3YM 1.4~2.0	3YSH5 1.4~2.0		3YSM H5 1.2~2.0	
Supercored 110/ C1	3Y69S(C)H5 1.2	AWS A5.29 E111T1-GC-H4 (IV-40℃ ≥41J) 1.2			3Y69MS H5 1.2				EN ISO 18276-A-T 69 4 ZMn2.5NiMo P C1 1						
Supercored 120/ C1	AWS A5.29 E121T1-GCH4 1.2~1.4														
Supercored 71 / C1	3SMG(C)H10, 3YSMG(C)H10 0.9~1.6	3SAH10,3YSA 0.9~1.6	3YS H10 0.9~1.6	SA3M,SA3YM, A3M,A3YM HH 0.9~1.6	IIIYMS H10 0.9~1.6	KSW53Y40G(C) H10 0.9~1.6	CSA W48 E491T1-C1A2-CS1-H8 (E491T-1-H8) 1.2~1.6	EN ISO 17632-A - T 42 2 P C1 1.2~1.6	EN ISO 17632-A - T 42 2 P C1 1	DIN EN ISO 17632-A T42 2 P C1 1 1.2~1.6		3YSH10 1.0~1.6		3YSM H10 1.2~1.6	3YSH10 1.2
Supercored 71/ CBM8061/C1			3YS 0.9~1.6												
Supercored 71H / C1	4YSMG(C) H10 1.2~1.4	4YSAH10 1.2~1.4	4YSH10 1.2~1.4	A, SA4YM HH 1.2~1.4	IVYMS H5 1.2~1.4	KSW54G(C) H10 1.2~1.4	CSA W48 E491T1-C1A4-CS1-H8 (E491T-93-H8) 1.2~1.6	EN ISO 17632-A - T 42 4 P C 1 1.2~1.6	EN ISO 17632-A - T 42 4 P C11	DIN EN ISO 17632-A T 42 4 P 1C1 1.2~1.6	4YSMH10 1.2~1.4	3YSH10 1.2~1.6		4Y40SM H5 4YSM H5 1.2~1.4	
	3SMG(C)H10, 3YSMG(C) H10 1.6	3YSAH10 1.6		A, SA3YM HH 1.6	IIIYMS H5 1.6	KSW53G(C) H10 KAW53MG(C) H10 1.6					3YSMH10 1.6			3Y40SM H5 3YSM H5 1.6	
Supercored 71Hi / C1		4YSAH5 1.2~1.4	4YSH5 1.2~1.4		IVYSM H5 1.2~1.4				EN ISO 17632-A-T 42 4 P C11						
Supercored 71MAG / M21		3SAH10,3YSA (75~80%Ar+BalCO$_2$) 1.2~1.6	3S,3YSH10 1.2~1.6	SA3M, SA3YM HH A3M, A3YM 1.2~1.6	IIIYMS H10 1.2~1.6		CSA W48 E491T1-M21A3-CS1-H8 (E491T-9M-H8) 1.2~1.6	EN ISO 17632-A - T 46 3 P M 1 1.2~1.6	EN ISO 17632-A - T 46 3 P M211	DIN EN ISO 17632-A T 46 3 P M211 1.2~1.6		3YSH10 1.2			
Supercored 71MAG / CBM8061 /M21			3YS 1.2~1.4												
Supercored 81MAG / M21		5Y400SA H5 1.2	5Y40S H5 1.2	SA5Y40M HHH 1.2	VY40MS H5 1.2		CSA W48 E551T1-Ni1M-H4 (E551T1-Ni1M-H4) 1.2	EN ISO 17632-A - T 50 6 1Ni1 P M 2 H5 1.2	EN ISO 17632-A - T 50 6 1Ni1 P M21 2 H5	DIN EN ISO 17632-A T 50 6 Ni1 P M21 2 H5 1.2		5Y40SH5 1.2		5Y42SM H5 1.2	

Classification / Product	KR	ABS	LR	BV	DNV	NK	CWB	TUV	CE	DB	CCS	RINA	CR	RS	CRS
SC-81SR / C1		5Y400SA H5 1.2	5Y40S H5, 5Y40srS 1.2		V Y40SM (H5) NV2-4L, NV4-4L 1.2										
SC-81SR/WS-601 / C1			5Y40S H5, 5Y40srS 1.2												
SC-81A1 / C1									EN ISO 17634-B-T55T1-1 C1 2M3						
SF-80W / C1									EN ISO 17632-A-T 46 2 ZCrNiCu P C12						
SC-81WM / M21									EN ISO 17632-A-T 50 3 ZCrNiCu P M211 H10						
SC-81M / M21									EN ISO 17632-A-T 50 6 1Ni1 P M21 1 H5						
SC-90M / M21									EN ISO 18276-A-T 55 5 ZMn1NiMo M M21 1 H5						
SC-91K2 Cored / C1		AWS A5.29 E91T1-K2C (-40℃ ≥50 J) 1.2			IVY50MS(H5) 1.2~1.4		CSA W48 E621T1-C1A2-K2-H8 (E621T1-K2C-H8) 1.2~1.4				4Y50H5 1.2~1.6				
SC-91LT / C1		5YQ500SA (H5) (-60℃ ≥50 J) 1.2	5Y50S H5 1.2		VY50MS (H5) 1.2		CSA W48 E621T1-C1A6-Ni2-H4 (E621T1-Ni2C-J H4) 1.2~1.4							5Y50SM H5 1.2	
SC-110LT / C1		4YQ690SA H5 1.2			VY69MS (H5) 1.2										
SC-110MAG / M21					IVY69MS (H5) 1.2										
SC-120T5 / C1					VY69MS (H5) 1.2										
SF-70MX / C1	2SG, 2YSG (C1) H10 2MG, 2YMG(C1) H10 1.2~1.6	2SA,2YSAH10, 2Y400SA 1.2~1.6	2S,2YSH10 1.2~1.6	SA2YM HH 1.2~1.6	II'Y40MS (H5) 1.2~1.6	KSW52Y40G(C) H10, KAW52G(C) H10 1.2~1.6	CSA W48 E490T1-C1A2-CS1-H8 (E492T1-H8) 1.2~1.6		EN ISO 17632-A-T 42 0 R C13		2YSMH10 1.2~1.6	2YSH10 1.2~1.6	2HSM, 2YHSM 1.2~1.6		
SF-71 / C1	2SMG, 2YSMG(C)H10 1.2~1.6	2SA, 2YSAH10, 2Y400SA 1.2~1.6	2S,2YSH10 1.2~1.6	SA2M, SA2YM HH A2M,A2YM HH 1.2~1.6	II'Y40MS (H10) 1.2~1.6	KSW52G(C)H10, KSW52Y40G(C) H10 1.2~1.6	CSA W48 E491T1-C1A2-CS1-H8 (E491T-1-H8) 1.2~1.6	EN ISO 17632-A - T42 0 P C 1 1.2~1.6	EN ISO 17632-A - T42 0 P C1 1		2YSMH10 1.2~1.6	2YH10 1.2~1.6	2HS, 2YHS 1.2~1.6	2,2YS H10 1.2~1.6	
SF-71/CBM8061/ C1			2YSH10 1.2~1.4												
SF-71LF / C1		2YSAH10 1.2~1.6	2S,2YSH10 1.2~1.6		IIYMSH10 1.2~1.6	KSW52G(C)H10 KAW52MG(C) 1.2~1.6									
SF-71LF/ CBM8061/C1			2S,2YSH10 1.2~1.6												
SF-71MC / C1		3YSA H10 1.2~1.6	3YS H10 1.2~1.6	SA3YMHH 1.2~1.6	IIIYMS H10 1.2~1.6		CSA W48 E491T1-C1A3-CS1-H8 (E491T-9-H8) 1.2~1.6	EN ISO 17632-A - T42 2 P C 1 H10 1.2~1.6	EN ISO 17632-A - T42 2 P C1 1 H10	DIN EN ISO 17632-A-T 46 2 P C11 H10 1.2~1.6					
SF-71MC / M21		3YSA H10 (75%Ar+25%CO$_2$) 1.2~1.6	3YS H10 1.2~1.6	SA3YMHH 1.2~1.6	IIIYMS H10 1.2~1.6		CSA W48 E491T1-M20A3-CS1/CS2-H8 (E491T-9M/12M-H8) 1.2~1.6	EN ISO 17632-A - T46 3 P M 1 H10 1.2~1.6	EN ISO 17632-A - T46 3 P M21 1 H10	DIN EN ISO 17632-A-T 46 3 P M21 1 H10 1.2~1.6					
SF-71R / C1		3YSA H5 AWS A5.36 E71T1-C1A(P)0-CS1 H4 1.2~1.4													

TYPE APPROVAL STATUS

Classification / Product	KR	ABS	LR	BV	DNV	NK	CWB	TUV	CE	DB	CCS	RINA	CR	RS	CRS
SW-309L Cored / M21		AWS A5.22 E309LT1-4 0.9~1.6	SS/CMn, Dup/CMn 0.9~1.6	SA309L 0.9~1.6	NV 309L 0.9~1.6		CSA W48 E309LT1-4 0.9~1.6	EN ISO 17633-A - T 23 12 L P M21 2 0.9~1.6	EN ISO 17633-A - T 23 12 L P M21 2	DIN EN ISO 17633-A - T 23 12 L P M212 0.9~1.6	309LS 0.9~1.6			A-9sp (309L) 0.9~1.6	
SW-309MoL Cored / C1	RW309MoLG (C) 1.2~1.6	AWS A5.22 E309LMoT1-1 0.9~1.6	AWS A5.22 E309LMoT1-1 1.2~1.6	309Mo 1.2~1.6	NV 309MoL (-20℃) 1.2~1.6	KW309MoLG(C) 1.2~1.6	CSA W48 E309LMoT1-1 0.9~1.6					309Mo 1.2~1.6		A-9sp (309Mo) 0.9~1.6	
SW-309MoL Cored / M21		AWS A5.22 E309LMoT1-4 0.9~1.6			NV 309MoL (-20℃) 1.2~1.6		CSA W48 E309LMoT1-4 0.9~1.6								
SW-316L Cored / C1	RW316LG (C) (-60℃≥34 J) 1.2~1.6	AWS A5.22 E316LT1-1 0.9~1.6	316L 0.9~1.6	316L (-60℃) 1.2~1.6	NV 316L 1.2~1.6	KW316LG(C) 1.2~1.6	CSA W48 E316LT1-1 0.9~1.6	EN ISO 17633-A - T 19 12 3 L P C1 2 0.9~1.6	EN ISO 17633-A - T 19 12 3 L P C1 2	DIN EN ISO 17633-A - T 19 12 3 L P C1 2 0.9~1.6	316L 0.9~1.6	316L 1.2~1.6		A-6 (316L) 1.2~1.6	
SW-316L Cored / M21		AWS A5.22 E316LT1-4 (75~80%Ar+BalCO$_2$) 0.9~1.6	316L 0.9~1.6		NV 316L 1.2~1.6		CSA W48 E316LT1-4 0.9~1.6	EN ISO 17633-A - T 19 12 3 L P M212 0.9~1.6	EN ISO 17633-A - T 19 12 3 L P M21 2	DIN EN ISO 17633-A - T 19 12 3 L P M212 0.9~1.6				A-6 (316L) 0.9~1.6	
SW-347 Cored / C1		AWS A5.22 E347T1-1 0.9~1.6													
Supercored 308L / C1							CSA W48 E308LT0-1 0.9~1.6	EN ISO 17633-A - T 19 9 L R C1 3 0.9~1.6	EN ISO 17633-A - T 19 9 L R C1 3	DIN EN ISO 17633-A - T 19 9 L R C1 3 0.9~1.6					
Supercored 308L / M21							CSA W48 E308LT0-4 0.9~1.6	EN ISO 17633-A - T 19 9 L R M21 3 0.9~1.6	EN ISO 17633-A - T 19 9 L R M21 3	DIN EN ISO 17633-A - T 19 9 L R M21 3 0.9~1.6					
Supercored 309L / C1							CSA W48 E309LT0-1 0.9~1.6	EN ISO 17633-A - T 23 12 L R C1 3 0.9~1.6	EN ISO 17633-A - T 23 12 L R C1 3	DIN EN ISO 17633-A - T 23 12 L R C1 3 0.9~1.6					
Supercored 309L / M21		AWS A5.22 E309LT0-4 0.9~1.6	SS/CMn 0.9~1.6	309L 0.9~1.6	NV 309L (-20℃) 0.9~1.6		CSA W48 E309LT0-4 0.9~1.6	EN ISO 17633-A - T 23 12 L R M21 3 0.9~1.6	EN ISO 17633-A - T 23 12 L R M21 3	DIN EN ISO 17633-A - T 23 12 L R M213 0.9~1.6					
Supercored 309MoL / M21			SS/CMn 0.9~1.6	309LMo 0.9~1.6	NV 309MoL (-20℃) 0.9~1.6										
Supercored 316L / C1							CSA W48 E316LT0-1 0.9~1.6	EN ISO 17633-A - T 19 12 3 L R C1 3 0.9~1.6	EN ISO 17633-A - T 19 12 3 L R C1 3	DIN EN ISO 17633-A - T 19 12 3 L R C1 3 0.9~1.6					
Supercored 316L / M21			316L 0.9~1.6	316L 0.9~1.6	NV 316L (-20℃) 0.9~1.6		CSA W48 E316LT0-4 0.9~1.6	EN ISO 17633-A - T 19 12 3 L R M21 3 0.9~1.6	EN ISO 17633-A - T 19 12 3 L R M21 3	DIN EN ISO 17633-A - T 19 12 3 L R M213 0.9~1.6					
SW-5NiLT / C1		Manufacturer's Specification 1.2	5NiS 1.2	SAN50 1.2	NV 5NiMS 1.2	Manufacturer's Specification 1.2									
SW-5NiLT / M21					NV 5NiMS 1.2										
SW-82H / C1	L91S 1.2	Manufacturer's Spec 1.2	9NiS 1.2	N90 1.2	-MS NV 9Ni, -196℃ 1.2	KSWL92G(C) 1.2								Manufacturer's Spec -196 1.2	
SW-82H / M21			9NiS 1.2		-MS NV 9Ni, -196℃ 1.2										
SW-9NiLT / C1			9NiS 1.4												
SW-9NiH/C1	L92S 1.2~1.4	Manufacturer's Spec -196 1.2~1.4	9NiS 1.2~1.4	SA N90 1.2~1.4	-MS NV 9Ni, -196℃ 1.2~1.4									Manufacturer's Spec -196 1.2~1.4	
A-G / Superflux 55ULT 2 X A-G / Superflux 55ULT					V42TM (H5) 1.2~6.4										

Classification / Product	KR	ABS	LR	BV	DNV	NK	CWB	TUV	CE	DB	CCS	RINA	CR	RS	CRS
Supercored 81-K2 / C1	SY405G(C) H5, L35G(C) H5 1.2~1.6	SY400SA H5 1.2~1.6	SY40S H5 1.2~1.6	SA SY40M HHH 1.2~1.6	VY40MS (H5) NV 2-4L, NV 4-4L 1.2~1.6	KSWL3G(C) H5, KSWS6Y40G(C) H5 (-60℃ ≥47J, ≥34J (Butt)) 1.2~1.6	CSA W48 E551T1-C1A3-K2-H4 (E551T1-K2C-H4) 1.2~1.6		EN ISO 17632-A-T 46 6 1.5Ni P C1 1 H5		SY40SH5 1.2~1.6	SYS H10 1.2~1.4		SY40SM H5 1.2~1.6	
Supercored 81-K2MAG / M21		SY400SA H5 1.2	SY40S H5 1.2	SA SY40M HHH 1.2	VY40MS H5 1.2			EN ISO 17632-A - T 46 6 1.5Ni P M 2 1.2	EN ISO 17632-A - T 50 6 1.5Ni P M21 2 H5	T46 6 1.5Ni P M 2 DIN EN ISO 17632-A 1.2				SY42SM H5 1.2	
Supershield 71-T8							CSA W48 E491T8-A3-CS3 (E491T-8) 1.2~2.0		EN ISO 17632-A - T 42 3 Y NO 2						
Supershiled 11									EN ISO 17632-A - T 42 Z Z NO 1						
Supershield 71-K6		4YSA H5 2.0													
Supershield EG-75T									EN ISO 17632-B-T49 3T G-1NOA-Gmo						
Supershield EG-82T									EN ISO 17632-B-T55 3T G-1NOA-GNiMo						
Supershield 308L									EN ISO 14633-A T19 9 L U NO 3						
SC-81M / M21									EN ISO 17632-A - T 50 6 1Ni P M21 1 H5						
SC-70NR / M21									EN ISO 17632-A - T 38 5 3Ni M M21 2 H5						
SW-2209 Cored / C1	AWS A5.22 E2209T1-1 1.2~1.6	AWS A5.22 E2209T1-1 (-46℃ 27J) 1.2	S31803 1.2	SA2209 (KV -20℃ ≥27 J) 1.2		KW2209G(C) 1.2			EN ISO 17633-A-T 22 9 3 N L P C1 2		2205S 1.2				
SW-2209 Cored / M21			S31803 1.2	SA2205 (KV -20℃ ≥41 J) 1.2	- Duplex Stainless Steel 1.2						2205S 1.2	2209 1.2		AF-8dup (-40℃) 1.2	
SW-308L Cored / C1	RW308LG (C) 0.9~1.6	AWS A5.22 E308LT1-1 (-120℃ 29 J) 1.2~1.6	304L (-120℃) 1.2~1.6	SA308L (KV -120℃) 1.2~1.6	NV 308L (-120℃) 1.2~1.6	KW308LG(C) 1.2~1.6	CSA W48 E308LT1-1 0.9~1.6	EN ISO 17633-A - T 19 9 L P C1 2 0.9~1.6	EN ISO 17633-A - T 19 9 L P C1 2	DIN EN ISO 17633-A - T 19 9 L P C1 2 0.9~1.6				A-5 (304L) 1.2~1.6	
SW-308L Cored / M21							CSA W48 E308LT1-4 0.9~1.6	EN ISO 17633-A - T 19 9 L P M21 2 0.9~1.6	EN ISO 17633-A - T 19 9 L P M21 2	DIN EN ISO 17633-A - T 19 9 L P M21 2 0.9~1.6					
SW-308LT / C1		AWS A5.22 E308LT1-1 (-196℃ ≥27 J) 1.2													
SW-308LT / M21		AWS A5.22 E308LT1-4 (-196℃ ≥27 J) (75%Ar+25%CO$_2$) 1.2													
SW-316LT / C1		AWS A5.22 E316LT1-1 (-196℃ ≥27 J) 1.2													
SW-316LT / M21		AWS A5.22 E316LT1-4 (-196℃ ≥27 J) (75%Ar+25%CO$_2$) 1.2													
SW-309L Cored / C1	RW309LG (C) (-20℃ ≥34 J) 1.2~1.6	AWS A5.22 E309LT1-1 1.2~1.6	SS/CMn 1.2~1.6	309L with KV at -20℃ (-20℃ ≥34 J) 1.2~1.6	NV 309L 1.2~1.6	KW309LG(C) 1.2~1.6	CSA W48 E309LT1-1 0.9~1.6	EN ISO 17633-A - T 23 12 L P C1 2 0.9~1.6	EN ISO 17633-A - T 23 12 L P C12	DIN EN ISO 17633-A - T 23 12 L P C1 2 0.9~1.6	309LS 0.9~1.6	309L 1.2~1.6	AWS A5.22 E309LT1-1 1.2~1.6	A-9sp (309) 1.2~1.6	

TYPE APPROVAL STATUS

Classification / Product	KR	ABS	LR	BV	DNV	NK	CWB	TUV	CE	DB	CCS	RINA	CR	RS	CRS
H-14/S-705EF/ CW/CBM-G22	2SR,2YSR Max. thick. 25mm 2.0~6.4	2,2Y 2.0~6.4	2A,2YA Max. thick. 25mm 2.0~6.4	A2M,A2YM 2.0~6.4	IIYM t≤25mm 2.0~6.4	KAW52SP 2.0~6.4									
H-14/S-705HF/ CW/CBM-G22 multi-run	3YSMR Max. thick. 25mm 2.0~6.4	3Y 2.0~6.4	3YA H10 2.0~6.4	A3Y U, A3YM 2.0~6.4	IIIYM t≤25mm 2.0~6.4	KAW53-SMP Max. thick. 25mm 2.0~6.4									
H-14/S-705HF/ IRN/BS-3W	3YSR 2.0~6.4	3Y 2.0~6.4	3YA 2.0~6.4	A3YU 2.0~6.4	IIIYM 2.0~6.4	KAW53SP Max. thick. 25mm 2.0~6.4					3Y 2.0~6.4				
2 X H-14/ S-705HF/IRN/BS-3W	3YSR 2.0~6.4	3Y 2.0~6.4	3YA 2.0~6.4	A3YU 2.0~6.4	IIIYM 2.0~6.4	KAW53SP Max. thick. 30mm 2.0~6.4									
H-14/S-707T	3T, 3YT, 4YM 1.2~6.4	4YM,3T,3YT 1.2~6.4	4YM,3T,3YT 1.2~6.4	A4YM, A3T,A3YT 1.2~6.4	IVYM, IIIYT 1.2~6.4	KAW53T, KAW54M 1.2~6.4			EN ISO 14171-A - S4 (Wire) EN ISO 14174 - S A AB 1 (Flux)			4YM, 3YT 1.2~6.4		3T, 3YT, 4YM 1.2~6.4	
2 X H-14/S-707T	3T, 3YT, 4YM 1.2~6.4	4YM,3T,3YT 1.2~6.4	4YM,3T,3YT 1.2~6.4	A4YM, A3T,A3YT 1.2~6.4	IVYM, IIIYT 1.2~6.4	KAW53T, KAW54M 1.2~6.4						4YM, 3YT 1.2~6.4		3T, 3YT, 4YM 1.2~6.4	
H-14/S-707T/CW/ CBM-G22	3YSR Max. thick. 28mm 2.0~6.4	3Y Max. thick. 28mm 2.0~6.4	3Y Max. thick. 28mm 2.0~6.4	A3YU 2.0~6.4	IIIYM T≤28mm 2.0~6.4	KAW53SP Max. thick. 28mm 2.0~6.4								3Y 1.2~6.4	
H-14/S-707TP	3M,3YM 2.0~6.4	3M,3YM 2.0~6.4	3M,3YM 2.0~6.4	A3M,A3YM 2.0~6.4	IIIYM 2.0~6.4	KAW31M, KAW53M 2.0~6.4									
H-14/S-737	3M,3YM 2.0~6.4	3M,3YM 2.0~6.4	3M,3YM 2.0~6.4		IIIYM 2.0~6.4				EN ISO 14171-A - S4 (Wire) EN ISO 14174 - S A AR 1 (Flux)						
H-14/S-777MX	2M,2YM 1.6~6.4	2M,2YM 1.6~6.4	2M,2YM 1.6~6.4	A2M,A2YM 1.6~6.4	IIYM 1.6~6.4	KAW2M, KAW52M 1.6~6.4			EN ISO 14171-A - S4 (Wire) EN ISO 14174 - S A AR 1 (Flux)						
2 X H-14/ S-777MX		2M,2YM 1.6~6.4	2M,2YM 1.6~6.4	A2M,A2YM 1.6~6.4	IIYM 1.6~6.4	KAW2M, KAW52M 1.6~6.4									
H-14/S-777MXH	2T,2YT, 3M,3YM 1.2~6.4	2T,2YT,3M,3YM 1.2~6.4	3M,3YM, 2T,2YT 1.2~6.4	A2T,A2YT, A3M,A3YM 1.2~6.4	IIYTH10, IIIYM H10 1.2~6.4	KAW3M,KAW53M KAW2T,KAW52T 1.2~6.4	CSA W48 F49A3-EH14-H8 1.6~6.4								
2XH-14/ S-777MXH	3YM 1.2~3.2	3M,3YM 1.2~3.2	A3YM 1.2~3.2												
H-14/S-787TB		3T,3YT, 5Y400M 1.2~6.4	3YT,5Y40M 1.2~6.4	A5Y40M, A3T,A3YT 1.2~6.4	VY40M H10, NV4-4L IIIYT (3.5ti), VYT (20t) 1.2~5.0	KAWL3TM, KAW54Y40TM 1.2~6.4	CSA W48 F49A6-EH14-H8 F49P6-EH14-H8 1.6~6.4		EN ISO 14171-A - S4 (Wire) EN ISO 14174 - S A FB 1 (Flux)						
H-14/Superflux 55ULT	5Y40M H5 (-75℃ ≥27 J) 5YT 1.2~6.4	5Y400MH5 (-75℃ ≥27 J) 4YT 1.2~6.4	5Y40M H5 (-75℃ ≥27 J) 4YT (max.40t) 1.2~6.4	A5Y40M HHH (-75℃ ≥27 J) A5YT (1wire max. 20T, 2wire max 25T) A4Y40T (1wire max. 30T, 2wire max 35T) 1.2~6.4	V Y40M H5 (-75℃ ≥27 J) IV YT (1wire max.35) V YT (1wire max.20T, 2wire max 25T) NV4-4L 1.2~6.4	KAW54Y40MH5 KAW54Y40MH5-vE27M-75T (-75℃ ≥27 J) KAW54T 1.2~6.4	CSA W48 F49A6-EH14-H8 F49P6-EH14-H8 1.2~4.8	EN ISO 14171-A - S4 (Wire) EN ISO 14174 - S A FB 1 (Flux) 1.2~6.4	EN ISO 14171-A - S4 (Wire) EN ISO 14174 - S A FB 1 (Flux) 1.2~6.4	DIN EN ISO 14171-A-S4 (Wire) DIN EN ISO 14174-S A FB 1 (Flux) 1.6~5.0		5Y40M,4YT 1.2~6.4		5YT, 5Y40M 1.2~6.4	

Classification / Product	KR	ABS	LR	BV	DNV	NK	CWB	TUV	CE	DB	CCS	RINA	CR	RS	CRS
A-2/Superflux 800T								EN 756 S2 Mo - (Wire) EN 760 S A FB1 - (Flux) 3.0~5.0	EN 756 S2 Mo - (Wire) EN 760 SA FB1 - (Flux) 3.0~5.0	DIN EN ISO 14171-A-S2Mo (Wire) DIN EN ISO 14174-S A FB 1 (Flux) 1.6~6.4					
A-2/S-900SP		AWS A5.23 F9A2-EA2-G AWS A5.23 F9P2-EA2-G 1.6~4.8													
A-2/Superflux 787		AWS A5.23 F8A6-EA2-A2 1.6~4.8													
A-2TiB/Superflux 787		AWS A5.23 F8TA8-EA2TiB 1.6~4.8													
A-3/S-500MS				A4Y50TM HHH 1.2~6.4	IVY50TM H5 1.2~6.4									4Y50TM H5 1.2~6.4	
A-3/S-705LP/IRN-1/CBM-G22	L3SR Max. thick. 16mm 3.2~4.8	5Y Max. thick. 16mm 3.2~4.8	4Y 3.2~4.8	A5YU 3.2~4.8	VY NV4-4L Max. thick. 16mm 3.2~4.8	KAWL3SP 3.2~4.8									
A-3/S-787TB	L3T H10 Max. thick. 28℃ (-60℃≥27J)	5YT H10 Max. thick. 28mm 3.2~4.8	4YT H10 (-60℃ ≥34J) 3.2~4.8	A5YT HH thick. 28mm 3.2~4.8	VYT H10 (Tt≤28mm) NV4-4L 3.2~4.8	KAWL3TH10 Max. 28mm									
2 X A-3/S-787TB		5YT H10 Max. thick. 28mm 3.2~4.8	4YT H10 (-60℃) 3.2~4.8	A5YT HH thick. 28mm 3.2~4.8	VYT H10 (Tt≤28mm) NV4-4L 3.2~4.8	KAWL3TH10 Max. 28mm									
A-3/Superflux 55ULT 2 X A-3/ Superflux 55ULT	5Y40M H5, 5YT, 4Y40T 5YT thick. 1 Wire ≤ 25mm 2 Wire ≤ 30mm 4Y40T thick. 1 Wire ≤ 35mm 2 Wire ≤ 40mm 3.2~4.8	5Y400M H5, 5YT, 4Y40T 5YT thick. 1 Wire ≤ 25mm 2 Wire ≤ 30mm 4Y40T thick. 1 Wire ≤ 35mm 2 Wire ≤ 40mm 3.2~4.8	5Y40M H5, 4Y40T, 4YT 4Y thick. 1 Wire ≤ 25mm 2 Wire ≤ 30mm 4Y40 thick. 1 Wire ≤ 35mm 2 Wire ≤ 40mm 3.2~4.8	A5Y40M H5, A5YT, A4Y40T A5YT thick. 1 Wire ≤ 25mm 2 Wire ≤ 30mm A4Y40T thick. 1 Wire ≤ 35mm 2 Wire ≤ 40mm 3.2~4.8	VY40M H5, VYT, IVY40T VYT thick. 1 Wire ≤ 25mm 2 Wire ≤ 30mm IVY40T thick. 1 Wire ≤ 35mm 2 Wire ≤ 40mm 3.2~4.8	KAW54Y40TMH5, KAW54Y40MH5-60T KAWL3TH5, KAWL3TH5-vE34M tandem, two-run 3.2~4.8								5Y40M H5, 5YT, 4Y40T 3.2~4.8	
A-3/Superflux 55LP		5YT H10 Max. thick. 24mm 3.2~4.8	4YT H10 (-60℃) 3.2~4.8	A5YT HH 3.2~4.8	VYT H10 (Tt≤24mm) NV4-4L 3.2~4.8										
A-3/S-777MXH									14171-B - SU4M3 (Wire) 14174-S A AB 1 (Flux)						
B-2/Superflux 787		AWS A5.23 F8P2-EB2-B2 1.6~4.8													
F-3/S-500Y				5Y55M HHH 3.2~4.8	VY55M (H5) 3.2~4.8						5Y55M H5 1.2~6.4			5Y55M H5 3.2~4.8	
H-12K/Superflux 787		4Y M H5 AWS A5.17 F7A8-EH12K AWS A5.17 F7P8-EH12K 1.2~6.4			VY42M H5 1.2~6.4				14171-A - S3Si (Wire) 14174-S A FB 1 (Flux)						
H-14/S-460Y	5Y46MH5 1.2~6.4	5YQ460M H5 1.2~6.4	5Y46M H5 1.2~6.4	A5Y46M HHH 1.2~6.4	VY46M(H5) 1.2~6.4	KAW5Y46MH5, KAW63Y47MH5 (-20℃ ≥53J) 1.2~6.4			EN ISO 14171-A - S4 (Wire) EN ISO 14174 - S A FB 1 (Flux)						
H-14/S-705EF/ IRN/S-22	2SMR,2YSMR 2.0~6.4	2,2Y 2.0~6.4	2A,2YA 2.0~6.4	A2M,A2YM 2.0~6.4	IIYM 2.0~6.4	KAW2SMP, KAW52SMP 2.0~6.4	KAW2SMP,KAW52SMP 2.0~6.4 KAW2SMP,KAW52SMP 2.0~6.4							2YM 2.0~6.4	

TYPE APPROVAL STATUS

Classification / Product	KR	ABS	LR	BV	DNV	NK	CWB	TUV	CE	DB	CCS	RINA	CR	RS	CRS
A-3/Superflux 787		AWS A5.23 F8A6-EA3-A3, F8P4-EA3-A3 1.6~4.8													
Ni-5/Superflux 787		AWS A5.23 F8A8-ENi5-Ni1 1.6~4.8			VY46M H5 1.6~6.4										
YS-2209/ Superflux 209	AWS A5.9 ER2209 (Wire) For Duplex Stainless Steels 2.4~3.2	AWS A5.9 ER2209 (Wire) (TS 690, EL25, -46℃≥27J) 2.4~3.2		S2209M 1.6~4.0	- Duplex Stainless Steel 2.4~3.2	Manufacturer's Specification 2.4~4.0					2205M 2.4~4.0				
YS-308L/ Superflux 300S	RU308L TM (-196℃ ≥27 J) 1.6~4.0	AWS A5.39 F75A3.2-ER308L/308L (-196℃ ≥27 J) 1.6~4.0													
YS-309L/ Superflux 300S				A309LM 1.6~4.0											
YS-316L/ Superflux 300S	RU316L TM (-196℃ ≥27 J) 1.6~4.0	AWS A5.9 ER316L(Wire) (-60℃ ≥34 J) 1.6~5.0		A316LM (KV -60℃ ≥ 27 J) 1.6~5.0											
SA-08/S-Ni2		Manufacturer's Spec -196 1.2~3.2	9NiM 1.2~3.2	AN90M 1.2~3.2	-M NV 1.5Ni up to NV 9Ni 1.2~3.2									Manufacturer's Spec (-196℃) 1.2~3.2	
HWL-HMn			Manufacturer's Specification 12		High Manganese austenitic steels 1.2										
SW-NiMnF			Manufacturer's Specification 1.4		High Manganese austenitic steels 1.4										
SC-91LCO			5Y50S H5 1.2~1.4												
Ni-2/S-500LCO		5Y50M H5 2.4~4.8													
M-12K/S-950S		AWS A5.17 F7A(P)8-EM12K 1.2~4.8													
A-2/S-950S		AWS A5.23 F8A(P)5-EA2-A2 1.2~4.8													
A-2TiB/S-950S		AWS A5.23 F8TA(P)8-EA2TiB 1.2~4.8													

Classification / Product	KR	ABS	LR	BV	DNV	NK	CWB	TUV	CE	DB	CCS	RINA	CR	RS	CRS
2 X H-14/ Superflux 55ULT	5Y40M H5 (-75℃ ≥27 J) 5YT 1.2~6.4	5Y400MH5 (-75℃ ≥27 J) 4YT 1.2~6.4	5Y40M H5 (-75℃≥27 J) 4YT (max.40T) 1.2~6.4	A5Y40M HH (-75℃ ≥27 J) A5YT (1wire max. 20T, 2wire max 25T) A4Y40T (1wire max. 30T, 2wire max 35T) 1.2~6.4	V Y40M H5 (-75℃ ≥27 J) IV YT (1wire max.35) V YT (1wire max.20T, 2wire max 25T) NV4-4L (-75℃ ≥27 J) 1.2~6.4	KAW54Y40MH5 KAW54Y40MH5-vE27M-75T (-75℃≥27 J) KAW54T 1.2~6.4						5Y40M,4YT 1.2~6.4		5YT, 5Y40M 1.2~6.4	
H-14/Superflux 55ULT/CW		4YM 1.2~6.4	4YM, 4YMsr 1.2~6.4	A4YM 1.2~6.4	IVYM 1.2~6.4									4YM 1.2~6.4	
H-14/Superflux 55LP		5Y400M H10 1.2~6.4	5Y40M H10 1.2~6.4	A5Y40M HH 1.2~6.4	VY40M H10 NV4-4L 1.2~6.4										
H-14/Superflux 787	4YM 1.2~6.4	3M,4YM 1.6~6.4	4YM 1.6~6.4	A4YM 1.2~6.4	IV YM 1.6~6.4	KAW54M 1.2~6.4					4YM 1.2~6.4				
H-14L/Superflux 787		3M,4YM 1.6~6.4													
L-8/S-707	3TM,3YTM 1.6~6.4	3TM,3YTM 1.6~6.4	3T, 3YM, 3YT 1.6~6.4	A3TM,A3YTM 2.4~6.4	IIIYTM 2.4~6.4	KAW3TM, KAW53TM 2.4~6.4			EN ISO 14171-A - S1 (Wire) EN ISO 14174 - S A AB 1 (Flux)			3YM,3YT 1.2~6.4		3YTM 1.2~6.4	
2XL-8/S-707			3T, 3YM, 3YT 1.6~6.4									3YM,3YT 1.2~6.4			
L-8/S-707/IRN/ S-22	2SMR,2YSMR 2.4~6.4	2,2Y 2.4~6.4	2A,2YA 2.4~6.4	A2M,A2YM 2.4~6.4	IIYM 2.4~6.4	KAW2M, KAW52M 2.4~6.4									
L-8/S-707/CW/ CBM-G22	2YSR 2.0~6.4	2Y 2.0~6.4	2YA 2.0~6.4	A2YU 2.0~6.4	IIY 2.0~6.4	KAW52SP 2.0~6.4									
NI-3 / S-150					-M(H5) NV 3.5Ni, -115℃ 2.4~4.0										
M-12K/S-717	3M,3YM 2.4~6.4	3M,3YM 2.4~6.4	3YM 2.4~6.4	A3,A3YM 2.0~6.4	IIIYM 2.0~6.4	KAW53M 2.0~6.4	CSA W48 F49A5-EM12K-H8 F49P5-EM12K-H8 1.2~6.4	EN ISO 14171-A - S2Si (Wire) EN ISO 14174 - S A AB 1 (Flux) 1.2~6.4	EN ISO 14171-A - S2Si (Wire) EN ISO 14174 - S A AB 1 (Flux)	DIN EN ISO 14171-A-S2Si (Wire) DIN EN ISO 14174-S A AB 1 (Flux) 1.2~6.4				3YM 1.2~6.4	
M-12K/Superflux 800T								EN ISO 14171-A - S2Si (Wire) EN ISO 14174 - S A FB 1 (Flux) 1.2~6.4	EN ISO 14171-A - S2Si (Wire) EN ISO 14174 - S A FB 1 (Flux)	DIN EN ISO 14171-A-S2Si (Wire) DIN EN ISO 14174-S A FB 1 (Flux) 1.2~6.4					
M-12K/S-800WT							CSA W48 F49A6-EM12K-H8 F49P6-EM12K-H8 1.2~6.4	EN ISO 14171-A - S2Si (Wire) EN ISO 14174 - S A FB 1 (Flux) 1.2~6.4	EN ISO 14171-A - S2Si (Wire) EN ISO 14174 - S A FB 1 (Flux)	DIN EN ISO 14171-A-S2Si (Wire) DIN EN ISO 14174-S A FB 1 (Flux) 1.2~6.4					
M-12K/S-900SP		AWS A5.17 F7A4-EM12K AWS A5.17 F7P4-EM12K 1.6~4.8													
A-2/Superflux 800T									EN ISO 14171-A - S2Mo (Wire) EN ISO 14174 - S A FB 1 (Flux)						
A-2/S-900SP		AWS A5.23 F9A(P)2-EA2-G 1.6~4.8													
A-2/Superflux 787		AWS A5.23 F8A6-EA2-A2 1.6~4.8													
B-2/Superflux 787		AWS A5.23 F8P2-EB2-B2 1.6~4.8													

ISO & IATF APPROVALS

LRQA

Certification date: 2 March 2024
Expiry date: 1 March 2027
Certificate number: 10586600
IATF Certificate number: 0503352

Certificate of Approval

This is to certify that the Management System of:

Hyundai Welding Co., Ltd.

100, Daesong-ro, Nam-gu, Pohang-si, Gyeongbuk 37863, Republic of Korea

IATF USI: CPHKEM

has been approved by LRQA to the following standards:

IATF 16949:2016

Approval number(s): IATF 16949 – 0069044-001

This certificate is valid only in association with the certificate schedule bearing the same number on which the locations applicable to this approval are listed.

The scope of this approval is applicable to:

Design and manufacturing of solid wires & rods and flux cored wires.

Il-Hyoung Lee

Korea Operations Manager

Issued by: LRQA Limited

LRQA

Current issue date: 25 January 2025
Expiry date: 24 January 2028
Certificate identity number: 10667140

Original approval(s):
ISO 9001 - 7 February 1995

Certificate of Approval

This is to certify that the Management System of:

Hyundai Welding Co., Ltd.

100, Daesong-ro, Nam-gu, Pohang-si, Gyeongbuk 37863, Republic of Korea

has been approved by LRQA to the following standards:

ISO 9001:2015

Approval number(s): ISO 9001 – 0065942

This certificate is valid only in association with the certificate schedule bearing the same number on which the locations applicable to this approval are listed.

The scope of this approval is applicable to:

Design, manufacture of covered electrodes, solid wires & rods, flux cored wires, submerged arc wires and fluxes.

Il-Hyoung Lee

Korea Operations Manager

Issued by: LRQA Limited

UKAS MANAGEMENT SYSTEMS 0001

ISO & IATF APPROVALS

LRQA

Current issue date: 10 February 2025
Expiry date: 9 February 2028
Certificate identity number: 10667321

Original approval(s):
ISO 14001 - 10 February 2004

Certificate of Approval

This is to certify that the Management System of:

Hyundai Welding Co., Ltd.

100, Daesong-ro, Nam-gu, Pohang-si, Gyeongbuk 37863, Republic of Korea

has been approved by LRQA to the following standards:

ISO 14001:2015

Approval number(s): ISO 14001 – 0069053

This certificate is valid only in association with the certificate schedule bearing the same number on which the locations applicable to this approval are listed.

The scope of this approval is applicable to:

Design and manufacture of covered electrodes, solid wires & rods, flux cored wires and submerged arc wires & fluxes.

Il-Hyoung Lee

Korea Operations Manager

Issued by: LRQA Limited

UKAS MANAGEMENT SYSTEMS 0001

WELDING CONSUMABLES SELECTION GUIDE BY INDUSTRY AND STEEL GRADE

The table is based on limited conditions and does not represent all applications or requirements. Users are responsible for reviewing their specific applications and conditions to select the proper welding consumable.

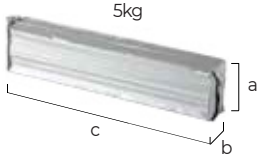
Industry	Division				Cored wire			Solid wire		Electrode	Flux + Wire
	Steel	TS (ksi)	YS (ksi)	Etc.	FCAW	FCAW-S (Self shielded)	Metal cored, FCAW-Flat	GMAW	GTAW	SMAW	SAW
Shipbuilding	AH(32)	64	46	None	(2Y) SF-71		E70T-x	ER70S-x	ER70S-x	E70xx	F7xx-Ex
	DH(32)	64	46	-20℃	(3Y) Supercored 71 (3Y) SC-71LH		Supercored 70MXH	SM-70 (CO_2, Mix) SM-70S (Mix)	ST-50.6 ST-50.3	S-7016.H S-7018.G	Superflux55ULT/ H-14
	DH(36)	71	51	-20℃	(3Y) Supercored 71 (3Y) SC-71LH		Supercored 70MXH	SM-70 (CO_2, Mix) SM-70S (Mix)	ST-50.6 ST-50.3	S-7016.H S-7018.G	Superflux55ULT/ H-14
	EH(36)	71	51	-40℃	(4Y) Supercored 71H (5Y40) Supercored 81-K2		SC-80K2			S-7016.H S-7018.G	Superflux55ULT/ H-14
	EH(46)	83	67	-40℃	(5Y46) SC-460		SC-80K2				
Pipe	API 5L X42	60	42	None	SF-71 Supercored 71		E70T-x	ER70S-x	ER70S-x	E70xx, E60xx	F7xx-Ex
	API 5L X56	71	56	-40℃	Supercored 71H SC-71SR	Pipecored 71 (V-down)				S-7018.1H	Two run S-950S/A-2TiB+A-2 Superflux787/ A-2TiB+A-2 Multi run Superflux787/H-12K
	API 5L X70	82	70	-40℃	Supercored 81MAG	Pipecored 81 (V-down)			ST-1N	S-7018.1H	Two run S-950S/A-2TiB+A-2 Superflux787/ A-2TiB+A-2 Multi run Superflux787/Ni-5
Wind tower	S355 JR	74	52	None	SF-71 Supercored 71		E70T-x	ER70S-x	ER70S-x	E70xx	F7xx-Ex
	S355 J2	74	52	-20℃	Supercored 71H SC-71SR			SM-70	ST-50.6	S-7018.G, S-7018.1H	S-717/M-12K
	S355 NL	74	52	-50℃	Supercored 81-K2					S-7018.1H, S-7016.LS, S-76LTH, S-86LTH	S-800WT/M-12K Superflux787/H-12K
	S460 ML	83	67	-50℃	SC-460					S-86LTH	Superflux787/Ni-5
Plant (PWHT)	A516 Gr.60	60	32	-46℃	SC-71SR					S-7018.1H	Superflux787/H-12K
	A516 Gr.70	70	38	-46℃	SC-71SR					S-7018.1H	Superflux787/H-12K
	A537 Cl.2	80	60	-46℃	SC-81SR					S-86LTH	Superflux787/Ni-5

WELDING CONSUMABLES SELECTION GUIDE BY INDUSTRY AND STEEL GRADE

Industry	Division				Cored wire			Solid wire		Electrode	Flux + Wire
	Steel	TS (ksi)	YS (ksi)	Etc.	FCAW	FCAW-S (Self shielded)	Metal cored, FCAW-Flat	GMAW	GTAW	SMAW	SAW
Plant (CrMo)	A204 Gr.B (A335 Gr.P1)	70	40	None	SC-81A1					S-7016.A1 S-7018.A1	Superflux787/ A-3
	A387 Gr.11 (A335 Gr.P11)	75	45	None	SC-81B2				ST-80B2	S-8016.B2 S-8018.B2	S-800CM/B-2R
	A387 Gr.22 (A213 Gr.T22)	75	45	None	SC-91B3					S-9016.B3 S-9018.B3	
STS	304(L)	-	-	None	SW-308L Cored SW-308LT Cored	Supershield 308L (Repair)	Supercored 308L	SM-308L (SM-308)	ST-308L (ST-308)	S-308L.16N S-308LT.16 S-308L.17	Superflux300S/ YS-308L S-300B/YS-308L
	316(L)	-	-	None	SW-316L Cored SW-316LT Cored		Supercored 316L	SM-316L (SM-316)	ST-316L (ST-316)	S-316L.16N S-316LT.16 S-316L.17	Superflux300S/ YS-316L S-300B/YS-316L
	309	-	-	None	SW-309L Cored		Supercored 309L	SM-309L (SM-309)	ST-309L (ST-309)	S-309L.16 S-309L.17	
	309MoL	-	-	None	SW-309MoL Cored		Supercored 309MoL			S-309MoL.16	
	347 (321)	-	-	None	SW-347 Cored			SM-347	ST-347	S-347.16	S-300B/YS-347
	2209	-	-	None	SW-2209				ST-2209	S-2209.16	Superflux209/ YS-2209
	2594	-	-	None	SW-2594				SMT-2594	S-2594.16	
Structure	SM355A	72	52	20℃	SF-71		E70T-x	ER70S-x	ER70S-x	E70xx	F7xx-Ex
	SM355B	72	52	0℃	SF-71 Supercored 71	Supershield 71-T8	SF-70MX	SM-70 SM-70S SM-70G	ST-50.6 ST-50.3 ST-50G	S-7016.H	S-777MX/H-14 S-777Q/M-12K, H-14
	SM420A	76	61	20℃	SC-55 Cored		E80T-x	ER80S-x	ER80S-x	E80xx	F8xx-Ex
	SM420B	76	61	0℃	SC-55 Cored		SC-55F Cored	SM-55H		S-8018.G	S-777MXH/A-3
	SM460A	83	67	20℃	Supercored 81		E80T-x	ER80S-x	ER80S-x	E80xx	F8xx-Ex
	SM460B	83	67	0℃	Supercored 81		SC-80K2	SM-80G		S-9016.G	S-777MXH/A-3

HYUNDAI STANDARD PACKAGING

1. Covered Electrodes (1/2)

Type	Packet	Box
BOX /VACCUM PACK (Standard)	5kg  5kg 	20kg 

Unit : mm (in)

Packet Size	
a	78 (3.1)
b	46~60 (1.8)~(2.4)
c	304~703 (12)~(27.7)

Unit : mm (in)

Box Size	
d	85 (3.3)
e	125~262 (4.9)~(10.3)
f	317~712 (12.5)~(28)

Pallet

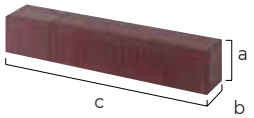
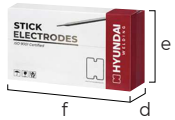
1,000kg

Unit : mm (in)

Pallet Size		
	l≤ 450 (17.7)	l> 450 (17.7)
A	450 (17.7)	450 (17.7)
B	130/160 (5.1)/(6.3)	160 (6.3)
C	1,130/1,190 (44.5)/(46.9)	1,160 (45.7)
D	890/970 (35)/(38.2)	990 (39)

HYUNDAI STANDARD PACKAGING

1. Covered Electrodes (2/2)

Type	Packet	Box
PE CAN (Stainless/ Special Alloy)	2.5kg  Unit : mm (in)	10kg  Unit : mm (in)
TIN CAN (Stainless/ Special Alloy)	4.5kg  Unit : mm (in)	18kg  Unit : mm (in)

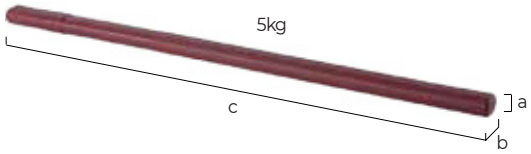
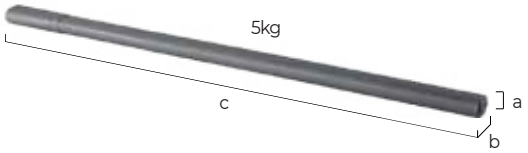
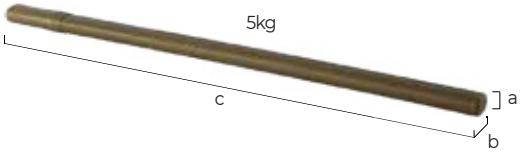
Packet Size		
l	300 (11.8)	350 (13.8)
a	73 (2.9)	73 (2.9)
b	53 (2.1)	49 (1.9)
c	311 (12.2)	360 (14.2)

Box Size	
d	80 (3.1)
e	210~230 (8.3)~(9.1)
f	320~380 (12.6)~(15)

Packet Size		
l	300 (11.8)	350 (13.8)
a	75 (3)	75 (3)
b	75 (3)	75 (3)
c	365 (14.4)	415 (16.3)

Box Size	
d	85 (3.3)
e	317 (12.5)
f	383~433 (15.1)~(17)

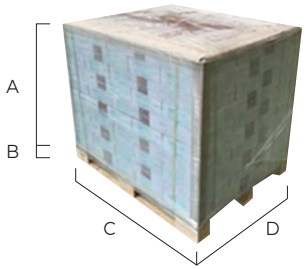
2. TIG Rods

Type	PE Tube
Standard	5kg 
Stainless	5kg 
Special Alloy	5kg 

Unit : mm (in)

Tube Size	
a	32 (1.3)
b	45 (1.8)
c	1,010 (39.8)

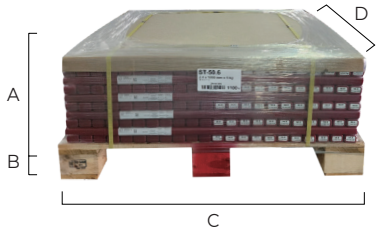
Pallet

1,000kg 

Unit : mm (in)

Pallet Size - PE CAN		
l	300 (11.8)	350 (13.8)
A	800 (31.5)	
B	140 (5.5)	
C	1,040 (40.1)	
D	825 (32.5)	

Pallet

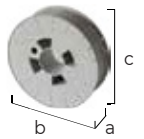
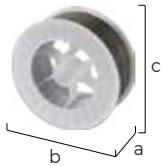
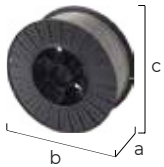
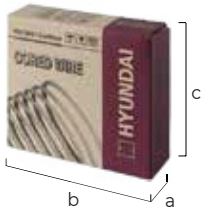
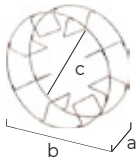
1,100kg 

Unit : mm (in)

Pallet Size	
A	320 (12.6)
B	140 (5.5)
C	1,070 (42.1)
D	1,030 (40.6)

HYUNDAI STANDARD PACKAGING

3. Wire Spools(MIG Solid Wire / Flux Cored Wire)

Type	Spool	Box
Plastic Spool (MIG Solid Wire /Flux Cored Wire)	 5kg(11 lb)	 Solid Wire
	  12.5 / 15 / 20 kg (28 / 33 / 44 lb)	 Flux Cored Wire (Carbon Steel / Stainless)
Basket Rim (MIG Solid Wire)		

Unit : mm (in)

Box Size	
a	60 (2.4)
b	215 (8.5)
c	215 (8.5)

Unit : mm (in)

Box Size	
a	110 (4.3)
b	280~300 (11~11.8)
c	280~300 (11~11.8)

Unit : mm (in)

Box Size	
a	105 (4.1)
b	310 (12.2)
c	310 (12.2)

Pallet

900kg / 1,080kg / 1,200kg

Unit : mm (in)

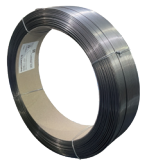
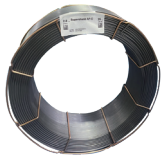
Pallet Size – Flux Cored Wire			
	5 kg (11 lb)	12.5/20 kg (28/44 lb)	15 kg (33 lb)
A	620 (24.4)	550~660 (21.7)~(26)	660 (26)
B	140 (5.5)	130/140 (5.1)/(5.5)	130/140 (5.1)/(5.5)
C	1,130 (44.5)	1,200 (47.2)	1,130/1,200 (44.5)/(47.2)
D	850 (33.5)	900 (35.4)	850/900 (33.5)/(35.4)

Pallet Size – MIG Solid Wire		
	12.5 kg(28 lb)	15/20 kg(33/44 lb)
A	660 (26)	550~660 (21.7)~(26)
B	130 (5.1)	130/140 (5.1)/(5.5)
C	1,190 (46.9)	1,130 (44.5)
D	970 (38.2)	850 (33.5)

Pallet					
Spool Size	EA	Wooden Pallet	Spool Size	EA	Wooden Pallet
MIG Solid Wire			Flux Cored Wire		
15 kg (33 lb)	60 EA	900 kg (1,984 lb)	5 kg (11 lb)	200 EA	1,000 kg (2,204 lb)
	72 EA	1,080 kg (2,381 lb)	12.5 kg (28 lb)	72 EA	900 kg (1,984 lb)
20 kg (44 lb)	60 EA	1,200 kg (2,645 lb)	15 kg (33 lb)	60 EA	900 kg (1,984 lb)
Stainless MIG Wire				72 EA	1,080 kg (2,381 lb)
12.5 kg (28 lb)	72 EA	900 kg (1,984 lb)	20 kg (44 lb)	60 EA	1,200 kg (2,645 lb)

HYUNDAI STANDARD PACKAGING

4. Coil/Basket Rim(Flux Cored Wire)

Type	Packet	Box
Coil	 20~30kg (44~66 lb)	
Basket Rim (Coreless)	 25kg (55 lb)	

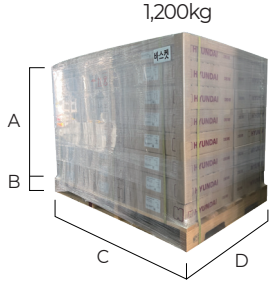
Unit : mm (in)

BOX Size	
a	85 (3.3)
b	420 (16.5)
c	415 (16.3)

Unit : mm (in)

BOX Size	
a	110 (4.3)
b	435 (17.1)
c	425 (16.7)

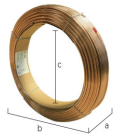
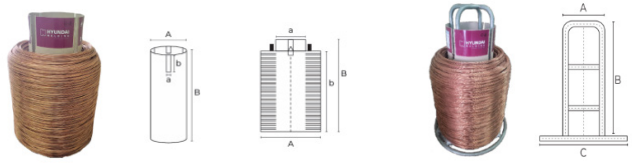
Pallet



Unit : mm (in)

Pallet Size	Coil	Basket Rim
A	830 (32.7)	890 (35)
B	140/160 (5.5)/(6.3)	140/160 (5.5)/(6.3)
C	1,320 (52)	1,320 (52)
D	910 (35.8)	910 (35.8)

5. Submerged Wire

Type	Packet	Box
Coil		 20~30 kg (55~66 lb)
Basket Rim (Coreless)	 25kg (55 lb)	
Pack	Please refer to 'MEGA PAK' on page 424.	
MEGA COIL	 1,000kg 1,000kg	

Unit : mm (in)

Coil Size	a	b	c
25 kg (55 lb)	80 (3.1)	405 (15.9)	315 (12.4)
75 kg (165 lb)	110 (4.3)	720 (28.3)	630 (24.8)
300 kg (661 lb)	210 (8.3)	820 (32.3)	630 (24.8)
500 kg (1,102 lb)	210 (8.3)	920 (36.2)	630 (24.8)
1,000 kg (2,204 lb)	210 (8.3)	1,130 (44.5)	630 (24.8)

Unit : mm (in)

Basket Rim Size	
a	103 (4.1)
b	413~419 (16.3)~(16.5)
c	297~303 (11.7)~(11.9)

Unit : mm (in)

BOX Size	Coil	Basket
d	85 (3.3)	110 (4.3)
e	435 (17.1)	430 (16.9)
f	425 (16.7)	425 (16.7)

Unit : mm (in)

MEGA COIL Size	
A	850 (33.5)
B	1,200 (47.2)
a/b	454/1,000 (17.9)/(39.4)

Unit : mm (in)

Paper Core Size	
A	454 (17.9)
B	1,200 (47.2)
a/b	50/250 (2)/(9.8)

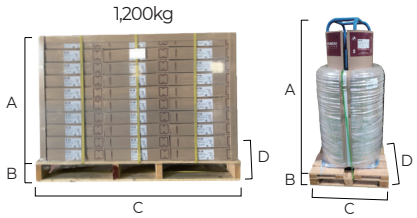
Unit : mm (in)

MEGA FRAME COIL Size	
A	490 (19.3)
B	1,520 (59.8)
C	900 (35.4)

HYUNDAI STANDARD PACKAGING

5. Submerged Wire

Pallet

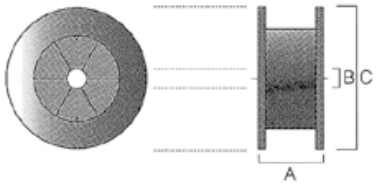


Unit : mm (in)

Pallet Size				
	Coil	Basket Rim	MEGA COIL	MEGA FRAME COIL
A	690 (27.2)	890 (35)	1,390 (54.7)	1,790 (70.5)
B	140/160 (5.5)/(6.3)	140/160 (5.5)/(6.3)	170/180 (6.7)/(7.1)	170/180 (6.7)/(7.1)
C	1,320 (52)	1,320 (52)	900 (35.4)	900 (35.4)
D	910 (35.8)	910 (35.8)	900 (35.4)	900 (35.4)

6. Wire Spool Details(Plastic Spool/Basket Spool)

Plastic Spool

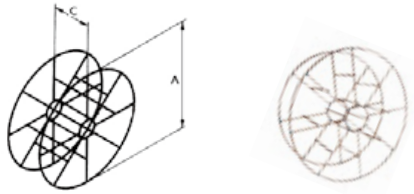


Unit : mm (in)

Spool Size			
USAGE	A	B	C
FCAW Wire 5 kg (11 lb)	55 (2.2)	52~53 (2)~(2.1)	199~200 (7.8)~(7.9)
FCAW 6.5 kg (14 lb)	102~104 (4)~(4.1)	52~53 (2)~(2.1)	223~224 (8.8)
FCAW 12.5 kg (28 lb)	100~102 (3.9)~(4)	52~53 (2)~(2.1)	279~280 (11)
FCAW 15 kg (33 lb) GMAW 15~20 kg (33~44 lb)	100~102 (3.9)~(4)	52~53 (2)~(2.1)	269~270 (10.6) 279~280 (11)
FCAW 20 kg (44 lb)	100~102 (3.9)~(4)	52~53 (2)~(2.1)	279~280 (11)
Material : PP(Polypropylene)/HIPS(High Impact Polystyrene)			

6. Wire Spool Details(Plastic Spool/Basket Spool)

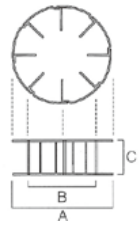
Basket Spool



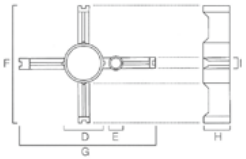
Core Type

Unit : mm (in)

Spool Size		
USAGE	A	B
FCAW 15 kg (33 lb)/ Solid Wire 15~20 kg (33~44 lb)	298~302 (11.7)~(11.9)	98~100 (3.9)



Coreless Type



Basket Spool Adaptor

Unit : mm (in)

Spool Size									
USAGE	A	B	C	D	E	F	G	H	I
FCAW 15 kg (33 lb) Solid Wire 15~20 kg (33~44 lb)	295~300 (11.6)~(11.8)	178~182 (7)~(7.2)	97~103 (3.8)~(4.1)	55 (2.2)	13 (0.5)	180 (7.1)	220 (8.7)	97 (3.8)	18 (0.7)
Submerged Wire 25 kg (55 lb)	413~419 (16.3)~(16.5)	297~303 (11.7)~(11.9)	103 (4.1)	-	-	-	-	-	-

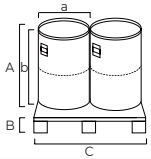
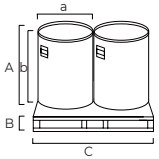
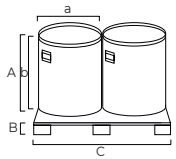
HYUNDAI STANDARD PACKAGING

7. Wire Drums

HYUNDAI Drum Solutions

PAIL PACK				ECO PLUS PACK	
Ball pac	MAX PAK	RiNG PAK	MEGA PAK	EP I	EP II
					
510 * 500 510 * 810 510 * 870 660 * 590 660 * 810	510 * 500 510 * 810 660 * 810	510 * 500 510 * 610 510 * 810 510 * 870 660 * 590 660 * 810	570 * 870 660 * 870	545 * 810 610 * 810	510 * 780 660 * 780

Unit : mm (in)

PAIL PACK Size			
Size	510 Type	570 Type	660 Type
a	510 (20.1)	570 (22.4)	660 (26)
b	810/870 (31.9)/(34.3)	870 (34.3)	810/870 (31.9)/(34.3)
b(Half)	500 (19.7)	-	590 (23.2)
			

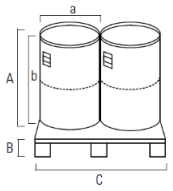
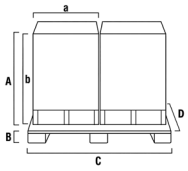
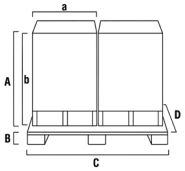
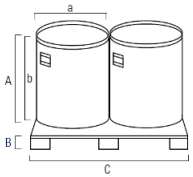
Unit : mm (in)

PAIL PACK Pallet Size			
Size	510 Type	570 Type	660 Type
A	820/880 (32.3)/(34.6)	880 (34.6)	820/880 (32.3)/(34.6)
B	130/160 (5.1)/(6.3)	130/160 (5.1)/(6.3)	130/160 (5.1)/(6.3)
C	1,070 (42.1)	1,150 (45.3)	1,340 (52.8)
D	530 (20.9)	590 (23.2)	670 (26.4)

7. Wire Drums

HYUNDAI Drum Solutions

Unit : mm (in)

ECO PLUS PACK Size				
Size	510 Type	545 Type	610 Type	660 Type
a	520 (20.5)	555 (21.9)	620 (24.4)	620 (24.4)
b	790 (31.1)	915 (36)	915 (36)	790 (31.1)
b(Half)	-	-	-	-
				

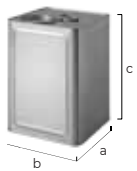
Unit : mm (in)

ECO PLUS PACK Pallet Size				
Size	510 Type	545 Type	610 Type	660 Type
A	800 (31.5)	930 (36.6)	930 (36.6)	800 (31.5)
B	160/188 (6.3)/(7.4)	140 (5.5)	140 (5.5)	160 (6.3)
C	1,070 (42.1)	1,130 (44.5)	1,270 (50)	1,340 (52.8)
D	530/1,070 (20.9)/(42.1)	570 (22.4)	650 (25.6)	670 (26.4)

HYUNDAI STANDARD PACKAGING

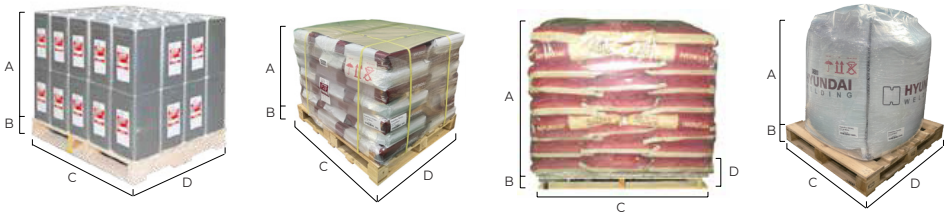
8. Submerged Flux

Package Type

TIN CAN	SHIELD BAG	PAPER BAG	MEGA BAG
			

Unit : mm (in)

Package Size				
Size	TIN CAN	SHIELD BAG	PAPER BAG	MEGA BAG
a	237 (9.3)	110 (4.3)	75/90 (3)/(3.5)	890 (35)
b	237 (9.3)	385 (15.2)	420/360 (16.5)/(14.2)	890 (35)
c	280~375 (11)~(14.8)	620 (24.4)	670/720 (26.4)/(28.3)	1,140 (44.9)



Unit : mm (in)

Pallet Size				
Size	TIN CAN	SHIELD BAG	PAPER BAG	MEGA BAG
A	620~850 (24.4)~(33.5)	880 (34.6)	770/920 (30.3)/(36.2)	930 (36.6)
B	140 (5.5)	160 (6.3)	130/160 (5.1)/(6.3)	160 (6.3)
C	1,210 (47.6)	1,130 (44.5)	1130/1210 (44.5)/(47.6)	1,100 (43.3)
D	970 (38.2)	980 (38.6)	890/970 (35)/(38.2)	1,100 (43.3)

HYUNDAI DRUM SOLUTIONS

HYUNDAI Ball pac®

HYUNDAI Ball pac® is a new and improved version of our original Pail pack. Our patented 'marble' system, acts as a 'non-static' resistance on top of the wire. The marble add weight on the wire to ensure that only one strand, at a time, is picked up. With the shape and weight of the 'marbles', the wire pulls up and out of the Ball Pac consistently and without the normal static resistance found with other drum systems. Our wire is pulled out with minimum resistance and seamless feedability is the end result.

For more details about HYUNDAI Ball pac®, please refer to the following chapter.

HYUNDAI MAX PAK®

Easy to check the remaining wire as no drum is installed inside the pak. Designed as a pressing plate by step method which minimizes the wire feeding resistance, also adopted a practical design to prevent tangling during wire feeding. Likewise by removing the drum and using a lightweighted pressing plate, the light weighted pak could be launched. Therefore it is easy to carry and handle. It will be more likely to find out its convenience with advantages as this item made the best use of our ball pak type, which our company feels proud of.

HYUNDAI RING PAK®

The newly developed RING PAK® can effectively prevent wire from any tangling in spite of insufficient winding quality. In a feedability comparison test with previous models, it shows predominant feedability and weldability. As a result of minimized resistance in feedings, it guarantees Superior feedability, Excellent seam tracking, consistent penetration and the straight in bead appearance.

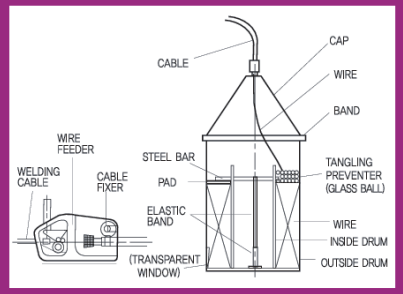
HYUNDAI WELDING

HYUNDAI DRUM SOLUTIONS

Ball pac

HOW TO USE

IMPORTANT
- Use all the balls packed inside.
- Only use the balls for their intended purpose.
- Do not put balls in mouth or roll them on the floor.
- Be careful not to drop balls on the floor, serious injuries can result.

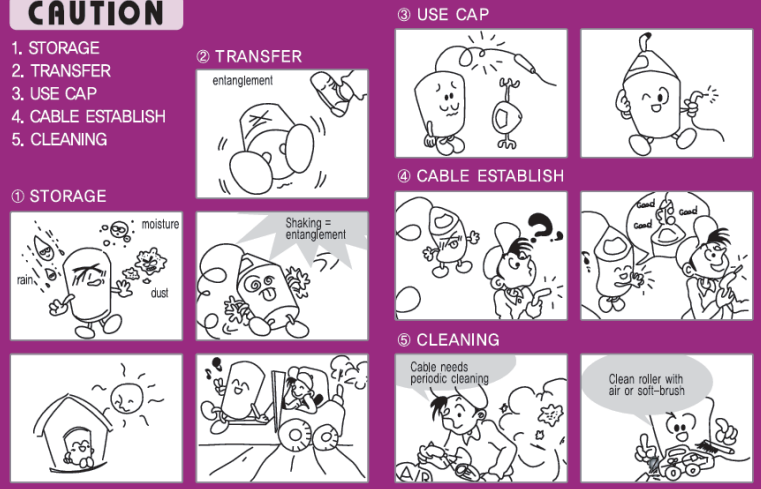


USE

- Before use - When installing
- Please use all provided subsidiary materials

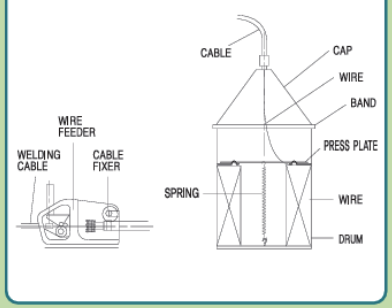
CAUTION

1. STORAGE
2. TRANSFER
3. USE CAP
4. CABLE ESTABLISH
5. CLEANING



RING PAK

HOW TO USE

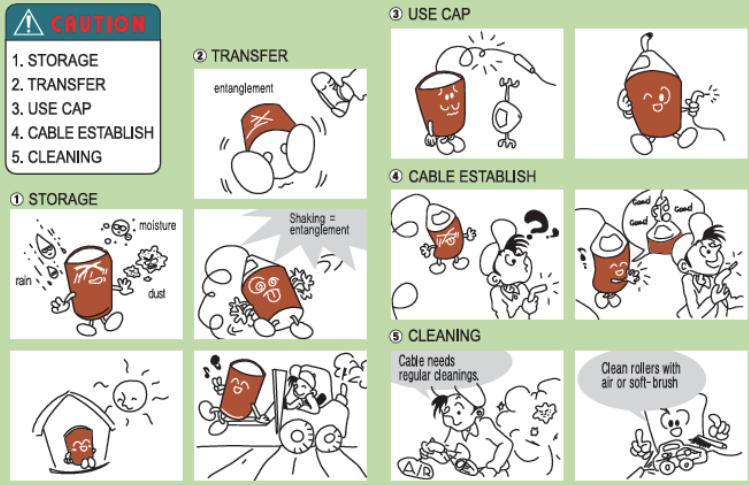


USE

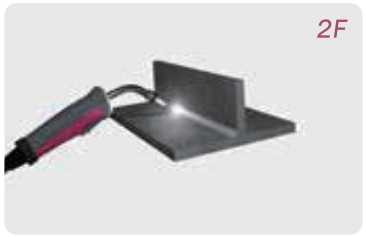
※ Make sure to apply it where it is to be welded.
※ Please use all the subsidiary materials provided.
※ Do not apply excessive force when handling springs.

CAUTION

1. STORAGE
2. TRANSFER
3. USE CAP
4. CABLE ESTABLISH
5. CLEANING



WELDING POSITIONS

	GROOVE WELD	FILLET WELD
FLAT	 1G	 1F
HORIZONTAL	 2G	 2F
VERTICAL	 3G	 3F
OVERHEAD	 4G	 4F

for Pipes

GROOVE WELD

SAFETY WARNINGS

WARNING

• Be sure to follow the safety practices stated in the following in order to protect welders, operators and accompanied workers from a serious accident resulting in injury or death.

• Be sure to follow the safety practices stated in the following when you use welding consumables.
• Be sure to follow the safety practices stated in the instruction manual when you use welding equipment.

WARNING

• Electric shock can kill.

• Do not touch live electrical parts.(A covered electrode held with an electrode holder and a wire in welding are electrically live.)
• Wear dry, insulated gloves. Do not wear teared and wet gloves.
• Use an electric shock preventing device(open-circuit-voltage-reducing device)when welders or operators work in confined or high-level spaces. Use also a lifeline when a welder or an operator conducts welding at a high-level area.
• Follow the safaty practices stated in the instruction of the welding manchine before you use. Do not use a welding manchine case or cover of which is removed. Welding cables must be a size adequate for the capacity expected. Welding cables must be maintained, and a damaged cable must be repaired or replaced one.

WARNING

• Fumes and gases generated in welding can be dangerous to your health.
• Welding in confined spaces can be dangerous for suffocation because of oxygen deficient atmospheres.

• Do not touch live electrical parts.(A covered electrode held with an electrode holder and a wire in welding are electrically live.)
• Wear dry, insulated gloves. Do not wear teared and wet gloves.
• Use an electric shock preventing device(open-circuit-voltage-reducing device)when welders or operators work in confined or high-level spaces. Use also a lifeline when a welder or an operator conducts welding at a high-level area.
• Follow the safaty practices stated in the instruction of the welding manchine before you use. Do not use a welding manchine case or cover of which is removed. Welding cables must be a size adequate for the capacity expected. Welding cables must be maintained, and a damaged cable must be repaired or replaced one.

WARNING

• Arc rays can injure eyes and burn skin.

• Wear hand shields with an adequate grade of shade in welding and supervising the welding work.
• Select the correct grade shade for filter lenses and filter and filter plates suitable for exact welding work by referring to the standard of JIS T8141.

• Wear protectors suitable for preventing contact with arc rays, such as safety leather gloves for welding, long sleeve shirts, foot covers, leather aprons, etc.
• Use, as needed shade curtains for welding by surrounding the welding areas in order to prevent accompanied workers from the arc rays.

WARNING

• The tips of the welding wires and filler wires can injure eyes, face, etc.

• Do not lose your hole on the wire when taking off the tip of the wire.
• Do not point the welding torch towards your face when checking the wire feeding condition.

WARNING

• Falling down and dropping welding consumables can injure you.

• Wear safety shoes, and pay your attention not to drop welding consumables on your body when you carry and handle them. Keep your posture correct not to cause a crick in your back while handling them.
• Pile up welding consumables so that falling down and dropping cannot take place while storing and carrying them.

WARNING

• Fire and explosion can take place.

• Never weld in areas adjacent to highly inflammable materials. Remove consumables so that spatter cannot ignite them. If combusibles cannot be removed, cover them with a noninflammable material.
• Do not weld a vessel or PiPe which contains combustibles or being sealed.
• Do not Put a hot weldment close to combusibles right after welding finished.
• When welding ceiling, floors, walls, etc, remove combustibles at the other side of them.
• Any part of welding wire, with exception of wire extended at the tip of the torch, must be free from touching on the electical circuit of the base metal side.
• Fasten the cable joints and seal them in a insulation tape. The cable for the base metal side should be connected closer to the part of welding.
• Be ready to cope with a possible accident by equipping fire-extingushing equipmint adjacent to the welding areas.

WARNING

• Flying spatters and slags can injure eyes and cause burn skins.
• High temperature heat in welding can cause burn skins.

• Wear safety glasses, safety leather gloves for welding, long sleeve shirts, foot covers, leather aprons, etc.
• Do not touch weldments while hot.

HYUNDAI WELDING

STORAGE AND HANDLING

Storage & Handling

The quality of weld joint depends not only on the selection of the right welding consumables, but also on the handling and management of the welding consumables. Since they can affect on the quality of weld joint, special attention is required. Therefore, welding consumables should be handled and stored with care as follows.

1) A separate storage warehouse should be operated for the management of welding consumables, and a thermometer and hygrometer should be provided in the warehouse. In addition, the warehouse should be equipped with a fire protection structure, condensation prevention, atmospheric barrier and ventilation facilities.

2) Welding consumables should be stored in a place with good ventilation and low humidity by loading it on a pallet and keeping it away from the wall. (Storage temperature: 5~40℃, Relative Humidity: Max. 70%, However, the storage temperature and relative humidity depend on the user's environment and management procedures.)

3) If overloaded, the packaging may be damaged due to the accumulation of weight and stacking more than 3 layers is forbidden for safety reason.

4) Care should be taken as the packaging may be damaged due to improper handling during the transportation. Also, in case of snow or rain, it is absolutely forbidden to transport, but if it is unavoidable, lay a waterproof sheet and cover with a protective material to prevent moisture. It should be transported after being thoroughly checked.

Flux Cored Wires

1. Storage for the product

1) In order to prevent contamination of the wire surface, the product should be sealed. Care should be taken to avoid rust on the wire surface.

2) If the storage period for reuse after the package opens is long, attention should be paid to avoid moisture absorption and rust with silica gel or a separate bag.

2. The prevention management of moisture absorption

1) In general, flux cored wires have a bluing or other surface treatment on the wire surface to increase the anti-rust effect. and are packaged with vaporization anti-rust paper & plastic bag for long-term storage.

2) The plastic spool products can not be re-dried, but if the package opens, it should be stored 10 ~ 25℃ higher than the ambient temperature.

3) When exposed to a moisture during the rainy season, the plastic spool can be re-dried in the 60 ~ 80℃ temperature range for about 2 hours. If re-drying is performed, the adsorbed moisture on the wire surface can be removed and welding defects can be reduced.

3. Warehouse storage conditions

1) When the original packaging is unopened : Storage temperature 5~40℃, relative humidity Max. 70%. The vacuum packed products are not subject to relative humidity.

2) When the original packaging opens : After packing in plastic bag, it should be stored in storage bin at 5~40℃. When reused, 3~4 layers of wire should be removed before use.

STORAGE AND HANDLING

Flux Cored Wires

4. Re-drying

1) Generally, since flux cored wires have moisture absorption from the atmosphere, weld defects may occur in the weld metal. This can be prevented by re-drying the welding consumables.

2) The re-drying temperature and time are determined according to the packaging specifications.
- Coil & Wire basket products : Re-drying temperature Max. 150℃ X Re-drying time Max. 5 hours
- Plastic spools : Re-drying temperature 60~80℃ X Re-drying time Max. 24 hours
- When re-drying, the plastic bag should be removed.

5. Precautions for use

1) The welder should receive the amount of welding consumables that can be used within work hour.

2) When welding work is finished, the flux cored wires should be protected from moisture.

3) When rework is performed after stopped for more than 4 hours. one of the below methods should be followed.
- The product should be removed from the wire feeder and stored in a plastic bag
- The product should be removed from the wire feeder and stored in a drying oven with a temperature of 60~80℃ and a relative humidity of 80% or less. If the welder performs welding again before 4 hours, it can be reused without the product removed.
  (Within 1 hour when it rains or the relative humidity is 80% or higher)

4) When handling the spool product, do not throw or roll the product. Be careful as rough handling or impact may cause damage to the packaging or plastic spool and cause damage to the wire.

MMA electrodes

1. Storage for the product

1) The re-dried welding consumables requires a storage place to avoid moisture absorption. It is preferable to maintain the temperature of the drying oven at 100~120℃.

2) The moisture absorption rate depends on the weather conditions. Therefore, the time limit should be managed when using the product after taken out from the drying oven (Time limit : Max. 4 hours)

2. Re-drying & moisture management

1) Moisture content in packaging of electrodes for mild steels : Max. 1.0%
Moisture content in packaging of low-hydrogen electrodes : Max. 0.5%

2) Moisture absorption of mild steel and low-hydrogen electrodes
- For mild steels : about 3% moisture absorbs when left at 30℃ and 80% relative humidity for 8 hours.
- Low hydrogen type : about 0.6% moisture absorbs when left at 30℃ and 80% relative humidity for 5 hours.

3) Re-drying conditions
- When re-drying, the proper temperature and time should be observed. The drying temperature and time is as follows.
- The vacuum-packed product can be used directly from its original, undamaged package.

HYUNDAI WELDING

STORAGE AND HANDLING

MMA electrodes

Steel type	Covering material type	Product name	Limited moisture absorption ratio (%)	Dry Temp. (℃)	Dry time (min)
Mild Steels	Ilmenite	S-4301.I	2.5	70~100	30~60
	Lime titania	S-4303.V, S-4303.T	2	70~100	30~60
	High cellulose	S-6010.D, S-6011.D	3~7	70~100	30~60
	High titania	S-6013.LF, S-6013.V, S-7024.F	3	70~100	30~60
	Low hydrogen	S-7048.V, S-7016.O	0.5	300~350	30~60
	Iron powder oxide	S-6027.LF	2	70~100	30~60
High Tensile Steels	Low hydrogen	S-7016.G, S-7016.H, S-8016.G S-9016.G	0.5	350~400	60
	High cellulose	S-7010.P1	3~7	70~100	30~60
	Iron powder low hydrogen	S-7018.G, S-8018.G	0.5	350~400	60
Low-Temp. Service & Low Alloy Steels	Low hydrogen	S-7016.LS, S-76LTH, S-8016.C1 S-8016.C2, S-8016.B2, S-9016.B3	0.5	350~400	60
	High cellulose	S-7010A1	3~7	70~100	30~60
	Iron powder low hydrogen	S-7018.1, S-7018.1H, S-8018.C1 S-8018.C3, S-8018.B2, S-9018.B3	0.5	350~400	60
Hardfacing Applicatios	Titania	S-240.R, S-350A.R	3	70~100	30~60
	Low hydrogen	S-260A.B, S-350B.B, S-400A.B S-450B.B, S-500B.B, S-600B.B	0.5	350~400	60
Stainless Steels	Lime titania	S-308L.16N, S-309L.16, S-316L.16N S-347.16	1	300~350	30~60
Cast Iron & steel	Graphite	S-NCI, S-NFC, S-FCF	1.5	70~100	30~60
Nickel alloyl	Low hydrogen	SR-182, SR-625, SR-133	0.5	350~400	60

Submerged Arc Flux & Wire

1. Storage for the product

For welding fluxes, the water of crystallization in the particles should be controlled to be less than 0.1% at 1,000℃ to improve toughness, other weldability and to avoid cracks. In addition, as it continues to dry during the welding work, fluxes can be reused as long as it is continuously used after dispensing. Precautions to be taken during storage and handling are as follows.

1) Fluxes should be stored in a dry and well-ventilated place on a stand that is at least 10cm away from the ground and wall. (Storage temperature 5~40℃, Relative humidity Max. 70%)

2) The wire surface is coated with copper to prevent rusting and improve conductivity with the contact tip of the welding machine. Therefore, it should be stored in a place isolated from harmful gases (sulfide gas, sea wind, etc.), which can deteriorate the wire surface. In case of storage, care should be taken not to mix with the product name and size by recording it. When the wire is rusted, it can deteriorate the conductivity with contact tip, which impairs the wire feeding, arc stability and the appearance of weld bead. However, careful attention should be paid as it can cause welding defects such as pits and blow holes.

3) After unpacked, it should be re-dried by evenly spreading it at a height of 50 mm or less in the drying oven.

4) The recovered flux after work is easy to re-absorb moisture, so it should be re-dried.

5) Since the re-dried recovered flux contains a large amount of fine powder, the re-dried flux should be mixed with new flux in a 1:3 ratio in order to avoid weldability problems.

6) When working outdoors, the base material should also be preheated before welding in consideration of the moisture absorption. (preheating temperature: 40~80℃)

STORAGE AND HANDLING

Submerged Arc Flux & Wire

2. Drying and moisture management of flux

Fluxes are manufactured by controlling the moisture content as low as possible to obtain good welding characteristics. Therefore, it is supplied in tin can or paper bag, which prevents moisture absorption.
If flux has been in direct contact with snow or rain, it should be used after re-drying.

1) When unpacked, the moisture content of flux should be controlled to 0.1% or less.

2) Moisture content is measured immediately after re-drying.

3) Re-drying conditions
- When re-drying, the proper temperature and time should be observed. The re-drying temperature is 300℃ and the drying time is usually about 60 minutes.
- If re-dried flux is not used completely within exposure time, it should be protected from open air and stored in heated hoppers at 100~150℃.

Storage condition		Exposure time after unpacked (min)	Re-drying condition		Recycle times
Temp.(℃)	R.H(%)		Temp.(℃)	Time(min)	
5~40	Max.80	Max. 240	300~350	60	3

MIG/MAG/SAW wires & TIG rods

1. Storage for the product

1) Welding consumables should be stored on the delivery pallets or on warehouse racking in clean & dry conditions. (Storage temperature: 5~40℃, Relative Humidity: Max. 70%)

2) The packaging should not be stored in direct sun light or in direct contact with walls or floors.

3) Hydrogen-containing substances, like oil, grease and corrosion substances that could absorb moisture must be avoided on the surface of the wires.

4) Partly used spool wire should be replaced into a plastic bag for storage to prevent surface contamination.

5) Before use of the welding consumable , a visual check should be made and if there are any signs of physical damage or of corrosion on the wire surface, the product should not be used.

6) If the welding consumable has been damaged in appearance, or if corrosion is evident as a result of damaged packaging, then the product should be scrapped.

7) The welding consumables must not be left exposed in the working area, or left on welding machines unused, for long periods. After the shift working is over, the products should be removed from the welding machine and placed in their original packaging, resealed and returned to the welding consumable store.

Region	No.	Office	Tel	Fax	Address
JAPAN	1	HYUNDAI WELDING JAPAN CO., LTD. (OSAKA)	(+81-6) 6147-2312	(+81-6) 6147-2302	8TH FLOOR, SHINOSAKA ROSE B/D 5-12-10, NISHINAKAJIMA, YODOGAWA-KU, OSAKA, JAPAN
	2	HYUNDAI WELDING JAPAN CO., LTD. (TOKYO)	(+81-3) 6551-2042	(+81-3) 6551-2043	5TH FLOOR, HIGASHI NIHONBASHI B/D, 1-3-3, HIGASHI NIHONBASHI, CHUOKU, TOKYO, JAPAN
	3	HYUNDAI WELDING JAPAN CO., LTD. (KYUSYU)	(+81-92) 415-6450	(+81-92) 415-6593	8TH FLOOR ABUNDANT 90 B/D, 3-11-14, HAKAA-EKI HIGASHI, HAKATA-KU, FUKUOKA, JAPAN
	4	HYUNDAI WELDING JAPAN CO., LTD. (HIROSHIMA)	(+81-82) 224-1580	(+81-82) 224-1581	3RD FLOOR 510B/D 10-1 HASHIMOTO-CHO, NAKA-KU, HIROSHIMA, JAPAN
	5	HYUNDAI WELDING JAPAN CO., LTD. (NAGOYA)	(+81-52) 689-5775	(+81-52) 689-5776	#D 2ND FLOOR RINOFRIENDS, 1-12 NAWA-CHO, TOKAI-SHI, AICHI-KEN, NAGOYA, JAPAN
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	7	HYUNDAI WELDING GUANGZHOU OFFICE (CHINA)	(+86-20) 8732-5007		Room 806, 8th Floor, Building 2, X inji Plaza, 93 Yingbin Road, Lu pu Sub-district, Panyu District, Guangzhou
	8	HYUNDAI WELDING QINGDAO OFFICE (CHINA)	(+86-532) 8786-2838		Room 1308, Building 2, Shidai Center, 160 Zhengyang Middle Road, Chengyang District, Qingdao
	9	HYUNDAI WELDING NANTONG OFFICE (CHINA)	(+86-513)8118-9952		Room 203 South, Xueyuan Building, 388 Waihuan East Road, Chongchuan District, Nantong
	10	HYUNDAI WELDING WUHAN OFFICE (CHINA)	(+86-27)8789-0800		12-A10-2, South China International City, Intersection of Wuluo Road 588 and Dingziqiao Road, Wuchang District, Wuhan
	11	HYUNDAI WELDING XI'AN OFFICE (CHINA)	(+86)134-0520-3101		15-1-1801, 66 12th Road, Economic and Technological Development Zone, Xi'an
	12	HYUNDAI WELDING BEIJING OFFICE (CHINA)	(+86-10)6493-9796		Building A, Yuquanying Industrial Park, 65 South Third Ring West Road, Fengtai District, Beijing
	13	HYUNDAI WELDING DALIAN OFFICE (CHINA)	(+86)177-0411-2963		Room 2501, 41 Lixian Street, Boyue International, High-Tech Zone, Dalian
	14	HYUNDAI WELDING CHENGDU OFFICE (CHINA)	(+86)135-5115-8770		1st Floor, 251 Hongzhan East Road, Deyuan Town, Pidu District, Chengdu
	15	HYUNDAI WELDING ZHOUSHAN OFFICE (CHINA)	(+86)134-5409-8999		Room 607, Building 7, Tanxiang Community, Dinghai District, Zhoushan
	16	HYUNDAI WELDING NANJING OFFICE (CHINA)	(+86)189-1479-6319		Building 29, Shanshui Yunfang, Puzhu North Road, Pukou District, Nanjing
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	18	HYUNDAI WELDING VIETNAM OFFICE (HO CHI MINH)	(+84) 28-3930-8900	(+84) 28-3930-8903	12 Street No. 5, Sala Urban Area, An Khanh Ward,Ho Chi Minh City, Vietnam.
	19	HYUNDAI WELDING VIETNAM OFFICE (HANOI)	(+84) 243-944-6774		10Fl Hong Ha Center Building, 37 Ngo Quyen, Cua Nam Ward, Hanoi, Vietnam
	20	HYUNDAI WELDING THAILAND OFFICE (BANGKOK)	(+66) 2286-3441	(+66) 2286-1242	K.A.N.Place 3rd Fl, Narathiwasratchanakarin Rd, Soi Narathiwasratchanakarin8, Thungwatdon, Sathorn , BKK 10120
	21	HYUNDAI WELDING CO., LTD (INDONESIA)	(+62) 8785 074 1997		Gandaria 8, 17th Unit J2, JL. Sultan Iskandar Muda, Jakarta Selatan 12240, Indonesia
MIDDLE EAST AND TURKIYE	22	HYUNDAI WELDING MIDDLE EAST OFFICE (JEBEL ALI, U.A.E)	(+971-4) 8808-354	(+971-4) 8808-352	Office No. 418, Jafza 16, Jebel Ali Free Zone(JAFZA), Dubai, United Arab Emirates
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	30	HYUNDAI WELDING CENTRAL EUROPE OFFICE (HUNGARY)	(+36) 30 363 1917		Westend Business Center, Vaci utca. 22-24, 7th floor, No. 706, 1132 Budapest, Hungary
	31	HYUNDAI WELDING ROMANIA	(+40)-726-117-519	(+40)-726-117-519	ORIZONTULUI STREET 33, BUZAU, 120003, ROMANIA
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