FCAW FLUX CORED WIRE

SF-71

TYPE : Rutile

AWS A5.20 / ASME SFA5.20 E71T-1C
JIS Z3313 T49J 0 T1-1 C A-U H10
EN ISO 17632-A-T 42 0 P C 1

Applications

All position welding of building, shipbuilding, bridges, machinery and vehicles.

Characteristics on Usage

SF-71 is a titania type flux cored wire for all position welding with CO_2. Compared with solid wire, spatter loss is low, bead appearance is beautiful and arc is soft with good stability.
Slag covering is uniform with good removal.

Notes on Usage

① Proper preheating(50~150˚C)(122~302˚F) and interpass temperature must be used in order to release hydrogen which may cause cracking in weld metal when electrodes are used for medium and heavy plates.
② One-side welding defects such as hot cracking may occur with wrong welding parameter such as high welding speed.
③ Use 100% CO_2 gas

Welding Position(All-Position)	Current	Shielding Gas
 1G 2F 3G 4G	DC +	CO_2

Typical Chemical Composition of All-Weld Metal (%)

C	Si	Mn	P	S
0.04	0.49	1.29	0.010	0.009

Typical Mechanical Properties of All-Weld Metal

YS MPa(lbs/in²)	TS MPa(lbs/in²)	EL (%)	Temp. ℃ (℉)	CVN-Impact Value J (ft · lbs)
548 (79,600)	582 (84,500)	28	0 (32)	86 (64)

Approval

KR, ABS, LR, BV, DNV, GL, NK, TÜV, CWB, CE, CCS, CRS

I Packing(Including Ball Pac)

Dia. (mm)	1.0	1.2	1.4	1.6	Spoo (kg)	5	12.5	15	20
(im)	.039	.045	.052	1/16	(lbs)	11	28	33	44
Ball Pac									

Sizes Available and Recommended Currents (Amp.)

Size mm (in)	1.2 (.045)	1.4 (.052)	1.6 (1/16)
F & HF	120~300	200~350	200~400
V-up, OH	120~260	180~280	180~280
V-down	200~300	220~320	250~300

SF-71LF

TYPE : Rutile

AWS A5.20 / ASME SFA5.20 E71T-1C
JIS Z3313 T49J 0 T1-1 C A-U H10

Applications

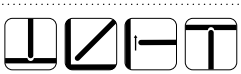
All position welding in shipbuilding, machinery, bridges, buildings, vehicles using mild and higher strength steels.

Characteristics on Usage

SF-71LF is the most widely used titania type flux cored wire for all position welding with CO_2 shielding gas. As deposition rate is higher than solid wire and manual metal arc electrode, highly efficient welding can be performed.
Arc stability is excellent. Spatter loss is low and slag covering is uniform with good removability. Fume generation is lower than conventional flux cored wires.
SF-71LF is effective for use in insufficient ventilation areas.

Notes on Usage

① Proper preheating(50~150˚C)(122~302˚F) and interpass temperature must be used in order to release hydrogen which may cause cracking in weld metal when electrodes are used for medium and heavy plates.
② One-side welding defects such as hot cracking may occur with wrong welding parameter such as high welding speed.
③ Use 100% CO_2 gas.

Welding Position(All-Position)	Current	Shielding Gas
 1G 2F 3G 4G	DC +	CO_2

Typical Chemical Composition of All-Weld Metal (%)

C	Si	Mn	P	S
0.03	0.50	1.45	0.009	0.011

Typical Mechanical Properties of All-Weld Metal

YS MPa(lbs/in²)	TS MPa(lbs/in²)	EL (%)	Temp. ℃ (˚F)	CVN-Impact Value J (ft · lbs)
550 (79,900)	590 (85,700)	27	0 (32)	90 (66)

Approval

ABS, NK, LR, DNV

I Packing(Including Ball Pac)

Dia. (mm)	1.2	1.4	1.6	Spoo (kg)	15	20
(in)	.045	.052	1/16	(lbs)	33	44

Sizes Available and Recommended Currents (Amp.)

Size mm (in)	1.2 (.045)	1.4 (.052)	1.6 (1/16)
F & HF	120~300	150~350	200~400
V-up,OH	120~260	180~280	180~280
V-down	200~300	220~320	250~300

Supercored 71

TYPE : Rutile

AWS A5.20 / ASME SFA5.20 E71T-1C
JIS Z3313 T49 2 T1-1 C A H10
EN ISO 17632-A-T 42 2 P C 1

Applications

All position welding of machinery, shipbuilding, bridges. Impact values of weld metal are good.

Characteristics on Usage

Supercored 71 is a flux cored wire which has been designed to get a good usability in all position for wide range of welding currents. With its quiet and smooth arc, its slag detachability is very good.

Notes on Usage

① Proper preheating(50~150˚C)(122~302˚F) and interpass temperature must be used in order to release hydrogen which may cause cracking in weld metal when electrodes are used for medium and heavy plates.
② One-side welding defects such as hot cracking may occur with wrong welding parameter, such as high welding speed.
③ Use 100% CO_2 gas.

Welding Position(All-Position)	Current	Shielding Gas
 1G 2F 3G 4G	DC +	CO_2

Typical Chemical Composition of All-Weld Metal (%)

C	Si	Mn	P	S
0.03	0.51	1.26	0.010	0.011

Typical Mechanical Properties of All-Weld Metal

YS MPa(lbs/in²)	TS MPa(lbs/in²)	EL (%)	Temp. ℃ (˚F)	CVN-Impact Value J (ft · lbs)
545 (79,100)	572 (83,100)	28	0 (32)	110 (81)
			-20 (-4)	70 (52)

Approval

KR, ABS, LR, BV, DNV, GL, NK, TÜV, DB, CE, RINA, RS

I Packing(Including Ball Pac)

Dia. (mm)	1.0	1.2	1.4	1.6	Spool(kg)	12.5	15	20
(in)	.039	.045	.052	1/16	(lbs)	28	33	44
Ball Pac								

Sizes Available and Recommended Currents (Amp.)

Size mm (in)	1.2 (.045)	1.4 (.052)	1.6 (1/16)
F & HF	120~300	150~350	200~400
V-up,OH	120~260	140~270	180~280
V-down	200~300	220~320	250~300

SC-71LH

TYPE : Rutile

AWS A5.20 E71T-1C/-9C
JIS Z3313 T49 3 T1-1 C A-U H5
EN ISO 17632-A-T 42 2 P C 1 H5

Applications

All position welding of building, shipbuilding, bridge construction machinery, and vehicles.

Characteristics on Usage

SC-71LH is titania type flux cored wire for all position welding. It has extra low hydrogen levels(H5) and provide an exceptionally smooth and stable arc with a fast freezing slag system.

Notes on Usage

① Proper Preheating(50~150℃)(122~302℉) and interpass temperature must be used in order to release hydrogen which may cause cracking in weld metal when electrodes are used for medium and heavy plates.
② One-side welding defects such as hot cracking may occur with wrong welding parameter such as high welding speed.
③ Use 100% CO_2 gas.

Welding Position(All-Position)	Current	Shielding Gas
 1G 2F 3G 4G	DC +	CO_2

Typical Chemical Composition of All-Weld Metal (%)

C	Si	Mn	P	S
0.06	0.47	1.35	0.014	0.012

Typical Mechanical Properties of All-Weld Metal

YS MPa(lbs/in²)	TS MPa(lbs/in²)	EL (%)	Temp. ℃ (℉)	CVN-Impact Value J (ft · lbs)
550 (79,800)	590 (85,600)	27	-30 (-22)	70 (52)

Approval

ABS, BV, DNV, NK, LR

I Packing(Including Ball Pac)

Dia. (mm)	1.2	1.4	1.6	Spool(kg)	12.5	15	20
(in)	.045	.052	1/16	(lbs)	28	33	44
Ball Pac							

Sizes Available and Recommended Currents (Amp.)

Size mm (in)	1.2 (.045)	1.4 (.052)	1.6 (1/16)
F & HF	220~290	240~320	260~330
V-up,OH	180~250	200~260	230~290
V-down	210~290	250~320	270~330

Supercored 71H

TYPE : Rutile

AWS A5.20 / ASME SFA5.20 E71T-1C/-9C/-9C-J
JIS Z3313 T49 4 T1-1 C A H5
EN ISO 17632-A-T 42 4 P C 1 H5

Applications

All position welding of shipbuilding, bridges, building and structural fabrication.

Characteristics on Usage

Supercored 71H is a titania flux cored wire for all position welding with high amperage. Its impact value is very good under high heat-input, arc is smooth and slag detachability is excellent .

Notes on Usage

① Proper preheating(50~150˚C)(122~302˚F) and interpass temperature must be used in order to release hydrogen which may cause cracking in weld metal when electrodes are used for medium and heavy plates.
② One-side welding defects such as hot cracking may occur with wrong welding parameter such as high welding speed.
③ Use 100% CO_2 gas.

Welding Position(All-Position)	Current	Shielding Gas
 1G 2F 3G 4G	DC +	CO_2

Typical Chemical Composition of All-Weld Metal (%)

C	Si	Mn	P	S
0.03	0.46	1.36	0.008	0.011

Typical Mechanical Properties of All-Weld Metal

YS MPa(lbs/in²)	TS MPa(lbs/in²)	EL (%)	Temp. ℃ (˚F)	CVN-Impact Value J (ft · lbs)
550 (79,900)	570 (82,800)	27	-30 (-22)	90 (66)
			-40 (-40)	60 (44)

Approval

KR, ABS, LR, BV, DNV, GL, NK, TÜV, CWB, CE, DB, CCS, RINA, RS

I Packing(Including Ball Pac)

Dia. (mm)	1.2	1.4	1.6	Spool (kg)	15	20
(in)	.045	.052	1/16	(lbs)	33	44
Ball Pac						

Sizes Available and Recommended Currents (Amp.)

Size mm (in)	1.2 (.045)	1.4 (.052)	1.6 (1/16)
F & HF	120~300	150~350	180~400
V-up,OH	120~260	140~270	160~280
V-down	200~300	220~320	250~300

Supercored 71MAG

TYPE : Rutile

AWS A5.20/ASME SFA5.20 E71T-1M/-9M
JIS Z3313 T49 3 T1-1 M A-U H10
EN ISO 17632-A-T 42 3 P M 1

Applications

Building, shipbuilding, bridge construction, machinery, and vehicles.

Characteristics on Usage

Despite welding position, it will get low spatter, soft arc, good bead appearance and excellent weldability with this wire.

Notes on Usage

① Proper preheating(50~150˚C)(122~302˚F) and interpass temperature must be used in order to release hydrogen which may cause cracking in weld metal when electrodes are used for medium and heavy plates.
② One-side welding defects such as hot cracking may occur with wrong welding parameter such as high welding speed.
③ Use Ar+20~25% CO_2 gas.

Welding Position(All-Position)	Current	Shielding Gas
 1G 2F 3G 4G	DC +	Ar + 20~25% CO_2

Typical Chemical Composition of All-Weld Metal (%)

C	Si	Mn	P	S
0.04	0.54	1.25	0.011	0.012

Typical Mechanical Properties of All-Weld Metal

YS MPa(lbs/in²)	TS MPa(lbs/in²)	EL (%)	Temp. ℃ (˚F)	CVN-Impact Value J (ft · lbs)
580 (84,200)	600 (87,100)	28	-30 (-22)	60 (44)

Approval

ABS, LR, BV, DNV, GL, TÜV, CE, DB, RINA, CWB

I Packing(Including Ball Pac)

Dia. (mm)	1.0	1.2	1.4	1.6	Spool (kg)	12.5	15	20
(in)	.039	.045	.052	1/16	(lbs)	28	33	44

Ball Pac

Sizes Available and Recommended Currents (Amp.)

Size mm (in)	1.2 (.045)	1.4 (.052)	1.6 (1/16)
F & HF	220~290	240~320	260~350
V-up, OH	180~250	200~260	230~290
V-down	210~290	250~320	270~330

SC-71LHM Cored

TYPE : Rutile

AWS A5.20 / ASME JFA A5.20 E71T-1M/-9M
JIS Z3313 T49 3 T1-1 M A-U H5
EN ISO 17632-A-T 46 3 P M 1 H5

Applications

All position welding of building, shipbuilding, bridge construction machinery, and vehicles.

Characteristics on Usage

SC-71LHM Cored is a titania type flux cored wire for all position welding. It has extra low hydrogen level(H5) and provides an exceptionally smooth and stable arc with a fast freezing slag system.

Notes on Usage

① Proper Preheating (50~150˚C) (122~302˚F) and interpass temperature must be used in order to release hydrogen which may cause cracking in weld metal when electrodes are used for medium and heavy plates.
② One-side welding defects such as hot cracking may occur with wrong welding parameter such as high welding speed.
③ Use Ar + 20~25% CO_2 gas.

Welding Position	Current	Shielding Gas
 1G 2F 3G 4G	DC +	Ar+20~25%CO_2

Typical Chemical Composition of All-Weld Metal (%)

C	Si	Mn	P	S
0.05	0.50	1.20	0.012	0.015

Typical Mechanical Properties of All-Weld Metal

YS MPa(lbs/in²)	TS MPa(lbs/in²)	EL (%)	Temp. ℃ (℉)	CVN-Impact Value J (ft · lbs)
580 (84,100)	600 (87,100)	28	-30 (-22)	80 (59)

Approval

ABS, LR, BV, DNV, GL

I Packing(Including Ball Pac)

Dia. (mm)	1.2	1.4	1.6	Spool(kg)	12.5	15	20
(in)	.045	.052	1/16	(lbs)	28	33	44
Ball Pac							

Sizes Available and Recommended Currents (Amp.)

Size mm (in)	1.2 (.045)	1.4 (.052)	1.6 (1/16)
F & HF	220 ~ 290	240 ~ 320	260 ~ 330
V-up, OH	180 ~ 250	200 ~ 260	230 ~ 290
V-down	210 ~ 290	250 ~ 320	270 ~ 330

SF-71MC

TYPE : Rutile

AWS A5.20/ASME SFA5.20 E71T-1C/-1M/-9C/-9M/-12C/-12M
EN ISO 17632-A-T 46 3 P M 1
EN ISO 17632-A-T 46 2 P C 1

Applications

All position welding for ship hulls, vehicles, bridges, chemical plant machinery and other metal fabrication.

Characteristics on Usage

SF-71MC is a titania type flux cored wire applicable for all-position welding by 100%CO_2 shielding gas or 75%Ar+25%CO_2 shielding gas.
Less spattering and good slag removability shorten the time of bead grinding operation.

Notes on Usage

① Proper preheating (50~150˚C) (122~302˚F) and interpass temperature must be used in order to release hydrogen which may cause cracking in weld metal when electrodes are used for medium and heavy plates.
② Use 100% CO_2 gas or Ar-CO_2 Mixture.

Welding Position(All-Position)	Current	Shielding Gas
 1G 2F 3G 4G	DC +	CO_2/Ar + 20~25%CO_2

Typical Chemical Composition of All-Weld Metal (%)

C	Si	Mn	P	S	Shielding Gas
0.04	0.40	1.20	0.010	0.012	100%CO_2
0.04	0.50	1.41	0.010	0.014	75%Ar + 25%CO_2

Typical Mechanical Properties of All-Weld Metal

YS MPa(lbs/in²)	TS MPa(lbs/in²)	EL (%)	CVN-Impact Value J (ft · lbs) -20℃ (-4℉)	-30℃ (-22℉)	Shielding Gas
510 (74,000)	550 (79,900)	28	95 (70)	75 (55)	100%CO_2
540 (78,400)	605 (87,700)	28	110 (81)	90 (66)	75%Ar + 25%CO_2

Approval

ABS, LR

I Packing(Including Ball Pac)

Dia. (mm)	1.2	1.4	1.6	Spool(kg)	12.5	15	20
(in)	.045	0.52	1/16	(lbs)	28	33	44

Sizes Available and Recommended Currents (Amp.)

Size mm(in)	1.2 (.045)	1.4 (.052)	1.6 (1/16)
F	120~300	150~350	180~400
HF	120~300	150~350	180~340
V-up & OH	120~260	150~270	180~280
V-Down	200~300	220~300	250~300

SF-70MX

TYPE : Semi-Metal

AWS A5.20 / ASME SFA5.20 E70T-1C
JIS Z3313 T49J 0 T15-0 C A-U H10
EN ISO 17632-A-T 42 0 R C 3

Applications

As a metal cored wire, it is designed for high productive welding of structural steels in excess of 6mm.

Characteristics on Usage

This wire benefits from a high deposition rate with very low spatter loss. It gives excellent penetration and good arc stability.

Notes on Usage

① Proper preheating(50~150˚C)(122~302˚F) and interpass temperature must be used in order to release hydrogen which may cause cracking in weld metal when electrodes are used for medium and heavy plates.
② Use 100% CO_2 gas.

Welding Position(Flat,Horizontal fillet)	Current	Shielding Gas
 1G 2F	DC +	CO_2

Typical Chemical Composition of All-Weld Metal (%)

C	Si	Mn	P	S
0.05	0.50	1.50	0.011	0.010

Typical Mechanical Properties of All-Weld Metal

YS MPa(lbs/in²)	TS MPa(lbs/in²)	EL (%)	Temp. ℃ (℉)	CVN-Impact Value J (ft · lbs)
560 (81,300)	590 (85,700)	28	0 (32)	60 (44)

Approval

KR, ABS, LR, BV, DNV, GL, NK, CCS, CRS

I Packing(Including Ball Pac)

Dia. (mm)	1.2	1.4	1.6	Spool (kg)	12.5	15	20
(in)	.045	.052	1/16	(lbs)	28	33	44

Sizes Available and Recommended Currents (Amp.)

Size mm(in)	1.2 (.045)	1.4 (.052)	1.6 (1/16)
F & HF	250~300	300~350	300~350

FCAW

SC-70H Cored

TYPE : Semi-Metal

AWS A5.20 / ASME SFA5.20 E70T-1C/-9C
JIS Z3313 T49 3 T15-0 C A H10
EN ISO 17632-A-T 42 2 R C 3

Applications

Flat & H-Fillet welding of building, shipbuilding, bridge construction, machinery, vehicle using mild and 490MPa class high tensile steels.

Characteristics on Usage

SC-70H Cored is a flux cored wire for Flat & H-fillet efficient welding with CO_2 shielding gas.
As deposition rate is very high, highly efficient welding can be performed.
Weld metal has good impact properties at -30˚C (-22˚F).
Slag is uniform and easy to remove.

Notes on Usage

① Proper preheating(50~150˚C)(122~302˚F) and interpass temperature must be used in order to release hydrogen which may cause cracking in weld metal when electrodes are used for medium and heavy plates.
② One-side welding defects such as hot cracking may occur with wrong welding parameter such as high welding speed.
③ Use 100% CO_2 gas.

Welding Position(Flat,Horizontal fillet)	Current	Shielding Gas
 1G 2F	DC +	CO_2

Typical Chemical Composition of All-Weld Metal (%)

C	Si	Mn	P	S
0.05	0.56	1.48	0.014	0.010

Typical Mechanical Properties of All-Weld Metal

YS MPa(lbs/in²)	TS MPa(lbs/in²)	EL (%)	Temp. ℃ (℉)	CVN-Impact Value J (ft · lbs)
495 (71,900)	580 (84,200)	27	-30 (-22)	51 (27)

Approval

CWB, ABS, CCS, LR, GL
NK, CWB, TÜV

Packing(Including Ball Pac)

Dia. (mm)	1.6	2.0	2.4	Coil (kg)	25
(in)	1/16	5/64	3/32	(lbs)	55
Ball Pac					

Sizes Available and Recommended Currents (Amp.)

Size mm(in)	1.6 (1/16)	2.0 (5/64)	2.4 (3/32)
F & HF	300~400	350~450	400~500

Supercored 70MXH

TYPE : Semi-Metal

AWS A5.20/ SME SFA5.20 E70T-1C
JIS Z3313 T49 2 T15-0 C A-U H5
EN ISO 17632-A-T 42 2 R C 3 H5

Applications

Supercored 70MXH is a metal cored wire for high speed single or twin tandem welding application in the flat and horizontal fillet position. This wire benefits from high deposition rate and is widely used for shipbuilding, construction of bridge, and structural fabrication.

Characteristics on Usage

Supercored 70MXH has very low spatter loss rate and minimum amount of slag. It gives excellent penetration and good arc stability. Especially has good anti-porosity to zinc-primer plate and mill scale plate in high speed single and twin tandem fillet welding.

Notes on Usage

① Proper preheating(50~150˚C)(122~302˚F) and interpass temperature must be used in order to release hydrogen which may cause cracking in weld metal when electrodes are used for medium and heavy plates.
② Use 100% CO_2 gas.

Welding Position	Current	Shielding Gas
 1G 2F	DC +	CO_2

Typical Chemical Composition of All-Weld Metal (%)

C	Si	Mn	P	S
0.05	0.55	1.65	0.013	0.010

Typical Mechanical Properties of All-Weld Metal

YS MPa(lbs/in²)	TS MPa(lbs/in²)	EL (%)	Temp. ℃ (˚F)	CVN-Impact Value J (ft · lbs)
540 (78,400)	620 (90,000)	28	-20 (-4)	60 (44)

Approval

KR, ABS, LR, BV, DNV, GL, NK, CCS

I Packing(Including Ball Pac)

Dia. (mm)	1.4	1.6	Spool (kg)	15	20
(in)	.052	1/16	(lbs)	33	44
Ball Pac					

Sizes Available and Recommended Currents (Amp.)

Size mm(in)	1.4 (.052)	1.6 (1/16)	2.0 (5/64)
F & HF	300~400	350~450	400~500

FCAW

SC-70T Cored

TYPE : Metal-Cored

AWS A5.18 / ASME SFA5.18 E70C-3C / -6M
JIS Z3313 T 49 2 T15-1 CA
Z3313 T 49 3 T15-1 MA
EN ISO 17632-A-T 42 2 M C 1
ISO 17632-A-T 46 2 M M 1 H5

Applications

SC-70T Cored is ideally suitable for thin plate welding and root pass welding of structural steel. Designed for high productivity and automatic applications where a large amount of filler metal can be deposited with a minimum amount of slag & spatter. Typical industrial applications include shipbuilding, machinery, bridge construction and structural fabrication.

Characteristics on Usage

SC-70T Cored has excellent arc stability and negligible spatter level at not only high current but also low current (down to 50Amp). There is minimum slag coverage so it can be used for multi-pass welding without the need to remove slag.

Notes on Usage

①Proper preheating (50~150˚C)(122~302˚F) and interpass temperature must be used in order to release hydrogen which may cause cracking in weld metal when electrodes are used for medium heavy plates.
② One-side welding defects such as hot cracking may occur with wrong welding parameter such as high welding speed.
③ Use 100% CO_2 Gas or Ar+20~25% CO_2 gas.

Welding Position	Current	Shielding Gas
 1G 2F 3G 4G	DC +	CO_2/Ar+20~25% CO_2

Typical Chemical Composition of All-Weld Metal (%)

C	Si	Mn	P	S	Shielding Gas
0.06	0.60	1.20	0.011	0.014	100% CO_2
0.07	0.65	1.45	0.010	0.011	Ar+20~25% CO_2

Typical Mechanical Properties of All-Weld Metal

YS MPa(lbs/in²)	TS MPa(lbs/in²)	EL (%)	Temp. ℃ (˚F)	CVN-Impact Value J (ft · lbs)	Shielding Gas
520 (75,500)	590 (85,700)	27	-20 (-4)	45 (33)	100% CO_2
550 (79,900)	620 (90,000)	27	-30 (-22)	50 (37)	Ar+20~25% CO_2

Approval

ABS, BV, DNV, GL, LR

I Packing(Including Ball Pac)

Dia. (mm)	1.2	Spool(kg)	15
(in)	.045	(lbs)	33

Sizes Available and Recommended Currents (Amp.)

Size mm(in)	1.2 (.045)
F & HF	50~300
V-up,OH	50~160

SC-70Z Cored

TYPE : Metal-Cored

AWS A5.18/ ASME SFA5.18 E70C-G
EN ISO 17632-A-T 46 Z M M/C 3

Applications

Welding of galvanized steel sheets in the field of automobile manufacturing and galvanized steel in the structure of ships or construction as well.

Characteristics on Usage

SC-70Z Cored is designed for the welding of low carbon and low alloy galvanized steel sheets as well as vertical-up position welding of galvanized pipe line at relatively high weld rates. It has the high deposition rates due to the higher feedability than a solid wire. Applicable to the zinc plating weight less than 60g/m_2 generally.

Notes on Usage

① Use 100% CO_2 or Ar + 20~25% CO_2 gas.

Welding Position	Current	Shielding Gas
 1G 2F 3G	DC +	CO_2/Ar+20~25%CO_2

Typical Chemical Composition of All-Weld Metal (%)

C	Si	Mn	P	S	Shielding Gas
0.09	0.42	1.35	0.022	0.013	100%CO_2
0.10	0.61	1.57	0.025	0.014	80%Ar+20%CO_2

Typical Mechanical Properties of All-Weld Metal

YS MPa(lbs/in²)	TS MPa(lbs/in²)	EL (%)	Temp. ℃ (℉)	CVN-Impact Value J (ft · lbs)	Shielding Gas
550 (79,900)	600 (87,100)	30	0 (32)	120 (89)	100%CO_2
580 (84,200)	640 (92,900)	25	0 (32)	105 (77)	80%Ar+20%CO_2

Approval

KR, ABS, LR, BV, DNV, GL, NK, CWB, TÜV

I Packing(Including Ball Pac)

Dia. (mm)	1.2	Spool(kg)	15
(in)	.045	(lbs)	33

Sizes Available and Recommended Currents (Amp.)

Size mm(in)	1.2 (.045)	-
F & HF	200~300	-
V-up,OH	100~150	-

FCAW

Supercored 70NS

TYPE : Metal-Cored

AWS A5.18 / ASME SFA5.18 E70C-6M
JIS Z3313 T49 3 T15-0 M A H5
EN ISO 17632-A-T 42 3 M M 3 H5

Applications

Supercored 70NS is used for welding in shipbuilding, machinery, bridge construcion, structural fabrication, automated or robotic welding.

Characteristics on Usage

Supercored 70NS is a metal-cored wire which combines the high deposition rates of F.C.W with the high efficiencies of a solid wire, provides exceptionally smooth and stable arc, low spatter and minimal slag coverage.

Notes on Usage

① Proper preheating(50~150˚C)(122~302˚F) and interpass temperature must be used in order to release hydrogen which may cause cracking in weld metal when electrodes are used for medium and heavy plates.
② One-side welding defects such as hot cracking in may occur with wrong welding parameter such as high welding speed.
③ Use Ar+20~25% CO_2 gas.

Welding Position	Current	Shielding Gas
 1G 2F 3G	DC +	Ar+20~25%CO_2

Typical Chemical Composition of All-Weld Metal (%)

C	Si	Mn	P	S
0.05	0.55	1.45	0.013	0.010

Typical Mechanical Properties of All-Weld Metal

YS MPa(lbs/in²)	TS MPa(lbs/in²)	EL (%)	Temp. ℃ (℉)	CVN-Impact Value J (ft · lbs)
480 (69,700)	550 (79,900)	27.0	-30 (-22)	50 (37)

Approval

ABS, LR, BV, DNV, GL, TÜV, CWB, CE, DB, RINA

I Packing(Including Ball Pac)

Dia. (mm)	1.0	1.2	1.4	1.6	Spool(kg)	12.5	15	20
(in)	.039	.045	.052	1/16	(lbs)	28	33	44
Ball Pac								

Sizes Available and Recommended Currents (Amp.)

Size mm(in)	1.2 (.045)	1.4 (.052)	1.6 (1/16)
F & HF	230~300	260~340	290~360

Supercored 70B

TYPE : Basic

AWS A5.20 / ASME SFA5.20 E71T-5M-J
JIS Z3313 T49 4 T5-1 M A-U H5
EN ISO 17632-A-T 42 4 B M 3 H5

Applications

Mild and 490MPa high tensile strength steels for shipbuilding, machinery structures, bridges and heavy plant facilities.

Characteristics on Usage

Supercored 70B is a basic type flux cored wire with excellent characteristics and is suitable for steel with tensile strength up to 600MPa. Deposited metal shows superior crack resistance, excellent toughness at low temperature of -20~-50˚C(-4~-58˚F).

Notes on Usage

① Proper preheating(50~150˚C)(122~302˚F) and interpass temperature must be used in order to release hydrogen which may cause cracking in weld metal when electrodes are used for medium and heavy plates.
② Use Ar+20~25% CO_2 gas for welding.

Welding Position(Flat,Horizontal fillet)	Current	Shielding Gas
 1G 2F 3G	DC ±	Ar+20~25%CO_2

Typical Chemical Composition of All-Weld Metal (%)

C	Si	Mn	P	S
0.06	0.43	1.33	0.011	0.013

Typical Mechanical Properties of All-Weld Metal

YS MPa(lbs/in²)	TS MPa(lbs/in²)	EL (%)	Temp. ℃ (˚F)	CVN-Impact Value J (ft · lbs)
450 (65,300)	520 (75,400)	32	-40 (-40)	78 (58)

Approval

ABS, DNV, BV, GL, LR

I Packing(Including Ball Pac)

Dia. (mm)	1.0	1.2	1.4	1.6	2.0	Spool(kg)	12.5	15	20	
(in)	.039	.045	.052	1/16	5/64		(lbs)	28	33	44

Ball Pac

Sizes Available and Recommended Currents (Amp.)

Size mm(in)	1.0 (.039)	1.2 (.045)	1.4 (0.52)	2.0 (5/64)
F & HF	150~280	170~320	200~350	200~400
V-up,OH	70~130	80~150	90~180	

FCAW

Supercored 70SB

TYPE : Basic

AWS A5.20 / ASME SFA5.20 E71T-5C
JIS Z3313 T49 3 T5-1 C A-U H5
EN ISO 17632-A-T 42 3 B C 2 H5

Applications

Supercored 70SB is suitable for welding of mild and 490MPa high tensile strength steels for shipbuilding, machinery structures, bridge construction and heavy plant facilities.

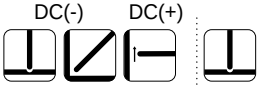
Characteristics on Usage

Supercored 70SB is a basic flux cored wire with excellent characteristics and is suitable for steel with a tensile strength up to 600MPa. Deposited metal shows superior crack resistance, excellent at low temperature at -20~-30˚C(-4~-22˚F).

Notes on Usage

① Proper preheating(50~150˚C)(122~302˚F) and interpass temperature must be used in order to release hydrogen which may cause cracking in weld metal when electrodes are used for medium and heavy plates.
② One-side welding defects such as hot cracking may occur with wrong welding parameter such as high welding speed.
③ Designed for use with DC(-).
④ Use 100% CO_2 gas.

Welding Position	Current	Shielding Gas
DC(-) DC(+)	DC ±	CO_2



1G 2F 3G 1G

Typical Chemical Composition of All-Weld Metal (%)

C	Si	Mn	P	S
0.06	0.39	1.39	0.013	0.014

Typical Mechanical Properties of All-Weld Metal

	YS MPa(lbs/in²)	TS MPa(lbs/in²)	EL (%)	Temp. ℃ (˚F)	CVN-Impact Value J (ft · lbs)
DCEN(DC-)	570 (82,800)	620 (90,000)	26	-30 (-22)	70 (52)
DCEP(DC+)	500 (72,600)	550 (79,900)	31	-30 (-22)	80 (59)

Approval

KR, ABS, BV, DNV, GL, LR, NK

I Packing(Including Ball Pac)

Dia. (mm)	1.2	1.4	1.6	Spool(kg)	12.5	15	20
(in)	.045	.052	1/16	(lbs)	28	33	44
Ball Pac							

Sizes Available and Recommended Currents (Amp.)

Size mm(in)	1.2 (.045)	1.4 (.052)	1.6 (1/16)
F & HF	170~320	200~350	200~350
V-up	80~150	90~180	90~180

SC-EG2 Cored

TYPE : Metal-Cored

AWS A5.26 / ASME SFA5.26 EG70T-2C
JIS Z3319 YFEG-22C

Applications

Vertical-up butt welding of side shell and various inner structures of ships, plates of storage tanks, and web members of box-girders of bridges.

Characteristics on Usage

SC-EG2 Cored is a small diameter flux cored wire to be used with CO_2 shielding gas for electro gas arc welding high speed. The arc is extremely stable and has good bead appearance. It provides highly efficient welding by electro gas process.

Notes on Usage

① Use 100% CO_2 gas.

Welding Position	Current	Shielding Gas
 3G	DC +	CO_2

Typical Chemical Composition of All-Weld Metal (%)

C	Si	Mn	P	S	Mo
0.08	0.30	1.52	0.012	0.010	0.12

Typical Mechanical Properties of All-Weld Metal

YS MPa(lbs/in²)	TS MPa(lbs/in²)	EL (%)	Temp. ℃ (℉)	CVN-Impact Value J (ft · lbs)
510 (74,000)	560 (81,300)	27	-20 (-4)	60 (44)

Approval

KR, ABS, BV, DNV, GL, LR, NK, CCS

I Packing(Including Ball Pac)

Dia. (mm)	1.6		Spool(kg)	15	20
(in)	1/16		(lbs)	33	44
Ball Pac					

Sizes Available and Recommended Currents (Amp.)

Size mm(in)	1.6 (1/16)
V-Up	330~420

FCAW

SC-EG3

TYPE : Metal-Cored

Applications

Vertical-up butt welding of side shells and inner structures of bulk carriers in shipbuilding, box girder webs and plate girder in bridge, storage tank and other vertical welding lines

Characteristics on Usage

SC-EG3 is metal type flux cored wire to be used with CO_2 shielding gas for electro gas arc welding at high speed. Deposited weld metal toughness is good at low temperature range.
Welding arc is stable and bead appearance is good . It provides highly efficient welding by electro gas process.

Notes on Usage

① Use 100% CO_2 gas.

Welding Position	Current	Shielding Gas
 3G	DC+	CO_2

Typical Chemical Composition of All-Weld Metal (%)

C	Si	Mn	P	S	Ni
0.07	0.28	1.73	0.013	0.010	1.49

Typical Mechanical Properties of All-Weld Metal

YS MPa(lbs/in²)	TS MPa(lbs/in²)	EL (%)	Temp. ℃ (℉)	CVN-Impact Value J (ft · lbs)
575 (83,400)	672 (94,500)	23.5	-20 (-4)	95 (70)
			-60 (-76)	50 (37)

Approval

ABS, LR, DNV, BV, GL, NK, KR

I Packing(Including Ball Pac)

Dia. (mm)	1.6		Spool(kg)	20
(in)	1/16		(lbs)	44
Ball Pac				

Sizes Available and Recommended Currents (Amp.)

Size mm(in)	1.6 (1/16)
V-up	330~420

SC-55 Cored

TYPE : Rutile

AWS A5.29 / ASME SFA5.29 E81T1-GC
JIS Z3313 T55 2 T1-1 C A-U H10

Applications

All position welding for construction machinery, bridge structures and storage tanks.

Characteristics on Usage

SC-55 Cored is a titania type flux cored wire applicable for all-position welding by 100% CO_2 shielding gas has good weldability and low spatter levels and good bead appearance. Slag covering is uniform and easy to remove.

Notes on Usage

① Proper preheating (50~150˚C)(122~302˚F) and inter-pass temperature must be used in order to release hydrogen which may cause cracking in weld metal when electrodes are used for medium and heavy plates.
② Use 100% CO_2 gas.

Welding Position(All-Position)	Current	Shielding Gas
 1G 2F 3G 4G	DC +	CO_2

Typical Chemical Composition of All-Weld Metal (%)

C	Si	Mn	P	S
0.06	0.45	1.40	0.012	0.006

Typical Mechanical Properties of All-Weld Metal

YS MPa(lbs/in²)	TS MPa(lbs/in²)	EL (%)	Temp. ℃ (℉)	CVN-Impact Value J (ft · lbs)
560 (81,200)	610 (88,500)	28.5	-20 (-4)	80 (59)

Approval

I Packing(Including Ball Pac)

Dia. (mm)	1.2	1.4	1.6	Spool(kg)	12.5	15	20
(in)	.045	.052	1/16	(lbs)	28	33	44

Sizes Available and Recommended Currents (Amp.)

Size mm(in)	1.2 (.045)	1.4 (.052)	1.6 (1/16)
F	120~300	150~350	180~380
HF	120~300	150~350	180~340
V-up & OH	120~260	150~270	180~280
V-Down	200~300	220~320	250~350

SC-55F Cored

TYPE : Semi-Metal

AWS A5.29 / ASME SFA5.29 E80T1-GC
JIS Z3313 T55 2 T15-0 C A-N1-U H10

Applications

Butt and fillet welding of steel structures using 520MPa class high tensile steel such as construction machinery, buildings and bridges.

Characteristics on Usage

SC-55F Cored is a metal type flux cored wire which produces smooth arc characteristics and minimum spatter levels and excellent slag remove.

Notes on Usage

① Proper Preheating(50~150℃)(122~302℉) and interpass temperature must be used in order to release hydrogen which may cause cracking in weld metal when electrodes are used for medium and heavy plates.
② Use 100% CO_2 gas.

Welding Position	Current	Shielding Gas
 1G 2F	DC +	CO_2

Typical Chemical Composition of All-Weld Metal (%)

C	Si	Mn	P	S
0.05	0.48	1.56	0.012	0.010

Typical Mechanical Properties of All-Weld Metal

YS MPa(lbs/in²)	TS MPa(lbs/in²)	EL (%)	Temp. ℃ (℉)	CVN-Impact Value J (ft · lbs)
580 (84,100)	625 (90,600)	24.5	-20 (-4)	60 (44)

Approval

I Packing(Including Ball Pac)

Dia. (mm)	1.2	1.4	1.6	Spool(kg)	12.5	15	20
(in)	.045	.052	1/16	(lbs)	28	33	44
Ball Pac							

Sizes Available and Recommended Currents (Amp.)

Size mm (in)	1.2 (.045)	1.4 (.052)	1.6 (1/16)
F & HF	250 - 300	300 - 350	300 - 350

Supercored 81

TYPE : Rutile

AWS A5.29 / ASME SFA5.29 E81T1-Ni1C
JIS Z3313 T55 3 T1-1 C A-N2-U H10
EN ISO 17632-A-T 46 2 1Ni P C 1

Applications

All position welding for construction machinery, bridge structures and storage tanks.

Characteristics on Usage

Supercored 81 is an all position flux cored wire designed for 100% CO_2 shielding. You can get smooth arc, and low spatter, good weldability. The weld metal impact value at -30˚C(˚F) is excellent and has good bead appearance, slag covering is uniform and easy to remove.

Notes on Usage

① Proper preheating(50~150˚C)(122~302˚F) and interpass temperature must be used in order to release hydrogen which may cause cracking in weld metal when electrodes are used for medium and heavy plates.
② One-side welding defects such as hot cracking may occur with wrong welding parameter such as high welding speed.
③ Use 100% CO_2 gas.

Welding Position	Current	Shielding Gas
 1G 2F 3G 4G	DC +	CO_2

Typical Chemical Composition of All-Weld Metal (%)

C	Si	Mn	P	S	Ni
0.03	0.35	1.25	0.011	0.012	0.95

Typical Mechanical Properties of All-Weld Metal

YS MPa(lbs/in²)	TS MPa(lbs/in²)	EL (%)	Temp. ℃ (˚F)	CVN-Impact Value J (ft · lbs)
570 (82,700)	640 (92,900)	25	-30 (-22)	90 (66)

Approval

I Packing(Including Ball Pac)

Dia. (mm)	1.2	1.4	1.6	Spool(kg)	15	20
(in)	.045	.052	1/16	(lbs)	33	44
Ball Pac						

Sizes Available and Recommended Currents (Amp.)

Size mm (in)	1.2 (.045)	1.4 (.052)	1.6 (1/16)
F & HF	250~300	260~320	290~350
V-up, OH	180~230	200~260	220~280
V-down	250~310	260~320	280~340

SF-80MX

TYPE : Semi-Metal

AWS A5.29/ ASME SFA5.29 E80T1-G
JIS Z3313 T55 2 T15-0 C A-N2 H10
EN ISO 17632-A-T 46 2 1Ni R C 3

Applications

As a metal type flux cored wired, Butt and fillet welding of steel structures using 590MPa class high tensile steel such as construction machinery, buildings and bridges.

Characteristics on Usage

SF-80MX is a metal type flux cored wire which produces smooth arc characteristics. It is used for joining from mild tensile steels to 590MPa class high tensile steels, and is suitable for both fillet and but welds, providing high deposition rates, combined with minimal spatter and excellent slag release.
Especially it has good anti-porosity to zinc-primer plate and mill scale plate in fillet welding.

Notes on Usage

① Proper preheating 50~150˚C(122~302˚F) and interpass temperature must be used in order to release hydrogen which may cause cracking in weld metal when electrodes are used for medium and heavy plates.
② Use 100% CO_2 gas.

Welding Position	Current	Shielding Gas
 1G 2F	DC +	CO_2

Typical Chemical Composition of All-Weld Metal (%)

C	Si	Mn	P	S	Ni
0.06	0.55	1.42	0.015	0.010	1.00

Typical Mechanical Properties of All-Weld Metal

YS MPa(lbs/in²)	TS MPa(lbs/in²)	EL (%)	Temp. ℃ (˚F)	CVN-Impact Value J (ft · lbs)
590 (85,600)	630 (91,400)	24.0	-20 (-4)	53 (39)

Approval

I Packing(Including Ball Pac)

Dia. (mm)	1.2	1.4	1.6	Spool(kg)	12.5	15	20
(in)	.045	.052	1/16	(lbs)	28	33	44

Sizes Available and Recommended Currents (Amp.)

Size mm(in)	1.2 (.045)	1.4 (.052)	1.6 (1/16)
F & HF	200~300	300~350	300~350

SC-80M

TYPE : Metal-Cored

AWS A5.28/ ASME SFA5.28 E80C-G
EN ISO 17632-A T 46 4 M M 3 H5

Applications

SC-80M is used for welding in bridge construction, structural fabrication automated or robotic welding.

Characteristics on Usage

SC-80M is a metal cored wire designed for single or multipass welding on high-tensile steel and weathering grade steels. SC-80M was designed specifically to meet the demand for weld deposits that color match the low alloy, high strength weathering grade steels, such as Corten steel

Notes on Usage

① Proper preheating(50~150℃)(122~302℉) and interpass temperature must be used in order to release hydrogen which may cause cracking in weld metal when electrodes are used for medium and heavy plates.
② Use Ar + 20 ~ 25% CO_2 gas.

Welding Position	Current	Shielding Gas
 1G 2F	DC+	Ar + 20~25% CO_2 gas.

Typical Chemical Composition of All-Weld Metal (%)

C	Si	Mn	P	S	Ni	Cr	Cu
0.07	0.63	1.65	0.014	0.010	0.72	0.25	0.34

Typical Mechanical Properties of All-Weld Metal

YS MPa(lbs/in²)	TS MPa(lbs/in²)	EL (%)	Temp. ℃ (℉)	CVN-Impact Value J (ft · lbs)
610 (88,400)	658 (96,300)	24.5	-40 (-46)	60 (44)

Approval

I Packing(Including Ball Pac)

Dia. (mm)	1.2	1.4	1.6	Spool(kg)	15
(in)	.045	.052	1/16	(lbs)	33

Sizes Available and Recommended Currents (Amp.)

Size mm(in)	1.2 (.045)	1.4 (.052)	1.6 (1/16)
F & HF	200~300	260~340	290~360
V-up, OH	100~150	140~180	150~180

SC-90M

TYPE : Metal-Cored

AWS A5.28/ ASME SFA5.28 E80C-G
EN ISO 18276-A T 55 Z Z M M 1 H5

Applications

SC-90M is used for welding in structural and mechanical fabrication automated or robotic welding

Characteristics on Usage

SC-90M is a metal cored wire designed for single or multipass welding on 90Grade high-tensile steel. SC-90M provides an exceptionally smooth and stable arc, low spatter and minimal slag coverage and achieves good impact value at low temperature.

Notes on Usage

① Proper preheating(50~150℃)(122~302℉) and interpass temperature must be used in order to release hydrogen which may cause cracking in weld metal when electrodes are used for medium and heavy plates.
② Use Ar + 20~25% CO_2 gas.

Welding Position	Current	Shielding Gas
 1G 2F 3G 4G	DC+	Ar + 20~25% CO_2 gas.

Typical Chemical Composition of All-Weld Metal (%)

C	Si	Mn	P	S	Ni	Mo
0.07	0.54	1.35	0.012	0.010	1.17	0.18

Typical Mechanical Properties of All-Weld Metal

YS MPa(lbs/in²)	TS MPa(lbs/in²)	EL (%)	Temp. ℃ (℉)	CVN-Impact Value J (ft · lbs)
610 (88,450)	672 (97,400)	25.5	-50 (-58)	60 (44)

Approval

I Packing(Including Ball Pac)

Dia. (mm)	1.2	1.4	Spool(kg)	15
(in)	.045	.052	(lbs)	33

Sizes Available and Recommended Currents (Amp.)

Size mm(in)	1.2 (.045)	1.4 (.052)
F & HF	200~300	260~340
V-up, OH	100~150	140~180

SC-91P

TYPE : Rutile

AWS A5.29 E91T1-GM

Applications

Typical industrial applications include shipbuilding, machinery, piping, bridge, structural fabrication and building.

Characteristics on Usage

SC-91P is a rutile-type flux cored wire to be used with Ar+CO_2 gas mixture shielding.
Provide an exceptionally smooth and stable arc with a fast freezing slag system, this wire is ideal for pipe welding. Bead shape and appearance are excellent in all position welding.

Notes on Usage

① Proper Preheating(50~150℃)(122~302℉) and inter-pass temperature must be used in order to release hydrogen which may cause cracking in weld metal when electrodes are used for medium and heavy plates.
② One-side welding defects such as hot cracking that may occur with wrong welding parameter such as high welding speed
③ Use Ar+20~25%CO_2 gas.

Welding Position	Current	Shielding Gas
 1G 2F 3G 4G	DC(+)	Ar+20~25%CO_2

Typical Chemical Composition of All-Weld Metal (%)

C	Si	Mn	P	S	Ni	Mo
0.05	0.45	1.30	0.013	0.010	0.85	0.22

Typical Mechanical Properties of All-Weld Metal

YS MPa(lbs/in²)	TS MPa(lbs/in²)	EL (%)	Temp. ℃ (℉)	CVN-Impact Value J (ft · lbs)
640 (92,900)	680 (98,700)	26.0	0 (32)	80 (59)

Approval

I Packing(Including Ball Pac)

Dia. (mm)	1.2	Spool(kg)	12.5	15	20
(in)	.045	(lbs)	28	33	44

Sizes Available and Recommended Currents (Amp.)

F & HF	120~300
V-up, OH	120~260
V-down	180~280

SC-91K2 Cored

TYPE : Rutile

AWS A5.29 / ASME SFA5.29 E91T1-K2C
JIS Z3313 T57 4 T1-1 C A-N3 H10
EN ISO 17632-A-T50 4 1.5Ni P C 1

Applications

SC-91K2 Cored is designed for the welding of low alloy steel such as 600Mpa grade high strength steels HY-80, and ASTM A710, A514, A517.

Characteristics on Usage

SC-91K2 Cored is a rutile type flux cored arc welding wire to be used with CO_2 shielding gas.
Deposited weld metal toughness is good at low temperature range down -40°C(-40℉). To achieve good weld metal qualities, heat input must be controlled, not to exceed general welding condition.
Welding arc is stable and bead apperance is good in all position welding.
Diffusible hydrogen content is low and crack resistance is excellent.

Notes on Usage

① Use 100% CO_2 gas.

Welding Position	Current	Shielding Gas
 1G 2F 3G 4G	DC +	CO_2

Typical Chemical Composition of All-Weld Metal (%)

C	Si	Mn	P	S	Ni	Mo
0.04	0.35	1.25	0.013	0.012	1.55	0.09

Typical Mechanical Properties of All-Weld Metal

YS MPa(lbs/in²)	TS MPa(lbs/in²)	EL (%)	Temp. ℃ (℉)	CVN-Impact Value J (ft · lbs)
620 (90,000)	650 (94,500)	27	-20 (-4) -40 (-40)	110 (82) 60 (44)

Approval

ABS

I Packing(Including Ball Pac)

Dia. (mm)	1.2	1.4	1.6	Spool(kg)	12.5	15	20
(in)	.045	.052	1/16	(lbs)	28	33	44

Sizes Available and Recommended Currents (Amp.)

Size mm (in)	1.2 (.045)	1.4 (.052)	1.6 (1/16)
F & HF	200~300	250~350	280~380
V-up,OH	140~240	160~260	180~260

Supercored 110

AWS A5.29 / ASME SFA5.29 E111T1-GC

TYPE : Rutile

Applications

Supercored 110 is suitable for single or multipass welding for high strength low alloy steel.

Characteristics on Usage

Supercored 110 is titania type of flux cored wire for all position welding. It provides excellent impact values at low temperature.

Notes on Usage

① Proper Preheating(50~150˚C) (122~302˚F) and inter-pass temperature must be used in order to release hydrogen which may cause cracking in weld metal when electrodes are used for medium and heavy plates.
② One-side welding defects such as hot cracking that may occur with wrong welding parameter such as high welding speed.
③ Use 100% CO_2 gas.

Welding Position	Current	Shielding Gas
 1G 2F 3G 4G	DC +	CO_2

Typical Chemical Composition of All-Weld Metal (%)

C	Si	Mn	P	S	Ni	Mo
0.06	0.35	1.55	0.016	0.007	2.20	0.50

Typical Mechanical Properties of All-Weld Metal

YS MPa(lbs/in²)	TS MPa(lbs/in²)	EL (%)	Temp. ℃ (˚F)	CVN-Impact Value J (ft · lbs)
780 (113,000)	830 (121,000)	19.9	-40 (-40)	60 (44)

Approval

ABS

I Packing(Including Ball Pac)

Dia. (mm)	1.2		Spool(kg)	12.5	15	20
(in)	.045		(lbs)	28	33	44

Sizes Available and Recommended Currents (Amp.)

Size mm (in)	1.2 (.045)
F & HF	120~300
V-up,OH	120~260
V-down	180~280

FCAW

SC-110M Cored

TYPE : Metal-Cored

AWS A5.28 / ASME SFA5.28 E110C-G
EN ISO 18276-A-T 69 4 Mn2NiMo M M 3

Applications

Single and multipass welding of high strength low alloy steels, such as HY-80, and HY-100.

Characteristics on Usage

SC-110M Cored is a metal cored wire which provides an exceptionally smooth and stable arc, low spatter and minimal slag coverage.

Notes on Usage

① Proper Preheating(50~150℃)(122~302℉) and interpass temperature must be used in order to release hydrogen which may cause cracking in weld metal when electrodes are used for medium and heavy plates.
② One-side welding defects such as hot cracking may occur with wrong welding parameter such as high welding speed.
③ Use Ar+20-25% CO_2 gas.

Welding Position	Current	Shielding Gas
 1G 2F	DC +	Ar+20~25%CO_2

Typical Chemical Composition of All-Weld Metal (%)

C	Si	Mn	P	S	Ni	Cr	Mo
0.04	0.70	1.80	0.015	0.015	2.0	0.10	0.60

Typical Mechanical Properties of All-Weld Metal

YS MPa(lbs/in²)	TS MPa(lbs/in²)	EL (%)	Temp. ℃ (℉)	CVN-Impact Value J (ft · lbs)
760 (110,200)	820 (119,000)	20	-51 (-60)	45 (34)

Approval

I Packing(Including Ball Pac)

Dia. (mm)	1.2	Spool(kg)	12.5	15	20
(in)	.045	(lbs)	28	33	44

Sizes Available and Recommended Currents (Amp.)

Size mm (in)	1.2 (.045)
F & HF	220 ~ 290

SF-70W

TYPE : Rutile

JIS Z3320 YFA-50W

Applications

SF-70W is an all position flux cored wire for use with CO_2 shielding gas. This wire is designed for the welding of weathering grade steels where weld metal and base metal color match is primary consideration.

Characteristics on Usage

SF-70W has a high deposition rate and excellent slag detachability. Its main applications are with 70Kpsi class weather poof steel and construction work using atmospheric corrosion resisting steels.

Notes on Usage

① Proper preheating(50~150˚C)(122~302˚F) and interpass temperature must be used in order to release hydrogen which may cause cracking in weld metal when electrodes are used for medium and heavy plates.
② One-side welding defects such as hot cracking may occur with wrong welding parameter such as high welding speed.
③ Use 100% CO_2 gas.

Welding Position	Current	Shielding Gas
 1G 2F 3G 4G	DC +	CO_2

FCAW

Typical Chemical Composition of All-Weld Metal (%)

C	Si	Mn	P	S	Cr	Ni	Cu
0.04	0.45	1.05	0.017	0.011	0.50	0.35	0.40

Typical Mechanical Properties of All-Weld Metal

YS MPa(lbs/in²)	TS MPa(lbs/in²)	EL (%)	Temp. ℃ (˚F)	CVN-Impact Value J (ft · lbs)
510 (74,000)	580 (84,200)	28	0 (32)	60 (44)

Approval

I Packing(Including Ball Pac)

Dia. (mm)	1.2	1.4	1.6	Spool(kg)	12.5	15	20
(in)	.045	.052	1/16	(lbs)	28	33	44
Ball Pac							

Sizes Available and Recommended Currents (Amp.)

Size mm (in)	1.2 (.045)	1.4 (.052)	1.6 (1/16)
F & HF	200~300	250~350	300~400
V-up,OH	120~260	140~270	180~280
V-down	200~300	250~350	300~400

SF-80W

TYPE : Rutile

AWS A5.29 / ASME SFA5.29 E81T1-W2C
JIS Z3320 YFA-58W

Applications

SF-80W is designed for the welding of weather-proof steel for example corten A-242 or A-588. Mainly used for flat and horizontal fillet welding on structural exposed steel usually found on buildings and bridges.

Characteristics on Usage

SF-80W is a titania type flux cored wire which can be used for all welding in conjunction with CO_2 shielding gas.

Notes on Usage

① Proper preheating(50~150˚C)(122~302˚F) and interpass temperature must be used in order to release hydrogen which may cause cracking in weld metal when electrodes are used for medium and heavy plates.
② One-side welding defects such as hot cracking may occur with wrong welding parameter such as high welding speed.
③ Use 100% CO_2 gas.

Welding Position	Current	Shielding Gas
 1G 2F 3G 4G	DC +	CO_2

Typical Chemical Composition of All-Weld Metal (%)

C	Si	Mn	P	S	Cr	Ni	Cu
0.04	0.40	0.92	0.016	0.012	0.50	0.50	0.40

Typical Mechanical Properties of All-Weld Metal

YS MPa(lbs/in²)	TS MPa(lbs/in²)	EL (%)	Temp. ℃ (˚F)	CVN-Impact Value J (ft · lbs)
530 (77,000)	610 (88,600)	26	-30 (-22)	40 (30)

Approval

I Packing(Including Ball Pac)

Dia. (mm)	1.2	1.4	1.6	Spool(kg)	12.5	15	20
(in)	.045	.052	1/16	(lbs)	28	33	44
Ball Pac							

Sizes Available and Recommended Currents (Amp.)

Size mm (in)	1.2 (.045)	1.4 (.052)	1.6 (1/16)
F & HF	200~300	250~350	300~400
V-up,OH	120~260	140~270	180~280
V-down	200~300	250~350	300~400

SC-71SR

TYPE : Rutile

AWS A5.20 / ASME SFA5.20 E71T-1C/-9C/-9C-J/12C/-12C-J
JIS Z3313 T49 4 T1-1 C AP H5
EN ISO 17632-A-T 42 4 P C 1 H5

Applications

Oil and gas construction, pipe and off-shore structures.

Characteristics on Usage

SC-71SR is a titania type flux cored wire for all position welding for use with CO_2 gas.
It provides excellent notch toughness at low temperature, not only as-welded also stress relieved state.

Notes on Usage

① Use 100%CO_2 gas.

Welding Position

1G 2F 3G 4G

Current

DC +

Shielding Gas

CO_2

Typical Chemical Composition of All-Weld Metal (%)

C	Si	Mn	P	S	Ni
0.05	0.40	1.20	0.011	0.010	0.38

Typical Mechanical Properties of All-Weld Metal

YS MPa(lbs/in²)	TS MPa(lbs/in²)	EL (%)	CVN-Impact Value J (ft · lbs) -30℃(-22℉)	-40℃(-40℉)	
560 (81,300)	580 (84,100)	28	115 (85)	80 (59)	As welded
540 (78,400)	560 (81,300)	30	84 (62)	60 (44)	PWHT(620˚C@2hr)

Approval

ABS, BV, DNV, LR, GL

I Packing(Including Ball Pac)

Dia. (mm)	1.2	1.4		Spool(kg)	12.5	15	20
(in)	.045	.052		(lbs)	28	33	44

Sizes Available and Recommended Currents (Amp.)

Size mm (in)	1.2 (.045)	1.4 (.052)
F & HF	120~300	150~350
V-up, OH	120~260	140~270
V-down	200~300	220~320

SC-71MSR

TYPE : Rutile

AWS A5.20 / ASME SFA5.20 E71T-12M-J
EN ISO 17632-A-T 46 4 P M 1 H5

Applications

Oil and gas construction, pipe, and off-shore structures.

Characteristics on Usage

SC-71MSR is a titania type flux cored wire for all position welding. It provides excellent notch toughness at low temperature, not only as-welded but also stress relieved state.
All position welding can be achieved with excellent flat bead appearance, less spatter and easy slag removal and high welding current in vertical up position can be performed.

Notes on Usage

① Proper preheating (50~150˚C)(122~302˚F) and interpass temperature must be used in order to release hydrogen which may cause crack in weld metal when electrodes are used for medium and heavy thick plates.
② One-side welding defects such as hot cracking may occur with wrong welding parameter such as high welding speed.
③ Use Ar+20~25% CO_2 gas for welding.

Welding Position	Current	Shielding Gas
 1G 2F 3G 4G	DC +	CO_2

Typical Chemical Composition of All-Weld Metal (%)

C	Si	Mn	P	S	Ni
0.06	0.35	1.24	0.012	0.012	0.45

Typical Mechanical Properties of All-Weld Metal

YS MPa(lbs/in²)	TS MPa(lbs/in²)	EL (%)	CVN-Impact Value J (ft · lbs) -40℃(-40˚F)	-50℃(-60˚F)	
542 (78,600)	577 (83,600)	30	115 (85)	85 (63)	As welded
523 (75,700)	552 (80,000)	33	90 (66)	70 (52)	PWHT(620˚C@2hr)

Approval

ABS, BV, DNV, LR

I Packing(Including Ball Pac)

Dia. (mm)	1.2		Spool(kg)	12.5	15	20
(in)	.045		(lbs)	28	33	44
Ball Pac						

Sizes Available and Recommended Currents (Amp.)

Size mm (in)	1.2 (.045)
F & HF	200~290
V-up, OH	180~250
V-down	210~280

SC-70ML

TYPE : Metal-Cored

AWS A5.18/ ASME SFA5.18 E70C-6M
JIS Z3313 T49 4 T15-1 M A-U H5
EN ISO 17632-A-T 46 4 M M 2 H5

Applications

SC-70ML can be used on mild and high tensile steels in single and multi-pass applications.
It is ideally suited for high production and automatic applications. Typical industrial applications include offshore, heavy equipment and general structural fabrications.

Characteristics on Usage

SC - 70ML is a gas shielded metal-cored wire which combines high deposition rates of a flux cored wire with high efficiency of a solid wire. Its design achieves low temperature impacts and can be used in semiautomatic and automatic applications.

Notes on Usage

① Use Ar + 20 ~ 25% CO_2 gas.

Welding Position	Current	Shielding Gas
 1G 2F 3G 4G	DC +	Ar+20~25%CO_2

Typical Chemical Composition of All-Weld Metal (%)

C	Si	Mn	P	S	Ni
0.05	0.57	1.56	0.013	0.010	0.42

Typical Mechanical Properties of All-Weld Metal

YS MPa(lbs/in²)	TS MPa(lbs/in²)	EL (%)	Temp. ℃ (℉)	CVN-Impact Value J (ft · lbs)
510 (73,950)	560 (81,200)	27.0	-40 (-40)	70 (52)

Approval

ABS, LR, DNV, BV, GL

I Packing(Including Ball Pac)

Dia. (mm)	1.2	1.4	1.6	Spool(kg)	15
(in)	.045	.052	1/16	(lbs)	33

Sizes Available and Recommended Currents (Amp.)

Size mm (in)	1.2 (.045)	1.4 (.052)	1.6 (1/16)
F & HF	200 ~ 300	260 ~ 340	300 ~ 350
V-up, OH	100 ~ 150	140 ~ 180	150 ~ 180

SC-80MR

TYPE : Metal-Cored

AWS A5.28/ ASME SFA5.28 E80C-G
EN ISO 17632-A T 46 6 1.5Ni M M 2 H5

Applications

SC-80MR is used for welding in offshore structure and heavy equipment and general structural fabrication.

Characteristics on Usage

SC-80MR is a metal cored wire designed for single-side welding and is also suitable for multi-pass welding in thick plate. SC-80MR provides an exceptionally smooth and stable arc, low spatter and minimal slag coverage and achieves good impact value to low temperature(-60℃).

Notes on Usage

① Proper preheating(50~150℃)(122~302℉) and interpass temperature must be used in order to release hydrogen which may cause cracking in weld metal when electrodes are used for medium and heavy plates.
② Use Ar + 20~25% CO_2 gas.

Welding Position	Current	Shielding Gas
 1G 2F 3G 4G	DC+	Ar + 20~25% CO_2 gas.

Typical Chemical Composition of All-Weld Metal (%)

C	Si	Mn	P	S	Ni
0.07	0.35	1.55	0.014	0.010	1.55

Typical Mechanical Properties of All-Weld Metal

YS MPa(lbs/in²)	TS MPa(lbs/in²)	EL (%)	Temp. ℃ (℉)	CVN-Impact Value J (ft · lbs)
612 (88,700)	658 (95,400)	25.5	-60 (-76)	60 (44)

Approval

I Packing(Including Ball Pac)

Dia. (mm)	1.2	1.4	Spool(kg)	15
(in)	.045	.052	(lbs)	33

Sizes Available and Recommended Currents (Amp.)

Size mm(in)	1.2 (.045)	1.4 (.052)
F & HF	200~300	260~340
V-up, OH	100~150	140~180

Supercored 81MAG

TYPE : Rutile

AWS A5.29 / ASME SFA5.29 E81T1-Ni1M
EN ISO 17632-A-T 46 6 1 Ni P M 2 H5

Applications

Supercored 81MAG can be used in oil and gas construction, pipe, and offshore structures.

Characteristics on Usage

Supercored 81MAG is a titania type flux cored wire to be used with Ar+CO_2 gas mixture shielding. This provides excellent notch toughness at low temperature, not only as-welded but also stress relieved state.

Notes on Usage

① Proper preheating (50~150˚C)(122~302˚F) and interpass temperature must be used in order to release hydrogen which may cause cracking in weld metal when electrodes are used for medium and heavy plates.
② One-side welding defects such as hot cracking may occur with wrong welding parameter such as high welding speed.
③ Use Ar+20~25% CO_2 gas.

Welding Position	Current	Shielding Gas
 1G 2F 3G 4G	DC +	Ar+20~25%CO_2

Typical Chemical Composition of All-Weld Metal (%)

C	Si	Mn	P	S	Ni
0.05	0.28	1.20	0.008	0.012	0.93

Typical Mechanical Properties of All-Weld Metal

YS MPa(lbs/in²)	TS MPa(lbs/in²)	EL (%)	Temp. ℃ (˚F)	CVN-Impact Value J (ft · lbs)	
550 (79,900)	590 (85,700)	26	-60 (-76)	60 (44)	As welded
510 (74,100)	570 (82,800)	28	-40 (-40)	98 (73)	PWHT(620˚C@2hr)

Approval

ABS, BV, DNV, LR, CWB, RINA

I Packing(Including Ball Pac)

Dia. (mm)	1.2	1.6		Spool(kg)	12.5	15	20
(in)	.045	1/6		(lbs)	28	33	44
Ball Pac							

Sizes Available and Recommended Currents (Amp.)

Size mm(in)	1.2 (.045)	1.6 (1/16)
F & HF	200~290	260~350
V-up,OH	180~250	230~290
V-down	210~280	270~330

Supercored 81-K2

TYPE : Rutile

AWS A5.29 / ASME SFA5.29 E81T1-K2C
JIS Z3313 T55 6 T1-1 C A-N3-U H5
EN ISO 17632-A-T 46 6 1.5Ni P C 1 H5

Applications

Supercored 81-K2 is used for the welding of low temperature service steels in the construction of LPG and LNG storage tanks.

Characteristics on Usage

Supercored 81-K2 is a titania type flux cored wire designed for all position welding with CO_2 shielding gas.

Notes on Usage

① Proper preheating(50~150˚C)(122~302℉) and interpass temperature must be used in order to release hydrogen which may cause cracking in weld metal when electrodes are used for medium and heavy plates.
② One-side welding defects such as hot cracking may occur with wrong welding parameter such as high welding speed.
③ Use 100% CO_2 gas.

Welding Position	Current	Shielding Gas
 1G 2F 3G 4G	DC +	CO_2

Typical Chemical Composition of All-Weld Metal (%)

C	Si	Mn	P	S	Ni
0.04	0.35	1.35	0.012	0.011	1.50

Typical Mechanical Properties of All-Weld Metal

YS MPa(lbs/in²)	TS MPa(lbs/in²)	EL (%)	Temp. ℃ (℉)	CVN-Impact Value J (ft · lbs)
540 (78,400)	620 (90,000)	28	-30 (-22) -60 (-76)	110 (81) 60 (44)

Approval

KR, ABS, BV, DNV, GL, LR, NK, CCS, RINA, RS, CWB

I Packing(Including Ball Pac)

Dia. (mm)	1.2	1.4	1.6	Spool(kg)	12.5	15	20
(in)	.045	.052	1/16	(lbs)	28	33	44
Ball Pac							

Sizes Available and Recommended Currents (Amp.)

Size mm (in)	1.2 (.045)	1.6 (1/16)
F & HF	250~300	300~350
V-up, OH	170~230	200~250
V-down	250~300	300~350

SC-460

TYPE : Rutile

AWS A5.29 / ASME SFA5.29 E81T1-K2C
Z3313 T55 6 T1-1 C A-N3 H5
EN ISO 17632-A-T 46 6 1.5Ni P C 1 H5

Applications

SC-460 is suitable for single or multipass welding for low temperature service steel.

Characteristics on Usage

SC-460 is titania type of flux cored wire for all position welding. It provides excellent impact values at low temperature.

Notes on Usage

① Proper Preheating(50~150℃)(122~302℉) and inter-pass temperature must be used in order to release hydrogen which may cause cracking in weld metal when electrodes are used for medium and heavy plates.
② One-side welding defects such as hot cracking that may occur with wrong welding parameter such as high welding speed.
③ Use 100% CO_2 gas.

Welding Position	Current	Shielding Gas
 1G 2F 3G 4G	DC +	CO_2

Typical Chemical Composition of All-Weld Metal (%)

C	Si	Mn	P	S	Ni
0.06	0.35	1.20	0.008	0.011	1.50

Typical Mechanical Properties of All-Weld Metal

YS MPa(lbs/in²)	TS MPa(lbs/in²)	EL (%)	Temp. ℃ (℉)	CVN-Impact Value J (ft · lbs)
580 (84,200)	630 (91,000)	26.0	-60 (-76)	60 (44)

Approval

ABS, BV, DNV, GL, LR,

I Packing(Including Ball Pac)

Dia. (mm)	1.2	1.4	Spool(kg)	5	15	20
(in)	.045	.052	(lbs)	28	33	44
Ball Pac						

Sizes Available and Recommended Currents (Amp.)

Size mm (in)	1.2 (.045)	1.6 (1/16)
F & HF	120~290	150~350
V-up, OH	120~260	140~270
V-down	200~300	220~350

Supercored 81-K2MAG

TYPE : Rutile

AWS A5.29 / ASME SFA5.29 E81T1-K2M
JIS Z3313 T55 6 T1-1 M A-N3 H5
EN ISO 17632-A-T 46 6 1.5Ni P M 2 H5

Applications

Supercored 81-K2MAG is suitable for single or multipass MAG welding application for LNG, LPG tank, etc. and for all low temperature service steel.

Characteristics on Usage

Supercored 81-K2MAG is an all position flux cored wire for low temperature service steel. Excellent mechanical properties and low temperature impact toughness. Smooth arc characteristics and very low spatter level.

Notes on Usage

① Proper preheating(50~150˚C)(122~302℉) and interpass temperature must be used in order to release hydrogen which may cause cracking in weld metal when electrodes are used for medium and heavy plates.
② One-side welding defects such as hot cracking may occur with wrong welding parameter such as high welding speed.
③ Use Ar+20~25% CO_2 gas.

Welding Position	Current	Shielding Gas
 1G 2F 3G 4G	DC +	Ar+20~25% CO_2

Typical Chemical Composition of All-Weld Metal (%)

C	Si	Mn	P	S	Ni
0.03	0.35	1.25	0.012	0.010	1.55

Typical Mechanical Properties of All-Weld Metal

YS MPa(lbs/in²)	TS MPa(lbs/in²)	EL (%)	Temp. ℃ (℉)	CVN-Impact Value J (ft · lbs)
590 (85,600)	610 (88,500)	27	-30 (-22) -60 (-76)	110 (81) 70 (52)

Approval

TÜV, CE, DB

I Packing(Including Ball Pac)

Dia. (mm)	1.2		Spool(kg)	12.5	15	20
(in)	.045		(lbs)	28	33	44
Ball Pac						

Sizes Available and Recommended Currents (Amp.)

Size mm(in)	1.2 (.045)
F & HF	250~300
V-up,OH	170~230
V-down	250~300

SC-80K2

TYPE : Semi-Metal

AWS A5.29/ ASME SFA5.29 E80T1-K2C
JIS Z3313 T55 6 T15-0 C A-N3 H5
EN ISO 17632-A-T 46 6 1.5Ni R C 3 H5

Applications

SC-80K2 is designed for welding of low temperature service. Butt and fillet welding of offshore structures, LNG and LPG carriers and storage tanks, etc.

Characteristics on Usage

SC-80K2 is a metal type flux cored wire for high speed welding applications in the flat and horizontal fillet position.
Arc stability is excellent. Spatter loss is low and slag covering is uniform with good removability.

Notes on Usage

① Proper Preheating(50~150℃)(122 ~ 302℉) and to release hydrogen which may cause cracking in weld metal when electrodes are used for medium and heavy plates.
② Use 100% CO_2 gas.

Welding Position(All-Position)	Current	Shielding Gas
 1G 2F	DC +	CO_2

Typical Chemical Composition of All-Weld Metal (%)

C	Si	Mn	P	S	Ni
0.05	0.40	1.31	0.011	0.010	1.45

Typical Mechanical Properties of All-Weld Metal

YS MPa(lbs/in²)	TS MPa(lbs/in²)	EL (%)	Temp. ℃ (℉)	CVN-Impact Value J (ft · lbs)
550 (79,900)	590 (85,700)	25	-30 (-22) -60 (-76)	90 (66) 53 (39)

Approval

KR, ABS, LR, BV, DNV, GL, NK

Packing(Including Ball Pac)

Dia. (mm)	1.2	1.4	Spool(kg) 15
(in)	.045	.052	(lbs) 33

Sizes Available and Recommended Currents (Amp.)

Size mm (in)	1.2 (.045)	1.4 (.052)
F	250 ~ 300	280 ~ 320
HF	250~ 300	280 ~ 320

SC-81B2

TYPE : Rutile

AWS A5.29/ ASME SFA5.29 E81T1-B2C
EN ISO 12071-T CrMo1 P C 2

Applications

SC-81B2 can be used for welding of 1.25%Cr-0.5%Mo heat resistant steels used for steam pipes of boilers for electric power plants and marine use, equipment for oil refining industries and high temperature synthetic chemical industries.
Most common usage is in steam power plants and ships, chemical plants and refineries.

Characteristics on Usage

SC-81B2 is a titania type flux cored wire for all position welding. Arc stability is excellent.
Spatter loss is low and slag covering is uniform with good removability.

Notes on Usage

① Use 100% CO_2 gas.
② All position gas shielded flux cored wire.

Welding Position	Current	Shielding Gas
 1G 2F 3G 4G	DC +	CO_2

Typical Chemical Composition of All-Weld Metal (%)

C	Si	Mn	P	S	Cr	Mo
0.066	0.41	0.83	0.016	0.017	1.19	0.51

Typical Mechanical Properties of All-Weld Metal

YS MPa(lbs/in²)	TS MPa(lbs/in²)	EL (%)	PWHT
575 (83,500)	656 (95,200)	22.4	690±15˚C×1Hr

Approval

I Packing(Including Ball Pac)

Dia. (mm)	1.2	1.4	1.6	Spool(kg)	15
(in)	.045	.052	1/16	(lbs)	33

Sizes Available and Recommended Currents (Amp.)

Size mm(in)	1.2 (.045)	1.4 (.052)	1.6 (1/16)
F & HF	250~300	280~350	300~450
V-up & OH	200~260	220~260	240~280
V-Down	250~300	280~350	300~450

SC-91B3

TYPE : Rutile

AWS A5.29/ ASME SFA5.29 E91T1-B3C
EN ISO 12071-T CrMo2 P C 2

Applications

SC-91B3 can be used for welding of 2.25%Cr-1.0%Mo steel used for super heat tubes and steam pipes of boilers for electric power plant and marine use, equipment for oil refining industries and high temperature synthetic chemical industries.

Characteristics on Usage

SC-91B3 is a titania type flux cored wire for all position welding. Arc stability is excellent. Spatter loss is low and slag covering is uniform with good removability.

Notes on Usage

① Use 100% CO_2 gas.
② All position gas shielded flux cored wire.

Welding Position(All-Position)	Current	Shielding Gas
 1G 2F 3G 4G	DC +	CO_2

Typical Chemical Composition of All-Weld Metal (%)

C	Si	Mn	P	S	Cr	Mo
0.063	0.47	0.83	0.022	0.017	2.32	0.99

Typical Mechanical Properties of All-Weld Metal

YS MPa(lbs/in²)	TS MPa(lbs/in²)	EL (%)	PWHT
643 (93,300)	730 (106,000)	20	690°C±15× 1Hr

Approval

I Packing(Including Ball Pac)

Dia. (mm)	1.2	1.4	1.6	Spool(kg)	15
(in)	.045	.052	1/16	(lbs)	33

Sizes Available and Recommended Currents (Amp.)

Size mm(in)	1.2 (.045)	1.4 (.052)	1.6 (1/16)
F & HF	250~300	280~350	300~450
V-up & OH	200~260	220~260	240~280
V-Down	250~300	280~350	300~450

SC-80D2

TYPE : Metal-Cored

AWS A5.28 / ASME SFA5.28 E80C-G
EN ISO 17632-A-T 46 0 MnMo M M 3

Applications

SC-80D2 can be used on high strength steels and low alloy steels in heavy industries and structural steels.

Characteristics on Usage

SC-80D2 is a metal-cored gas shielded cored wire which combines the high deposition rates of a flux cored wire with the high efficiencies of a solid wire. SC-80D2 is equivalent to ER80S-D2 solid wire.
It provides an exceptionally smooth and stable arc, low spatter and minimal slag coverage.

Notes on Usage

① use Ar + 20~25% CO_2 gas.

Welding Position	Current	Shielding Gas
 1G 2F	DC +	Ar+20~25% CO_2

Typical Chemical Composition of All-Weld Metal (%)

C	Si	Mn	P	S	Mo
0.05	0.60	1.65	0.012	0.010	0.51

Typical Mechanical Properties of All-Weld Metal

YS MPa(lbs/in²)	TS MPa(lbs/in²)	EL (%)	Temp. ℃ (℉)	CVN-Impact Value J (ft · lbs)
590 (85,600)	660 (95,700)	28	-20 (-4)	70 (52)

Approval

I Packing(Including Ball Pac)

Dia. (mm)	1.2	1.4	1.6	Spool(kg)	12.5	15	20
(in)	.039	.045	1/16	(lbs)	28	33	44
Ball Pac							

Sizes Available and Recommended Currents (Amp.)

Size mm(in)	1.2 (.045)	1.4 (.052)	1.6 (1/16)
F & HF	200~310	200~340	230~360

Supercored 1CM

TYPE : Metal-Cored

AWS A5.28 / ASME SFA5.28 E80C-G
EN ISO 12071-T CrMo1 M M 3

Applications

Supercored 1CM can be used on 1.25%Cr-0.5%Mo steels. Recommended for welding of steam boiler plates and high temperature steels.

Characteristics on Usage

Supercored 1CM is a metal cored wire which combines the high deposition rates of F.C.W with the high efficiencies of a solid wire. It provides exceptionally smooth and stable arc, low spatter and minimal slag coverage.

Notes on Usage

① Proper preheating(130~165˚C)(122~302˚F) and interpass temperature must be used in order to release hydrogen which may cause cracking in weld metal when electrodes are used for medium and heavy plates.
② Keep the distance between tip and base metal at about 15mm.
③ Use Ar+20~25% CO_2 gas.

Welding Position(All-Position)	Current	Shielding Gas
 1G 2F	DC +	Ar+20~25% CO_2

Typical Chemical Composition of All-Weld Metal (%)

C	Si	Mn	P	S	Cr	Mo
0.07	0.39	0.81	0.013	0.010	1.25	0.51

Typical Mechanical Properties of All-Weld Metal

YS MPa(lbs/in²)	TS MPa(lbs/in²)	EL (%)	Temp. ℃ (℉)	CVN-Impact Value J (ft · lbs)	Heat Treatment (℃/hr)
560 (81,300)	630 (91,000)	20	0 (32)	90 (66)	620/1hr
510 (74,100)	600 (87,100)	25	0 (32)	110 (81)	620/8hr

Approval

I Packing(Including Ball Pac)

Dia. (mm)	1.0	1.2	Spool(kg)	12.5	15
(in)	.039	.045	(lbs)	28	33

Sizes Available and Recommended Currents (Amp.)

Size mm(in)	1.0 (.039)	1.2 (.045)
F & HF	150~300	200~310

FCAW

Supershield 11

TYPE : Self-Shielded

AWS A5.20 /ASME SFA 5.20 E71T-11
JIS Z3313 T49 T14-1 N A
EN ISO 17632-A-T 42 Z Z Z N 1

Applications

Supershield 11 is used where light structurals, short assembly welds, other general fabrications and galvanized steel fixtures, gate etc.

Characteristics on Usage

Supershield 11 is an all position self-shielded flux cored wire designed for single & multi-pass welding of thin mild and medium tensile steels not exceeding 510MPa.

Notes on Usage

① Do not use shielding gas.

Welding Position

1G 2F 3G 4G

Current

DC -

Typical Chemical Composition of All-Weld Metal (%)

C	Si	Mn	P	S	Al
0.19	0.35	0.60	0.011	0.006	1.20

Typical Mechanical Properties of All-Weld Metal

YS MPa(lbs/in²)	TS MPa(lbs/in²)	EL (%)
520 (75,400)	590 (85,500)	21

Approval

I Packing(Including Ball Pac)

Dia. (mm)	1.0	1.2	1.4	1.6	Spool(kg)	15	20
(in)	.039	.045	.052	1/16	(lbs)	33	44

Sizes Available and Recommended Currents (Amp.)

Size mm (in)	1.0 (.039)	1.2 (.045)	1.4 (.052)	1.6 (1/16)
F	80~200	160 ~ 220	170 ~ 250	180 ~ 280
V-up, OH	55~120	120~ 180	140 ~ 200	160 ~ 220

Supershield 71GS

TYPE : Self-Shielded

AWS A5.20 /ASME SFA 5.20 E71T-GS
JIS Z3313 T49 T14-1 N S
EN ISO 17632-A-T 42 Z Z V N 1

Applications

Supershield 71GS is used where light structurals, short assembly welds, other general fabrications and galvanized steel fixtures, gate etc.

Characteristics on Usage

Supershield 71GS is an all position self-shielded flux cored wire designed for single-pass welding of thin mild and medium tensile steels not exceeding 510MPa.

Notes on Usage

① Do not use shielding gas.

Welding Position

1G 2F 3G 4G

Current

DC -

Typical Chemical Composition of All-Weld Metal (%)

C	Si	Mn	P	S	Al
0.26	0.50	0.91	0.016	0.014	2.05

Typical Mechanical Properties of All-Weld Metal

	As Welded
Transverse Tensile Strength, MPa(psi) (Specimen broken in the base metal)	586 (85,000)
Longitudinal Guided Bend Test	Satisfactory

Approval

-

I Packing(Including Ball Pac)

Dia. (mm)	1.0	1.2	1.4	1.6	Spool(kg)	15	20
(in)	.039	.045	.052	1/16	(lbs)	33	44

Sizes Available and Recommended Currents (Amp.)

Size mm (in)	1.0 (.039)	1.2 (.045)	1.4 (.052)	1.6 (1/16)
F	80~200	160 ~ 220	170 ~ 250	180 ~ 280
V-up, OH	55~120	120 ~ 180	140 ~ 200	160 ~ 220

FCAW

Supershield 4

TYPE : Self-Shielded

AWS A5.20/ ASME SFA5.20 E70T-4
EN ISO 17632-A T 42 Z Z W N 3

Applications

Only Flat, H-Fillet welding of general fabrication, structural fabrication, machinery bases and heavy equipment repair.

Characteristics on Usage

Supershield 4 is self-shield flux cored wire for high deposition rate flat and horizontal welding where impact properties are not required.

Notes on Usage

① Do not use shielding gas.

Welding Position

1G 2F

Current

DC+

Typical Chemical Composition of All-Weld Metal (%)

C	Si	Mn	P	S	Al
0.19	0.38	0.40	0.012	0.010	1.25

Typical Mechanical Properties of All-Weld Metal

YS MPa(lbs/in²)	TS MPa(lbs/in²)	EL (%)
465 (67,400)	610 (88,400)	24.0

Approval

I Packing(Including Ball Pac)

Dia. (mm)	2.0	Spool(kg)	12.5
Dia. (mm)	2.4	Coil(Kg)	25

Sizes Available and Recommended Currents (Amp.)

Size mm	2.0	2.4
F & HF	250~350	250~450

SW-307NS Cored

EN ISO 17633-A-T 18 8 Mn M M

TYPE : Metal-Cored

Applications

SW-307NS Cored is designed for welding dissimilar steels, 13Mn steels with reduced weldability and for cladding carbon steels.

Characteristics on Usage

SW-307NS Cored is a metal cored wire with a hot cracking resistant austenitic weld metal.
The tough weld metal has an excellent crack resistance, even when welding steels with very poor weldability.
This wire is designed for welding dissimilar steels, 13Mn steels with reduced weldability and for cladding carbon steels. Can also be used as a buffer layer prior to hard surfacing.
Designed for high deposition welding of multi-layer standing fillet welds.

Notes on Usage

① Use with 100%Ar or Ar+2~5%O_2 gas.
② Welders for solid wire can be used but as wire is softer than solid wire, pay full attention to adjust feeding roller and do not tighten them excessively.
③ Use the wind-screen against wind.
④ Where possible, preferred storage conditions of opened packs are 60% RH maximum, 18℃ minimum.

Welding Position	Current	Shielding Gas
 1G 2F	DC +	Ar/Ar+2~5% O_2

FCAW

Typical Chemical Composition of All-Weld Metal (%) (Shielding Gas: 100% Ar)

C	Si	Mn	P	S	Cr	Ni	Mo
0.08	0.83	6.15	0.022	0.008	17.78	8.25	0.15

Typical Mechanical Properties of All-Weld Metal (Shielding Gas: 100% Ar)

YS MPa(lbs/in²)	EL (%)	Temp. ℃ (℉)	CVN-Impact Value J (ft · lbs)
627 (91,000)	40.8	-20 (-4) -60 (-76)	106 (78) 71 (52)

Approval

I Packing(Including Ball Pac)

Dia. (mm)	1.2	1.6		Spool(kg)	5	12.5	15
(in)	.045	1/16		(lbs)	11	28	33

Sizes Available and Recommended Currents (Amp.)

Size mm(in)	1.2 (.045)	1.6 (1/16)
F & HF	170~270	200~350

SW-308L Cored

TYPE : Rutile

AWS A5.22 / ASME SFA5.22 E308LT1-1/-4
JIS Z3323 TS308L-FB1
EN ISO 17633-A-T 19 9 L P M/C 2

Applications

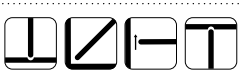
SW-308L Cored is designed for welding of 18%Cr-8%Ni stainless steels.

Characteristics on Usage

SW-308L Cored is a flux cored wire for all position welding to be used with CO_2 or Argon +CO_2 mixed shielding gases. This wire benefits from a fast freezing slag system which assists the operator when welding out of position and performs equally as well when welding in the flat and horizontal position.

Notes on Usage

① Use with 100% CO_2 or Ar + 20~25% CO_2 gas.

Welding Position	Current	Shielding Gas
 1G 2F 3G 4G	DC +	CO_2/Ar+20~25% CO_2

Typical Chemical Composition of All-Weld Metal (%) (Shielding Gas: 100% CO_2)

C	Si	Mn	P	S	Cr	Ni
0.03	0.65	1.45	0.025	0.010	19.5	10.0

Typical Mechanical Properties of All-Weld Metal (Shielding Gas: 100% CO_2)

YS MPa(lbs/in²)	EL (%)	Temp. ℃ (℉)	CVN-Impact Value J (ft · lbs)
590 (85,600)	45	-20 (-4)	60 (44)

Approval

ABS, LR, NK, BV, DNV, TÜV, CWB, CE, DB

I Packing(Including Ball Pac)

Dia. (mm)	0.9	1.2	1.6	Spool(kg)	5	12.5	15
(in)	.035	.045	1/16	(lbs)	11	28	33

Sizes Available and Recommended Currents (Amp.)

Size mm (in)	0.9 (.035)	1.2 (.045)	1.6 (1/16)
F & HF	130~190	180~220	250~290
V-up,OH	100~140	120~160	-

SW-308LT

TYPE : Rutile

AWS A5.22 / ASME SFA5.22 E308LT1-1/-4
JIS Z3323 TS308L-FB1
EN ISO 17633-A-T 19 9 L P M/C 2

Applications

SW-308LT is designed for welding of extra-low carbon 18%Cr-8%Ni stainless steel for cryogenic applications.

Characteristics on Usage

SW-308LT is a titania type flux cored wire for all position welding with CO_2 & Argon+CO_2 mixed shielding gas. This wire is designed for cryogenic applications, 304L austenitic stainless steels.
The high impact toughness at cryogenic temperature (-196℃) makes SW-308LT excellent in LNG applications.
Arc stability is excellent, so spatter loss is low and slag covering is uniform with good removability.

Notes on Usage

① Both 100% CO_2 and mixed (Ar+20~25% CO_2) gas are useful.
② Welders for solid wire can be used but as wire is softer than solid wire, pay full attention to adjust feeding roller and do not tighten them excessively.
③ Use the wind-screen against wind.
④ Where possible, preferred storage conditions of opened packs are 60% RH maximum, 18 minimum.

Welding Position	Current	Shielding Gas
 1G 2F 3G 4G	DC +	CO_2/Ar+20~25% CO_2

FCAW

Typical Chemical Composition of All-Weld Metal (%) (Shielding Gas: 100% CO_2)

C	Si	Mn	P	S	Cr	Ni
0.034	0.59	1.52	0.023	0.013	19.2	10.1

Typical Mechanical Properties of All-Weld Metal (Shielding Gas: 100% CO_2)

YS MPa(lbs/in²)	TS MPa(lbs/in²)	EL (%)	Temp. ℃ (℉)	CVN-Impact Value J (ft · lbs)
402 (58,300)	550 (79,800)	49.8	-196 (-320)	35 (26)

Approval

ABS

I Packing(Including Ball Pac)

Dia. (mm)	1.2	Spool(kg)	15
(in)	.045	(lbs)	33

Sizes Available and Recommended Currents (Amp.)

Size mm (in)	1.2 (.045)
F & HF	180 ~ 220
V-up, OH	120 ~ 160

SW-309L Cored

TYPE : Rutile

AWS A5.22 / ASME SFA5.22 E309LT1-1/-4
JIS Z3323 TS309L-FB1
EN ISO 17633-A-T 23 12 L P M/C 2

Applications

SW-309L Cored is designed for the welding of dissimilar metals such as stainless steels and carbon steels or stainless steels and low alloy steels.

Characteristics on Usage

SW-309L Cored is a flux cored wire for all position welding to be used with CO_2 or Argon + CO_2 mixed shielding gases. This wire contains a high ferrite level in its austenitic structure thus providing better weldability together superior heat and corrosion resistance. As larger amounts of alloying elements are added, it becomes suitable for the welding of dissimilar joints where dilution from ferrite steel takes place.

Notes on Usage

① Use with 100% CO_2 or Ar + 20~25% CO_2 gas.

Welding Position	Current	Shielding Gas
 1G 2F 3G 4G	DC +	CO_2/Ar+20~25%CO_2

Typical Chemical Composition of All-Weld Metal (%) (Shielding Gas: 100% CO_2)

C	Si	Mn	P	S	Cr	Ni
0.03	0.65	1.30	0.025	0.010	23.0	12.3

Typical Mechanical Properties of All-Weld Metal (Shielding Gas: 100% CO_2)

TS MPa(lbs/in²)	EL (%)	Temp. ℃ (℉)	CVN-Impact Value J (ft · lbs)
590 (85,600)	40	-20 (-4)	50 (37)

Approval

KR, ABS, LR, BV, GL, NK, DNV, TÜV, CWB, CE, DB, CRS

Packing(Including Ball Pac)

Dia. (mm)	0.9	1.2	1.6	Spool(kg)	5	12.5	15
(in)	.035	.045	1/16	(lbs)	11	28	33

Sizes Available and Recommended Currents (Amp.)

Size mm (in)	0.9 (.035)	1.2 (.045)	1.6 (1/16)
F & HF	130~180	180~220	250~290
V-up,OH	100~140	120~160	-

SW-309LNS Cored

TYPE : Metal-Cored

AWS A5.9 / ASME SFA5.9 EC309L
JIS Z3323 TS309L-MA0
EN ISO 17633-A-T 23 12 L M M

Applications

Main uses are for thin plate stainless steels and for the welding of automotive mufflers in 22%Cr-12%Ni stainless steels.

Characteristics on Usage

SW-309LNS Cored is a metal type stainless steel flux cored wire for welding of 22%Cr-12%Ni steel, heat resistant cast steel and for the joining of chrome nickel clad steels to Cr-Mo steel or mild steel. This wire is designed for flat and horizontal fillet welding. Its weld metal contains ferrite in austenitic structure, it gives excellent weldability, good corrosion and heat resistance.

Notes on Usage

① Use with 100% Ar or Ar + 2~5% O_2 gas.

Welding Position	Current	Shielding Gas
 1G 2F	DC +	Ar/Ar+2~5%O_2

Typical Chemical Composition of All-Weld Metal (%) (Shielding Gas: 100% Ar)

C	Si	Mn	P	S	Cr	Ni
0.03	0.65	1.80	0.020	0.010	24.0	13.0

Typical Mechanical Properties of All-Weld Metal (Shielding Gas: 100% Ar)

TS MPa(lbs/in²)	EL (%)	Temp. ℃ (℉)	CVN-Impact Value J (ft · lbs)
590 (85,600)	45	-20 (-4)	60 (44)

Approval

I Packing(Including Ball Pac)

Dia. (mm)	1.2	1.6		Spool(kg)	5	12.5	15
(in)	.045	1/16		(lbs)	11	28	33

Sizes Available and Recommended Currents (Amp.)

Size mm(in)	1.2 (.045)
F & HF	170~270

FCAW

SW-309MoL Cored

TYPE : Rutile

AWS A5.22 / ASME SFA5.22 E309LMoT1-1/-4
JIS Z3323 TS309LMo-FB1
EN ISO 17633-A-T 23 12 2 L P M/C 2

Applications

Main uses are for the applications of resistance to heat and corrosion and for the joining of stainless steels to mild or low alloy steels.

Characteristics on Usage

SW-309MoL Cored is designed for the welding of 22%Cr-12%Ni-2.5%Mo stainless steels. This wire has excellent crack resistance combined with good arc characteristics for the use of downhand and vertical up.

Notes on Usage

① Use with 100%CO_2 or Ar + 20~25% CO_2 gas.

Welding Position	Current	Shielding Gas
 1G 2F 3G 4G	DC +	CO_2/Ar+20~25%CO_2

Typical Chemical Composition of All-Weld Metal (%) (Shielding Gas: 100% CO_2)

C	Si	Mn	P	S	Cr	Ni	Mo
0.03	0.70	1.20	0.025	0.010	22.5	12.5	2.5

Typical Mechanical Properties of All-Weld Metal (Shielding Gas: 100% CO_2)

TS MPa(lbs/in²)	EL (%)	Temp. ℃ (℉)	CVN-Impact Value J (ft · lbs)
690 (100,000)	32	-20 (-4)	40 (30)

Approval

CWB, DNV, GL, NK

Packing(Including Ball Pac)

Dia. (mm)	0.9	1.2	1.6	Spool(kg)	5	12.5	15
(in)	.035	.045	1/16	(lbs)	11	28	33

Sizes Available and Recommended Currents (Amp.)

Size mm (in)	0.9 (.035)	1.2 (.045)	1.6 (1/16)
F & HF	130~180	180~220	250~290
V-up,OH	100~140	120~160	-

SW-316L Cored

TYPE : Rutile

AWS A5.22/ASME SFA5.22 E316LT1-1/-4
JIS Z3323 TS316L-FB1
EN ISO 17633-A-T 19 12 3 L P M/C 2

Applications

SW-316L Cored is designed for the welding of low carbon 18%Cr-12%Ni-2% Mo stainless steels or for the welding of dissimilar joints of stainless steels.

Characteristics on Usage

SW-316L Cored is a flux cored wire for all position welding to be used with CO_2 or Argon + CO_2 mixed shielding gases.
Due to ferrite contents in the weld metals austenitic structure, it has excellent crack resistance.

Notes on Usage

① Use with 100% CO_2 or Ar + 20~25% CO_2 gas.

Welding Position	Current	Shielding Gas
 1G 2F 3G 4G	DC +	CO_2/Ar+20~25%CO_2

Typical Chemical Composition of All-Weld Metal (%) (Shielding Gas: 100% CO_2)

C	Si	Mn	P	S	Cr	Ni	Mo
0.03	0.70	1.20	0.025	0.010	18.0	12.0	2.50

Typical Mechanical Properties of All-Weld Metal (Shielding Gas: 100% CO_2)

TS MPa(lbs/in²)	EL (%)	Temp. ℃ (℉)	CVN-Impact Value J (ft · lbs)
590 (85,600)	40	-20 (-4)	50 (37)

Approval

KR, ABS, LR, BV, DNV, GL, TÜV , CWB, CE, DB, CCS

I Packing(Including Ball Pac)

Dia. (mm)	0.9	1.2	1.6	Spool(kg)	5	12.5	15
(in)	.035	.045	1/16	(lbs)	11	28	33

Sizes Available and Recommended Currents (Amp.)

Size mm (in)	0.9 (.035)	1.2 (.045)	1.6 (1/16)
F & HF	130~180	180~220	250~290
V-up,OH	100~140	120~160	-

SW-316LT

TYPE : Rutile

AWS A5.22 / ASME SFA5.22 E316LT1-1/-4
JIS Z3323 TS316L-FB1
EN ISO 17633-A-T 19 12 3 L P M/C 2

Applications

SW-316LT is designed for welding of extra-low carbon 18%Cr-12%Ni-2%Mo stainless steels for cryogenic applications.

Characteristics on Usage

SW-316LT is a titania type flux cored wire for all position welding with CO_2 & Argon+CO_2 mixed shielding gas. This wire is designed for cryogenic applications, 316L austenitic stainless steels.
SW-316LT is also available to order as a variant with a controlled composition and low ferrite content, designed for cryogenic service.
This is particularly relevant to attack by chloride solutions and sulphurous acid.

Notes on Usage

① Both 100% CO_2 and mixed (Ar+20~25% CO_2) gas are useful.
② Welders for solid wire can be used but as wire is softer than solid wire, pay full attention to adjust feeding roller and do not tighten them excessively.
③ Use the wind-screen against wind.
④ Where possible, preferred storage conditions of opened packs are 60% RH maximum, 18℃ minimum.

Welding Position	Current	Shielding Gas
 1G 2F 3G 4G	DC +	CO_2/Ar+20~25% CO_2

Typical Chemical Composition of All-Weld Metal (%) (Shielding Gas: 100% CO_2)

C	Si	Mn	P	S	Cr	Ni	Mo
0.024	0.71	1.72	0.022	0.012	18.2	12.4	2.1

Typical Mechanical Properties of All-Weld Metal (Shielding Gas: 100% CO_2)

TS MPa(lbs/in²)	EL (%)	Temp. ℃ (℉)	CVN-Impact Value J (ft · lbs)
540 (78,300)	44	-196 (-320)	35 (26)

Approval

I Packing(Including Ball Pac)

Dia. (mm)	1.2	Spool(kg)	15
(in)	.045	(lbs)	33

Sizes Available and Recommended Currents (Amp.)

Size mm (in)	1.2 (.045)
F & HF	180 ~ 220
V-up, OH	120 ~ 160

SW-317L Cored

TYPE : Rutile

AWS A5.22/ASME SFA5.22 E317LT1-1/-4
JIS Z3323 TS317L-FB1

Applications

SW-317L Cored is designed for the welding of low carbon 18%Cr-12%Ni-2% Mo and 19%Cr-13%Ni-3%Mo stainless steels.

Characteristics on Usage

SW-317L Cored is a flux cored wire for all position welding to be used with CO_2 or Argon + CO_2 mixed shielding gases.
Due to ferrite contents in the weld metals austenitic structure, it has excellent crack resistance.

Notes on Usage

① Use with 100% CO_2 or Ar + 20~25% CO_2 gas.

Welding Position	Current	Shielding Gas
 1G 2F 3G 4G	DC +	CO_2/Ar+20~25%CO_2

FCAW

Typical Chemical Composition of All-Weld Metal (%) (Shielding Gas: 100% CO_2)

C	Si	Mn	P	S	Cr	Ni	Mo
0.03	0.70	1.20	0.025	0.010	19.0	13.0	3.5

Typical Mechanical Properties of All-Weld Metal (Shielding Gas: 100% CO_2)

TS MPa(lbs/in²)	EL (%)	Temp. ℃ (℉)	CVN-Impact Value J (ft · lbs)
600 (87,000)	35	-20 (-4)	40 (30)

Approval

I Packing(Including Ball Pac)

Dia. (mm)	0.9	1.2	1.6	Spool(kg)	5	12.5	15
(in)	.035	.045	1/16	(lbs)	11	28	33

Sizes Available and Recommended Currents (Amp.)

Size mm (in)	0.9 (.035)	1.2 (.045)	1.6 (1/16)
F & HF	130~180	180~220	250~290
V-up,OH	100~140	120~160	-

SW-347 Cored

TYPE : Rutile

AWS A5.22/ASME SFA5.22 E347T1-1/-4
JIS Z3323 TS347-FB1
EN ISO 17633-A-T 19 9 Nb P M/C 2

Applications

Main uses are for the welding of stainless steel boilers and gas turbines.

Characteristics on Usage

SW-347 Cored is a titania type flux cored wire designed for welding of 347 and 321 type stainless steels.

Notes on Usage

① Use with 100% CO_2 or Ar + 20~25% CO_2 gas.

Welding Position	Current	Shielding Gas
 1G 2F 3G 4G	DC +	CO_2/Ar+20~25%CO_2

Typical Chemical Composition of All-Weld Metal (%) (Shielding Gas: 100% CO_2)

C	Si	Mn	P	S	Cr	Ni	Nb
0.04	0.80	1.20	0.025	0.010	19.5	10.0	0.40

Typical Mechanical Properties of All-Weld Metal (Shielding Gas: 100% CO_2)

TS MPa(lbs/in²)	EL (%)	Temp. ℃ (℉)	CVN-Impact Value J (ft · lbs)
610 (88,500)	45	-20 (-4)	60 (44)

Approval

I Packing(Including Ball Pac)

Dia. (mm)	1.2	1.6	Spool(kg)	5	12.5	15
(in)	.045	1/16	(lbs)	11	28	33

Sizes Available and Recommended Currents (Amp.)

Size mm (in)	1.2 (.045)	1.6 (1/16)
F & HF	180~220	250~290
V-up,OH	120~160	-

SW-410NiMo Cored

TYPE : Rutile

AWS A5.22 /ASME SFA5.22 E410NiMoT1-1/-4
JIS Z3323 TS410NiMo-FB1
EN ISO 17633-A-T 13 4 P M/C 2

Applications

All position welding of martensitic stainless steels, hardfacing of continuous casting rolls, valve seats, etc.

Characteristics on Usage

SW-410NiMo Cored is a flux cored wire for martensitic stainless steel like CA6NM. SW-410NiMo cored is a titania type flux cored wire for all position welding with CO_2 & Mixed gas. As deposition rate is higher than solid wire and MMA electrode, highly efficient welding can be performed.
Arc stability is excellent, so spatter loss is low and slag covering is uniform with good removability.

Notes on Usage

① Proper preheating (50~150˚C) (122~302˚F) and interpass temperature must be adopted in order to release hydrogen which may cause crack in weld metal.
② Both 100% CO_2 and mixed (Ar+20~25% CO_2) gas are useful.

Welding Position	Current	Shielding Gas
 1G 2F 3G 4G	DC +	CO_2/Ar+20~25%CO_2

Typical Chemical Composition of All-Weld Metal (%) (Shielding Gas: 100% CO_2)

C	Si	Mn	P	S	Cr	Ni	Mo
0.03	0.41	0.46	0.011	0.010	12.2	4.30	0.51

Typical Mechanical Properties of All-Weld Metal (Shielding Gas: 100% CO_2)

YS MPa(lbs/in²)	TS MPa(lbs/in²)	EL (%)	Temp. ℃ (˚F)	CVN-Impact Value J (ft · lbs)	Hardness (HRc)	PWHT
700 (102,000)	850 (123,000)	17	0 (32)	50 (37)	As weld:37 PWHT :27	600˚C× 1Hr,AC
710 (103,000)	890 (129,000)	20	0 (32)	50 (37)	As weld:37 PWHT :26	590˚C× 3Hr,FC

Approval

I Packing(Including Ball Pac)

Dia. (mm)	1.2	1.6	Spool(kg)	12.5	15
(in)	.045	1/16	(lbs)	28	33

Sizes Available and Recommended Currents (Amp.)

Size mm(in)	1.6 (1/16)
F&HF	200~350
V-up,OH	170~260

FCAW

SW-2209 Cored

TYPE : Rutile

AWS A5.22 /ASME SFA5.22 E2209T1-1/-4
JIS Z3323 TS2209-FB1
EN ISO 17633-A-T 22 9 3 N L M/C 2

Applications

SW-2209 Cored is an all positional flux cored wire for duplex stainless steels like 2205.

Characteristics on Usage

SW-2209 Cored is a titania type flux cored wire for all position welding with CO_2 & Mixed gas.
As deposition rate is higher than solid wire and MMA electrode highly efficient welding can be performed.

Notes on Usage

① Proper preheating (50~150˚C)(122~302˚F) and interpass temperature must be adopted in order to release hydrogen which may cause crack in weld metal.
② Both 100% CO_2 and mixed (Ar+20~25% CO_2) gas are useful.

Welding Position	Current	Shielding Gas
 1G 2F 3G 4G	DC +	CO_2/Ar+20~25%CO_2

Typical Chemical Composition of All-Weld Metal (%) (Shielding Gas: 100% CO_2)

C	Si	Mn	P	S	Cr	Ni	Mo	N
0.03	0.70	1.10	0.02	0.010	23.5	8.7	3.2	0.10

Typical Mechanical Properties of All-Weld Metal (Shielding Gas: 100% CO_2)

YS MPa(lbs/in²)	TS MPa(lbs/in²)	EL (%)	Temp. ℃ (˚F)	CVN-Impact Value J (ft · lbs)	PREN
680 (98,600)	820 (119,100)	27	-20 (-4) -50 (-58)	60 (44) 50 (37)	36

Pitting Resistance Equivalent (Shieding Gas : 100%CO_2)

PRE = Cr+3.3×Mo+16×N

Approval

BV, DNV

I Packing(Including Ball Pac)

Dia. (mm)	1.2	1.6	Spool(kg)	12.5	15
(in)	.045	1/16	(lbs)	28	33

Ferrite Contents of All Weld Metal (Shielding Gas: 100% CO_2)

	WRC-1992(FN)	Shaeffler Diagram(%)
As welded	53~55	58~59

Sizes Available and Recommended Currents (Amp.)

Size mm(in)	1.2 (.045)	1.6 (1/16)
F & HF	170~220	240~280
V-up,OH	110~160	-

Supercored 308L

TYPE : Rutile

AWS A5.22/ASME SFA5.22 E308LT0-1/-4
JIS Z3323 TS308L-FB0
EN ISO 17633-A-T 19 9 L R M/C 3

Applications

Supercored 308L is designed for use in petrochemical processing, textile industries and can be used for welding 18%Cr-8%Ni stainless steels.

Characteristics on Usage

Supercored 308L for welding stainless steels has a rapid solidifying slag which enables flat and horizontal position welding. It gives a stable arc and low spatter.

Notes on Usage

① Use with 100% CO_2 or Ar + 20~25% CO_2 gas.

Welding Position	Current	Shielding Gas
 1G 2F	DC +	CO_2/Ar+20~25%CO_2

Typical Chemical Composition of All-Weld Metal (%) (Shielding Gas: 100% CO_2)

C	Si	Mn	P	S	Cr	Ni
0.03	0.70	1.50	0.025	0.010	19.5	9.5

Typical Mechanical Properties of All-Weld Metal (Shielding Gas: 100% CO_2)

TS MPa(lbs/in²)	EL (%)	Temp. ℃ (℉)	CVN-Impact Value J (ft · lbs)
600 (87,000)	43	-20 (-4)	60 (44)

Approval

TÜV, CE, DB

I Packing(Including Ball Pac)

Dia. (mm)	0.9	1.2	1.6	Spool(kg)	5	12.5	15
(in)	.035	.045	1/16	(lbs)	11	28	33

Sizes Available and Recommended Currents (Amp.)

Size mm (in)	0.9 (.035)	1.2 (.045)	1.6 (1/16)
F&HF	120~180	150~220	240~300

Supercored 309L

TYPE : Rutile

AWS A5.22/ASME SFA5.22 E309LT0-1/-4
JIS Z3323 TS309L-FB0
EN ISO 17633-A-T 23 12 L R M/C 3

Applications

Supercored 309L is designed for the welding of dissimilar metals such as stainless steels and carbon steels or stainless steels and low alloy steels.

Characteristics on Usage

Supercored 309L which contains a high ferrite level in its austenitic structure has excellent heat and corrosion resistibility. It has a good stable arc and excellent slag removal properties.

Notes on Usage

① Use with 100% CO_2 or Ar + 20~25% CO_2 gas.

Welding Position	Current	Shielding Gas
 1G 2F	DC +	CO_2/Ar+20~25%CO_2

Typical Chemical Composition of All-Weld Metal (%) (Shielding Gas: 100% CO_2)

C	Si	Mn	P	S	Cr	Ni
0.03	0.70	1.50	0.025	0.010	23.5	12.5

Typical Mechanical Properties of All-Weld Metal (Shielding Gas: 100% CO_2)

TS MPa(lbs/in²)	EL (%)	Temp. ℃ (℉)	CVN-Impact Value J (ft · lbs)
600 (87,000)	35	-20 (-4)	50 (37)

Approval

TÜV, CE, DB, BV, DNV, GL

I Packing(Including Ball Pac)

Dia. (mm)	0.9	1.2	1.6	Spool(kg)	5	12.5	15
(in)	.035	.045	1/16	(lbs)	11	28	33

Sizes Available and Recommended Currents (Amp.)

Size mm (in)	0.9 (.035)	1.2 (.045)	1.6 (1/16)
F & HF	120~180	150~220	240~300

Supercored 309MoL

TYPE : Rutile

AWS A5.22/ASME SFA5.22 E309LMoT0-1/-4
JIS Z3323 TS309LMo-FB0
EN ISO 17633-A-T 23 12 2 L R M/C 3

Applications

Supercored 309MoL is designed for applications of resistance to corrosion and for the joining of stainless to mild or low alloy steels.

Characteristics on Usage

Supercored 309MoL which contains a high ferrite level in austenitic has excellent heat, corrosion and crack resistibility. It has a good stable arc and excellent slag removal properties.

Notes on Usage

① Use with 100% CO_2 or Ar + 20~25% CO_2 gas.

Welding Position	Current	Shielding Gas
 1G 2F	DC +	CO_2\Ar+20~25%CO_2

Typical Chemical Composition of All-Weld Metal (%) (Shielding Gas: 100% CO_2)

C	Si	Mn	P	S	Cr	Ni	Mo
0.03	0.60	1.30	0.025	0.010	23.0	12.5	2.5

Typical Mechanical Properties of All-Weld Metal (Shielding Gas: 100% CO_2)

TS MPa(lbs/in²)	EL (%)	Temp. ℃ (℉)	CVN-Impact Value J (ft · lbs)
600 (87,000)	35	-20 (-4)	50 (37)

Approval

BV, DNV, GL

I Packing(Including Ball Pac)

Dia. (mm)	0.9	1.2	1.6	Spool(kg)	5	12.5	15
(in)	.035	.045	1/16	(lbs)	11	28	33

Sizes Available and Recommended Currents (Amp.)

Size mm (in)	0.9 (.035)	1.2 (.045)	1.6 (1/16)
F&HF	120~180	150~220	240~300

Supercored 316L

TYPE : Rutile

AWS A5.22/ASME SFA5.22 E316LT0-1/-4
JIS Z3323 TS316L-FB0
EN ISO 17633-A-T 19 12 3 L R M/C 3

Applications

Supercored 316L is designed for the welding of low carbon 18%Cr-12%Ni-2%Mo stainless steels or for the welding of dissimilar joints of stainless steels.

Characteristics on Usage

Supercored 316L gives good arc stability and easy slag removal due to its low carbon content. It has excellent resistance against granular corrosion.

Notes on Usage

① Use with 100% CO_2 or Ar + 20~25%CO_2 gas.

Welding Position	Current	Shielding Gas
 1G 2F	DC +	CO_2/Ar+20~25%CO_2

Typical Chemical Composition of All-Weld Metal (%) (Shielding Gas: 100% CO_2)

C	Si	Mn	P	S	Cr	Ni	Mo
0.03	0.70	1.40	0.025	0.010	18.0	12.0	2.5

Typical Mechanical Properties of All-Weld Metal (Shielding Gas: 100% CO_2)

TS MPa(lbs/in²)	EL (%)	Temp. ℃ (℉)	CVN-Impact Value J (ft · lbs)
590 (85,600)	40	-20 (-4)	50 (37)

Approval

TÜV, CE, DB, BV, DNV, GL

I Packing(Including Ball Pac)

Dia. (mm)	0.9	1.2	1.6	Spool(kg)	5	12.5	15
(in)	.035	.045	1/16	(lbs)	11	28	33

Sizes Available and Recommended Currents (Amp.)

Size mm (in)	0.9 (.035)	1.2 (.045)	1.6 (1/16)
F & HF	120~180	150~220	240~300

SF-409Ti

TYPE : Metal-Cored

AWS A5.9/ASME SFA5.9 EC409
JIS Z3323 TS409-MAO

Applications

SF-409Ti is a metal type flux cored wire designed for the horizontal fillet welding of AISI 409 ferrite stainless steels.

Characteristics on Usage

This wire has been specifically formulated for use in the welding of automotive exhaust systems and mufflers.
It benefits from being spatter free and without slag formation when used with argon or argon oxygen mixed shielding gas. It also has an excellent deposition rate and corrosion resistance. High speed welding can be carried out with this product on thin plate material without burning through.
SF-409Ti can be used in the welding of similar chemical composition alloys.

Notes on Usage

①Use with Ar or Ar + 2~5%O_2 gas.

Welding Position	Current	Shielding Gas
 1G 2F	DC +	Ar\Ar+2~5%O_2

Typical Chemical Composition of All-Weld Metal (%) (Shielding Gas: 100% Ar)

C	Si	Mn	P	S	Cr	Ti
0.03	0.50	0.55	0.012	0.010	12.5	1.0

Typical Mechanical Properties of All-Weld Metal (Shielding Gas: 100% Ar)

TS MPa(lbs/in²)	EL (%)
500 (72,600)	20

Approval

I Packing(Including Ball Pac)

Dia. (mm)	1.2		Spool(kg)	12.5	15
(in)	.045		(lbs)	28	33

Sizes Available and Recommended Currents (Amp.)

Size mm(in)	1.2 (.045)
F&HF	150~250

FCAW

SF-430

TYPE : Metal-Cored

AWS A5.9 /ASME SFA5.9 EC430
JIS Z3323 TS430-MAO

Applications

SF-430 is a metal cored wire for horizontal, fillet and flat position welding of 409 and 430 type stainless steels as found in ferrite stainless steels automotive mufflers.

Characteristics on Usage

This wire gives excellent bead appearance and provides the operator with a soft stable arc and very low spatter levels thus giving enhanced cosmetic appearance.

Notes on Usage

① Use with Ar or Ar + 2~5%O_2 gas.

Welding Position	Current	Shielding Gas
 1G 2F	DC +	Ar/Ar+2~5%O_2

Typical Chemical Composition of All-Weld Metal (%) (Shielding Gas: 100% Ar)

C	Si	Mn	P	S	Cr	Ti
0.03	0.30	0.50	0.005	0.010	16.5	0.45

Typical Mechanical Properties of All-Weld Metal (Shielding Gas: 100% Ar)

TS MPa(lbs/in²)	EL (%)	Heat Treatment
500 (72,600)	40	770˚C(1418℉)×4hr FC to 600˚C(1112℉) AC to RT

Approval

I Packing(Including Ball Pac)

Dia. (mm)	1.2		Spool(kg)	12.5	15
(in)	.045		(lbs)	28	33

Sizes Available and Recommended Currents (Amp.)

Size mm(in)	1.2 (.045)
F & HF	150~250

SF-430Nb

TYPE : Metal-Cored

JIS Z3323 TS430Nb-MAO
EN 12072 G Z 17 L Nb

Applications

SF-430Nb is a metal cored wire for horizontal, fillet and flat position welding of 409 and 430 type stainless steel as found in ferrite stainless steel automotive mufflers.

Characteristics on Usage

This wire gives excellent bead appearance and provides the operator with a soft stable arc and very low spatter levels thus giving enhanced cosmetic appearance.

Notes on Usage

① Use with 100%Ar or Ar+2~5%O_2 gas.

Welding Position	Current	Shielding Gas
 1G 2F	DC +	Ar/Ar+2~5%O_2

Typical Chemical Composition of All-Weld Metal (%) (Shielding Gas: Ar+2%O_2)

C	Si	Mn	P	S	Cr	Nb	Ti
0.03	0.40	0.17	0.010	0.010	16.5	0.50	0.40

Typical Mechanical Properties of All-Weld Metal (Shielding Gas: Ar+2%O_2)

TS MPa(lbs/in^2)	EL (%)
520 (75,400)	24

Approval

I Packing(Including Ball Pac)

Dia. (mm)	1.2		Spool(kg)	12.5	15	20
(in)	.045		(lbs)	28	33	44

Sizes Available and Recommended Currents (Amp.)

Size mm(in)	1.2 (.045)
F&HF	150~250

FCAW

SF-436

TYPE : Metal-Cored

Applications

SF-436 is a metal cored wire for horizontal, fillet and flat position welding of 409,430 and 436 type stainless steels as found in ferrite stainless steels automotive mufflers.

Characteristics on Usage

This wire gives excellent bead appearance and provides the operator with a soft stable arc and very
low spatter levels thus giving enhanced cosmetic appearance.

Notes on Usage

① Use with Ar or Ar + 2~5% O_2 gas.

Welding Position	Current	Shielding Gas
 1G 2F 3G 4G	DC +	Ar/Ar+2~5%O_2

Typical Chemical Composition of All-Weld Metal (%) (Shielding Gas: 100% Ar)

C	Si	Mn	P	S	Cr	Mo	Ti
0.03	0.60	0.40	0.008	0.010	17.5	1.0	0.40

Typical Mechanical Properties of All-Weld Metal (Shielding Gas: 100% Ar)

TS MPa(lbs/in²)	EL (%)	Heat Treatment
500 (72,600)	35	770° C×4hr FC to 600° C AC to RT

Approval

I Packing(Including Ball Pac)

Dia. (mm)	1.2		Spool(kg)	12.5	15
(in)	.045		(lbs)	28	33

Sizes Available and Recommended Currents (Amp.)

Size mm(in)	1.2 (.045)
F&HF	150~250

SC-439Ti Cored

TYPE : Metal-Cored

Applications

SC-439Ti Cored is a metal cored wire designed for flat and horizontal fillet welding of AISI 439 ferrite stainless steels.

Characteristics on Usage

This wire has specifically formulated for use in the welding of automotive exhaust systems and mufflers. It benefits from being spatter free and without slag formation when used in conjunction with argon or argon oxygen mixed shielding gas. It also has an excellent deposition rate and corrosion resistance.
High speed welding can be carried out with this product on thin plate material without burning through. SC-439Ti Cored can used in the welding of similar chemical composition alloys.

Notes on Usage

① Use with Ar or Ar + 2~5%O_2 gas.

Welding Position	Current	Shielding Gas
 1G 2F	DC +	Ar/Ar+2~5%O_2

Typical Chemical Composition of All-Weld Metal (%) (Shielding Gas: 100% Ar)

C	Si	Mn	P	S	Cr	Ti
0.03	0.30	0.60	0.005	0.010	18.5	0.75

Typical Mechanical Properties of All-Weld Metal (Shielding Gas: 100% Ar)

TS MPa(lbs/in^2)	EL (%)	Heat Treatment
500 (72,600)	40	770˚C×4hr FC to 600˚C AC to RT

Approval

I Packing(Including Ball Pac)

Dia. (mm)	1.2		Spool(kg)	12.5	15
(in)	.045		(lbs)	28	33

Sizes Available and Recommended Currents (Amp.)

Size mm(in)	1.2 (.045)
F & HF	150~250

FCAW

SC-42H

Applications

SC-42H is welding for the wearing part between metals such as machines, construction, building, crane wheel, shaft, etc.

Characteristics on Usage

SC-42H is a flux cored wire designed for hardfacing application with 100% CO_2 shielding gas.
It is highly recommendable to use on wear and impact between metals. The pure hardness of welded metal is HRc41~44.

Notes on Usage

① Preheat at 150℃(302℉) and more than that in general.
② Use with 100% CO_2 shielding gas.

Welding Position	Current	Shielding Gas
 1G	DC+	CO_2

Typical Chemical Composition of All-Weld Metal (%) (Shielding Gas: 100% CO_2)

C	Si	Mn	Cr	Mo	V	Nb	Co
0.10	0.50	1.60	4.95	2.60	0.34	0.34	1.05

Typical Mechanical Properties of All-Weld Metal

Preheat temp.℃(℉)	Postheat	Heat Treatment	Hardness(HRc)
150 (302)	-	-	42~44

Approval

I Packing

Dia. (mm)	1.6	Spool(kg)	15
(in)	1/16	(lbs)	33

Sizes Available and Recommended Currents (Amp.)

Size mm (in)	1.6(1/16)
F	300~380

SC-250H

JIS YF2A-C-250

Applications

For intermetallic abrasion, hardfacing of roller, gear, etc, welding between weared metals.

Characteristics on Usage

SC-250H is a flux cored wire designed for hardfacing application with 100% CO_2 shielding gas.
It is highly recommendable to use on wear plate and weld metal's hardness should be over Hv 250

Notes on Usage

① Preheat at 150℃(302℉) and more than that in general.
② Use with 100% CO_2 shielding gas.

Welding Position	Current	Shielding Gas
 1G	DC +	CO_2

Typical Chemical Composition of All-Weld Metal (%)

C	Si	Mn	Cr
0.06	0.5	1.6	1.2

Typical Mechanical Properties of All-Weld Metal (Shielding Gas: 100% Ar)

Preheat temp.℃ (℉)	Hardness	
	HRc	Hv
150 (302)	25~30	260~300

Approval

I Packing(Including Ball Pac)

Dia. (mm)	1.2	1.6	Spool(kg)	15
(in)	.045	1/16	(lbs)	33

Sizes Available and Recommended Currents (Amp.)

Size mm(in)	1.2 (.045)	1.6 (1/16)
F	250~350	300~380

SC-350H

JIS YF2A-C-350

Applications

For intermetallic abrasion, hardfacing of roller, gear, etc, welding between weared metals.

Characteristics on Usage

SC-350H is a flux cored wire designed for hardfacing application with 100% CO_2 shielding gas.
It is highly recommendable to use on wear plate and weld metal's hardness should be over Hv 350

Notes on Usage

① Preheat at 150℃(302℉) and more than that in general.
② Use with 100% CO_2 shielding gas.

Welding Position	Current	Shielding Gas
 1G	DC +	CO_2

Typical Chemical Composition of All-Weld Metal (%)

C	Si	Mn	Cr	Mo
0.1	0.6	1.6	1.2	0.3

Typical Mechanical Properties of All-Weld Metal (Shielding Gas: 100% Ar)

Preheat temp.℃ (℉)	Hardness	
	HRc	Hv
150 (302)	35~40	350~400

Approval

I Packing(Including Ball Pac)

Dia. (mm)	1.2	1.6	Spool(kg)	15
(in)	.045	1/16	(lbs)	33

Sizes Available and Recommended Currents (Amp.)

Size mm(in)	1.2 (.045)	1.6 (1/16)
F	250~350	300~380

SC-450H

JIS YF2A-C-450

Applications

For intermetallic abrasion, hardfacing of roller, gear, etc, welding between weared metals.

Characteristics on Usage

SC-450H is a flux cored wire designed for hardfacing application with 100% CO_2 shielding gas.
It is highly recommendable to use on wear plate and weld metal's hardness should be over Hv 450

Notes on Usage

① Preheat at 150℃(302℉) and more than that in general.
② Use with 100% CO_2 shielding gas.

Welding Position	Current	Shielding Gas
 1G	DC +	CO_2

Typical Chemical Composition of All-Weld Metal (%)

C	Si	Mn	Cr	Mo
0.2	0.7	1.5	1.8	0.6

Typical Mechanical Properties of All-Weld Metal (Shielding Gas: 100% Ar)

Preheat temp.℃ (℉)	Hardness	
	HRc	Hv
150 (302)	45~49	450~500

Approval

Packing(Including Ball Pac)

Dia. (mm)	1.2	1.4	1.6	Spool(kg)	15
(in)	.045	.052	1/16	(lbs)	33

Sizes Available and Recommended Currents (Amp.)

Size mm (in)	1.2 (.045)	1.4 (.052)	1.6 (1/16)
F	250~300	280~340	300~380

SC-600H

JIS YF3B-C-600

Applications

For intermetallic abrasion, hardfacing of roller, gear, etc, welding between weared metals.

Characteristics on Usage

SC-600H is a flux cored wire designed for hardfacing application with 100% CO_2 shielding gas.
It is highly recommendable to use on wear plate and weld metal's hardness should be over Hv 600

Notes on Usage

① Preheat at 150℃(302℉) and more than that in general.
② Use with 100% CO_2 shielding gas.

Welding Position	Current	Shielding Gas
 1G	DC+	CO_2

Typical Chemical Composition of All-Weld Metal (%) (Shielding Gas: 100% CO_2)

C	Si	Mn	Cr	Mo
0.37	0.5	0.75	4.1	0.58

Typical Mechanical Properties of All-Weld Metal

Preheat temp.℃ (℉)	Hardness HRc	Hardness Hv
150 (302)	55~60	620~660

Approval

I Packing

Dia. (mm)	1.2	1.4	1.6	Spool(kg)	15
(in)	.045	.052	1/16	(lbs)	33

Sizes Available and Recommended Currents (Amp.)

Size mm (in)	1.2(.045)	1.4(.052)	1.6(1/16)
F	250~300	280~340	300~380

SC-700H

JIS YF3B-C-700

Applications

For intermetallic abrasion, hardfacing of roller, gear, etc, welding between weared metals.

Characteristics on Usage

SC-700H is a flux cored wire designed for hardfacing application with 100% CO_2 shielding gas.
It is highly recommendable to use on wear plate and weld metal's hardness should be over Hv 700

Notes on Usage

① Preheat at 150℃(302℉) and more than that in general.
② Use with 100% CO_2 shielding gas.

Welding Position(All-Position)	Current	Shielding Gas
 1G	DC+	CO_2

Typical Chemical Composition of All-Weld Metal (%) (Shielding Gas: 100% CO_2)

C	Si	Mn	Cr	W
0.7	0.6	1.3	5.2	0.4

Typical Mechanical Properties of All-Weld Metal

Preheat temp.℃ (℉)	Hardness	
	HRc	Hv
150 (302)	60~62	700~720

Approval

I Packing

Dia. (mm)	1.2	1.4	1.6	Spool(kg)	15
(in)	.045	.052	1/16	(lbs)	33

Sizes Available and Recommended Currents (Amp.)

Size mm (in)	1.2(.045)	1.4(.052)	1.6(1/16)
F	250~300	280~340	300~380

FCAW

Supershield AP-O

Description & Applications

It is suitable for the build up on the part which has high impact and weight or joining build up. (Crusher Rolls & Components : High-Mn/Cr type)

Welding Process	Current Type	Welding Position
Open Arc	DC +	 1G

Typical Chemical Composition of All-Weld Metal (%)

C	Si	Mn	Cr
0.4	0.5	16.5	13.0

Hardness

HRc
18~22
WH40~50

Packaging Standard

Dia.(mm)	1.6/2.4/2.8
Coil(kg)	25
Pailpack(kg)	150, 250

Supershield 16Mn-O

Description & Applications

It is suitable for the build up depositiong Mn steel, the saw of crusher, roller, the train rail. (Crusher Hammer, Liners : High-Mn type)

Welding Process	Current Type	Welding Position
Open Arc	DC +	 1G

Typical Chemical Composition of All-Weld Metal (%)

C	Si	Mn	Cr
0.6	0.5	16.5	3.0

Hardness

HRc
18~22
WH40~50

Packaging Standard

Dia.(mm)	2.4/2.8
Coil(kg)	25
Pailpack(kg)	150, 250

Supershield 307-O

Description & Applications

It has good work hardening and anti rusty as Austenite. It can be used for roller and guide. (Buffer layer, Crane & Mine Car Wheels)

Welding Process	Current Type	Welding Position
Open Arc	DC +	 1G

Typical Chemical Composition of All-Weld Metal (%)

C	Si	Mn	Ni	Cr	Mo
0.10	0.6	6.0	8.5	19.0	1.0

Hardness

HRc
15~20
WH40~50

Packaging Standard

Dia.(mm)	2.8
Coil(kg)	25
Pailpack(kg)	150, 250

Supershield 309L-O

Description & Applications

Cr, Ni Alloy, diluting base steels to obtain deposited metal of 304 element. (Welding of dissimilar metals, Cladding : High-Cr/Ni STS type)

Welding Process	Current Type	Welding Position
Open Arc	DC +	 1G

Typical Chemical Composition of All-Weld Metal (%)

C	Si	Mn	Ni	Cr
0.03	0.5	1.4	12.5	23.0

Hardness

HRc
-

Packaging Standard

Dia.(mm)	2.8
Coil(kg)	25
Pailpack(kg)	150, 250

SC-BU Cored

Description & Applications

Build up as low alloy steels (Build-Up : Low Alloy type).

Welding Process	Current Type	Welding Position
Open Arc	DC +	 1G

Typical Chemical Composition of All-Weld Metal (%)

C	Si	Mn	Cr
0.12	0.8	2.7	1.0

Hardness

HRc
25~35

Packaging Standard

Dia.(mm)	2.4/2.8
Coil(kg)	25
Pailpack(kg)	150, 250

Supershield 430-O

Description & Applications

Good weldability(Non-Gas) and PWHT is not required.
(Steel Mill Rolls, Casting Rolls)

Welding Process	Current Type	Welding Position
Open Arc	DC +	 1G

Typical Chemical Composition of All-Weld Metal (%)

C	Si	Mn	Cr
0.06	0.7	0.9	17.0

Hardness

HRc
-

Packaging Standard

Dia.(mm)	2.4/2.8
Coil(kg)	25
Pailpack(kg)	150, 250

Supershield 410NiMo-O

Description & Applications

Good weldability(Non-Gas) and PWHT is not required.
(Steel Mill Rolls, Casting Rolls)

Welding Process	Current Type	Welding Position
Open Arc	DC +	 1G

Typical Chemical Composition of All-Weld Metal (%)

C	Si	Mn	Ni	Cr	Mo	Nb
0.06	0.7	0.9	4.2	13.0	0.5	0.2

Hardness

HRc
34~38

Packaging Standard

Dia.(mm)	2.4/2.8
Coil(kg)	25
Pailpack(kg)	150, 250

SC-410NiMoS

Description & Applications

Good at defect-resistance and weldability etc. by shielding weld metal with flux from defects.
(Steel Mill Rolls, Casting Rolls)

Welding Process	Current Type	Welding Position
SAW Type (with S-717, S-400HF Flux)	DC +	 1G

Typical Chemical Composition of All-Weld Metal (%)

C	Si	Mn	Ni	Cr	Mo
0.06	0.7	1.8	4.5	13.0	0.5

Hardness

HRc
34~38

Packaging Standard

Dia.(mm)	3.2
Coil(kg)	25
Pailpack(kg)	150, 250

SC-414S

Description & Applications

Good at defect-resistance and weldability etc. by shielding weld metal with flux from defects. (Steel Mill Rolls, Casting Rolls)

Welding Process	Current Type	Welding Position
SAW Type (with S-717, S-400HF Flux)	DC +	 1G

Typical Chemical Composition of All-Weld Metal (%)

C	Si	Mn	Ni	Cr	Mo	Nb	V
0.15	0.5	1.5	2.8	13.8	1.2	0.2	0.2

Hardness

HRc
40~45

Packaging Standard

Dia.(mm)	2.4/3.2
Coil(kg)	25
Pailpack(kg)	150, 250

SC-420S

Description & Applications

Good at defect-resistance and weldability etc. by shielding weld metal with flux from defects. (Steel Mill Rolls, Casting Rolls)

Welding Process	Current Type	Welding Position
SAW Type (with S-717, S-400HF Flux)	DC +	 1G

Typical Chemical Composition of All-Weld Metal (%)

C	Si	Mn	Ni	Cr	Mo	Nb	W	V
0.3	0.7	1.8	0.5	12.2	1.6	0.15	1.4	0.2

Hardness

HRc
48~52

Packaging Standard

Dia.(mm)	3.2
Coil(kg)	25
Pailpack(kg)	150, 250

SC-420SG

Description & Applications

Good at defect-resistance and weldability etc. by shielding weld metal with flux from defects. (Steel Mill Rolls, Casting Rolls)

Welding Process	Current Type	Welding Position
SAW Type (with S-717, S-400HF Flux)	DC +	 1G

Typical Chemical Composition of All-Weld Metal (%)

C	Si	Mn	Ni	Cr	Nb
0.23	0.5	1.5	0.2	13.0	0.2

Hardness

HRc
48~52

Packaging Standard

Dia.(mm)	3.2
Coil(kg)	25
Pailpack(kg)	150, 250

SC-423S

Description & Applications

Good at defect-resistance and weldability etc. by shielding weld metal with flux from defects. (Steel mill Roll, Casting Roll)

Welding Process	Current Type	Welding Position
SAW Type (with S-717, S-400HF Flux)	DC +	 1G

Typical Chemical Composition of All-Weld Metal (%)

C	Si	Mn	Ni	Cr	Mo	Nb	V
0.06	0.40	1.40	2.4	17.0	1.10	0.20	0.30

Hardness

HRc
-

Packaging Standard

Dia.(mm)	3.2
Coil(kg)	25
Pailpack(kg)	150, 250

SC-430S

Description & Applications

Good at defect-resistance and weldability etc. by shielding weld metal with flux from defects.
(Steel mill Roll, Casting Roll)

Welding Process	Current Type	Welding Position
SAW Type (with S-717, S-400HF Flux)	DC +	 1G

Typical Chemical Composition of All-Weld Metal (%)

C	Si	Mn	Cr
0.06	0.80	1.40	17.0

Hardness

HRc
48~52

Packaging Standard

Dia.(mm)	3.2
Coil(kg)	25
Pailpack(kg)	150, 250

SC-30S

Description & Applications

For Low/Middle alloy type metal-metal wear-resistance
(Crane Wheel, Rod Wheel, Tractor Roller etc.)

Welding Process	Current Type	Welding Position
SAW Type (with S-717 Flux)	DC +	 1G

Typical Chemical Composition of All-Weld Metal (%)

C	Si	Mn	Cr	Mo
0.13	0.4	1.8	2.0	0.35

Hardness

HRc
28~32

Packaging Standard

Dia.(mm)	3.2
Coil(kg)	25
Pailpack(kg)	150, 250

SC-45S

Description & Applications

Build up or Hardfacing on the part which does not have much alloy elements.
(Crane & Mine Car Wheels)

Welding Process	Current Type	Welding Position
SAW Type (with S-717, S-400HF Flux)	DC +	 1G

Typical Chemical Composition of All-Weld Metal (%)

C	Si	Mn	Cr	Mo
0.2	0.4	1.8	3.2	0.5

Hardness

HRc
40~45

Packaging Standard

Dia.(mm)	3.2
Coil(kg)	25
Pailpack(kg)	150, 250

SC-48S

Description & Applications

For Middle alloy type metal-metal wear-resistance.
(Crane Wheel, Rod Wheel, Tractor Roller etc.)

Welding Process	Current Type	Welding Position
SAW Type (with S-717, S-400HF Flux)	DC +	 1G

Typical Chemical Composition of All-Weld Metal (%)

C	Si	Mn	Cr	Mo	V
0.25	0.8	2.5	6.0	0.6	0.3

Hardness

HRc
46~50

Packaging Standard

Dia.(mm)	3.2
Coil(kg)	25
Pailpack(kg)	150, 250

SC-55S

Description & Applications

For the hardfacing of Steel mill table roll as Martensite alloy
(Steel Mill Rolls - required to get high hardness and abrasion resistance)

Welding Process	Current Type	Welding Position
SAW Type (with S-717, S-400HF Flux)	DC +	 1G

Typical Chemical Composition of All-Weld Metal (%)

C	Si	Mn	Cr	Mo	W
0.30	0.5	1.6	6.1	1.5	1.5

Hardness

HRc
50~55

Packaging Standard

Dia.(mm)	3.2
Coil(kg)	25
Pailpack(kg)	150, 250

SC-A4S

AWS A5.23 F8P2 ECA4-A4

Description & Applications

For High strength TMCP or Creep-resistance steels.
(Creep-resistance steels, Fine-grained steels)

Welding Process	Current Type	Welding Position
SAW Type (with S-717 Flux)	DC +	 1G

Typical Chemical Composition of All-Weld Metal (%)

C	Si	Mn	Mo
0.10	0.4	1.4	0.5

Typical Mechanical Properties (PWHT)

Y.S MPalbs/in²)	T.S MPalbs/in²)	EL. (%)	Temp. ℃ (℉)	CVN-Impact Value J(ft.lbs)	Heat Treatment
610 (88,000)	676 (97,000)	24.4	-29 (-20)	70 (52)	600° C(1112° F) × 1hr FC

Packaging Standard

Dia.(mm)	2.4
Coil(kg)	25
Pailpack(kg)	150, 250

Supershield CrC

Description & Applications

To use on severe abrasive part such as Gyratory Cone & Mantles, Chemical Pipe & Valve. (Pulverizer Rolls & Tables : Cr-Carbide type)

Welding Process	Current Type	Welding Position
Open Arc	DC +	 1G

Typical Chemical Composition of All-Weld Metal (%)

Dia.(mm)	C	Si	Mn	Cr
1.2/1.6	4.8	0.4	1.6	27.0
2.4/2.8	5.5	0.7	1.6	30.0

Hardness

Dia.(mm)	(HRc)
1.2/1.6	54~58
2.4/2.8	58~62

Packaging Standard

Dia.(mm)	1.2/1.6	2.4/2.8
Type(kg)	15kg Spool	25kg Coil
Pailpack(kg)	-	150, 250

Supershield CrCW

Description & Applications

Use on wear plate (Raw material transfer and storage tank : Cr-Carbide type)

Welding Process	Current Type	Welding Position
Open Arc	DC +	 1G

Typical Chemical Composition of All-Weld Metal (%)

Dia.(mm)	C	Si	Mn	Cr
1.2/1.6	5.2	0.8	0.8	25.0
2.4/2.8	5.8	1.8	1.8	25.0

Hardness

Dia.(mm)	(HRc)
1.2/1.6	54~58
2.4/2.8	60~64

Packaging Standard

Dia.(mm)	1.2/1.6	2.4/2.8
Type(kg)	15kg Spool	25kg Coil
Pailpack(kg)	-	150, 250

Supershield CrCH

Description & Applications

Use on wear plate(Crush rolls, wear plate, screw augers,coal pulverizer rolls, earth engaging tools, slurry pipe and elbows). Single layer deposit make sure of high hardness(HRC=59)

Welding Process	Current Type	Welding Position
Open Arc	DC +	 1G

Typical Chemical Composition of All-Weld Metal (%)

Dia.(mm)	C	Si	Mn	Cr	Others
2.8	5.8	1.6	0.2	29.0	+

Hardness

Dia.(mm)	(HRc)
2.8	60~64
Single layer	59
2nd layer	62

Packaging Standard

Dia.(mm)	2.8
Type(kg)	25kg Coil
Pailpack(kg)	150, 250

Supershield CrCNb

Description & Applications

To use on severe abrasive part such as conveyor screws, wear plates, bucket teeth on bucket wheel excavators.(Cr-carbide+Nb-carbide)

Welding Process	Current Type	Welding Position
Open Arc	DC +	 1G

Typical Chemical Composition of All-Weld Metal (%)

Dia.(mm)	C	Si	Mn	Cr	Nb	Others
2.8	5.4	1.0	0.2	24.0	7.0	+

Hardness

Dia.(mm)	(HRc)
2.8	64~66

Packaging Standard

Dia.(mm)	1.6/2.8
Type(kg)	25kg Coil
Pailpack(kg)	150, 250

Supershield CrCB

Description & Applications

Supershield CrCB is an open arc wire. It is Chromium Carbide base added boron for hardenability. Used for hardfacing components subject to extreme abrasion and heavy impact.
(Cement roll mill, Gyratory Crusher, Crusher & Coke Hammers etc.)

Welding Process	Current Type	Welding Position
Open Arc	DC +	 1G

Typical Chemical Composition of All-Weld Metal (%)

Dia.(mm)	C	Si	Mn	Cr	Ti	B
3.2	4.50	0.60	1.45	26.5	0.13	0.30

Hardness

Dia.(mm)	(HRc)
3.2	60~64

Packaging Standard

Dia.(mm)	3.2
Type(kg)	25kg Coil
Pailpack(kg)	150, 250