

Flux Cored Wire



Welding Notes

Unique characteristics:

1. Stainless steel flux cored wire has deposition rate of 2~4 times of covered electrode.
The deposition efficiency is about 90%.
2. Easier adjustment of welding parameters than solid wire.
3. Minimal welding spatter produced, easy slag removal and good bead appearance.
4. High arc stability, easy to pass RT examination.

1. Shielding Gas

CO₂ or Ar + 20~25% CO₂ mixed gas, depending on wire classification.

Proper flow rate: 20~25 L/min.

2. Wire Extension

- a. Wire diameter 0.9 mm: 15~20 mm

Wire diameter 1.2 & 1.6 mm: 15~25 mm

- b. Improper extension will cause improper shielding and result blow hole, incomplete fusion and other welding defects.
- c. For self shield type, please refer to individual product features.

3. Wind protection

Proper shelter for outdoor welding and proper ventilation & air flow exchange for indoor welding.

4. Welding Fumes

Users must observe safety regulations and warning signs while follow proper precautionary procedures.

5. Welding Wire Storage Requirements

Good ventilation storage area for unopened welding wire, plastic bag covered with desiccant for opened but unfinished welding wire.

6. Welding parameter and Deposition rate (reference data)

wire dia. (mm)	welding current (A)	welding voltage (V)	deposition rate (Kg/hr)	extension (mm)
1.2	150	24~26	2.3	15~25
	180	25~27	3.0	
	200	28~30	3.6	
	220	29~32	4.2	
	250	30~34	4.8	
1.6	200	28~30	3.0	
	220	29~31	3.6	
	240	29~31	3.9	
	280	31~33	5.0	
	300	31~34	5.5	

Product Features:

- Rutile type gas shield flux cored arc welding wire, austenite structure weld metal.
- Smooth arc, low spatter loss and easy slag removal.
- Low carbon content in weld metal to get good crack and inter-granular corrosion resistance.
- Good bead appearance.
- Easy to get Smooth fillet weld size.

Applications:

- Suitable for welding of stainless steels such as SUS301, 302, 304, 304L and 305.

Typical chemical composition of all-weld metal (wt%)

C	Si	Mn	Ni	Cr
0.03	0.60	1.59	9.87	19.18

Typical mechanical properties of all-weld metal

Tensile Strength N/mm ²	Elongation %
573	39.3

Size (mm) & recommended welding parameters

Diameter		1.2mm	1.6mm
Polarity		DC+	DC+
Ampere (A)	Flat/ Horizontal position	150~250	200~300
	Vertical / overhead position	100~140	—
Shielding Gas		CO ₂	CO ₂

© Note: 1.Use general CO₂ welding machine with proper feed roller pressure.
2.Refer to page C31 welding notes.

GMX308L-O

AWS A5.22 E308LT0-3
JIS Z 3323 TS308L-FN0

Product Features:

- Self shield type flux cored arc welding wire.
- Smooth arc, low spatter loss and easy slag removal.
- Good bead appearance, shallow penetration, especially suitable for cladding or buildup.
- High deposition efficiency.

Applications:

- Suitable for welding of stainless steels such as SUS301, 302, 304, 304L and 305.

Typical chemical composition of all-weld metal (wt%)

C	Si	Mn	Ni	Cr
0.03	0.48	1.50	9.8	19.8

Typical mechanical properties of all-weld metal

Tensile Strength N/mm ²	Elongation %
563	43

Size (mm) & recommended welding parameters

Diameter	1.2mm	1.6mm	2.4mm
Polarity	DC+	DC+	DC+
Ampere (A)	100~260	120~280	140~320
wire extension (mm)	15~30	20~30	25~35
Shielding Gas	Self Shield	Self Shield	Self Shield

- © Note: 1.Use general CO₂ welding machine with proper feed roller pressure.
2.Refer to page C31 welding notes.

Product Features:

- Rutile type gas shield flux cored arc welding wire, austenite structure weld metal.
- Low spatter loss and easy slag removal.
- High welding performance, austenite weld metal contains adequate ferrite numbers to get good crack resistance.
- Low carbon content in weld metal to get good inter-granular corrosion resistance.
- Smooth fillet weld size.

Applications:

- Welding of SUS 309L stainless steel.
- Welding of carbon steels or other high hardening alloy steels to stainless steels (low carbon).
- Cladding or welding of stainless steels to carbon steels or low alloy steels.

Typical chemical composition of all-weld metal (wt%)

C	Si	Mn	Ni	Cr
0.04	0.32	1.43	12.70	23.78

Typical mechanical properties of all-weld metal

Tensile Strength N/mm ²	Elongation %
619	35.4

Size (mm) & recommended welding parameters

Diameter		1.2mm	1.6mm
Polarity		DC+	DC+
Ampere (A)	Flat/ Horizontal position	150~250	200~300
	Vertical / overhead position	100~140	—
Shielding Gas		CO ₂	CO ₂

- © Note: 1.Use general CO₂ welding machine with proper feed roller pressure.
2.Refer to page C31 welding notes.



GMX309L-O

AWS A5.22 E309LT0-3
JIS Z3323 TS309L-FN0

Product Features:

- Self shield type flux cored arc welding wire.
- Smooth arc, low spatter loss and easy slag removal.
- Smooth and Good bead appearance, shallow penetration suitable for cladding or buildup.

Applications:

- Welding of SUS 309L stainless steel and dissimilar metal welding of carbon steels to stainless steels.
- Dissimilar metal welding of high hardening alloy steels to stainless steels.
- Cladding or welding of stainless steels to carbon steels or low alloy steels.

Typical chemical composition of all-weld metal (wt%)

C	Si	Mn	Ni	Cr
0.04	0.32	1.43	12.70	23.78

Typical mechanical properties of all-weld metal

Tensile Strength N/mm ²	Elongation %
619	35.4

Size (mm) & recommended welding parameters

Diameter	1.2mm	1.6mm	2.0mm	2.4mm	2.8mm
Polarity	DC+	DC+	DC+	DC+	DC+
Ampere (A)	100~260	120~280	130~310	140~320	150~330
wire extension (mm)	15~30	20~30	20~30	25~35	25~35
Shielding Gas	Self Shield	Self Shield	Self Shield		

© Note: 1.Use general CO₂ welding machine with proper feed roller pressure.
2.Refer to page C31 welding notes.

Product Features:

- Rutile type gas shield flux cored arc welding wire, austenite structure weld metal.
- Weld metal contains Mo element to get good high temperature strength, good crack and inter-granular corrosion resistance.
- Low spatter loss and easy slag removal.

Applications:

- Dissimilar metal welding of SUS316L to carbon steels or low alloy steels.
- Cladding of SUS316, 316L to carbon steels and low alloy steels.

Typical chemical composition of all-weld metal (wt%)

C	Si	Mn	Ni	Cr	Mo
0.03	0.55	1.55	13.5	23.8	2.42

Typical mechanical properties of all-weld metal

Tensile Strength N/mm ²	Elongation %
559	38

Size (mm) & recommended welding parameters

Diameter		1.2mm	1.6mm
Polarity		DC+	DC+
Ampere (A)	Flat/ Horizontal position	150~250	200~300
	Vertical / overhead position	100~140	—
Shielding Gas		CO ₂	CO ₂

© Note: 1.Use general CO₂ welding machine with proper feed roller pressure.
2.Refer to page C31 welding notes.

GMX316L

AWS A5.22 E316LT1-1
JIS Z3323 TS316L-FC1

Product Features:

- Rutile type gas shield flux cored arc welding wire, austenite structure weld metal.
- Smooth arc, low spatter loss and easy slag removal.
- High welding performance, weld metal contains adequate ferrite to get good crack resistance.
- Low carbon content in weld metal to get good inter-granular corrosion resistance.
- Good low temperature impact toughness and corrosion resistance.

Applications:

- Suitable for welding of severe acid and high heat resistance required SUS316 stainless steel.

Typical chemical composition of all-weld metal (wt%)

C	Si	Mn	Ni	Cr	Mo
0.03	0.50	1.45	12.4	18.9	2.35

Typical mechanical properties of all-weld metal

Tensile Strength N/mm ²	Elongation %
550	42

Size (mm) & recommended welding parameters

Diameter		1.2mm	1.6mm
Polarity		DC+	DC+
Ampere (A)	Flat/ Horizontal position	160~250	200~300
	Vertical / overhead position	100~140	—
Shielding Gas		CO ₂	CO ₂

- © Note: 1.Use general CO₂ welding machine with proper feed roller pressure.
2.Refer to page C31 welding notes.

Product Features:

- GMX347 is similar to GMX308 but niobium stabilized.
- Smooth arc, low spatter loss and easy slag removal.
- Deep penetration and easy to obtain the flat equal weld leg.
- The content of niobium helps minimize carbide precipitation and obtain more resistance to inter-granular corrosion.

Applications:

- Suitable for welding types of stainless steel such as SUS 301,302,304,304L, 305,321,347,347H.

Typical chemical composition of all-weld metal (wt%)

C	Si	Mn	Cr	Ni	Nb	Mo	S	P
0.05	0.6	1.5	19.5	10	0.6	0.05	0.011	0.017

Typical mechanical properties of all-weld metal

Yield Strength N/mm ²	Tensile Strength N/mm ²	Elongation %
490	620	38

Size (mm) & recommended welding parameters

Diameter		1.2mm	1.6mm
Polarity		DC+	DC+
Ampere (A)	Flat position	160~250	220~300
	Vertical up position	90~130	—
Voltage	Flat position	22~32	24~30
	Vertical up position	20~24	—
Shielding Gas		CO ₂	CO ₂

- © Note: 1.Use general CO₂ welding machine with proper feed roller pressure.
2.Refer to page C31 welding notes.



GMX2209

AWS A5.22 E2209T1-1/-4

Product Features:

- GMX2209 is designed to weld similar type of duplex stainless steel.
- The alloy has good resistance to stress corrosion cracking and pitting corrosion attack.
- Smooth arc and easy slag removal.

Applications:

- Suitable for welding of duplex stainless steel such as 2205.

Typical chemical composition of all-weld metal (wt%)

C	Si	Mn	Cr	Ni	Mo	S	P	N
0.03	0.6	1.5	23.1	9.1	3.2	0.009	0.018	0.140

Typical mechanical properties of all-weld metal

Yield Strength N/mm ²	Tensile Strength N/mm ²	Elongation %
620	810	28.3

Size (mm) & recommended welding parameters

Diameter		1.2mm	1.6mm
Polarity		DC+	DC+
Ampere (A)	Flat, Fillet	160~250	220~300
	Vertical up, Overhead	90~130	—
Voltage	Flat, Fillet	22~32	24~30
	Vertical up, Overhead	20~24	—
Shielding Gas		CO ₂ / Mixed Gas	CO ₂ / Mixed Gas

- © Note: 1. Use general CO₂ welding machine with proper feed roller pressure.
2. Refer to page C31 welding notes.