

Specification

AWS A5.22 E316LT1-1/4

Applications

- Weld deposit is 18.5% Cr-12.5% Ni-2.5% Mo, which provides excellent corrosion resistance.
- Suitable for welding critical chemical vessels and AISI 316L stainless steel.

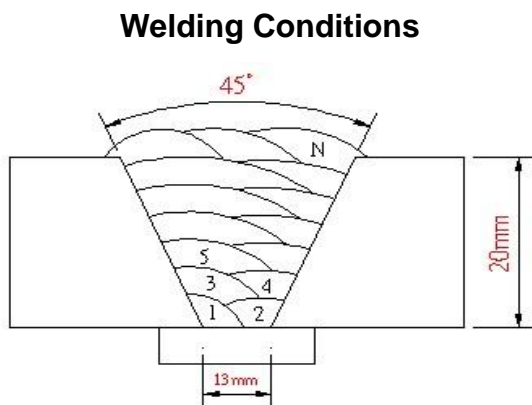
Characteristics

- It provides excellent weldability and crack resistance, due to proper ferrite contents in the weld metal.,
- Stable arc, good slag removal, easy control of weld puddle, low spatters, X-ray quality welds and good penetration.
- Flat bead shape and good wettability of bead.
- Ideal for all positions welding

Note on Usage

- Distance between base metal and tip should be kept within the range of 15~25mm.
- Shielding gas flow rate should be kept within 20~25l/min.

Mechanical Properties & Chemical Composition of All Weld Metal



Welding Conditions

Method by AWS Rules

Diameter(mm)	1.2mm
Shielding Gas	100% CO ₂
Flow Rate (l/min)	20
Amp / Volt	200 / 32
Stick-Out (mm)	15-20
Interpass Temp (°C)	175±15
Polarity	DC(+)

[Joint Preparation & Layer Details]

● **Mechanical Properties of the Weld Metal**

Brand Name	Tensile Test Results			Charpy V-Notch Impact Value (Joules)		
	Y.S. (MPa)	T.S. (MPa)	EL. (%)	-30°C	-40°C	-60°C
KFW-316L	430	584	38	-	-	-
E316LT1-1/4	-	520 min	30 min	-	-	-

● **Chemical Analysis of the Weld Metal**

Unit: wt%

Brand Name	C	Si	Mn	P	S	Cr	Ni	Mo
KFW-316L	0.02	0.6	1.0	0.03	0.01	18.19	11.47	2.32
E316LT1-1/4	<0.04	<1.0	0.5-2.5	<0.04	<0.03	17.0-20.0	11.0-14.0	2.0-3.0

● **Ferrite Number of the Weld Metal**

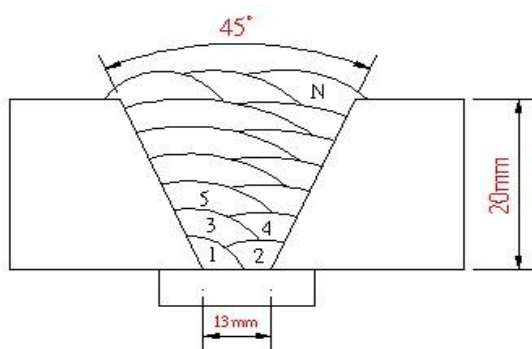
F.N.= 7

** Ferrite number is calculated by WRC-1992*

Mechanical Properties & Chemical Composition of All Weld Metal

Welding Conditions

Method by AWS Rules



Diameter(mm)	1.2mm
Shielding Gas	80% Ar+ 20% CO ₂
Flow Rate (l/min)	20
Amp / Volt	210 / 31
Stick-Out (mm)	15-20
Interpass Temp (°C)	175±15
Polarity	DC(+)

[Joint Preparation & Layer Details]

● **Mechanical Properties of the Weld Metal**

Brand Name	Tensile Test Results			Charpy V-Notch Impact Value (Joules)		
	Y.S. (MPa)	T.S. (MPa)	EL. (%)	-30°C	-40°C	-60°C
KFW-316L	434	583	38	-	-	-
E316LT1-1/4	-	520 min	30 min	-	-	-

● **Chemical Analysis of the Weld Metal**

Unit: wt%

Brand Name	C	Si	Mn	P	S	Cr	Ni	Mo
KFW-316L	0.02	0.7	1.1	0.03	0.01	18.23	11.42	2.33
E316LT1-1/4	<0.04	<1.0	0.5-2.5	<0.04	<0.03	17.0-20.0	11.0-14.0	2.0-3.0

● **Ferrite Number of the Weld Metal**

F.N. = 8

* Ferrite number is calculated by WRC-1992

Intergranular corrosion test

Brand Name	After bending	Result
KFW-316L	No crack	OK

*Intergranular corrosion test is carried out by ASTM A262E

Available Sizes and Suggested Operating Range

Welding Position	Wire Diameter		
	0.9mm	1.2mm	1.6mm
F&HF	70-170	100-250	200-350
Vertical Up	80-150	100-180	-

This information is provided solely for the purpose of confirming product conformance with applicable standards. The serviceability of a product or structure utilizing this type of information is and must be the sole responsibility of the builder/user. Many variables beyond the control of Kuang Tai Metal IND CO., LTD. affect the results obtained in applying this type of information. These variables include, but are not limited to, welding procedure, shielding gas, plate chemistry and temperature, weldment design, fabrication methods and service requirements.