M-308L

STAINLESS STEEL
SOLID WIRE

KISWEL

Rev.0

M-308L

KISWEL

■ Description & Application

- **Solid welding wire for 18%Cr-8%Ni austenite stainless steels (AISI STS 301, 302, 304)**
- **A various application for petrochemical, automobile exhaust and etc.**
- **Excellent weldability because of stable feed and arc**
- **Good wetting of molten weld metal help excellent bead appearance.**

■ Classification

- **AWS A5.9 : ER308L**
- **KS D 3696 : STSY308L**
- **JIS Z 3321 : YS308L**
- **EN ISO 14343-A : 19 9 L**
- **EN ISO 14343-B : SS308L**

■ Typical Chemical Composition of Wire (%)

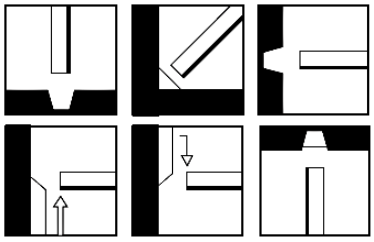
	C	Si	Mn	P	S	Ni	Cr
AWS ER308L	≤0.03	0.30-0.65	1.00-2.50	≤0.030	≤0.030	9.0-11.0	19.5-22.0
EN ISO 308L	≤0.03	0.30-0.65	1.0-2.5	≤0.030	≤0.020	9.0-11.0	19.5-22.0
EN ISO 19 9 L	≤0.03	0.30-0.65	1.0-2.5	≤0.030	≤0.020	9.0-11.0	19.0-21.0
M-308L	**0.02**	**0.47**	**1.66**	**0.024**	**0.001**	**9.55**	**19.55**

- **Ferrite Number : 11 ~ 12 (Low ferrite product 3 ~ 8)**

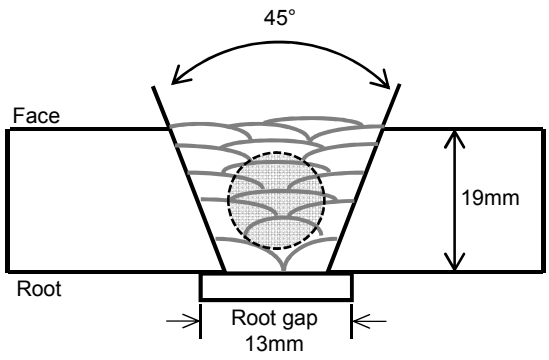
■ Shielding Gas

- **Ar + 1~3%O_2 (15~25ℓ/min)**
- **Ar + 1~5%CO_2 (15~25ℓ/min)**

■ Welding Position



All Weld Metal Test Specimen



Base metal	STS 304L
Diameter	1.2mm
Current / Voltage	250A /240V
Stick out	20mm
Travel Speed	45 CPM
Welding Position	PA / 1G

Typical Mechanical Properties of Weld Metal

	Shielding Gas	PWHT	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) (Joule @ Temp)
AWS ER308L	-	-	-	-	-	-
EN ISO 19 9 L EN ISO 308L	-	AW	≥ 220	≥ 510	≥ 25	-
M-308L	**Ar + 2%O_2**	**AW**	**390**	**510**	**25**	**90 @ 0℃ 60 @ -196℃**

Typical Operating Procedures

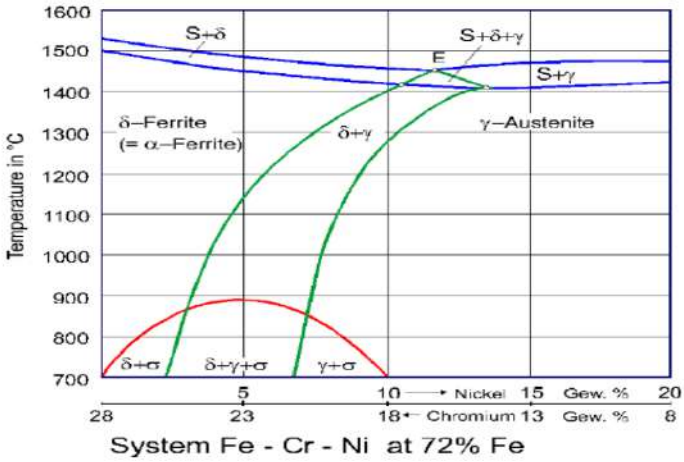
Dia (mm)	Shielding Gas	Current (amps)	Voltage (volts)	Feed speed (m/min)	Melt-off Rate (Kg/Hr)
1.2	Ar + 2% O_2 Short circuit	80-240	14-25	2.5-7.5	0.7-2.0
1.2	Ar + 2% O_2 Spray	270-350	27-29	10.0-12.5	2.8-3.5

* Polarity : DCEP (DC+)

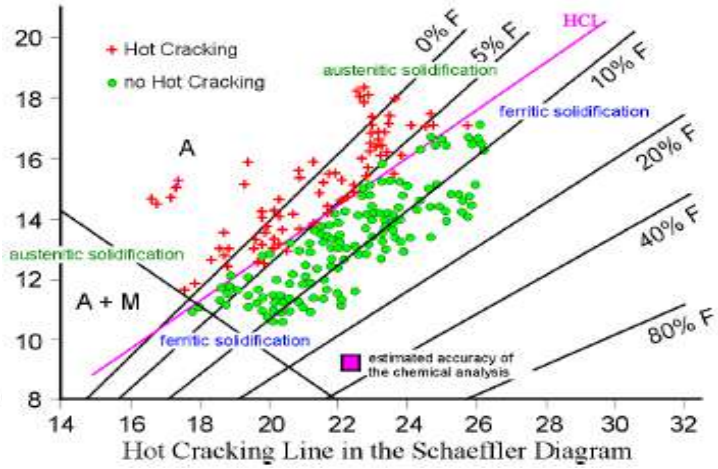
■ δ-Ferrite

• In the phase state diagram of Cr and Ni steels containing 72% iron, it affects the kind of primary crystals formed during solidification depending on the composition.

• Compared to austenite texture, δ-Ferrite texture reduces shrinkage stress due to phase transformation and employs P and S to prevent high temperature cracking, but lower corrosion resistance when excessive.



System Fe - Cr - Ni at 72% Fe

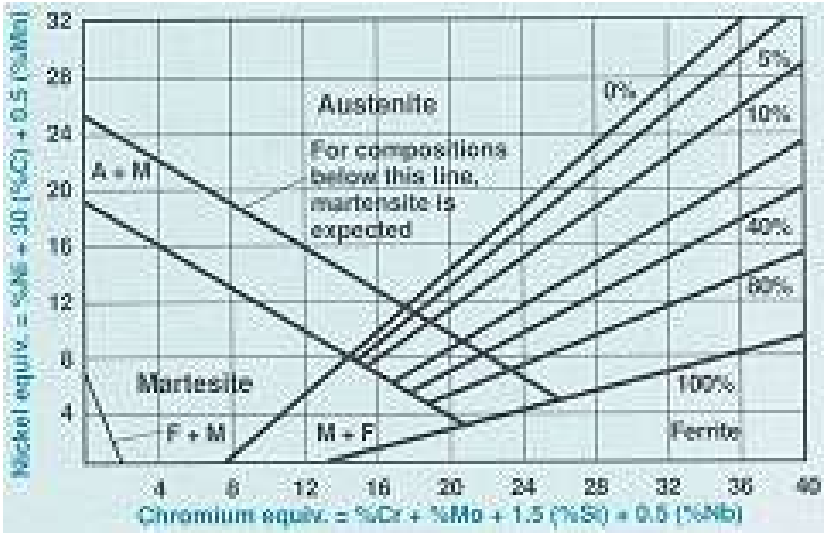


Hot Cracking Line in the Schaeffler Diagram

■ Low Ferrite STS

• The amount of delta ferritium can be measured either directly by measuring the amount of magnetism or by chemical components

• In order to satisfy the low level of ferrite, it can be achieved by increasing Ni, an expensive alloying element.



- Cr equivalents
  - Cr, Mo, Si, Nb
- Ni equivalents
  - Ni, C, Mn

■ Packaging



■ Size and Weight

Dia. (mm)	0.8, 0.9, 1.0, 1.14, 1.2, 1.32, 1.4, 1.6			
Weight (kg)	2	5	12.5, 15, 20	100~200
Packaging	Plastic Spool			Pail-pack
	-		Wire Basket	

■ Handling

• **Do not speed up or brake loaded products to prevent rollover during transport.**

• **Please run out product within two weeks of its packaging release.**

• **If the product is discontinued for more than two weeks, it should be packed and stored separately to prevent air contact.**

• **Products that are in use on the supply line must be prevented by covering to prevent product contamination and electric shock accidents.**

• **When using Drum or DPP, check the enclosed installation and handling manual, and use it after proper installation.**

■ Storage

• **Do not stock Drum or DPP packaging palettes more than 2 layers and Spool or Wire basket packaging palettes more than 3 layers. To prevent damage to the products and external packaging.**

• **Store the product without removing the packaging to prevent air contact.**

• **To prevent product packaging damage and condensation due to moisture. Keep the product at a relative humidity of less than 50%**

KISWEL

The Management System of KISWEL LTD, 704, Gongdan-ro, Seongsan-gu, Changwon-si, Gyeongnam 51544, Republic of Korea, 70, Saebyeok-ro 63beon-gil, Sasang-gu, Busan 47018, Republic of Korea has been approved by Lloyd's Register Quality Assurance to : IATF 16949:2016, ISO 14001:2015, applicable to : Manufacture of solid welding wires & rods, flux cored wires, submerged arc welding wires & fluxes, stainless steel welding wires & rods and covered electrodes.
More information : www.kiswel.com

