KC-27CF

COPPER FREE SOLID WIRE

KISWEL

Rev.0

■ Description & Application

- **This wire produces good weld quality when welded for most carbon steels with mixture shielding gas in short circuit or globular transfer.**
- **Since it has no copper coating, Copper Free wire eliminates downtime for cleaning copper flakes out of guns, liners, and tips Not only get more arc time, but also reduce replacement costs for the liners and tips.**
- **During welding, the copper on copper coated wire produces toxic copper fumes. Copper Free wire has no copper coating, which means toxic copper fumes are dramatically reduced. Therefore, Copper Free wire helps you contributes to a better welding environment.**
- **Automotive, Pressure vessels, Pipeline & Offshore, construction machinery**

■ Classification

- **AWS A5.18-2005 : ER70S-G**
- **KS D 7025-2005 : YGW15**
- **JIS Z 3312-2009 : YGW15**
- **EN ISO 14341-A : G 46 2 M G0**
- **EN ISO 14341-B : G 49A 2 M G15**

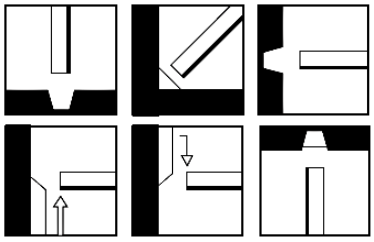
■ Typical Chemical Composition of Wire (%)

	C	Si	Mn	P	S	Ti	Cu	Remark
EN ISO G15	0.02-0.15	0.40-1.00	1.00-1.60	≤0.030	≤0.030	0.02-0.15	≤0.35	
JIS YGW15	0.02-0.15	0.40-1.00	1.00-1.60	≤0.030	≤0.030	0.02-0.15	≤0.35	
KC-27CF	**0.07**	**0.62**	**1.18**	**0.014**	**0.01**	**0.09**	**0.10-0.40**	

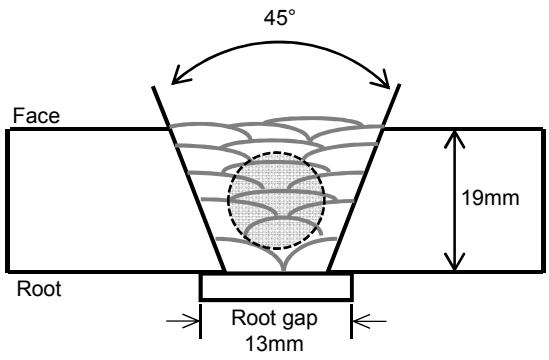
■ Shielding Gas

- **Ar + 15 ~ 25%CO_2 (15~25ℓ/min)**

■ Welding Position



■ All Weld Metal Test Specimen



Base metal	A515 Gr.70
Diameter	1.2mm
Current / Voltage	280A / 30V
Stick out	20mm
Travel Speed	30 CPM
Welding Position	PA / 1G

■ Typical Mechanical Properties of Weld Metal

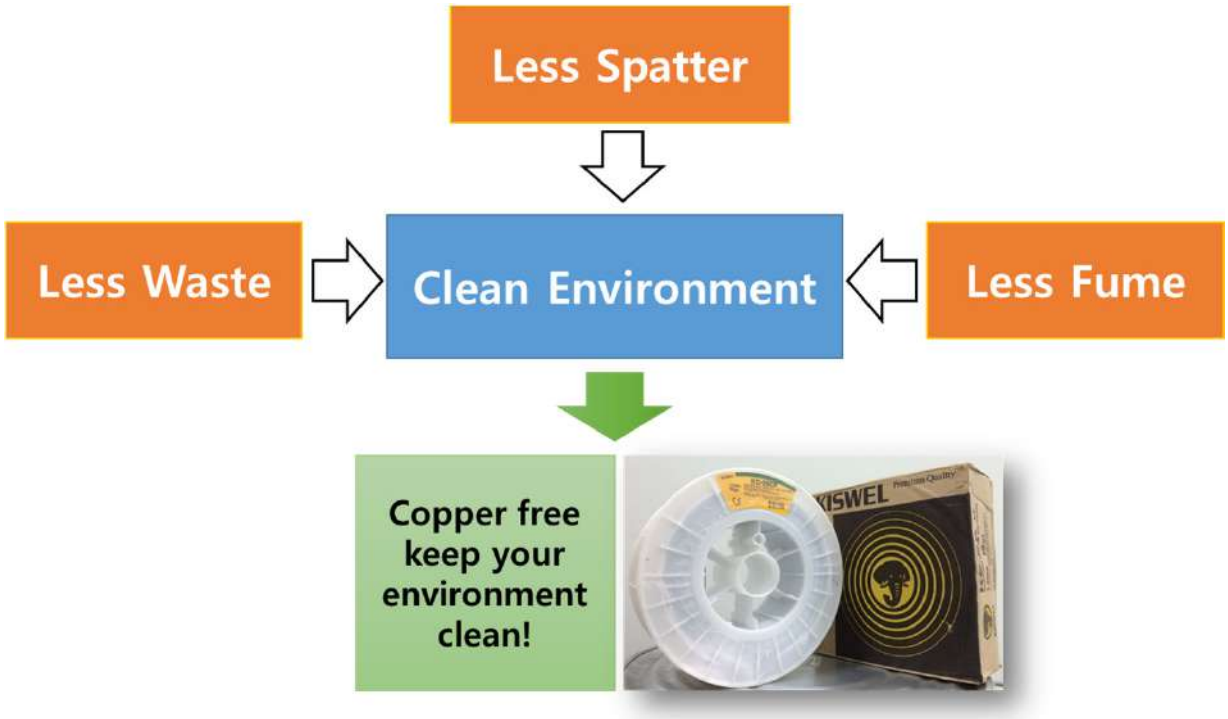
	Shielding Gas	PWHT	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) (Joule @ Temp)
AWS ER70S-6	-	AW	< 400	< 480	< 22	-
EN ISO G15	-	AW	< 390	490~670	< 18	≥ 27 @ -20℃
KC-27CF	**Ar + 20%CO_2**	**AW**	**490**	**560**	**31**	**160 @ -20℃**

■ Typical Operating Procedures

Dia (mm)	Shielding Gas	Current (amps)	Voltage (volts)	Feed speed (m/min)	Melt-off Rate (Kg/Hr)
0.9	100% CO_2	80-250	18-22	2.5-6.5	0.7-1.7
	Ar + 20% CO_2	190-280	24-30	9.5-15.5	2.4-4.2
1.2	100% CO_2	140-200	19-21	3.0-5.0	1.4-2.3
	Ar + 20% CO_2	280-340	27-30	8.5-12.5	4.2-6.2
1.4	Ar + 20% CO_2	300-440	30-34	7.5-12.5	5.1-8.5
1.6	Ar + 20% CO_2	320-440	28-32	5.5-7.5	4.9-6.7

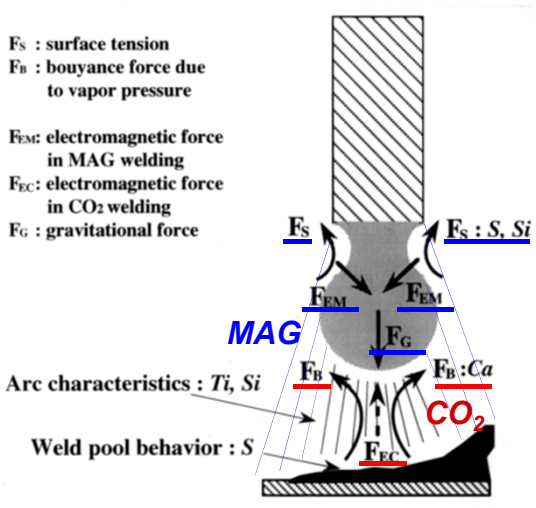
* Polarity : DCEP (DC+)

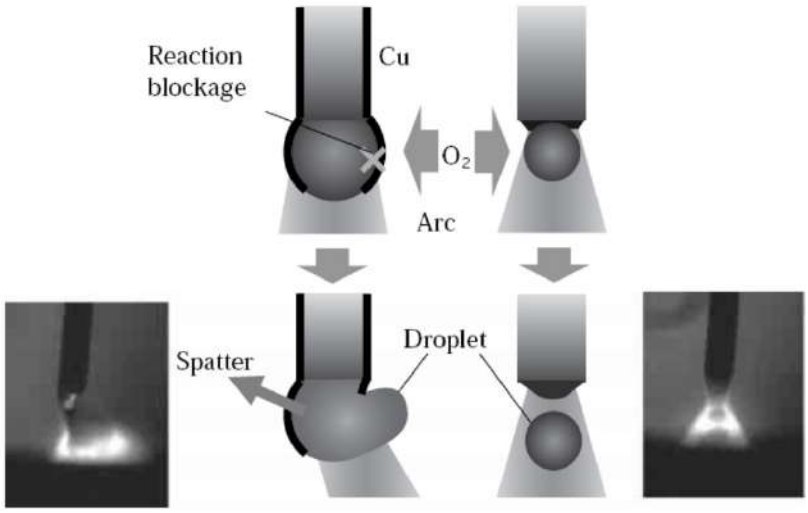
■ Characteristics



■ Cu Free

- **Various forces are applied to the melting edge of the wire at the Arc**
- **Excessive Cu-plate prevents penetration of oxygen and maintains surface tension**
- **Because of maintained surface tension, The size of droplet is increase, this increases the generation of spatter**





■ Welding wire feeding

- Welding wire is fed by feed system
- If feeding is not stable, the arc length is changed. It makes problems.
- A stable feeding requires the proper configuration of the welding system and the selection of the product with the appropriate level of surface roughness

■ Wire feed system

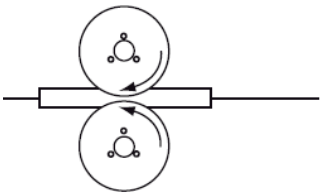


Push system for normal GMAW wire

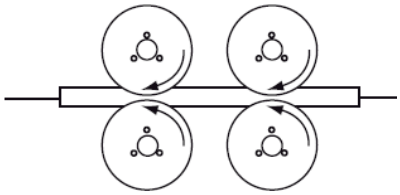


Push/Pull system for soft GMAW wire (Aluminum)

■ Drive rollers



Two roll feeder



Four roll feeder

■ Bead appearance (2F)

Mode	Current (A)	Voltage (V)	Travel SP (CPM)	Base Metal	Thickness (mm)	Stick out (mm)	Shielding Gas
Inverter	400	37	35	SM490	12	20	Ar + 20%CO2

KC-27CF	

■ Packaging





■ Size and Weight

Dia. (mm)	0.6, 0.8, 0.9, 1.0, 1.14, 1.2, 1.32, 1.4, 1.6			
Weight (kg)	2	5	12.5, 15, 20	100~450
Packaging	Plastic Spool			Pail-pack / DPP
	-		Wire Basket	

■ Approval

Shielding gas	ABS	BV	DNV.GL	LR	KR	NK
MIX	3SA, 3YSA	SA3YM	III YMS	3YS H15	-	KSW53G

* Remark : JIS

■ 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

