KC-28

SOLID WELDING WIRE
FOR 490MPa GRADE STEEL

KISWEL

Rev.0

■ Description & Application

- **This wire produces good weld quality when welded for most carbon steels with CO2 shielding gas in short circuit or globular transfer.**
- **Good welding conductivity and wire feedability creates excellent weld beads.**
- **Stables arc performance in almost welding current**
- **A wide range of use due to low spatter and all welding positions**
- **Sheet metal to 380 – 485 Yield strength material**
  - **Automotive, Pressure vessels, Pipeline & Offshore**

■ Classification

- **AWS A5.18-2005 : ER70S-6**
- **KS D 7025-2005 : YGW12**
- **JIS Z 3312-2009 : YGW12**
- **EN ISO 14341-A : G 42 3 C1 3Si1**
  : G 42 3 M21 3Si1
- **EN ISO 14341-B : G 49 A 3 C1 S6**
  : G 49 A 3 M21 S6

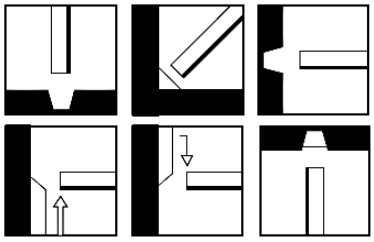
■ Typical Chemical Composition of Wire (%)

	C	Si	Mn	P	S	Cu
AWS ER70S-6	0.06-0.15	0.80-1.15	1.40-1.85	≤0.025	≤0.035	≤0.50
EN ISO 3Si1	0.06-0.14	0.70-1.00	1.30-1.60	≤0.025	≤0.025	≤0.35
KC-28	**0.07**	**0.86**	**1.53**	**0.012**	**0.007**	**0.10-0.35**

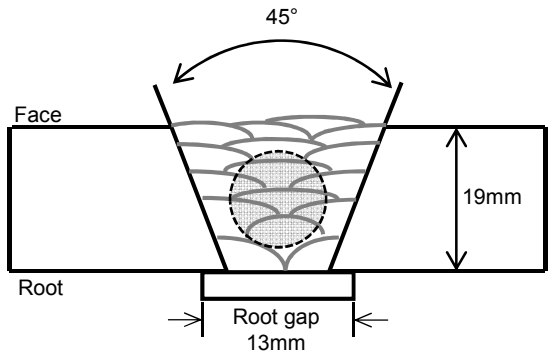
■ Shielding Gas

- **100% CO_2 (15~25ℓ/min)**
- **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

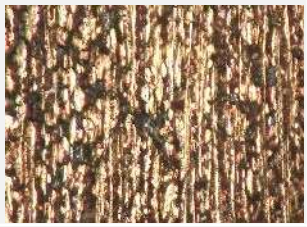
	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) (Joule @ Temp)	Shielding Gas	PWHT
AWS ER70S-6	< 400	< 480	< 22	≥ 27 @ -29℃	-	AW
EN ISO 3Si1	< 420	500~640	< 20	≥ 47 @ -30℃	-	AW
KC-28	**450**	**550**	**30**	**70 @ -30℃**	**100%CO_2**	**AW**
KC-28	**463**	**547**	**33**	**34 @ -45℃**	**100%CO_2**	**AW**
KC-28	**480**	**580**	**28**	**80 @ -30℃**	**Ar + 20%CO_2**	**AW**
KC-28	**355**	**498**	**39**	**169 @ 0℃**	**Ar + 20%CO_2**	**610℃ 40Hrs**

Typical Operating Procedures

Dia (mm)	Shielding Gas	Current (amps)	Voltage (volts)	Feed speed (m/min)	Melt-off Rate (Kg/Hrs)
0.9	100% CO_2	80-250	18-22	2.5-6.5	0.7-1.7
	Ar + 10% 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 + 10% CO_2	280-340	27-30	8.5-12.5	4.2-6.2
1.4	Ar + 10% CO_2	300-440	30-34	7.5-12.5	5.1-8.5
1.6	Ar + 10% CO_2	320-440	28-32	5.5-7.5	4.9-6.7

* Polarity : DCEP (DC+)

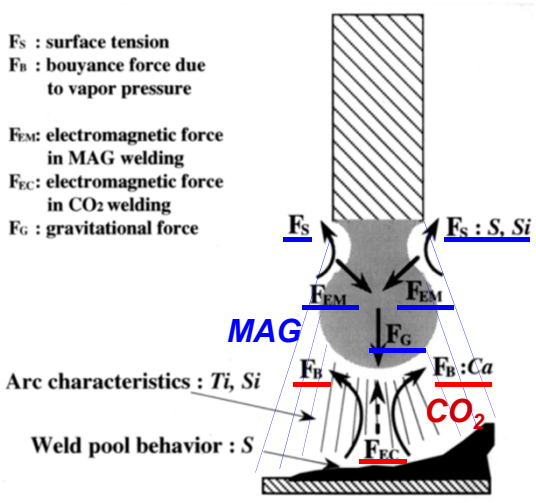
■ Wire surface

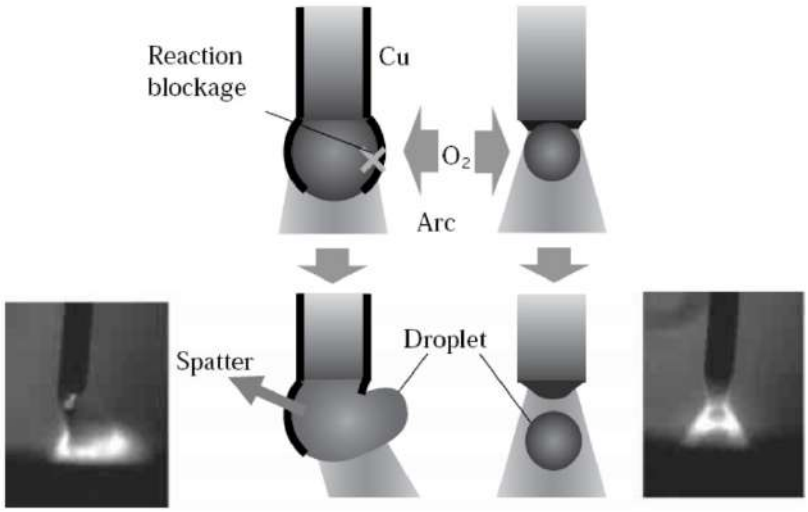
	KC-28CF	KC-28 (Skin Pass)	KC-28 (ESD)	KC-28
Wire Appearance				
Cu Adhesive				
	Cu Free	Less Cu / Rough surface	Less Cu / Rough surface	Basic

※ Various surfaces are provided according to the customer's environment to improve wire feeding

■ Low Cu plated

- **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

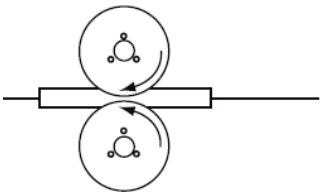


Push system for normal GMAW wire

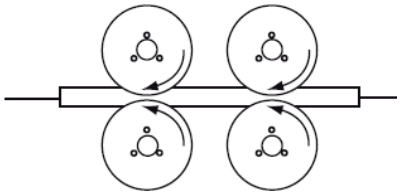


Push/Pull system for soft GMAW wire (Aluminum)

■ Drive rollers



Two roll feeder



Four roll feeder

■ Bead appearance (H-fillet)

Mode	Current (A)	Voltage (V)	Travel SP (CPM)	Base Metal	Thickness (mm)	Stick out (mm)	Shielding Gas
Inverter	280	28	50	SM490	12	15	Ar + 10%CO2

KC-28CF	
KC-28 (Skin Pass)	
KC-28 (ESD)	
KC-28	

■ 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
CO2	3SA	SA3YM	III YMS	3YS	3YS H15	3YSG	KSW53G
MIX	3YSA	-	-	-	-	-	-

* Remark : CCS, RS, CWB, KS, 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

