KR-3000

COVERED ELECTRODE
FOR MILD STEEL

KISWEL

Rev.0

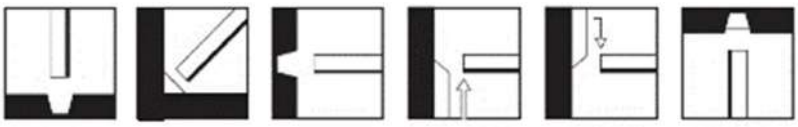
■ Description

- KR-3000 is a rutile type coated electrode, especially developed for welding mild steel for light metallic constructions and thin sheet
- Electrodes welds a stabile arc and easy slag remove
- Excellent striking and re-striking properties
- Stables arc performance in almost welding current
- Redry the electrode at 70~100℃ for 30~60minutes prior to use

■ Classification

- AWS A5.1 : E6013
- JIS Z 3211 : E4313
- EN ISO 2560-A : E 38 0 R 11
- EN ISO 2560-B : E 43 13 A

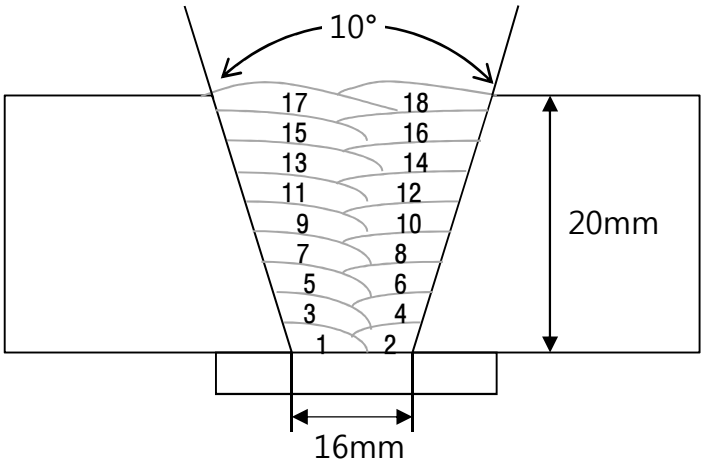
■ Welding Position



■ Base Materials

Industry	Steel Grades	Type
General structural	EN 10025	S185, S235, S275
Ship	ASTM A131	A, B, D
Cast	EN 10213-2	GP240R
Pipe	EN 10208	L210, L240, L290
	API 5LX	X42, X46
Boiler & Pressure vessel	EN10028-2	P235, P265, P295

■ All Weld Metal Test Specimen



Base metal	A36
Size	4.0*400mm
Polarity / Current	DC+ / 160~165A
Welding Position	PA / 1G
Heat Input	13.6~15.9 kJ/cm

■ Typical Mechanical Properties of Weld Metal

	Y.S (MPa)	T.S (MPa)	El. (%)	I.V (J) (J @ Temp.)	PWHT	Remark
AWS Spec.	≥330	≥430	≥17	-	A.W	1G
KR-3000	430	490	28	60 @ 0℃	A.W	

■ Typical Chemical Composition of Weld Metal (%)

	C	Si	Mn	P	S	Ni
AWS Spec.	≤0.20	≤1.00	≤1.20	-	-	≤0.30
KR-3000	0.06	0.35	0.40	0.016	0.010	0.02

■ Weldability

		Flat, H-Fillet	V-Up & Down
Arc	Stability	Excellent	Good
	Concentration	Excellent	Good
	Force	Good	Excellent
Slag	Fluidity	Excellent	Excellent
	Removability	Excellent	Good
Spatter	Quantity	Excellent	Excellent
Fume	Quantity	Good	Good
Porosity	Occurrence	Good	Good

■ Bead Appearance



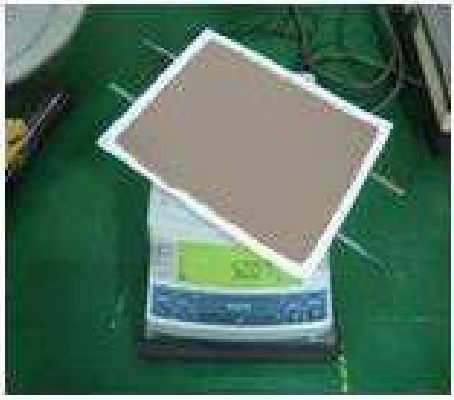
Flat, 3.2*350mm, DC+ 120~125A

H-Fillet, 3.2*350mm, DC+ 120~125A



■ Fume Measurement test

	Weight of Fume (g) / W.M 100g	SO_2 (ppm)	CO (ppm)	O_3 (ppm)
KR-3000	1.144	0.112	36.5	0.072
Product A	1.180	0.071	43.0	0.099
Product B	1.151	0.110	41.0	0.079
Product C	1.221	0.090	40.3	0.093


■ Welding Efficiency

Nominal electrode efficiency (%)	Deposition efficiency (%)
90~95	60~65

1) Size : 3.2*350mm

2) Nominal electrode efficiency (%) : M_D/M_{CN} *100

3) Deposition efficiency (%) : $M_D/(M_E-M_S)$*100

* M_D : mass of deposited weld metal
* M_{CN} : nominal mass of consumed core wire
* M_E : total mass of electrodes tested
* M_S : total mass of the stub ends

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■ Packaging and Available sizes



Diameter (mm)		2.6	3.2	4.0	5.0
Length (mm)		350	350	400	400
Carton	Inner	5Kg			
	Out	20Kg (5Kg x 4EA)			

* Identification Imprint : E6013 KISWEL

* Tip Color : None

■ Recommended Welding Parameter (AC or DC±)

Diameter (mm)	2.6	3.2	4.0	5.0
Length (mm)	350	350	400	400
Flat, Fillet, V-Down	60~100	80~130	130~180	160~220
V-Up	50~80	80~110	90~140	120~190

■ Approval

ABS	BV	DNV • GL	LR	NK
2	2	2	2m	KMW2

* Remark : KS, JIS, CE

■ Control Instruction

1. Storage

1) On principle covered electrodes should be in their original packaging until used. If possible the packs of electrodes should be taken out of storage in the sequence in which they were received in warehouse.
2) The covered electrodes must be stored in dry rooms to protect them against damage caused by moisture. The room must be fitted out with pallets or shelves since storage directly on the floor or against the walls is not recommended.
3) Opened packs of electrodes should also be stored in dry and, if necessary, heated rooms so that there is no likelihood of the temperature dropping below the dew point.

AWS Classification	Store Condition (Opened packs of electrode)	
	Ambient Air	Holding Oven
E6013	30±10℃ Humidity max. 50%	High 12~24℃ than room temperature

2. Re-drying

1) Where electrodes have become damp it is recommended that re-drying is carried out immediately prior to welding in accordance with the temperature details specified in the following table.
2) Electrodes that have been in direct contact with water, grease or oil should not be used for welding fabrication.

Type of coating	Re-drying temp. (℃)	Re-Drying time (min)
High titania	70~100	30~60

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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

