K-8018C3(HR)

COVERED ELECTRODE

FOR LOW TEMPERATURE SERVICE

STEEL (560MPA GRADE)

KISWEL

K-8018C3(HR)

■ Description

- **Covering is low hydrogen, iron powder type for welding of 1%Ni steel and high tensile strength steel for military and commercial applications where good impact property**
- **Excellent mechanical properties and radiographic soundness**
- **Satisfactory bead appearance and slag removal**
- **Redry the electrode at 300~400℃ for 1~2hours prior to use**

■ Classification

- **AWS A5.5 : E8018-C3 H4R**
- **EN ISO 2560-A : E 46 5 1Ni B 32 H5**
- **EN ISO 2560-B : E 55 18-N2 A U H5**

■ Welding Position



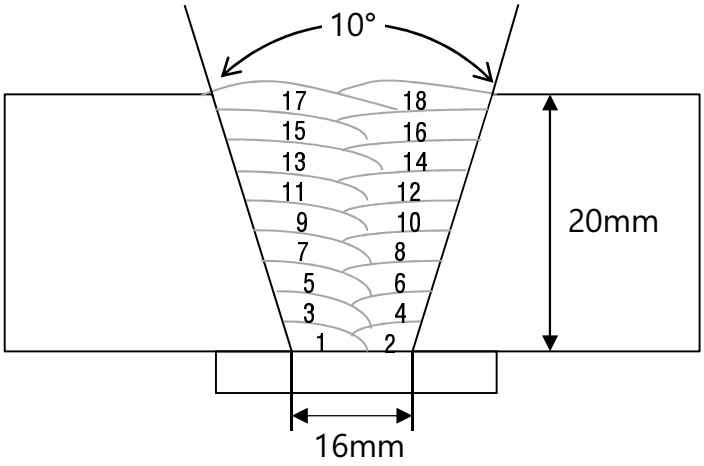
■ Base Materials

Constructional steels, pipe and vessel steels, cryogenic fine-grained steels
E295, E335, S355J2G3, C35-C45, L210 – L450NB, L245MB – L450MB
P310GH, P355 NL1 – P460NL1, P355NL2 – P460NL2, S380N –S 460N

ASTM A516 Gr.65, A572 Gr.55, 60, 65

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■ All Weld Metal Test Specimen



Base metal	A36
Size	4.0*400mm
Polarity / Current	DC+ / 160~165A
Welding Position	PA / 1G
Heat Input	13.8~18.2 kJ/cm

■ Typical Mechanical Properties of Weld Metal

	Y.S (MPa)	T.S (MPa)	El. (%)	I.V (J) (J @ Temp.)	PWHT	Remark
AWS Spec.	470~550	≥550	≥24	≥27 @ -40℃	A.W	1G
K-8018C3 (HR)	510	600	31	120 @ -40℃	A.W	
	470	560	28	100 @ -40℃	620℃ X 10Hr	

*** Diffusible hydrogen content (㎖/100gr W.M) : Avg 3.7 (G.C)**

■ Typical Chemical Composition of Weld Metal (%)

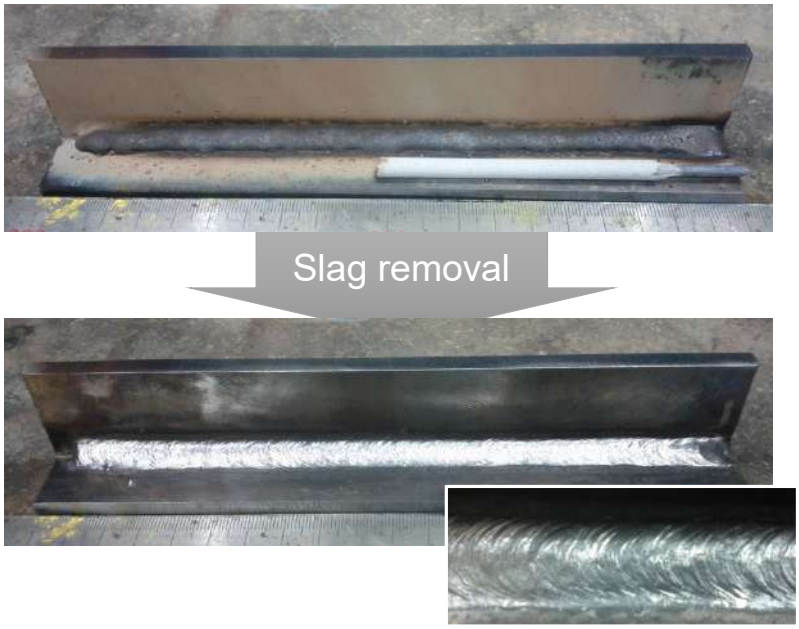
	C	Si	Mn	P	S	Ni	Mo
AWS Spec.	≤0.12	≤0.80	0.40~1.25	≤0.03	≤0.03	0.80~1.10	≤0.35
K-8018C3 (HR)	0.06	0.42	1.12	0.014	0.009	0.93	0.10

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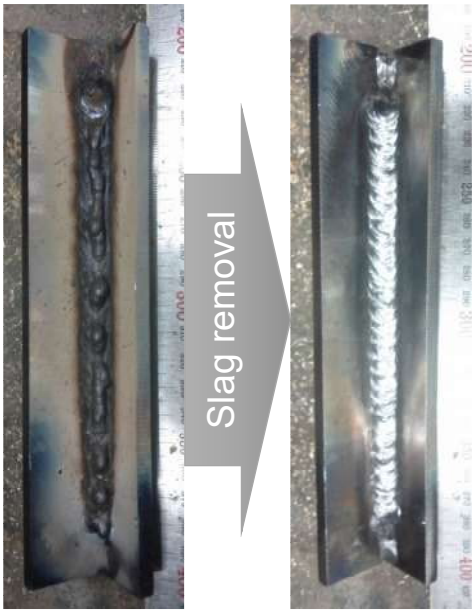
■ Weldability

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

■ Bead Appearance



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



V-Up, 3.2*350mm, DC+ 100~105A

■ Welding Efficiency

Nominal electrode efficiency (%)	Deposition efficiency (%)
115~120	65~70

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

■ Recommended Welding Parameter (AC or DC+)

Diameter (mm)	2.5	3.2	4.0	5.0
Length (mm)	350	350 / 450	400 / 450	400 / 450
Flat, Fillet	60~100	80~130	140~190	160~220
V-Up	50~80	80~110	110~160	120~190

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■ Packaging and Available sizes



Diameter (mm)		2.5	3.2	4.0	5.0
Length (mm)		350	350 / 450	400 / 450	400 / 450
Carton	Inner	5Kg			
	Out	20Kg (5Kg x 4EA)			
Vacuum	Inner	2Kg / 5Kg			
	Out	10Kg (2Kg x 5EA) / 20Kg (5Kg x 4EA)			

* Identification Imprint : E8018-C3 H4R

* Tip Color : None

■ Approval

ABS	LR
3YH10,E8018-C3	3YmH15

* Remark : 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
E8018-C3 H4R	Not recommended	High 30~140℃ 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)
Low hydrogen, iron powder	300~400	60~120

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

