EF-200V+KD-60

SUBMERGED ARC WELDING

KISWEL

Rev.0

EF-200V+KD-60

KISWEL

■ Description & Application

- **Single and multi-layer welding of 0.5%Mo steel for pressure vessels, steam pipes, boilers., etc.**
- **Neutral flux for multi-pass welding.**
- **Excellent impact toughness and welding characteristics.**

■ Classification

Sub-arc Wire

- **AWS A5.23 : EA3**
- **EN ISO 14171 : SZ**
- **JIS Z 3351 : YS-M5**
- **KS B ISO 14171 : SZ**

Sub-arc flux

- **EN ISO 14174 : SA CS 1 53 AC**
- **JIS Z 3352 : SA CS 1 AC- 12x65**
- **KS B ISO 14174 : SA CS 1 53 AC**

Flux/Wire-combination

- **AWS A5.17 : F8A(P)6-EA3-G**
- **EN ISO 14171 : S 50 5 CS SZ**
- **JIS Z 3183 : S584-H**
- **KS B ISO 14171 : S 50 5 CS SZ**

■ Typical Chemical Composition of Wire(%)

Item	C	Mn	Si	S	P	Cu	Mo
AWS Spec. EA3	0.05-0.17	1.65-2.20	≤0.20	≤0.025	≤0.025	≤0.35	0.45-0.65
RESULT	0.10	1.93	0.02	0.006	0.008	0.10	0.51

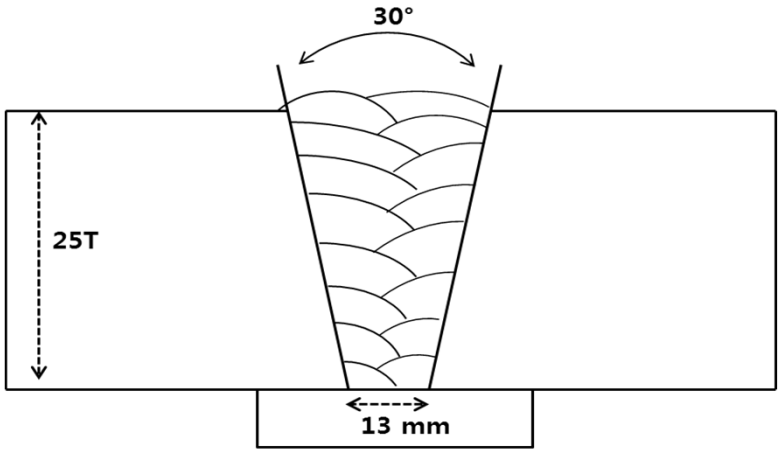
■ Typical Chemical Composition of Weld Metal(%)

Item	C	Mn	Si	S	P	Cu	Mo
RESULT	0.60	1.80	0.19	0.004	0.024	0.13	0.47

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■ All Weld Metal Test Specimen



Pass	1~16
Diameter	4.0mm
Current / Voltage	520A / 30V
Travel Speed	42 CPM
Stick out	30 mm
Interpass Temp. (℃)	150±15

Base Metal	Thick (mm)	Size (mm)	Grove Design	Remark
SM490	25	300Lx125W	V-Grove	AWS A5.17

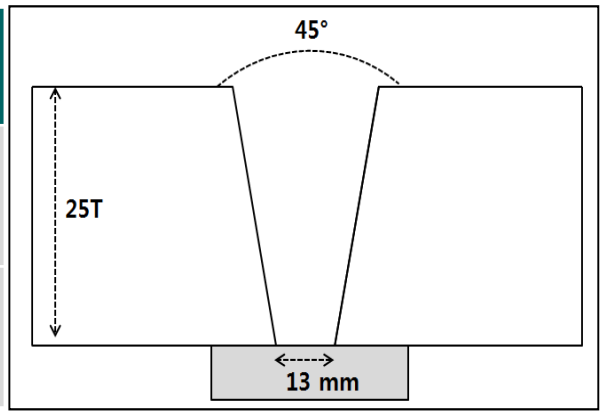
■ Typical Mechanical Properties of Weld Metal

Item [Flux+Wire]	Tensile Test			Impact Test	Remark
	Y.S [MPa]	T.S [MPa]	E.L [%]	Impact Value [J]	
AWS Spec. [A5.23 F8A(P)6-EA3-G]	≥ 470	550-700	≥20	≥27 @ -51℃	-
EF-200V+KD-60 [As Welded]	598	660	27	109 @ -40℃ 50 @ -51℃	As Welded

■ Additional Welding Test Specimen (AWS D1.8)

Base Metal	Thick (mm)	Size (mm)	Grove Design	Remark
ASTM A36	25	300Lx125W	V-Grove	AWS D1.8

Class.	Pol.	Size (mm)	H.I (kJ/㎝)	Preheat Temp. (℃)	Interpass Temp. (℃)
High H.I	DC+	4.0	≥31.0	≥120	≥240
Low H.I	DC+	4.0	≤12..0	≤40	≤120



■ Mechanical Property of Additional Test

Item [Flux+Wire]	Tensile Test			Impact Test
	Y.S [MPa]	T.S [MPa]	E.L [%]	Impact Value [J]
AWS D1.8 Spec.	≥ 470	≥ 550	≥22	≥54 @ 21℃ ≥27 @ -18℃
EF-200K+KD-42 [High H.I]	527	725	26	100 @ 21℃ 37 @ -18℃
EF-200K+KD-42 [Low H.I]	665	708	26	152 @ 21℃ @ -18℃

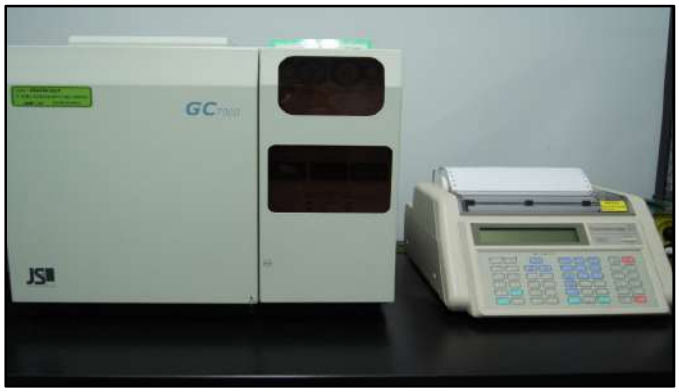
■ Diffusible Hydrogen Test

Class.	Diffusible Hydrogen Content (㎖) / 100g Weld Metal				
	1	2	3	4	Av.
Result	3.69	3.91	4.27	4.12	4.00

⋆ Test Information

▶ Test Method : Reference to EN ISO 3690

▶ Test Equipment : G.C (Gas Chromatograph)



< Gas Chromatography equipment >

EF-200V+KD-60

■ Packaging



■ Size and Weight

Item	Size	Package	Weight [kg]
Flux	12*30 / 12*60	Steel Can / Paper Bag	15 / 20

Item		Package	Weight [kg]
Diameter [mm]			2.0, 2.4, 3.2, 4.0, 4.8
Wire		Coil	25, 100, 150, 300, 400, 500, 600
		POP	200, 250, 300, 400, 450

■ Handling and Storage

◆ Storage

- **Unopened flux must be stored in the following conditions :**
  → Temperature : 20±10℃, Relative humidity : As low as possible not exceeding 60% max
- **Flux shall not be stored longer than 2 years**
- **The content of unheated flux hoppers must shift after 8 hour, it be placed in a drying cabinet or heated flux hopper at a temperature of 150±25℃**
- **Remaining flux from opened cans must be kept at a temperature of 150±25℃**

◆ Re-Drying

- **When handled and stored as above, fluxes can normally be used without re-drying**
- **In severe applications, stipulated by the applicable material specification, re-drying of the flux is recommended**
- **Re-drying shall be performed as follows :300~350 for about 60~180 minutes**
- **Re-drying must be done in equipment that turns the flux so the moisture can evaporate easily or in an oven shallow plates with a flux height not exceeding 5 cm.**
- **Re-dried flux not immediately used must be stored at 150±25℃ before use**

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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

