EF-100S+KD-42

SUBMERGED ARC WELDING

KISWEL

Rev.0

EF-100S+KD-42

KISWEL

■ Description & Application

- **Active flux for limited pass welding of ship buildings, steel, frames, structures and bridges.**
- **Bead appearance and slag removal are excellent under high welding speed with low current.**
- **Good resistance to porosity on rust and primer.**

■ Classification

Sub-arc Wire

- **AWS A5.17 : EM12K**
- **EN ISO 14171 : S2Si**
- **JIS Z 3351 : YS-S3**
- **KS B ISO 14171 : S2Si**

Sub-arc flux

- **EN ISO 14174 : SA AB 1 77 AC**
- **JIS Z 3352 : SA AB 1 AC- 12x65**
- **KS B ISO 14174 : SA AB 1 77 AC**

Flux/Wire-combination

- **AWS A5.17 : F7A(P)2-EM12K**
- **EN ISO 14171 : S 46 2 AB S2Si**
- **JIS Z 3183 : S502-H**
- **KS B ISO 14171 : S 46 2 AB S2Si**

■ Typical Chemical Composition of Wire(%)

Item	C	Mn	Si	S	P	Cu
AWS Spec. EM12K	0.05-0.15	0.80-1.25	0.10-0.35	≤0.030	≤0.030	≤0.35
RESULT	0.10	0.93	0.29	0.009	0.018	0.07

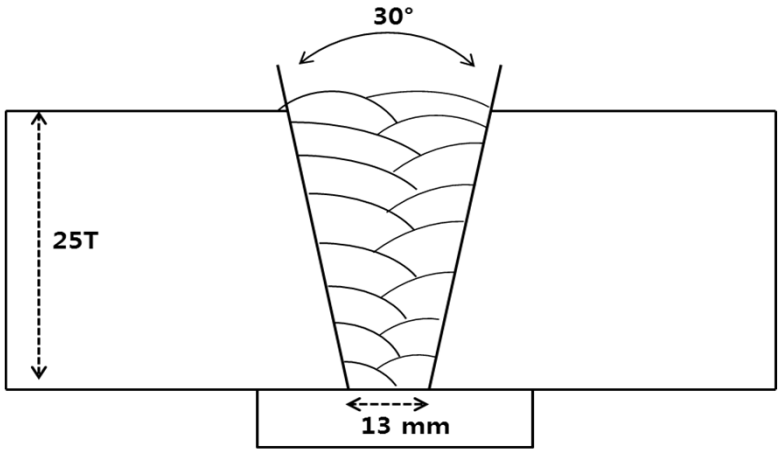
■ Typical Chemical Composition of Weld Metal(%)

Item	C	Mn	Si	S	P	Cu
RESULT	0.06	1.60	0.55	0.007	0.025	0.06

EF-100S+KD-42

KISWEL

■ 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

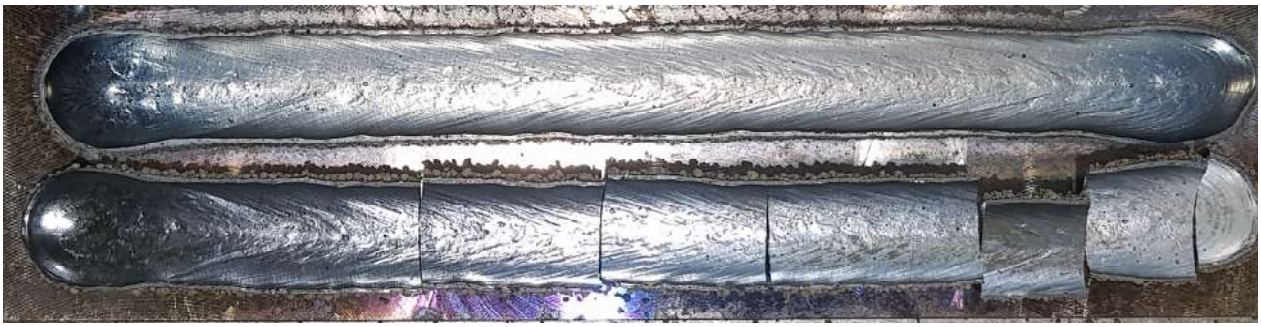
Base Metal	Thick (mm)	Size (mm)	Grove Design	Remark
SM490	25	300Lx125W	V-Grove	AWS A5.17

■ Typical Mechanical Properties of Weld Metal

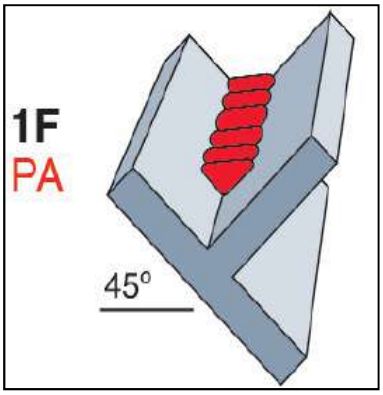
Item [Flux+Wire]	Tensile Test			Impact Test	Remark
	Y.S [MPa]	T.S [MPa]	E.L [%]	Impact Value [J]	
AWS Spec. [A5.17 F7A(P)2-EM12K]	≥ 400	480-660	≥22	≥27 @ -29℃	-
EF-100S+KD-42	545	600	29	53 @ -29℃	As Welded

■ Weldability Test

(1) Welding Conditions (DC+ 550A-30V-45CPM)



(2) Welding Conditions (DC+ 450A-26V-150CPM)









(★ : Very Good, ◎ : Good, ○ : Normal, × : Bad)

	Arc Stability	Slag Removal	Bead Appearance	Pork mark resistance	Fume
Normal	★	★	◎	★	◎
High Speed	★	★	◎	★	★

EF-100S+KD-42

KISWEL

■ 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

■ Approval

ABS	BV	DNV*GL
2YTM	2YTMM	Ⅱ YTM

■ 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**

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

