# EF-200V+KD-EH12K

SUBMERGED ARC WELDING

KISWEL

Rev.0

# EF-200V+KD-EH12K

KISWEL

## ■ Description & Application

- **Single and multi-layer welding of various kinds of structures such as offshore structures, buildings, large diameter and heavy wall steel pipes.**
- **Excellent impact toughness at low temperature.**
- **Bead appearance and slag removal are excellent.**

## ■ Classification

### Sub-arc Wire

- **AWS A5.17 : EH12K**
- **EN ISO 14171 : S3Si**
- **JIS Z 3351 : YS-S5**
- **KS B ISO 14171 : S3Si**

### 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 : F7A(P)8-EH12K**
- **EN ISO 14171 : S 46 6 CS S3Si**
- **JIS Z 3183 : S502-H**
- **KS B ISO 14171 : S 46 6 CS S3Si**

## ■ Typical Chemical Composition of Wire(%)

| Item | C | Mn | Si | S | P | Cu |
|---|---|---|---|---|---|---|
| AWS Spec. EH14 | 0.06-0.15 | 1.50-2.00 | 0.20-0.65 | ≤0.025 | ≤0.025 | ≤0.35 |
| RESULT | 0.10 | 1.77 | 0.33 | 0.008 | 0.011 | 0.06 |

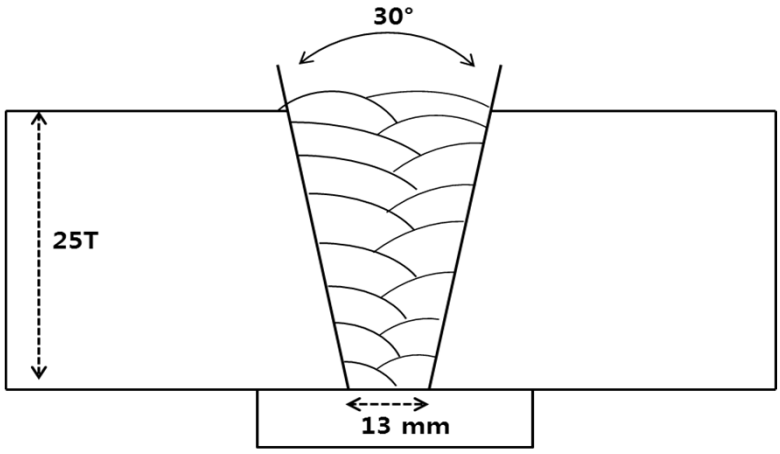
## ■ Typical Chemical Composition of Weld Metal(%)

| Item | C | Mn | Si | S | P | Cu |
|---|---|---|---|---|---|---|
| RESULT | 0.07 | 1.71 | 0.34 | 0.006 | 0.021 | 0.06 |

# EF-200V+KD-EH12K

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)8-EH12K] | ≥ 400 | 480-660 | ≥22 | ≥27 @ -62℃ | - |
| EF-200V+KD-EH12K | 542 | 611 | 30 | 103 @ -51℃<br>72 @ -62℃ | As-Welded |
| EF-200V+KD-EH12K | 402 | 500 | 35 | 124 @ -51℃<br>89 @ -62℃ | PWHT [610℃ 10Hr] |

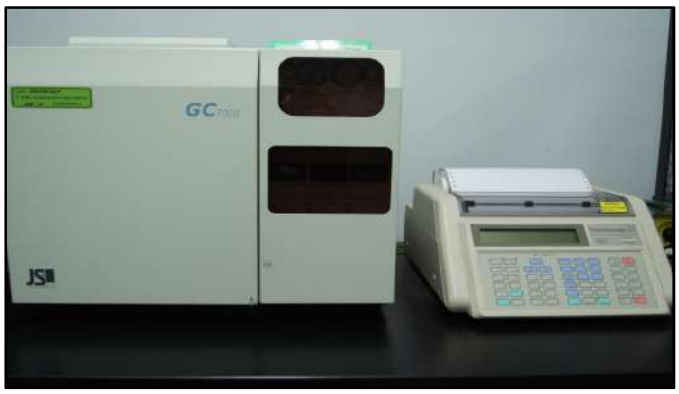
## ■ Diffusible Hydrogen Test

| Class. | Diffusible Hydrogen Content (㎖) / 100g Weld Metal | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | Av. |
| Result | 4.68 | 4.50 | 4.91 | 5.21 | 4.83 |

**⋆ Test Information**

**▶ Test Method : Reference to EN ISO 3690**

**▶ Test Equipment : G.C (Gas Chromatograph)**



< Gas Chromatography equipment >

# EF-200V+KD-EH12K



## ■ 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**

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

