# ZH-100

SOLID WELDING WIRE

FOR 690MPA HIGH STRENGTH STEEL

KISWEL

Rev.0

## ■ Description & Application

- 건설기계, 중장비, 압력용기 등의 70킬로급 고장력강의 맞대기 및 필렛 용접용 솔리드 와이어 입니다.
- 고전류 용접영역에서도 안정적인 용접성을 나타냅니다.
- 혼합가스 사용으로 스패터 발생이 적어, 아름다운 용접 외관을 얻을 수 있습니다.

## ■ Classification

- AWS A5.28-2005 : ER100S-1
- JIS Z 3312-2009 : G 69 A 2 M N4CM21T
- EN ISO 16834-A : G 62 2 M21 Z Mn3Ni1.5Mo
  : G 62 2 M13 Z Mn3Ni1.5Mo
- EN ISO 16834-B : G 69A 2U M21 N4CM21T
  : G 69A 2U M13 N4CM21T

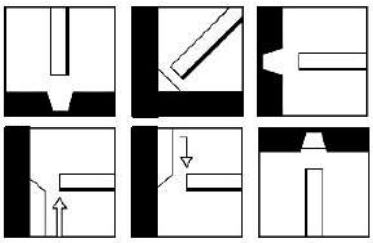
## ■ Typical Chemical Composition of Wire (%)

| Spec. | Chemical composition (%) | | | | | | |
|---|---|---|---|---|---|---|---|
| | C | Si | Mn | P | S | Ni | Mo |
| ER100S-1 | ≤0.09 | 0.2~0.55 | 1.25~1.8 | ≤0.01 | ≤0.01 | 1.4~2.1 | 0.25~0.55 |
| 일례 | 0.05 | 0.26 | 1.54 | 0.008 | 0.006 | 2.00 | 0.35 |

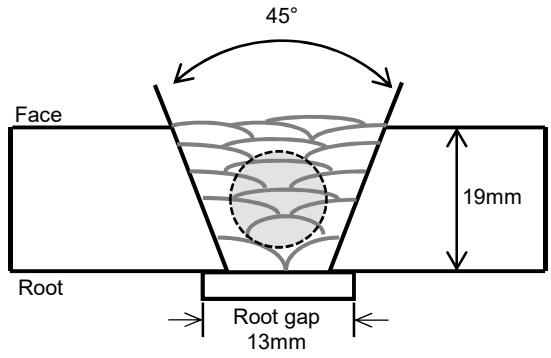
## ■ Shielding Gas

- Ar + 20%$CO_2$ (15~25ℓ/min)
- Ar + 2%$O_2$ (15~25ℓ/min)

## ■ Welding Position



## All Weld Metal Test Specimen




| | |
|---|---|
| **Base metal** | A515 Gr.70 |
| **Diameter** | 1.2mm |
| **Current / Voltage** | 300A / 27V |
| **Stick out** | 20mm |
| **Travel Speed** | 30 CPM |
| **Welding Position** | PA / 1G |

## Typical Mechanical Properties of Weld Metal

| | Y.S (MPa) | T.S (MPa) | El. (%) | IV (J) (Joule @ Temp) | Shielding Gas | PWHT |
|---|---|---|---|---|---|---|
| AWS ER100S-1 | ≥ 610 | ≥ 690 | ≥ 16 | **68 @ -50℃** | **Ar + 2%$O_2$** | AW |
| **ZH-100** | **720** | **780** | **22** | **130** | **Ar + 2%$O_2$** | AW |
| **ZH-100** | **700** | **760** | **20** | **70** | **Ar + 20%$CO_2$** | AW |

## Typical Operating Procedures

| Dia (mm) | Shielding Gas | Current (amps) | Voltage (volts) | Feed speed (m/min) | Melt-off Rate (Kg/Hrs) |
|---|---|---|---|---|---|
| 1.2 | Ar-20%$CO_2$, Ar-2%$O_2$ | 280-340 | 27-30 | 8.5-12.5 | 4.2-6.2 |
| 1.4 | | 300-440 | 30-34 | 7.5-12.5 | 5.1-8.5 |
| 1.6 | | 320-440 | 28-32 | 5.5-7.5 | 4.9-6.7 |

* Polarity : DCEP (DC+)

## ■ Packaging




## ■ Size and Weight

| Dia. (mm) | 0.9, 1.0, 1.14, 1.2, 1.32, 1.4, 1.6 | | | |
|---|---|---|---|---|
| Weight (kg) | 2 | 5 | 12.5, 15, 20 | 100~450 |
| Packaging | Plastic Spool | | | Pail-pack / DPP |
| | - | | Wire Basket | |

## ■ Approval

| Shielding gas | ABS | BV | DNV GL | LR | KR | NK |
|---|---|---|---|---|---|---|
| CO2 | - | - | - | - | - | - |
| MIX | - | - | - | - | - | - |

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

