

Supercored 71

FLUX CORED ARC WELDING CONSUMABLE
FOR WELDING OF MILD & 490MPa CLASS
HIGH TENSILE STEEL



❖ Specification

| | |
|-----------------------|--------------------|
| <i>AWS A5.36</i> | E71T1- C1A0- CS1 |
| <i>(AWS A5.36M</i> | E491T1- C1A2- CS1) |
| <i>(AWS A5.20</i> | E71T- 1C) |
| <i>EN ISO 17632-A</i> | T 42 2 P C 1 H10 |

❖ Applications

All position welding of machinery, shipbuilding, bridges. Impact values of weld metal are good.

❖ Characteristics on Usage

Supercored 71 is a flux cored wire which has been designed to get a good usability in all position for wide range of welding currents. With its quiet and smooth arc, its slag detachability is very good.

❖ Note on Usage

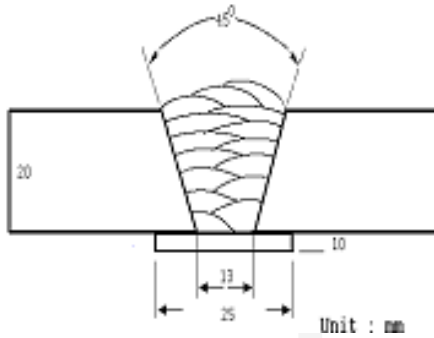
1. Proper preheating(50~ 150℃) and interpass temperature must be used in order to release hydrogen which may cause cracking in weld metal when electrodes are used for medium and heavy plates.
2. One- side welding defects such as hot cracking may occur with wrong welding parameter such as high welding speed.
3. Use 100% CO₂ gas.



Mechanical Properties & Chemical Composition of All Weld Metal

❖ Welding Conditions

Method by AWS Spec.



[Joint Preparation & Layer Details]

| | |
|---------------------|-----------------------|
| Welding Position | : 1G(PA) |
| Diameter(mm) | : 1.2mm |
| Shielding Gas | : 100%CO ₂ |
| Flow Rate(ℓ /min.) | : 20~22 |
| Amp./ Volt. | : 280 / 31 |
| Stick-Out(mm) | : 20~25 |
| Pre-Heat(°C) | : R.T . |
| Interpass Temp.(°C) | : 150±15 |
| Polarity | : DC(+) |

❖ Mechanical Properties of all weld metal

| Consumable | Tensile Test | | | CVN Impact Test (Joule) | |
|-----------------------------|--------------|---------|-------|-------------------------|-------|
| | YS(MPa) | TS(MPa) | EL(%) | 0°C | -20°C |
| Supercored 71 | 545 | 572 | 28 | 110 | 70 |
| AWS A5.36 E71T1-C1A0-CS1 | ≥ 390 | 490~670 | ≥ 22 | ≥ 27J at -20°C | |

❖ Chemical Analysis of all weld metal(wt%)

| Consumable | C | Si | Mn | P | S |
|-----------------------------|--------|-------|--------|--------|--------|
| Supercored 71 | 0.03 | 0.51 | 1.26 | 0.010 | 0.011 |
| AWS A5.36 E71T1-C1A0-CS1 | ≤ 0.12 | ≤ 0.9 | ≤ 1.75 | ≤ 0.03 | ≤ 0.03 |

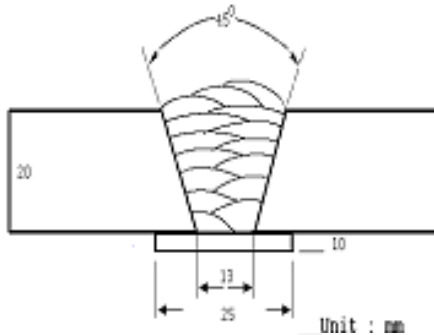
This information is provided solely for the purpose of confirming product conformance with applicable standards. The serviceability of a product or structure utilizing this type of information is and must be the sole responsibility of the builder/user. Many variables beyond the control of HYUNDAI WELDING CO., LTD. affect the results obtained in applying this type of information. These variables include, but are not limited to, welding procedure, shielding gas, plate chemistry and temperature, weldment design, fabrication methods and service requirements.



Mechanical Properties & Chemical Composition of All Weld Metal

❖ Welding Conditions

Method by AWS Spec.



[Joint Preparation & Layer Details]

| | |
|---------------------------|-----------------------|
| Welding Position | : 1G(PA) |
| Diameter(mm) | : 1.4mm |
| Shielding Gas | : 100%CO ₂ |
| Flow Rate(ℓ /min.) | : 20~22 |
| Amp./ Volt. | : 300 / 32 |
| Stick-Out(mm) | : 20 |
| Pre-Heat(℃) | : R.T . |
| Interpass Temp.(℃) | : 150±15 |
| Polarity | : DC(+) |

❖ Mechanical Properties of all weld metal

| Consumable | Tensile Test | | | CVN Impact Test (Joule) | |
|-----------------------------|--------------|---------|-------|-------------------------|------|
| | YS(MPa) | TS(MPa) | EL(%) | 0℃ | -20℃ |
| Supercored 71 | 548 | 576 | 28 | 128 | 81 |
| AWS A5.36 E71T1-C1A0-CS1 | ≥ 390 | 490~670 | ≥ 22 | ≥ 27J at -20℃ | |

❖ Chemical Analysis of all weld metal(wt%)

| Consumable | C | Si | Mn | P | S |
|-----------------------------|--------|-------|--------|--------|--------|
| Supercored 71 | 0.038 | 0.50 | 1.28 | 0.010 | 0.011 |
| AWS A5.36 E71T1-C1A0-CS1 | ≤ 0.12 | ≤ 0.9 | ≤ 1.75 | ≤ 0.03 | ≤ 0.03 |

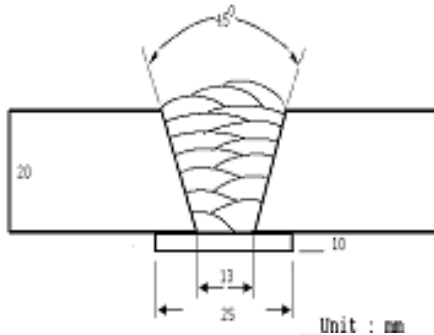
This information is provided solely for the purpose of confirming product conformance with applicable standards. The serviceability of a product or structure utilizing this type of information is and must be the sole responsibility of the builder/user. Many variables beyond the control of HYUNDAI WELDING CO., LTD. affect the results obtained in applying this type of information. These variables include, but are not limited to, welding procedure, shielding gas, plate chemistry and temperature, weldment design, fabrication methods and service requirements.



Mechanical Properties & Chemical Composition of All Weld Metal

❖ Welding Conditions

Method by AWS Spec.



[Joint Preparation & Layer Details]

| | |
|----------------------------|-----------------------|
| Welding Position | : 1G(PA) |
| Diameter(mm) | : 1.6mm |
| Shielding Gas | : 100%CO ₂ |
| Flow Rate(ℓ /min.) | : 20~22 |
| Amp./ Volt. | : 330 / 33 |
| Stick-Out(mm) | : 20 |
| Pre-Heat(°C) | : R.T . |
| Interpass Temp.(°C) | : 150±15 |
| Polarity | : DC(+) |

❖ Mechanical Properties of all weld metal

| Consumable | Tensile Test | | | CVN Impact Test (Joule) | |
|-----------------------------|--------------|---------|-------|-------------------------|-------|
| | YS(MPa) | TS(MPa) | EL(%) | 0°C | -20°C |
| Supercored 71 | 551 | 586 | 27.5 | 105 | 66 |
| AWS A5.36 E71T1-C1A0-CS1 | ≥ 400 | 490~670 | ≥ 22 | ≥ 27J at -20°C | |

❖ Chemical Analysis of all weld metal(wt%)

| Consumable | C | Si | Mn | P | S |
|-----------------------------|--------|-------|--------|--------|--------|
| Supercored 71 | 0.033 | 0.49 | 1.30 | 0.011 | 0.010 |
| AWS A5.36 E71T1-C1A0-CS1 | ≤ 0.12 | ≤ 0.9 | ≤ 1.75 | ≤ 0.03 | ≤ 0.03 |

This information is provided solely for the purpose of confirming product conformance with applicable standards. The serviceability of a product or structure utilizing this type of information is and must be the sole responsibility of the builder/user. Many variables beyond the control of HYUNDAI WELDING CO., LTD. affect the results obtained in applying this type of information. These variables include, but are not limited to, welding procedure, shielding gas, plate chemistry and temperature, weldment design, fabrication methods and service requirements.



Welding Efficiency

❖ Deposition Rate & Efficiency

| Consumable (size) | Welding Conditions | | Deposition Efficiency(%) | Deposition Rate(kg/hr) |
|------------------------|--------------------|----------|--|--|
| | Amp.(A) | Volt.(V) | | |
| Supercored 71 1.2mm | 150 | 24 | 84~86 | 2.4 |
| | 200 | 26 | 84~87 | 3.4 |
| | 250 | 28 | 85~88 | 4.5 |
| | 300 | 33 | 86~88 | 5.2 |
| Supercored 71 1.4mm | 250 | 28 | 85~87 | 3.9 |
| | 300 | 32 | 85~88 | 4.8 |
| | 350 | 36 | 86~89 | 5.8 |
| Supercored 71 1.6mm | 280 | 31 | 85~88 | 4.2 |
| | 330 | 33 | 86~88 | 4.8 |
| | 350 | 34 | 87~89 | 5.3 |
| | 400 | 38 | 87~90 | 5.7 |
| Remark | | | Deposition efficiency =(Deposited metal weight/ Wire weight used)× 100 | Deposition rate =(Deposited metal weight/ Welding time,min.)× 60 |

* Shielding Gas : 100%CO₂

This information is provided solely for the purpose of confirming product conformance with applicable standards. The serviceability of a product or structure utilizing this type of information is and must be the sole responsibility of the builder/user. Many variables beyond the control of HYUNDAI WELDING CO., LTD. affect the results obtained in applying this type of information. These variables include, but are not limited to, welding procedure, shielding gas, plate chemistry and temperature, weldment design, fabrication methods and service requirements.



Diffusible Hydrogen Content

❖ Welding Conditions

| | | | |
|--------------------|-----------------------|-------------------------|------------|
| Diameter(mm) | : 1.2 | Amps(A) / Volts(V) | : 280 / 31 |
| Shielding Gas | : 100%CO ₂ | Stick-Out(mm) | : 20 |
| Flow Rate(ℓ /min.) | : 20 | Welding Speed | : 45 cpm |
| Welding Position | : 1G (PA) | Current Type & Polarity | : DC(+) |

❖ Hydrogen Analysis Using Gas Chromatography Method

| | |
|-------------------------|-------------|
| Hydrogen Evolution Time | : 72 hrs |
| Evolution Temp. | : 45 °C |
| Barometric Pressure | : 780 mm-Hg |

❖ Result(ml/100g Weld Metal)

| X1 | X2 | X3 | X4 |
|-----|-----|-----|-----|
| 5.3 | 5.4 | 5.4 | 5.4 |

Average Hydrogen Content 5.4 ml / 100g Weld Metal



Proper Welding Condition

❖ Proper Current Range

| Consumable | Shielding Gas | Welding Position | Wire Dia. (mm) | | |
|---------------|---------------------|------------------|----------------|------------|------------|
| | | | 1.2mm | 1.4mm | 1.6mm |
| Supercored 71 | 100%CO ₂ | F & HF | 120~300Amp | 150~350Amp | 180~400Amp |
| | | V-Up & OH | 120~260Amp | 140~270Amp | 160~280mp |
| | | V-Down | 200~300Amp | 220~320Amp | 250~300Amp |

This information is provided solely for the purpose of confirming product conformance with applicable standards. The serviceability of a product or structure utilizing this type of information is and must be the sole responsibility of the builder/user. Many variables beyond the control of HYUNDAI WELDING CO., LTD. affect the results obtained in applying this type of information. These variables include, but are not limited to, welding procedure, shielding gas, plate chemistry and temperature, weldment design, fabrication methods and service requirements.



Approvals

❖ Shipping Approvals

| Welding Position | Register of shipping & Size(mm) | | | | | | |
|------------------|--|---------------------------------|-------------------------------|---|---------------------------|------------------------|---|
| | KR | ABS | LR | BV | DNV | GL | NK |
| All V- Down | 3SMG, 3YSMG ©H10 0.9~ 1.6 | 3SAH10, 3YSA 0.9~ 1.6 | 3S, 3YSH10 0.9~ 1.6 | SA3M,3YMHH A3M,3YMHH 0.9~ 1.6 | IIIYMSH10 0.9~ 1.6 | 3YH10S 0.9~ 1.6 | KSW53G©H10 KAW53MG©H10 0.9~ 1.6 |

❖ F No & A No

| F No | A No |
|------|------|
| 6 | 1 |