

S-6011.D

COVERED ARC WELDING ELECTRODE
FOR WELDING BUILDINGS AND PIPES



❖ Specification

| | |
|---------------|-------------|
| AWS A5.1 | E6011 |
| JIS Z3211 | E4311 |
| EN ISO 2560-A | E38 0 C 1 5 |

❖ Applications

Welding of thin steel sheets and pipes.

❖ Characteristics on Usage

S-6011.D is a high cellulose type electrode applicable for welding with alternating current or direct current. As the welding in poor groove fit up and vertical downward welding can be performed easily, it is suitable for all position welding of pipes. Its penetration is relatively deep and the volume of its slag is small, so that manipulation of the electrode is easy.

❖ Note on Usage

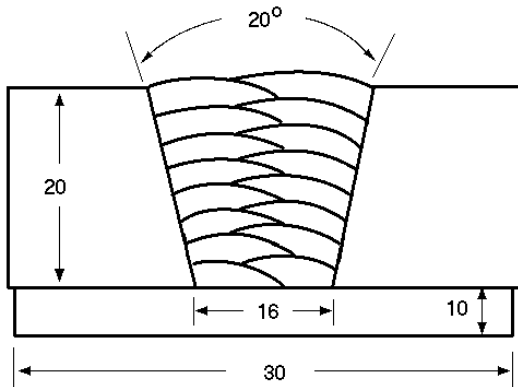
1. Pay attention not to exceed the recommended currents.
2. As this electrode is prone to absorb moisture, store it with care.



Mechanical Properties & Chemical Compositions of All Weld Metal

❖ **Welding Conditions**

Method by AWS Spec.



Diameter, mm(in) : 4.0 X 350(5/32 X 12)
 Amp./ Volt. : 140 / 22~23
 Interpass Temp. °C(°F) : 80~130 (176~266)
 Polarity : DC+

[Joint Preparation & Layer Details]

❖ **Mechanical Property of All Weld Metal**

| consumable | Tensile test | | | CVN Impact Value J (ft.lbs) |
|------------|-----------------|-----------------|-----------|--------------------------------|
| | YS MPa (ksi) | TS MPa (ksi) | EL (%) | -30°C (-22°F) |
| S-6011.D | 468(68) | 558(81) | 29.7 | 51(38) |
| AWS Spec. | ≥ 330(48) | ≥ 430(62) | ≥ 22 | ≥ 27(20) |

❖ **Chemical Composition of All Weld Metal(wt%)**

| Consumable | Chemical Composition (%) | | | | |
|------------|--------------------------|-------|-------|-------|-------|
| | C | Si | Mn | P | S |
| S-6011.D | 0.09 | 0.50 | 1.20 | 0.012 | 0.009 |
| AWS Spec. | ≤0.20 | ≤1.00 | ≤1.20 | N.S | N.S |

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.



**Weldability
& Crater Crack Test**

❖ **Weldability**

| Item | Division | Flat position | Vertical position |
|----------------------------------|---------------|---------------|-------------------|
| | Arc stability | | Excellent |
| Melting rate | | Excellent | Excellent |
| Deposition rate | | Excellent | Good |
| Resistance of spatter occurrence | | Excellent | Good |
| Bead appearance | | Good | Good |
| Slag detachability | | Excellent | Excellent |
| The others | | Good | Good |

❖ **Crater Crack Test**

| Test plate | Plate thickness (mm) | Fillet design (mm) | Welding conditions | | |
|------------|----------------------|--------------------|--------------------|----------|-----------------|
| | | | Amp.(A) | Volt.(V) | Result |
| ASTM A36 | 9(0.35) | unit: mm | 140 | 22~23 | No crater crack |

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Size Available and recommended Current & Approval

❖ Sizes Available and Recommended Currents

| Diameter, mm(in) | | 2.6 (3/32) | 3.2 (1/8) | 4.0 (5/32) | 5.0 (3/16) |
|--|---------------------------------|---------------|--------------|---------------|---------------|
| Length, mm(in) | | 300 (12) | 350 (14) | 350 (14) | 350 (14) |
| Recommended current range (AC or DC+ Amp.) | Flat position | 50 ~75 | 70 ~110 | 110 ~155 | 155 ~200 |
| | Vertical & Overhead position | 40 ~70 | 55 ~105 | 90 ~140 | 120 ~180 |

❖ Authorized Approval Details

| Classification | Dia. mm(in) | Welding position | Grade | | | | | |
|----------------|--------------------------|------------------|-------|-----|----|----|-----------|------|
| | | | KR | ABS | LR | BV | DNV GL | NK |
| E6011 | 2.6(3/32) ~ 5.0(3/16) | All | RMW2 | 2 | 2 | 2 | 2 | KMW2 |

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