HYUNDAI WELDING

Rev. 03

# S-7024.F

COVERED ARC WELDING ELECTRODE
FOR HIGH EFFICIENT WELDING

2020.12

HYUNDAI WELDING CO., LTD.

# S-7024.F

## ❖ Specification

| | |
|---|---|
| AWS A5.1 | E7024 |
| JIS Z 3211 | E4324 |
| EN ISO 2560-A | E42 0 RR 7 4 |

## ❖ Applications

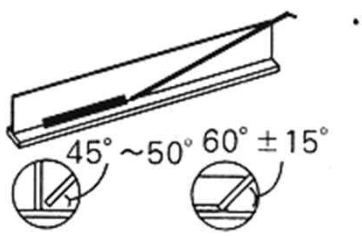
Flat and horizontal fillet welding of internal structures, inside hulls, buildings, machine construction

## ❖ Characteristics on Usage

S-7024.F is a representative iron powder titania type electrode widely used for flat and horizontal fillet welding. This is an execllet electrode with high efficiency.

## ❖ Note on Usage

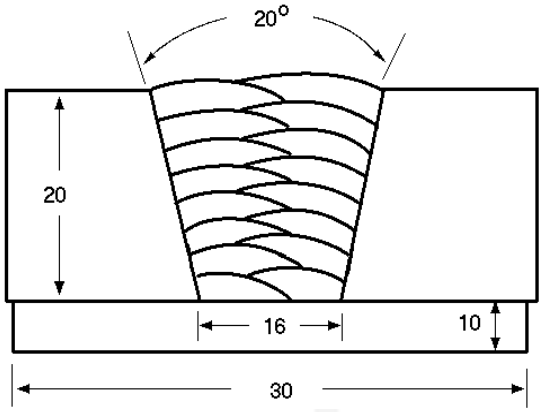
1. The optimum speed ratio is 1-1.5%
2. Dry the electrodes at 70-100℃ (158~212°F) for 30-60 minutes before use.
2. Keep the standard holding angles of the electrode in horizontal fillet welding as shown in the sketch



# Mechanical Properties & Chemical Compositions of All Weld Metal

## ❖ Welding Conditions

Method by AWS Spec.




[ Joint Preparation & Layer Details ]

| | | |
|---|---|---|
| Diameter. | : | 4.0 X 400mm(5/32 X 16in) |
| Amp./ Volt. | : | 170 / 23~24 |
| Interpass Temp. | : | 80~130℃ (176~266°F) |
| Polarity | : | AC or DC+ |

## ❖ Mechanical Property of All Weld Metal

| Consumable | Tensile test | | | CVN Impact Value J (ft.lbs) |
|---|---|---|---|---|
| | YS MPa (lbs/in²) | TS MPa (lbs/in²) | EL (%) | 0℃ (32°F) |
| S-7024.F | 513(74,000) | 561(81,000) | 23.4 | 61(45) |
| AWS A5.1 | ≥ 400(58,000) | ≥ 490(71,000) | ≥ 17 | ≥ 27 (20) |

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

| Consumable | Chemical Composition (%) | | | | |
|---|---|---|---|---|---|
| | C | Si | Mn | P | S |
| S-7024.F | 0.08 | 0.42 | 0.82 | 0.022 | 0.014 |
| AWS Spec | ≤ 0.15 | ≤ 0.90 | ≤ 1.25 | ≤ 0.035 | ≤ 0.035 |

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 & Welding Efficiency

## ❖ Weldability

| Division Items | | Checked | Remarks |
|---|---|---|---|
| Arc | Start arc | Excellent | •Welding conditions<br>H-Fillet |
| | Stability | Good | |
| | Concentricity | Excellent | |
| Slag | Fluidity | Good t | |
| | Detachability | Excellent | |
| Bead appearance | | Excellent | |
| Melting rate | | Good | |
| Heat resistance | | Good | |
| The others | | Good | |

## ❖ Test Conditions of Deposition Efficiency

| Consumable | Base Metal | | Welding conditions | | |
|---|---|---|---|---|---|
| | Specification | Dimension, mm(in) | Amp. (A) | Welding speed (mm/min) | Position |
| S-7024.F<br>4.0 X 450mm<br>(5/32 X 18in) | ASTM A36 | 300 X 150 X12<br>(12 X 5.9 X 0.5) | 200<br>(DC+) | 200~210 | Flat |

## ❖ Results of Deposition Efficiency Test

| Consumable | Deposition efficiency(%) | |
|---|---|---|
| | For electrode | For core wire |
| S-7024.F<br>4.0 X 450mm(5/32 X 18in) | 70 ~ 72 | 180 ~ 185 |

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# Size Available and recommended Current & Approval

## ❖Sizes Available and Reconnended Current

| Diameter mm(in) | | 3.2 (1/8) | 4.0 (5/32) | 4.5 (11/64) | 5.0 (3/16) | 6.0 (15/64) |
|---|---|---|---|---|---|---|
| Length mm(in) | | 400 (16) | 450 (18) | 450 (18)<br>700 (28) | 450 (18)<br>700 (28) | 450 (18)<br>700 (28) |
| Recommended current range ( AC or DC+ Amp.) | Flat & H-Fillet position | 100 ~150 | 140 ~200 | 180 ~230 | 200 ~250 | 260 ~300 |

## ❖ Authorized Approval Details

| Classification | Max Dia. mm(in) | Welding position | Grade | | | | |
|---|---|---|---|---|---|---|---|
| AWS | | | ABS | LR | DNV GL | NK | CWB |
| E7024 | 7.0(9/32) | F, H-Fil | 2 | 2, 2Y, 2YG | 2 | KMW2<br>KMW52 | CSA W48 E4924 |

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