

**FAMILIARC™**

# RB-26 Arc Welding Electrode

AWS A5.1 E6013, EN ISO 2560-A-E 35 0 R, JIS Z3211 E4313  
(For Mild Steel)

**KOBELCO**  
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**RB-26** is a high titania oxide type welding electrode for mild steel. It is widely used for welding sheets of ships, rolling stocks and automobiles, for ornamental surfacing of thick plates.

### General Characteristics

**Workability**

**RB-26** possesses the following merits.

- As the arc is stable and penetration is shallow, it enables welding of 0.8mm sheets.
- Since spatter is rarely caused, beautiful beads can be obtained.
- Slag detachability is good.
- Downward welding in the vertical position becomes easy to carry out with this electrode and results in a beautiful bead appearance.
- Both AC and DC can be used.

**Production Sizes and Recommended Welding Current**

Table 1: Production sizes and recommended welding current (AC or DC ±)

|                         |                     |         |          |           |           |
|-------------------------|---------------------|---------|----------|-----------|-----------|
| Electrode Diameter (mm) |                     | 2.6     | 3.2      | 4.0       | 5.0       |
| Electrode Length (mm)   |                     | 350     | 350      | 400       | 400       |
| Current Range (Amp)     | Flat Position       | 45 ~ 95 | 60 ~ 125 | 105 ~ 170 | 150 ~ 220 |
|                         | Vertical & Overhead | 45 ~ 95 | 60 ~ 125 | 100 ~ 150 | 125 ~ 190 |

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**Vertical Downward Welding**

Downward welding in the vertical position can be performed with **RB-26** of diameter 2.6mmØ ~ 5.0mmØ. Vertical downward welding raises welding speed and bead ratio (bead length/electrode length) which naturally improves efficiency.

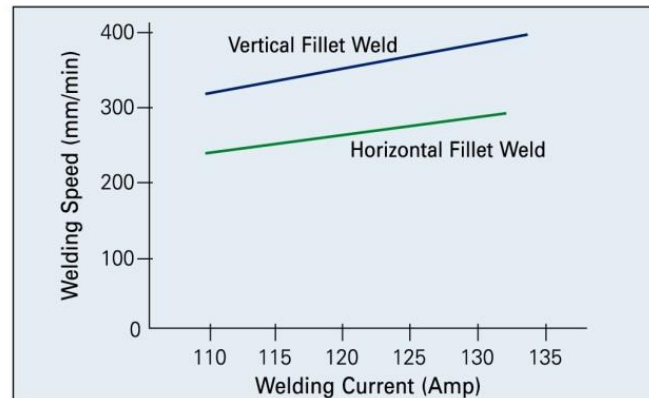


Fig. 1: Vertical downward fillet weld with **RB-26** 3.2mmØ electrode (Plate thickness - 2.3mm)

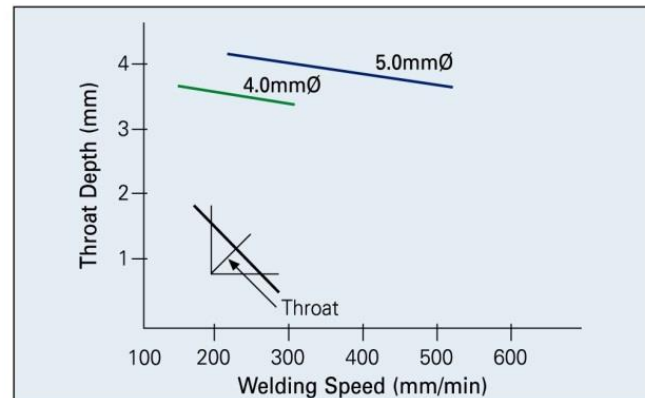


Fig. 2: Relationship between welding speed and throat thickness in vertical downward welding with **RB-26** 4.0mmØ and 5.0mmØ (Plate thickness - 6mm)

Vertical downward welding with **RB-26** is done in the following way.

- Adjust the current to the proper amperage in vertical downward welding according to the size of the electrode.
- Put the electrode in contact with the parent plates with the angles shown in Fig. 3 and begin contact welding.

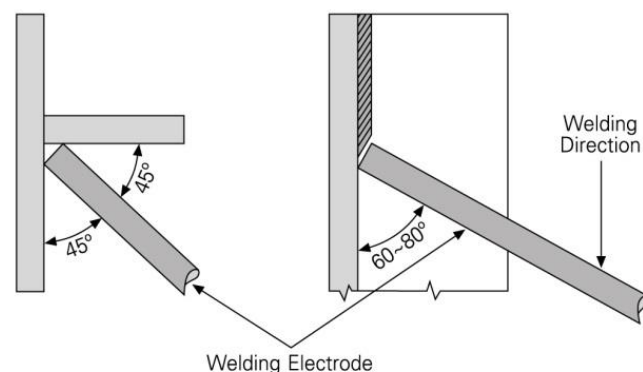


Fig. 3: Angles for vertical downward welding with **RB-26**

**Weldability**

**Mechanical Properties of All Weld Metal**

Table 2: Typical Mechanical Properties of All Weld Metal

|          | Yield Point<br>MPa (ksi) | Tensile Strength<br>MPa (ksi) | Elongation<br>(%) |
|----------|--------------------------|-------------------------------|-------------------|
| Example  | 450 (65)                 | 510 (74)                      | 25                |
| Guaranty | ≥330 (≥48)               | ≥410 (≥60)                    | ≥17               |

**Chemical Composition of All Weld Metal**

Table 3: Typical Chemical Composition of All Weld Metal (mass%)

| C    | Mn   | Si   | P     | S     |
|------|------|------|-------|-------|
| 0.08 | 0.37 | 0.30 | 0.012 | 0.010 |

**Approval List**

**RB-26** has received the approvals listed below.

Table 4: Shipping approvals

| LR | ABS | DNV-GL |
|----|-----|--------|
| 2m | 2   | 2      |

**Notes of Usages**

- Though **RB-26** is contained in a damp-proof package, it absorbs moisture if it is stored or left for a long time. It is always recommended to dry it again at 70°C~100°C for 30~60 minutes before use.
- Keep the arc length as short as possible.
- Adopt back step method or strike the arc on a small steel plate prepared for this particular purpose to prevent blowholes at the arc starting.
- Use the wind screen against strong wind.

**Technical Report**

**The Traditional and Advanced Covered Electrode, "RB-26" for Mild Steel Sheet Metals.**

**When was RB-26 first launched in the market ?**

RB-26 is a high titania type covered electrode for welding mild steel. It was developed in 1951. The "R" stands for Rutile, which is the major ingredient in the coating flux, while "B" symbolises a slag-shield covered electrode. "26" represents the 26<sup>th</sup> year of the Showa era of Japan, corresponding to the 1951 when it was developed.

**Is RB-26 Old-Fashioned ?**

You may believe that RB-26 is old-fashioned. RB-26, however, is commonly used worldwide for welding light sheet metals and light-gage formed steel in light-duty steel structures, and for surfacing thick-section welds to improve rough surfaces (Surface Dressing). The consumption of RB-26 differs country by country. In Southeast Asia and Middle East, RB-26 is one of the most commonly used, contemporary electrodes.

**Is RB-26 the same as other E6013 Electrodes on Quality ?**

RB-26 persistently earns a good reputation among users due to the following outstanding features in out-of-position welding, including the vertical-down position:

- Smoother arc transfer
- Less spatter
- Convenient self-peeling slag removal as show in Fig. 3
- Smoother bead surfaces with a fine ripple
- Excellent fusion with base metals provides a longer bead per one electrode – this is advantageous in welding sheet metals.



Fig.4: Convenient self-peeling slag removal with RB-26 assures a glossy bead appearance without post-weld brushing

**How RB-26 is of International**

Kobe steel has established a worldwide production and sales network in order to assure better delivery and technical services

matching local demands for RB-26. RB-26 is now mainly sold not only in Thailand, Singapore, Malaysia and Indonesia but also exported to Saudi Arabia, Vietnam and so on. RB-26, among all the various brands classified as AWS E6013, has persistently earned high reputation in these international markets.

**Committed to quality and customer satisfaction**

The high quality RB-26 produced in both Japan and overseas is approved and certified by shipping registers of Nippon Kaiji Kyokai, American Bureau of shipping and Lloyd's Register of shipping. These approvals and certificates assure the users the reliability and quality of RB-26.

Moreover, the emphasis on quality pervades the factories in Japan and overseas – with nearly all of our employees involved in quality control circles. To ensure that RB-26 is defect-free, we inspect it piece-by-piece and lot-by-lot of production by using Kobe steel's proprietary inspection processes and procedures.

To further ensure customer satisfaction, our marketing staffs work closely with customers, providing technical services that include training in welding techniques. Unsurpassed quality of RB-26 and customer satisfaction remains our highest priorities.

**Something new in the traditional**

Since its inception, RB-26 has seen its features refined and its markets expanded. Kobe Steel pursues keen quality control in order to maintain the outstanding features of RB-26 produced in Japan and overseas. RB-26 is a traditional cover electrode, but, at the same time, highly advanced in that the quality of RB-26 has been maintained through advanced research and production engineering. Kobe Steel hopes RB-26 will be an indispensable electrode for your workshops.