

Technical data sheet

011121MBA

Cored welding wire
ROBOFIL B P91**CLASSIFICATION**

EN ISO 17634-B: T69T5-0G-9C1MV-H5

DESCRIPTION

- Seamless copper coated tubular wire for gas shielded flux cored arc welding
- 9% Cr-1% Mo deposit modified with niobium and vanadium additions
- Tightly controlled weld metal chemistry provides strength, toughness, creep resistance, oxidation resistance and corrosion resistance at elevated temperatures
- Enhanced productivity, improved weldability, better wetting properties compared to solid wires
- Excellent weld metal quality and X-ray soundness
- $H_{DM} < 4\text{ml}/100\text{g}$ deposited metal over the whole parameter box

APPLICATIONS

ROBOFIL B P91 is designed for welding 9CrMo modified creep resisting steels (P91/T91) with small additions of niobium, vanadium and nitrogen to give improved long term creep properties.

Examples of materials to be welded:

| ASTM | Material number | EN Symbol |
|------------|-----------------|----------------|
| A213 T 91 | 1.4903 | X10CrMoVNb 9 1 |
| A335 P 91 | | |
| A387 Gr.91 | | |
| A182 F 91 | | |

APPROVALS

TÜV (12484.00)

TYPICAL ALL-WELD METAL ANALYSIS

| C | Mn | Si | Cr | Ni | Mo | Nb | V | N | Al | Cu | S | P |
|------|-----|-----|----|-----|-----|------|------|------|-------|------|-------|-------|
| 0.12 | 0.7 | 0.3 | 10 | 0.3 | 1.0 | 0.06 | 0.23 | 0.05 | 0.002 | 0.05 | 0.005 | 0.007 |

MINIMUM ALL-WELD METAL MECHANICAL PROPERTIES (with Ar – 8% CO₂ shielding gas)

| Rm [MPa] | Rp0.2% [MPa] | As [%] | CVN [J] |
|----------|--------------|--------|-----------|
| 690 | 565 | 14 | +20°C: 47 |

After heat treatment 4 hours at 760°C

TYPICAL ALL-WELD METAL MECHANICAL PROPERTIES (with Ar – 8% CO₂ shielding gas)

| Rm [MPa] | Rp0.2% [MPa] | As [%] | CVN [J] |
|----------|--------------|--------|-----------|
| 750 | 600 | 19 | +20°C: 60 |

After heat treatment 4 hours at 760°C

SHIELDING GAS

| | | |
|------------|-----|---|
| ISO 14175: | M20 | Ar + 5% < CO ₂ ≤ 15% |
| | M12 | Ar + 0.5 % < CO ₂ ≤ 2.5 with or without helium |
| | M21 | Ar + 15 - 25% CO ₂ |
| | Z | Ar + CO ₂ ≤ 0.5 % or O ₂ ≤ 0.5 % with or without helium |

OPERATING CONDITIONS

| Diameter [mm] | Current type | Current [A] | Voltage [V] | Stick-out [mm] |
|---------------|---------------|-------------|-------------|----------------|
| 1.2 | DC+ or pulsed | 100 - 350 | 16 - 34 | 12 - 25 |
| 1.6 | DC+ or pulsed | 160 - 470 | 20 - 36 | 15 - 25 |

WELDING POSITIONS

ROBOFIL B P91 is primarily used in the flat and horizontal-vertical positions. However, welds in other positions are also possible using the short-circuiting or pulsed arc modes of transfer.

PACKAGING

| Diameter | 1.2 mm | 1.6 mm |
|------------|---|--------|
| Spool type | EN ISO 544 – ASME IIC SFA-5.2 M: BS 300 | |
| Weight | 15 kg | |

Other packaging and other diameters: please consult us