

Chromet® 9-B9

TOP FEATURES

- P91 alloyed steel: Modified 9CrMo designed to weld equivalent "type 91" 9CrMo steels modified with small additions of niobium, vanadium and nitrogen for improved long term creep resistance
- Moisture resistant coating provides low amounts of weld metal hydrogen levels for a superior weld
- Specifically designed for high integrity structural service at elevated temperature
- Weld metal chemistry is low in impurity elements allowing it to respect the X Factor (<15ppm) and J-factor (<120ppm)

TYPICAL APPLICATIONS

- Main Steam Piping
- Oil Refineries
- Coal Liquefaction and Gasification Plants
- Power Generation Plants
- Turbine Castings

CLASSIFICATION

| | |
|---------------|--------------|
| AWS A5.5 | E9015-B91 H4 |
| EN ISO 3580-B | E 6216-9C1MV |

CURRENT TYPE

DC+/AC

WELDING POSITIONS

All position, except vertical down

CHEMICAL COMPOSITION (WEIGHT %), WELD METAL

| | C | Mn* | Si | S | P | Cr | Ni* | Mo | Nb | V | N | Cu | Al |
|---------|------|------|---------------|---------------|---------------|------|------|------|------|------|------|---------------|---------------|
| Min. | 0.08 | 0.40 | not specified | not specified | not specified | 8.0 | 0.20 | 0.85 | 0.03 | 0.15 | 0.03 | not specified | not specified |
| Max. | 0.12 | 0.75 | 0.30 | 0.01 | 0.01 | 10.0 | 0.40 | 1.20 | 0.07 | 0.25 | 0.07 | 0.25 | 0.04 |
| Typical | 0.1 | 0.6 | 0.25 | 0.008 | 0.008 | 9 | 0.3 | 1 | 0.04 | 0.2 | 0.05 | 0.05 | 0.01 |

*Mn+Ni≤1.0%. Nickel is below 0.4% (as parent material) although AWS allows up to 0.8%Ni. See Chromet 9MV-N or Chromet 9MVN+ for variant with 0.4–0.7%Ni conforming to ISO specification.

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

| Properties after PWHT | Min. * | Typical (760°C / 2h) | | | |
|---------------------------|---------------|----------------------|-------|-------|-------|
| | | 20°C | 550°C | 600°C | 650°C |
| Tensile strength (MPa) | 620 | 710 | >450 | >375 | >285 |
| 0.2% Proof strength (MPa) | 530 | 590 | >360 | >255 | >175 |
| Elongation (%) | 4d | 17 | 22 | - | - |
| | | 5d | 17 | 20 | >15 |
| Reduction of area (%) | not specified | 63 | >68 | >75 | >80 |
| Impact ISO-V (J) +20°C | not specified | 75 | - | - | - |
| Lateral expansion +20°C | not specified | 1.10 | - | - | - |
| Hardness (HV) | not specified | 240 | - | - | - |

*Minimum strength for parent material is lower than AWS requirement shown.

OUTPUT RANGE

| Diameter x Length (mm) | Current range (A) |
|------------------------|-------------------|
| 2.5 x 350 | 70-100 |
| 3.2 x 350 | 80-130 |
| 4.0 x 450 | 100-170 |
| 5.0 x 450 | 140-240 |

PACKAGING AND AVAILABLE SIZES

| Diameter x Length (mm) | Packaging | Electrodes/pack | Net weight/pack (kg) | Item number |
|---------------------------|-----------|-----------------|-------------------------|-------------|
| 2.5 x 250 | CAN | 205 | 4.3 | CH9B9-25-1 |
| 3.2 x 350 | CAN | 117 | 4.1 | CH9B9-32-1 |
| 4.0 x 450 | CAN | 80 | 5.4 | CH9B9-40-1 |
| 5.0 x 450 | CAN | 48 | 5.2 | CH9B9-50-1 |

TEST RESULTS

Test results for mechanical properties, deposit or electrode composition and diffusible hydrogen levels were obtained from a weld produced and tested according to prescribed standards, and should not be assumed to be the expected results in a particular application or weldment. Actual results will vary depending on many factors, including, but not limited to, weld procedure, plate chemistry and temperature, weldment design and fabrication methods. Users are cautioned to confirm by qualification testing, or other appropriate means, the suitability of any welding consumable and procedure before use in the intended application.

Safety Data Sheets (SDS) are available here:



Subject to Change – The information is accurate to the best of our knowledge at the time of printing.
Please refer to www.lincolnelectric.eu for any updated information.