

9CRM0V-N

Low Alloy Solid Electrode · AWS EB91

KEY FEATURES

- B9 (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
- Non-copper coated solid electrode 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)

RECOMMENDED FLUXES

OP 9W
OP 90W

CONFORMANCES

AWS A5.23: EB91

TYPICAL APPLICATIONS

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

DIAMETERS / PACKAGING

| Diameter mm (in) | 25kg (55 lb) Spool |
|---------------------|-----------------------|
| 2.4 (3/32) | SA9CRM0VN-24 |
| 3.2 (1/8) | SA9CRM0VN-32 |

MECHANICAL PROPERTIES⁽¹⁾ – As Required per AWS A5.23/A5.23M

| | Yield Strength ⁽²⁾ MPa (ksi) | Tensile Strength MPa (ksi) | Elongation % | Charpy V-Notch J (ft-lbf) @20°C (68°F) | Hardness HV |
|---|---|----------------------------------|-----------------|--|----------------|
| Requirements AWS EB91 | 415 (60) min | 620 (90) min | 16 min | - | - |
| Typical Performance⁽³⁾ As-Welded | 610 (88) | 720 (104) | 25 | 45 (33) | 230 |

DEPOSIT COMPOSITION⁽¹⁾ – As Required per AWS A5.23/A5.23M

| | %C | %Mn | %Si | %S | %P | %Cr | %Ni |
|--|-----------|-----------|-----------|-----------|-----------|----------|---------|
| Requirements AWS EB91 | 0.08-0.13 | 0.40-0.80 | 0.15-0.50 | 0.010 max | 0.010 max | 8.5-9.5 | 0.4-0.8 |
| Typical Performance⁽³⁾ | 0.1 | 0.5 | 0.25 | 0.006 | 0.008 | 9.0 | 0.6 |
| | %Mo | %Nb | %V | %N | %Cu | %Al | |
| Requirements AWS EB91 | 0.85-1.1 | 0.03-0.08 | 0.15-0.25 | 0.03-0.07 | 0.10 max | 0.04 max | |
| Typical Performance⁽³⁾ | 1.0 | 0.05 | 0.20 | 0.05 | 0.03 | <0.01 | |

TYPICAL OPERATING PROCEDURES

| Diameter mm (in) | Polarity | Current (Amps) | Voltage (Volts) |
|---------------------|----------|----------------|-----------------|
| 2.4 (3/32) | DC+ | 420 | 28 |

⁽¹⁾ Typical all weld metal ⁽²⁾ Measured with 0.2% offset ⁽³⁾ See test results disclaimer ⁽⁴⁾ Preferred polarity is listed first.

IMPORTANT: SPECIAL VENTILATION AND/OR EXHAUST REQUIRED

Fumes from the normal use of some welding products can contain significant quantities of components - such as chromium and manganese - which can lower the 5.0 mg/m³ maximum exposure guideline for general welding fume.

BEFORE USE, READ AND UNDERSTAND THE SAFETY DATA SHEET (SDS) FOR THIS PRODUCT AND SPECIFIC INFORMATION PRINTED ON THE PRODUCT CONTAINER.

Safety Data Sheets (SDS) and Certificates of Conformance are available on our website at www.lincolnelectric.com

FUMES AND GASES can be hazardous to your health.

- Fumes from the normal use of this product contain significant quantities of potentially hazardous compounds. See consumable product label/insert.
- Keep your head out of the fumes.
- Use enough ventilation and local exhaust to keep fumes and gases from your breathing zone and the general area.
- An approved respirator should be used unless exposure assessments are below applicable exposure limits.

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.

CUSTOMER ASSISTANCE POLICY

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