



9018-B3 XLM

AWS E9018-B3 H4R

Replaces: 050720

140-J, INDEX: 060116

DESCRIPTION:

McKay 9018-B3 XLM is ideal for welding 2 1/4% Cr, 1% Mo steels when heat treating (stress relieving) is required after welding. It is also an outstanding choice when long-term stress relieving is required or for higher elevated temperature strength than obtained with McKay 9018-B3L XLM. McKay 9018-B3 XLM resists moisture reabsorption to minimize hydrogen cracking and starting porosity. Note: Actual certs are supplied with every shipment (one per master carton or pallet) at no charge.

APPLICATIONS:

Used for chrome-moly pipes, castings, forgings and boiler work. Excellent for welding steels with tensile strengths greater than 90,000 psi.

| Features | Benefits |
|----------|----------|
|----------|----------|

- | | |
|---|---|
| <ul style="list-style-type: none"> • Low hydrogen, less than 4 ml/100 g • Excellent arc characteristics • Low moisture reabsorption • Low spatter level • Quick and easy slag removal • Low smoke level | <ul style="list-style-type: none"> • Resistant to hydrogen-induced cracking • Stable, easy to control arc • Prevents starting porosity • Improves weld bead appearance, higher deposition • Reduces clean-up time • Welder safety and comfort |
|---|---|

TYPICAL WELD METAL PROPERTIES* (CHEM PAD):

| Weld Metal Analysis | | AWS Spec |
|---------------------|-------|------------------|
| Carbon (C) | 0.07 | 0.05 to 0.12 max |
| Manganese (Mn) | 0.80 | 0.90 max |
| Phosphorus (P) | 0.01 | 0.03 max |
| Sulphur (S) | 0.009 | 0.03 max |
| Silicon (Si) | 0.59 | 0.80 max |
| Chromium (Cr) | 2.25 | 2.00 to 2.50 |
| Molybdenum (Mo) | 1.05 | 0.90 to 1.20 |

TYPICAL MECHANICAL PROPERTIES*(AS WELDED):

| | Stress Relieved 1 Hour at 1275°F | AWS Spec |
|--------------------|----------------------------------|-----------------|
| Tensile Strength | 112,000 psi (773 MPa) | 90,000 psi, min |
| Yield Strength | 87,000 psi (600 MPa) | 77,000 psi, min |
| Elongation % in 2" | 23% | 17% min |
| Reduction of Area | 66.1% | Not required |

TYPICAL CHARPY V-NOTCH IMPACT VALUES*:

| | | AWS Spec |
|---------------------|------------------|--------------|
| Avg. at 0°F (-18°C) | 45 ft•lbf (61 J) | Not required |

CONFORMANCES AND APPROVALS:

- AWS Spec A5.5, Class E9018-B3 H4R • ASME SFA5.5, F-4, A-4, E9018-B3 H4R • ABS

*The information contained or otherwise referenced herein is presented only as "typical" without guarantee or warranty, and McKay expressly disclaims any liability incurred from any reliance thereon. Typical data are obtained when welded and tested in accordance with AWS A5.5 specification. Other tests and procedures may produce different results. No data is to be construed as a recommendation for any welding condition or technique not controlled by McKay.



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RECOMMENDED WELDING PROCEDURES:

- GENERAL:** DCEP (electrode positive, work negative) or AC
- ARC LENGTH:** Very short (less than half the diameter of the electrode)
- FLAT:** Angle electrode 10-15° from 90°
- VERTICAL-UP:** Use weaving technique
- VERTICAL DOWN:** Not recommended
- OVERHEAD:** Use slight whipping motion within the puddle
- STORAGE:** After opening, store in holding oven (250°F to 300°F) until used to ensure low hydrogen weld deposit
- RECONDITIONING:** If electrode has been exposed to the atmosphere for an extended period of time, place in 250°F oven and slowly increase temperature to 600°F; bake at 600°F for one (1) hour.

RECOMMENDED OPERATING PARAMETERS:

| Inches | Diameter | | Type of Power | Minimum Amps | Optimum* Amps | Maximum Amps |
|--------|----------|-----|---------------|--------------|---------------|--------------|
| | Inches | mm | | | | |
| 3/32 | | 2.4 | DCEP or AC | 70 | 100 | 110 |
| 1/8 | | 3.2 | DCEP or AC | 90 | 135 | 160 |
| 5/32 | | 4.0 | DCEP or AC | 130 | 170 | 220 |
| 3/16 | | 4.8 | DCEP or AC | 200 | 250 | 300 |
| 1/4 | | 6.4 | DCEP or AC | 300 | 350 | 400 |

*For out of position welding, reduce amperages by 15%.

TYPICAL DEPOSITION DATA (AT OPTIMUM):

| Inches | Diameter | | Type of Power | Amps | Deposition Rate Lbs/hr |
|--------|----------|-----|---------------|------|------------------------|
| | Inches | mm | | | |
| 3/32 | | 2.4 | DCEP | 100 | 2.38 |
| 1/8 | | 3.2 | DCEP | 135 | 2.92 |
| 5/32 | | 4.0 | DCEP | 170 | 4.08 |
| 3/16 | | 4.8 | DCEP | 250 | 5.86 |
| 1/4 | | 6.4 | DCEP | 350 | 8.20 |

AVAILABLE DIAMETERS AND PACKAGES:

| Inches | Diameter | | Length | | 10-lb. Can | 50-lb. Can |
|--------|----------|-----|--------|-----|-------------|-------------|
| | Inches | mm | Inches | mm | | |
| 3/32 | | 2.4 | 14 | 355 | S125532-Z33 | S125532-Z35 |
| 1/8 | | 3.2 | 14 | 355 | S125544-Z33 | S125544-Z35 |
| 5/32 | | 4.0 | 14 | 355 | — | S125551-Z35 |
| 3/16 | | 4.8 | 14 | 355 | — | S125558-Z35 |
| 1/4 | | 6.4 | 18 | 457 | — | S125581-Z35 |

Material Safety Data Sheets on any McKay product may be obtained from McKay Customer Service.

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