

METALLOY[®] 70X



AWS A5.18: E70C-6M H4

WELDING POSITIONS:



FEATURES:

- Low fume generation rate
- Excellent wetting characteristics
- Virtually no slag coverage
- Low spatter

BENEFITS:

- Increases welder appeal, improves the working environment
- Assists in producing smooth weld beads with uniform fusion
- Reduces clean-up time, minimizes risk of inclusions
- Reduces clean-up time, increases productivity

APPLICATIONS:

- Non-alloyed and fine grain steels
- Single and multi-pass welding
- Automotive
- Structural applications
- Railcars
- Storage vessels

WIRE TYPE: Gas shielded, metal powder, metal-cored wire

SHIELDING GAS: 75-95% Argon (Ar)/Balance Carbon Dioxide (CO₂), 35-50 cfh (14-24 l/min)

TYPE OF CURRENT: Direct Current Electrode Positive (DCEP)

STANDARD DIAMETERS: 0.035" (0.9 mm), 0.045" (1.2 mm), 0.052" (1.4 mm), 1/16" (1.6 mm)

RE-DRYING: Not recommended

STORAGE: Product should be stored in a dry, enclosed environment, and in its original packaging

TYPICAL WELD METAL PROPERTIES* (Chem Pad):

| Weld Metal Analysis | 75% Ar/25% CO ₂ | 90% Ar/10% CO ₂ | AWS Spec |
|---------------------|----------------------------|----------------------------|----------|
| Carbon (C) | 0.03 | 0.03 | 0.12 |
| Manganese (Mn) | 1.48 | 1.67 | 1.75 |
| Silicon (Si) | 0.61 | 0.80 | 0.90 |
| Phosphorus (P) | 0.013 | 0.013 | 0.03 |
| Sulphur (S) | 0.009 | 0.012 | 0.03 |

Note: AWS specification single values are maximums.

TYPICAL DIFFUSIBLE HYDROGEN*:

| Hydrogen Equipment | 75% Ar/25% CO ₂ | 90% Ar/10% CO ₂ | AWS Spec |
|----------------------|----------------------------|----------------------------|---------------------|
| (GAS CHROMATOGRAPHY) | 2.5 ml/100g | 3.0 ml/100g | 4.0 ml/100g Maximum |

TYPICAL MECHANICAL PROPERTIES* (AS WELDED):

| Mechanical Tests | 75% Ar/25% CO ₂ | 90% Ar/10% CO ₂ | AWS Spec |
|----------------------------|----------------------------|----------------------------|------------------------------|
| Tensile Strength | 81,000 psi (560 MPa) | 89,000 psi (614 MPa) | 70,000 psi (480 MPa) Minimum |
| Yield Strength | 70,000 psi (485 MPa) | 70,000 psi (530 MPa) | 58,000 psi (400 MPa) Minimum |
| Elongation % in 2" (50 mm) | 27% | 25% | 22% Minimum |

TYPICAL CHARPY V-NOTCH IMPACT VALUES* (AS WELDED):

| CVN Temperatures | 75% Ar/25% CO ₂ | 90% Ar/10% CO ₂ | AWS Spec |
|-----------------------|----------------------------|----------------------------|-------------------------------|
| Avg. at 0°F (-20°C) | 75 ft•lbs (101 Joules) | 70 ft•lbs (94 Joules) | Not specified |
| Avg. at -20°F (-30°C) | 60 ft•lbs (81 Joules) | 56 ft•lbs (75 Joules) | 20 ft•lbs (27 Joules) Minimum |

*The information contained or otherwise referenced herein is presented only as "typical" without guarantee or warranty, and Hobart Brothers Company expressly disclaims any liability incurred from any reliance thereon. Typical data are those obtained when welded and tested in accordance with AWS A5.18 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 Hobart Brothers Company.

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| Diameter | | Weld Position | Amps | Volts | Wire Feed Speed | | Deposition Rate | | Contact Tip to Work Distance | |
|----------|-------|-------------------|------|-------|-----------------|---------|-----------------|---------|------------------------------|------|
| Inches | (mm) | | | | in/min | (m/min) | lbs/hr | (kg/hr) | Inches | (mm) |
| 0.035 | (0.9) | Flat & Horizontal | 150 | 25 | 295 | (7.5) | 4.7 | (2.1) | 5/8 | (16) |
| 0.035 | (0.9) | Flat & Horizontal | 200 | 27 | 425 | (10.8) | 6.9 | (3.1) | 5/8 | (16) |
| 0.035 | (0.9) | Flat & Horizontal | 250 | 29 | 560 | (14.2) | 9.0 | (4.1) | 5/8 | (16) |
| 0.045 | (1.2) | Flat & Horizontal | 200 | 25 | 225 | (5.7) | 6.1 | (2.8) | 5/8 | (16) |
| 0.045 | (1.2) | Flat & Horizontal | 250 | 26 | 315 | (8.0) | 8.4 | (3.8) | 5/8 | (16) |
| 0.045 | (1.2) | Flat & Horizontal | 300 | 27 | 415 | (10.5) | 11.2 | (5.1) | 3/4 | (19) |
| 0.045 | (1.2) | Flat & Horizontal | 350 | 28 | 545 | (13.5) | 15.1 | (6.9) | 3/4 | (19) |
| 0.052 | (1.4) | Flat & Horizontal | 250 | 25 | 230 | (5.8) | 7.9 | (3.6) | 3/4 | (19) |
| 0.052 | (1.4) | Flat & Horizontal | 300 | 27 | 330 | (8.4) | 11.3 | (5.1) | 1 | (25) |
| 0.052 | (1.4) | Flat & Horizontal | 350 | 29 | 420 | (10.7) | 14.5 | (6.6) | 1 | (25) |
| 0.052 | (1.4) | Flat & Horizontal | 400 | 31 | 505 | (12.8) | 17.5 | (8.0) | 1 | (25) |
| 1/16 | (1.6) | Flat & Horizontal | 250 | 25 | 150 | (3.8) | 7.2 | (3.3) | 3/4 | (19) |
| 1/16 | (1.6) | Flat & Horizontal | 300 | 26 | 210 | (5.3) | 10.1 | (4.6) | 1 | (25) |
| 1/16 | (1.6) | Flat & Horizontal | 350 | 27 | 255 | (6.5) | 12.3 | (5.6) | 1 | (25) |
| 1/16 | (1.6) | Flat & Horizontal | 400 | 29 | 310 | (7.9) | 15.1 | (6.8) | 1 | (25) |
| 1/16 | (1.6) | Flat & Horizontal | 450 | 31 | 375 | (9.5) | 18.3 | (8.3) | 1 | (25) |

- **Maintaining a proper welding procedure - including pre-heat and interpass temperatures - may be critical depending on the type and thickness of steel being welded.**
- **See Above:** This information was determined by welding with 90% Ar/10% CO₂ shielding gas with a flow rate between 35-50 cfh (14-24 l/min). For the 75-80% Ar/Balance CO₂ shielding gas requirements of AWS A5.18/A5.18M, increase listed voltages by 1-3 volts.

STANDARD DIAMETERS AND PACKAGES: For a complete list of diameters and packaging, please contact Hobart Brothers at (800) 424-1543, or (937) 332-5188 for International Customer Service.

| Diameter | | 33-lb. (15kg) | 50-lb. (23kg) | 60-lb. (27kg) | 500-lb. (227kg) | 750-lb. (340kg) |
|----------|-------|---------------|---------------|---------------|-----------------|-----------------|
| Inches | (mm) | Spool | Spool | Coil | X-Pak | X-Pak |
| 0.035 | (0.9) | — | S280808-K27 | — | — | — |
| 0.045 | (1.2) | S280812-K29 | S280812-K27 | S280812-K02 | S80812-K50 | — |
| 0.052 | (1.4) | S280815-K29 | — | — | — | — |
| 1/16 | (1.6) | — | — | S280819-K02 | — | S80819-K75 |

CONFORMANCES AND APPROVALS:

- AWS A5.18, E70C-6M H4
- AWS A5.18M, E48C-6M H4
- ASME SFA 5.18, E70C-6M H4
- CWB, 75-95% Ar/Balance CO₂, E491C-6M-H4 (1.2 - 1.6 mm diameter electrodes only)

CAUTION:

Consumers should be thoroughly familiar with the safety precautions on the warning label posted in each shipment and in the American National Standard Z49.1, "Safety in Welding and Cutting," published by the American Welding Society, 550 NW LeJune Road, Miami, FL 33126; OSHA Safety and Health Standards 29 CFR 1910 is available from the U.S. Department of Labor, Washington, D.C. 20210

Material Safety Data Sheets on any Hobart Brothers Company product may be obtained from Hobart Customer Service or at www.hobartbrothers.com.

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Revision Date: 110616 (Replaces 070801)

