

Quantum Arc™ 6



AWS ER70S-6

WELDING POSITIONS:



FEATURES:

- Excellent feedability
- Consistent feeding
- Excellent wetting characteristics
- High in deoxidizers

BENEFITS:

- Greater productivity
- Increased consumable life and feeds well through longer gun cables
- Smooth weld beads with uniform tie-in
- Best choice for rusty and oily plates

APPLICATIONS:

- Automotive frames
- Construction equipment
- Rail cars
- Farm implements
- Pressure vessels
- Pipe and tubing
- Non-alloyed and fine grain steels
- Robotic, automatic, and semi-automatic welding

SHIELDING GAS: 100% Carbon Dioxide (CO₂), 75-92% Argon (Ar)/Balance Carbon Dioxide (CO₂), 25-50 cfm (12-24 l/min)

TYPE OF CURRENT: Direct Current Electrode Positive (DCEP)

STANDARD DIAMETERS: 0.035" (0.9 mm), 0.045" (1.2 mm)

RE-DRYING: Not recommended

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

TYPICAL CHEMICAL VALUES*:

| Weld Metal Analysis | Wire Melt Button | AWS Wire Spec |
|---------------------|------------------|---------------|
| Carbon (C) | 0.10 | 0.06-0.15 |
| Manganese (Mn) | 1.43 | 1.40-1.85 |
| Silicon (Si) | 0.83 | 0.80-1.15 |
| Phosphorus (P) | 0.007 | 0.025 max |
| Sulphur (S) | 0.005 | 0.025 max |
| Copper (Cu) | 0.20 | 0.50† max |

† Copper content of wire and copper coating.

TYPICAL MECHANICAL PROPERTIES* (As Welded):

| Mechanical Tests | 100% CO ₂ | AWS Spec |
|----------------------------|----------------------|------------------------------|
| Tensile Strength | 88,000 psi (607 MPa) | 70,000 psi (480 MPa) Minimum |
| Yield Strength | 75,000 psi (507 MPa) | 58,000 psi (400 MPa) Minimum |
| Elongation % in 2" (50 mm) | 26% | 22% Minimum |

TYPICAL CHARPY V-NOTCH IMPACT TEST RESULTS* (As Welded):

| CVN Temperatures | 100% CO ₂ | AWS Spec |
|-----------------------|-----------------------|-------------------------------|
| Avg. at -20°F (-30°C) | 73 ft•lbs (99 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 LLC expressly disclaims any liability incurred from any reliance thereon. Typical data are those obtained when welded and tested in accordance with the 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 LLC.

Quantum Arc™ 6

| Diameter Inches (mm) | | Transfer Mode | Amps | Volts | Wire-Feed Speed in/min (m/min) | | Deposition Rate lbs/hr (kg/hr) | | Contact Tip to Work Distance Inches (mm) | |
|----------------------|--|---------------|------|-------|--------------------------------|--|--------------------------------|--|--|--|
| 0.035 (0.9) | | Short-Circuit | 70 | 17.0 | 95 (2.4) | | 1.3 (0.6) | | 1/4 (6) | |
| 0.035 (0.9) | | Short-Circuit | 85 | 18.5 | 130 (3.3) | | 1.7 (0.8) | | 1/4 (6) | |
| 0.035 (0.9) | | Short-Circuit | 100 | 18.5 | 150 (3.8) | | 2.0 (0.9) | | 1/4 (6) | |
| 0.035 (0.9) | | Short-Circuit | 115 | 19.5 | 190 (4.8) | | 2.5 (1.1) | | 1/4 (6) | |
| 0.035 (0.9) | | Short-Circuit | 145 | 20.5 | 225 (5.7) | | 3.3 (1.5) | | 3/8 (10) | |
| 0.035 (0.9) | | Short-Circuit | 155 | 20.5 | 265 (6.7) | | 3.5 (1.6) | | 3/8 (10) | |
| 0.035 (0.9) | | Spray | 165 | 23.5 | 330 (8.4) | | 5.3 (2.4) | | 5/8 (16) | |
| 0.035 (0.9) | | Spray | 185 | 24.5 | 370 (9.4) | | 5.9 (2.7) | | 5/8 (16) | |
| 0.035 (0.9) | | Spray | 205 | 24.5 | 410 (10.4) | | 6.5 (2.9) | | 3/4 (19) | |
| 0.035 (0.9) | | Spray | 235 | 25.5 | 465 (11.8) | | 7.3 (3.3) | | 3/4 (19) | |
| 0.045 (1.2) | | Spray | 175 | 23.5 | 175 (4.4) | | 4.7 (2.1) | | 5/8 (16) | |
| 0.045 (1.2) | | Spray | 195 | 24.5 | 200 (5.1) | | 5.3 (2.4) | | 5/8 (16) | |
| 0.045 (1.2) | | Spray | 215 | 26.0 | 230 (5.8) | | 4.6 (2.1) | | 3/4 (19) | |
| 0.045 (1.2) | | Spray | 260 | 28.5 | 310 (7.9) | | 8.1 (3.7) | | 3/4 (19) | |
| 0.045 (1.2) | | Spray | 325 | 29.0 | 425 (10.8) | | 11.1 (5.0) | | 3/4 (19) | |
| 0.045 (1.2) | | Spray | 350 | 30.0 | 475 (12.1) | | 12.5 (5.6) | | 3/4 (19) | |
| 0.052 (1.4) | | Spray | 290 | 27.0 | 280 (7.1) | | 9.8 (4.4) | | 3/4 (19) | |
| 0.052 (1.4) | | Spray | 325 | 27.0 | 330 (8.4) | | 11.6 (5.2) | | 3/4 (19) | |
| 0.052 (1.4) | | Spray | 390 | 29.0 | 420 (10.7) | | 14.8 (6.7) | | 3/4 (19) | |

Note: Short circuit transfer shielding gas is 100% CO₂ or 75% Ar/25% CO₂ at 20-35 cfh (9-17 l/min)
 Note: Spray transfer shielding gas is 90% Ar/10% CO₂ at 35-50 cfh (17-24 l/min)

- **Maintaining a proper welding procedure - including pre-heat and interpass temperatures - may be critical depending on the type and thickness of steel being welded.**
- **For out of position welding, short circuit or pulsed spray transfer modes must be used.**
- **Pulse waveforms are designed with nominal operating points that may result in average voltage and current values that differ from the above table. Generally, pulse processes can be expected to produce lower heat inputs than a standard CV process.**

COMMONLY ORDERED PART NUMBERS.

| Diameter in. (mm) | 33-lb. Steel Reel™ | 45-lb. Steel | 45-lb. Spool | 60-lb. Spool | 300-lb. Recyclable RoboPak® | 600-lb. RoboPak® | 600-lb. Recyclable RoboPak® | 950-lb. Recyclable RoboPak® |
|-------------------|--------------------|-------------------|-------------------|------------------|-----------------------------|-------------------|-----------------------------|-----------------------------|
| Net Pallet Weight | 2376-lb. (1078kg) | 3240-lb. (1470kg) | 3240-lb. (1470kg) | 1920-lb. (871kg) | 1200-lb. (544kg) | 2400-lb. (1089kg) | 2400-lb. (1089kg) | 1900-lb. (862kg) |
| 0.035 (0.9) | S307608-033 | S307608-045 | S307608-085 | — | S307608-073 | S307608-011 | S307608-074 | S307608-070 |
| 0.045 (1.2) | S307612-033 | S307612-045 | S307612-085 | S307612-028 | S307612-073 | S307612-011 | S307612-074 | S307612-070 |
| 0.052 (1.4) | — | — | — | S307615-028 | — | — | S307615-074 | S307615-070 |

CONFORMANCES AND APPROVALS:

- **AWS A5.18**, ER70S-6
- **AWS A5.18M**, ER48S-6
- **ASME SFA 5.18**, F-6, A-1, ER70S-6
- **CWB B-G 49A 3 C1 S6**

TECHNICAL QUESTIONS? For technical support of Hobart Filler Metals products, contact the Applications Engineering department by phone toll-free at 1-800-532-2618 or by e-mail at Applications.Engineering@hobartbrothers.com

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, 8669 NW 36th St., Miami, FL 33166 (can also be downloaded online at www.aws.org); OSHA Safety and Health Standards 29 CFR 1910 is available from the U.S. Department of Labor, Washington, D.C. 20210

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

Because Hobart Brothers LLC is constantly improving products, Hobart reserves the right to change design and/or specifications without notice.

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