

Quantum Arc™ 3



AWS ER70S-3

WELDING POSITIONS:



FEATURES:

- Excellent feedability
- Consistent feeding
- Clean weld deposit

BENEFITS:

- Greater productivity and repeatable weld parameters
- Feeds well through longer gun cables
- Weld is virtually ready to paint or plate

APPLICATIONS:

- General fabrication
- Light sheet metal fabrication
- High wire feed speeds
- Automotive frames
- Rail cars
- Metal furniture
- 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 cfh (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)	0.08	0.06-0.15
Manganese (Mn)	1.19	0.90-1.40
Silicon (Si)	0.46	0.45-0.75
Phosphorus (P)	0.015	0.025 max
Sulphur (S)	0.010	0.025 max
Copper (Cu)	0.21	0.50† max

† Copper content of wire and copper coating.

TYPICAL MECHANICAL PROPERTIES* (As Welded):

Mechanical Tests	100% CO ₂	AWS Spec
Tensile Strength	77,000 psi (531 MPa)	70,000 psi (480 MPa) Minimum
Yield Strength	63,000 psi (434 MPa)	58,000 psi (400 MPa) Minimum
Elongation % in 2" (50 mm)	28%	22% Minimum

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

CVN Temperatures	100% CO ₂	AWS Spec
Avg. at 0°F (-20°C)	83 ft•lbs (113 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 ArcTM 3

Diameter		Transfer Mode	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)	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	25.5	230	(5.8)	4.6	(2.1)	3/4	(19)
0.045	(1.2)	Spray	260	27.0	310	(7.9)	8.1	(3.7)	3/4	(19)
0.045	(1.2)	Spray	325	27.0	425	(10.8)	11.1	(5.0)	3/4	(19)
0.045	(1.2)	Spray	350	28.0	475	(12.1)	12.5	(5.6)	3/4	(19)

Note: Short circuit transfer shielding gas is 100% CO₂ or 75% Ar/25% CO₂ at 20-35 cfm (9-17 l/min)
 Note: Spray transfer shielding gas is 90% Ar/10% CO₂ at 35-50 cfm (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 TM	45-lb. Fiber Spool	45-lb. Steel Reel TM	60-lb. Spool	600-lb. RoboPak [®]	950-lb. Recyclable RoboPak [®]
Net Pallet Weight	2376-lb. (1078kg)	3240-lb. (1470kg)	3240-lb. (1470kg)	1920-lb. (871kg)	2400-lb. (1089kg)	1900-lb. (862kg)
0.035 (0.9)	S307308-033	S307308-085	S307308-045	—	S307308-011	S307308-070
0.045 (1.2)	—	—	S307312-045	S307312-028	S307312-011	S307312-070

Looking for a package or diameter NOT listed above? Please contact Hobart Brothers for a complete listing of product diameters and package sizes. Customer Service: (800) 424-1543, (937) 332-5188 for International Customer Service.

CONFORMANCES AND APPROVALS:

- **AWS A5.18**, ER70S-3
- **AWS A5.18M**, ER48S-3
- **ASME SFA 5.18**, F-6, A-1, ER70S-3
- **CWB B-G 49A 2 C1 S3**

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.

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