

Quantum Arc™ D2



AWS ER80S-D2, ER90S-G

WELDING POSITIONS:



FEATURES:

- Higher tensile and yield strength weldments than ER70S-X wires
- High in deoxidizers
- Excellent wetting characteristics
- Low silicon

BENEFITS:

- High quality welds - matched to meet the requirements of many high strength applications
- Excellent for rusty, scaly, oily plate and pipes
- Smoother weld beads with uniform tie-in
- Excellent for open root pass welding

APPLICATIONS:

- Construction equipment
- High quality, high strength applications

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	0.07-0.12
Manganese (Mn)	1.72	1.60-2.10
Silicon (Si)	0.63	0.50-0.80
Phosphorus (P)	0.008	0.025 max
Sulphur (S)	0.016	0.025 max
Molybdenum (Mo)	0.49	0.40-0.60
Nickel (Ni)	0.09	0.15 max
Copper (Cu)	0.25	0.50†

† Copper content of wire and copper shall not exceed 0.5% max.

TYPICAL MECHANICAL PROPERTIES* (As Welded):

Mechanical Tests	100% CO ₂	AWS Spec
Tensile Strength	94,000 psi (652 MPa)	80,000 psi (552 MPa) Minimum
Yield Strength	80,000 psi (552 MPa)	68,000 psi (469 MPa) Minimum
Elongation % in 2" (50 mm)	20%	17%

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

CVN Temperatures	100% CO ₂	AWS Spec
Avg. at -20°F (-29°C)	34 ft•lbs (46 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 A5.28 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.

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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	55-85	16-18	70-120	1.0-1.6	1/4	(6)
0.035	(0.9)	Short-Circuit	70-100	17-20	100-160	1.3-2.1	1/4	(6)
0.035	(0.9)	Short-Circuit	80-120	17-20	120-180	1.6-2.4	1/4	(6)
0.035	(0.9)	Short-Circuit	100-130	18-21	160-220	2.1-2.9	1/4	(6)
0.035	(0.9)	Short-Circuit	120-175	19-22	210-290	2.7-3.8	1/4	(6)
0.035	(0.9)	Short-Circuit	140-175	19-22	240-290	3.1-3.8	3/8	(10)
0.035	(0.9)	Short-Circuit	140-160	19-22	240-290	3.1-3.8	3/8	(10)
0.035	(0.9)	Spray	160-170	23-24	320-340	5.1-5.4	5/8	(16)
0.035	(0.9)	Spray	180-190	24-25	360-380	5.7-6.0	5/8	(16)
0.035	(0.9)	Spray	200-210	24-25	400-420	6.3-6.6	3/4	(19)
0.035	(0.9)	Spray	220-250	25-26	420-510	6.6-8.0	3/4	(19)
0.045	(1.2)	Short-Circuit	140-160	18-21	120-160	3.1-4.2	1/4	(6)
0.045	(1.2)	Short-Circuit	160-200	19-22	150-225	3.9-5.9	1/4	(6)
0.045	(1.2)	Short-Circuit	180-225	20-23	190-240	5.0-6.3	1/4	(6)
0.045	(1.2)	Spray	170-180	23-24	170-185	4.5-4.8	5/8	(16)
0.045	(1.2)	Spray	190-200	24-25	195-210	5.1-5.5	5/8	(16)
0.045	(1.2)	Spray	210-220	25-26	220-240	5.8-6.3	3/4	(19)
0.045	(1.2)	Spray	220-300	26-28	240-375	6.3-9.8	3/4	(19)
0.045	(1.2)	Spray	300-350	26-28	375-475	9.8-12.4	3/4	(19)
0.045	(1.2)	Spray	325-375	27-29	400-550	10.5-14.4	3/4	(19)

Note: Single-pass flat and horizontal fillet positions. Reduce current 10 to 15% for vertical and overhead welding.

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.**

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 in. (mm)	33-lb. Steel Reel™	45-lb. Steel Reel™	60-lb. Spool	600-lb. RoboPak®
Net Pallet Weight	2376-lb. (1078kg)	3240-lb. (1470kg)	1920-lb. (871kg)	2400-lb. (1089kg)
0.035 (0.9)	S307208-033	S307208-045	—	S307208-011
0.045 (1.2)	S307212-033	S307212-045	S307212-028	S307212-011

CONFORMANCES AND APPROVALS:

- **AWS A5.28**, ER80S-D2, ER90S-G
- **ASME SFA 5.28**, A-11, F-6
- **CWB B-G 55A 3 C1 S4M31**

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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