

**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 (CO<sub>2</sub>), 75-92% Argon (Ar)/Balance Carbon Dioxide (CO<sub>2</sub>), 25-50 cfh (9-24 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 intact packaging.

**TYPICAL CHEMICAL VALUES\*:**

	Wire Melt Button	AWS Wire Spec
Carbon (C)	0.075	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 <sup>†</sup> max

<sup>†</sup> Copper content of wire and copper coating.

**TYPICAL MECHANICAL PROPERTIES\* (AS WELDED):**

Mechanical Tests	100% CO <sub>2</sub>	75% Ar/25% CO <sub>2</sub>	AWS Spec (min)
Tensile Strength	77,000 psi (531 MPa)	88,000 psi (607 MPa)	70,000 psi (480 MPa)
Yield Strength	63,000 psi (434 MPa)	73,000 psi (503 MPa)	58,000 psi (400 MPa)
Elongation % in 2" (50 mm)	28%	28%	22%
Reduction in Area	68%	68%	not specified

**TYPICAL CHARPY V-NOTCH IMPACT TEST RESULTS\* (AS WELDED):**

CVN Temperatures	100% CO <sub>2</sub>	75% Ar/25% CO <sub>2</sub>	AWS Spec (min)
Avg. at 70°F (20°C)	96 ft•lbs (130 Joules)	134 ft•lbs (182 Joules)	not specified
Avg. at 0°F (-20°C)	83 ft•lbs (88 Joules)	110 ft•lbs (149 Joules)	20 ft•lbs (27 Joules)
Avg. at -20°F (-30°C)	50 ft•lbs (68 Joules)	90 ft•lbs (122 Joules)	not specified

\*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.



Diameter		Transfer Mode	Amps	Volts	Wire-Feed Speed		Travel Speed		Deposition Rate		Contact Tip to Work Distance	
Inches	(mm)				in/min	(m/min)	In/min	(cm/min)	lbs/hr	(kg/hr)	Inches	(mm)
0.035	(0.9)	Short-Circuit	70	17.0	95	(2.4)	20	(51)	1.3	(0.6)	1/4	(6)
0.035	(0.9)	Short-Circuit	85	18.5	130	(3.3)	28	(70)	1.7	(0.8)	1/4	(6)
0.035	(0.9)	Short-Circuit	100	18.5	150	(3.8)	28	(70)	2.0	(0.9)	1/4	(6)
0.035	(0.9)	Short-Circuit	115	19.5	190	(4.8)	28	(70)	2.5	(1.1)	1/4	(6)
0.035	(0.9)	Short-Circuit	145	20.5	225	(5.7)	25	(64)	3.3	(1.5)	3/8	(10)
0.035	(0.9)	Spray	155	20.5	265	(6.7)	20	(51)	3.5	(1.6)	3/8	(10)
0.035	(0.9)	Spray	165	23.5	330	(8.4)	20	(50)	5.3	(2.4)	5/8	(16)
0.035	(0.9)	Spray	185	24.5	370	(9.4)	18	(44)	5.9	(2.7)	5/8	(16)
0.035	(0.9)	Spray	205	24.5	410	(10.4)	15	(38)	6.5	(2.9)	3/4	(19)
0.035	(0.9)	Spray	235	25.5	465	(11.8)	14	(34)	7.3	(3.3)	3/4	(19)
0.045	(1.2)	Spray	175	23.5	175	(4.4)	19	(47)	4.7	(2.1)	5/8	(16)
0.045	(1.2)	Spray	195	24.5	200	(5.1)	17	(42)	5.3	(2.4)	5/8	(16)
0.045	(1.2)	Spray	215	25.5	230	(5.8)	14	(34)	4.6	(2.1)	3/4	(19)
0.045	(1.2)	Spray	260	27.0	310	(7.9)	15	(37)	8.1	(3.7)	3/4	(19)
0.045	(1.2)	Spray	325	27.0	425	(10.8)	15	(38)	11.1	(5.0)	3/4	(19)
0.045	(1.2)	Spray	350	28.0	475	(12.1)	15	(38)	12.5	(5.6)	3/4	(19)
0.052	(1.4)	Spray	290	27.0	280	(7.1)	15	(38)	9.8	(4.4)	3/4	(19)
0.052	(1.4)	Spray	325	27.0	330	(8.4)	15	(38)	11.6	(5.2)	3/4	(19)
0.052	(1.4)	Spray	390	29.0	420	(10.7)	13	(32)	14.8	(6.7)	3/4	(19)
1/16	(1.6)	Spray	350	27.0	260	(6.6)	14	(36)	13.3	(6.0)	3/4	(19)
1/16	(1.6)	Spray	400	29.0	300	(7.6)	12	(30)	15.4	(7.0)	3/4	(19)

Note: Short circuit transfer shielding gas is 100% CO<sub>2</sub> or 75% Ar/25% CO<sub>2</sub> at 20-35 cfh (9.4-16.5 l/min)  
 Note: Spray transfer shielding gas is 90% Ar/10% CO<sub>2</sub> at 35-50 cfh (14-24 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.**

**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.	45-lb.	60-lb.	600-lb.	950-lb.
in.	(mm)	Steel Reel™	Steel Reel™	Spool	RoboPak®	Recyclable RoboPak®
0.035	(0.9)	S307308-033	S307308-045	—	S307308-011	S307308-070
0.045	(1.2)	—	S307312-045	S307312-028	S307312-011	S307312-070
0.052	(1.4)	—	—	—	S307315-011	—
1/16	(1.6)	—	—	S307318-028	—	S307318-070

**CONFORMANCES AND APPROVALS:**

- AWS A5.18, ER70S-3
- AWS A5.18M, ER48S-3
- ASME SFA 5.18, F-6, A-1, ER70S-3
- CWB to CSA W48, ER49S-3

**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](http://www.hobartbrothers.com).

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

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