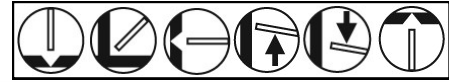


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AWS ER70S-6

WELDING POSITIONS:



FEATURES:

- High in deoxidizers
- High welder appeal
- Excellent wetting characteristics
- Lower spatter

BENEFITS:

- Best choice for rusty and oily plates, preferred over ER70S-3 wire
- Arc is very smooth and stable
- Smoother weld beads with uniform tie-in
- Minimal after weld clean-up

APPLICATIONS:

- Pressure vessels
- Pipe, shaft build-up
- Tanks
- Farm implements
- Steel casings
- Auto body, collision repair, thin sheet metal

SHIELDING GAS: 100% Carbon Dioxide (CO₂), 75-92% Argon (Ar)/Balance Carbon Dioxide (CO₂) 25-50 cfh (9-24 l/min)

TYPE OF CURRENT: Direct Current Electrode Positive (DCEP)

STANDARD DIAMETERS: 0.024" (0.6 mm), 0.030" (0.8 mm), 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 WELD METAL PROPERTIES* (Wire Chemistry):

Weld Metal Analysis		AWS Spec
Carbon (C)	0.08	0.06-0.15
Manganese (Mn)	1.52	1.40-1.85
Silicon (Si)	0.80	0.80-1.15
Phosphorus (P)	0.009	0.025 max
Sulphur (S)	0.012	0.025 max
Copper (Cu)	0.20	0.50†

† Copper content of wire and copper coating shall not exceed .5% max.

TYPICAL MECHANICAL PROPERTIES* (As Welded):

Mechanical Tests	100% CO ₂	AWS Spec
Tensile Strength	85,000 psi (587 MPa)	70,000 psi (483 MPa) Minimum
Yield Strength	70,000 psi (483 MPa)	58,000 psi (400 MPa) Minimum
Elongation % in 2" (50 mm)	29%	22%

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

CVN Temperatures	100% CO ₂	AWS Spec
Avg. at -20°F (-29°C)	44 ft•lbs (60 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.

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SHORT-CIRCUIT TRANSFER WELDING PARAMETERS*:

Material Thickness ¹ size in. (decimal) mm	Electrode Diameter		Welding Current (DC) amps	Arc Voltage (electrode positive)	Wire Feed Speed ipm	Travel Speed ipm	Deposition Rate lbs/hr		
	in.	mm							
24 ga.	0.025	0.6	.024	0.6	30-50	13-15	130-160	10-20	1.0-1.3
24 ga.	0.025	0.6	.030	0.8	30-50	15-17	75-100	10-20	1.4-1.8
22 ga.	0.031	0.6	.024	0.6	30-55	13-15	30-200	15-20	1.0-1.6
22 ga.	0.031	0.8	.030	0.8	40-60	15-17	90-130	15-22	1.6-2.3
20 ga.	0.037	0.9	.035	0.9	55-85	16-18	70-120	15-25	1.0-1.6
18 ga.	0.050	1.3	.035	0.9	70-100	17-20	100-160	20-35	1.3-2.1
1/16"	0.063	1.6	.035	0.9	80-120	17-20	120-180	20-35	1.6-2.4
5/64"	0.078	2.0	.035	0.9	100-130	18-21	160-220	20-35	2.1-2.9
1/8"	0.125	3.2	.035	0.9	120-175	19-22	210-290	20-30	2.7-3.8
1/8"	0.125	3.2	.045	1.1	140-160	18-21	120-160	15-25	3.1-4.2
3/16"	0.187	4.7	.035	0.9	140-175	19-22	240-290	14-19	3.1-3.8
3/16"	0.187	4.7	.045	1.1	160-200	19-22	150-225	15-22	3.9-5.9
1/4"	0.250	6.4	.035	0.9	140-160	19-22	240-290	9-13	3.1-3.8
1/4"	0.250	6.4	.045	1.1	180-225	20-23	190-240	12-18	5.0-6.3

NOTE: Single-pass flat and horizontal fillet positions.

¹For fillet and groove welds—for fillet welds, size equals metal thickness; for square groove welds, the root opening should equal 1/2 the metal thickness.

²Shielding gas is 100% CO₂ or 75% Ar/25% CO₂; 20-35 cfh.

SPRAY TRANSFER WELDING PARAMETERS*:

Material Thickness ¹ size in. (decimal) mm	Electrode Diameter		Welding Current (DC) amps	Arc Voltage (electrode positive)	Wire Feed Speed ipm	Travel Speed ipm	Deposition Rate lbs/hr		
	in.	mm							
1/8"	0.125	3.2	.035	0.9	160-170	23-24	320-340	17-22	5.1-5.4
1/8"	0.125	3.2	.045	1.1	170-180	23-24	170-185	16-21	4.5-4.8
3/16"	0.187	4.7	.035	0.9	180-190	24-25	360-380	15-20	5.7-6.0
3/16"	0.187	4.7	.045	1.1	190-200	24-25	195-210	14-19	5.1-5.5
1/4"	0.250	6.4	.035	0.9	200-210	24-25	400-420	12-18	6.3-6.6
1/4"	0.250	6.4	.045	1.1	210-220	25-26	220-240	11-17	5.8-6.3
5/16"	0.313	7.9	.035	0.9	220-250	25-26	420-510	11-16	6.6-8.0
5/16"	0.313	7.9	.045	1.1	220-300	26-28	240-375	11-18	6.3-9.8
3/8"	0.375	9.5	.045	1.1	300-350	26-28	375-475	11-19	9.8-12.4
1/2"	0.500	12.7	.045	1.1	325-375	27-29	400-550	12-18	10.5-14.4

¹Shielding gas: 90% Ar/10% CO₂ at 35-50 cfh with electrode stick-out, 3/4" ± 1/8". (Voltage adjustments likely if other spray arc gases are used—85% Ar min.)

²Fillet and groove welds (backing may be required on groove welds).

- 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.
- See Above: The information above was determined by welding using 75% Ar/25% CO₂ shielding gas with a flow rate between 25-50 cfh (14-24 l/min).
- 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.

Diameter Inches (mm)	2-lb. (0.9kg)	10-lb. (4.5kg)	33-lb. (15kg)	45-lb. (20.5kg)
Net Pallet Weight	960-lb. (435kg)	1920-lb. (871kg)	2376-lb. (1078kg)	3240 (1470kg)
0.024 (0.6)	S305401-019	S305401-022	—	—
0.030 (0.8)	S305406-019	S305406-022	S305406-033	—
0.035 (0.9)	S305408-019	S305408-022	—	S305408-045
0.045 (1.2)	—	—	—	S305412-045

CONFORMANCES AND APPROVALS:

- AWS A5.18, ER70S-6
- ASME SFA 5.18, F-6, A-1

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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Revision Date: 201001 (Replaces 141126)

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