



HOBART BROTHERS

# METAL-COR® 6

AWS A5.18: E70C-6M H4

WELDING POSITIONS:



**FEATURES:**

**BENEFITS:**

- High deposition rates and efficiencies
- Virtually no slag coverage
- Outstanding high-production performance
- Smooth arc characteristics
- Low diffusible hydrogen weld deposit
- Low smoke and spatter levels
- Excellent for both CV and pulsed welding
- Increases productivity
- Allows multi-pass welding without deslagging, reduces clean-up time
- Excellent for robotic welding
- Improves usability and welder appeal
- Increases resistance to cracking
- Increases welder safety and productivity
- Promotes versatility

**APPLICATIONS:**

- Automatic and robotic welding
- Storage vessels
- Non-alloyed and fine grain steels
- Steel structures
- Single or multi-pass welding
- Earthmoving equipment

**WIRE TYPE:** Gas shielded, metal powder, metal-cored wire

**SHIELDING GAS:** 75-95% Argon (Ar)/Balance Carbon Dioxide (CO<sub>2</sub>), 95% Argon (Ar)/5% Oxygen (O<sub>2</sub>), 35-50 cfm (14-24 l/min)

**TYPE OF CURRENT:** Direct Current Electrode Positive (DCEP)

**STANDARD DIAMETERS:** 0.045" (1.2 mm), 0.052" (1.4 mm), 1/16" (1.6 mm), 5/64" (2.0 mm), 3/32" (2.4 mm)

**RE-DRYING:** Not recommended

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

**TYPICAL WELD METAL CHEMISTRY\* (Chem Pad):**

Weld Metal Analysis	75% Ar/25% CO <sub>2</sub>	95% Ar/5% CO <sub>2</sub>	95% Ar/5% O <sub>2</sub>	AWS Spec
Carbon (C)	0.03	0.03	0.04	0.12
Manganese (Mn)	1.57	1.68	1.48	1.75
Silicon (Si)	0.69	0.78	0.64	0.90
Phosphorus (P)	0.001	0.009	0.010	0.03
Sulphur (S)	0.006	0.002	0.008	0.03

**Note:** AWS specification single values are maximums.

**TYPICAL DIFFUSIBLE HYDROGEN\*:**

Hydrogen Equipment	75% Ar/25% CO <sub>2</sub>	95% Ar/5% CO <sub>2</sub>	95% Ar/5% O <sub>2</sub>	AWS Spec
(GAS CHROMATOGRAPHY)	2.1 ml/100g	2.5 ml/100g	1.8 ml/100g	4.0 ml/100g Maximum

**TYPICAL MECHANICAL PROPERTIES\* (As Welded):**

Mechanical Tests	75% Ar/25% CO <sub>2</sub>	95% Ar/5% CO <sub>2</sub>	95% Ar/5% O <sub>2</sub>	AWS Spec
Tensile Strength	81,000 psi (558 MPa)	85,000 psi (586 MPa)	76,000 psi (524 MPa)	70,000 psi (480 MPa) Minimum
Yield Strength	69,000 psi (476 MPa)	75,000 psi (517 MPa)	61,000 psi (421 MPa)	58,000 psi (400 MPa) Minimum
Elongation % in 2" (50 mm)	30%	27%	30%	22% Minimum

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

CVN Temperatures	75% Ar/25% CO <sub>2</sub>	95% Ar/5% CO <sub>2</sub>	95% Ar/5% O <sub>2</sub>	AWS Spec
Avg. at -20°F (-30°C)	74 ft•lbs (101 Joules)	50 ft•lbs (68 Joules)	119 ft•lbs (161 Joules)	20 ft•lbs (27 Joules) Minimum
Avg. at -40°F (-40°C)	40 ft•lbs (54 Joules)	32 ft•lbs (43 Joules)	42 ft•lbs (57 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.

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Diameter		Weld Position	Amps	Volts	Wire-Feed Speed		Deposition Rate		Contact Tip to Work Distance	
Inches	(mm)				in/min	(m/min)	lbs/hr	(kg/hr)	Inches	(mm)
0.045	(1.2)	Flat & Horizontal	200	27	241	(6.1)	6.0	(2.7)	3/4	(19)
0.045	(1.2)	Flat & Horizontal	250	29	341	(8.7)	8.7	(3.9)	3/4	(19)
0.045	(1.2)	Flat & Horizontal	300	32	422	(10.7)	11.2	(5.1)	3/4	(19)
0.045	(1.2)	Flat & Horizontal	350	34	572	(14.5)	15.6	(7.1)	3/4	(19)
0.045	(1.2)	Flat & Horizontal	400	36	725	(18.4)	19.8	(9.0)	3/4	(19)
0.052	(1.4)	Flat & Horizontal	200	25	190	(4.8)	6.0	(2.7)	1	(25)
0.052	(1.4)	Flat & Horizontal	250	28	265	(6.7)	8.9	(4.0)	1	(25)
0.052	(1.4)	Flat & Horizontal	300	30	340	(8.6)	11.8	(5.4)	1	(25)
0.052	(1.4)	Flat & Horizontal	350	32	420	(10.7)	14.9	(6.8)	1	(25)
0.052	(1.4)	Flat & Horizontal	400	36	540	(13.7)	19.1	(8.7)	1	(25)
1/16	(1.6)	Flat & Horizontal	250	29	160	(4.1)	7.0	(3.2)	1	(25)
1/16	(1.6)	Flat & Horizontal	300	31	205	(5.2)	9.5	(4.3)	1	(25)
1/16	(1.6)	Flat & Horizontal	350	32	255	(6.5)	11.8	(5.4)	1	(25)
1/16	(1.6)	Flat & Horizontal	400	34	320	(8.1)	15.5	(7.0)	1	(25)
1/16	(1.6)	Flat & Horizontal	500	36	500	(12.7)	24.5	(11.1)	1	(25)
5/64	(2.0)	Flat & Horizontal	300	29	135	(3.4)	8.1	(3.7)	1	(25)
5/64	(2.0)	Flat & Horizontal	350	30	160	(4.2)	11.2	(5.1)	1	(25)
5/64	(2.0)	Flat & Horizontal	400	32	192	(4.9)	13.4	(6.1)	1	(25)
5/64	(2.0)	Flat & Horizontal	450	33	260	(6.6)	17.4	(7.9)	1 1/4	(32)
5/64	(2.0)	Flat & Horizontal	500	34	290	(7.4)	20.6	(9.3)	1 1/4	(32)
3/32	(2.4)	Flat & Horizontal	350	29	105	(2.7)	12.6	(5.7)	1	(25)
3/32	(2.4)	Flat & Horizontal	400	31	130	(3.3)	15.6	(7.1)	1	(25)
3/32	(2.4)	Flat & Horizontal	450	32	152	(3.9)	18.1	(8.2)	1	(25)
3/32	(2.4)	Flat & Horizontal	500	33	195	(5.0)	20.8	(9.4)	1	(25)
3/32	(2.4)	Flat & Horizontal	550	34	222	(5.6)	23.7	(10.8)	1 1/4	(32)

- **Maintaining a proper welding procedure - including pre-heat and interpass temperatures - may be critical depending on the type and thickness of steel being welded.**
- **See Above:** This information was determined by welding using 75% Ar/25% CO<sub>2</sub> shielding gas with a flow rate between 35-50 cfh (14-24 l/min). For 90% Ar/10% CO<sub>2</sub> shielding gas, reduce voltage 1-3 volts.

**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. (15kg)	44-lb. (20kg)	60-lb. (27kg)	500-lb. (227kg)	750-lb. (340kg)
Inches	(mm)	Spool	Spool	Coil	X-Pak	X-Pak
0.045	(1.2)	S249412-X29	S249412-X44	S249412-X02	S249412-X50	S249412-X75
0.052	(1.4)	S249415-X29	S249415-X44	S249415-X02	S249412-X50	S249415-X75
1/16	(1.6)	—	S249419-X44	S249419-X02	—	S249419-X75
5/64	(2.0)	—	—	S249425-X02	—	—
3/32	(2.4)	—	—	S249429-X02	—	—

### CONFORMANCES AND APPROVALS:

- **AWS A5.18**, E70C-6M H4
- **AWS A5.18M**, E48C-6M H4
- **ASME SFA 5.18**, E70C-6M H4
- **ABS**, 80% Ar/20% CO<sub>2</sub>, 3YSA (0.035" - 1/16" diameter electrodes)
- **Bureau Veritas**, 80% Ar/20% CO<sub>2</sub>, S3YMH5 (0.035" - 1/16" diameter electrodes)
- **CWB**, 75-95% Argon/Balance CO<sub>2</sub>, E491C-6MJ-H4 (1.2 mm - 1.6 mm diameter electrodes)
- **CWB**, 95% Ar/5% O<sub>2</sub>, E491C-6MJ-H4 (1.2 mm - 1.6 mm diameter electrodes)
- **CWB**, Argoshield 8C, Argoshield GP, Argoshield 25C, E491C-6MJ-H4 (1.2 mm - 1.6 mm diameter electrodes)
- **CWB**, Mison 8C & Mison 15C, E491C-6MJ-H4 (1.2 mm - 1.6 mm diameter electrodes)
- **DNV**, 80% Ar/20% CO<sub>2</sub>, III Y40MS(H5)
- **Lloyd's Register**, 80% Ar/20% CO<sub>2</sub>, 3Y40S H5
- **AWS D1.8/D1.8M**, 75% Ar/25% CO<sub>2</sub>, 1/16" (1.6 mm) diameter electrode

### 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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