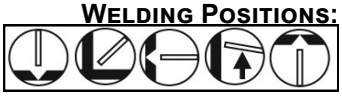
TM-771

TRI-MARK® By HOBART FILLER METALS

AWS A5.20: E71T-1C H8, E71T-12CJ H8

WELDING POSITIONS:



FEATURES:

- High impact strengths at low temperatures
- Low diffusible hydrogen weld deposit
- Excellent arc characteristics
- Low fume generation rate
- Low spatter levels

BENEFITS:

- Resists cracking in severe applications
- Resists underbead cracking
- Assists in producing smooth weld beads with uniform fusion
- Enhances operator appeal, improves the working environment
- Reduces clean-up time, increases productivity

APPLICATIONS:

- Non-alloyed and fine grain steels
- Single or multi-pass welding
- Pressure vessels
- Shipbuilding
- Bridge fabrication
- Structural applications

SLAG SYSTEM: Fast-freezing, rutile type, flux-cored wire
SHIELDING GAS: 100% Carbon Dioxide (CO_2), 35-50 cfh (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)
RE-DRYING: Not Recommended
STORAGE: Product should be stored in a dry, enclosed environment and in its original intact packaging

TYPICAL WELD METAL CHEMICAL COMPOSITION* (Chem Pad):

Weld Metal Analysis (%)	100% CO_2	AWS Spec.
Carbon (C)	0.02	0.12
Manganese (Mn)	0.88	1.60
Silicon (Si)	0.23	0.90
Phosphorus (P)	0.013	0.030
Sulphur (S)	0.005	0.030
Nickel (Ni)	0.47	0.50

Note: AWS Specification single values are maximums

TYPICAL WELD METAL DIFFUSIBLE HYDROGEN*:

Hydrogen Equipment	100% CO_2	AWS Spec.
(GAS CHROMOTOGRAPHY)	5.1 ml/100 g	8.0 ml/100 g Maximum

TYPICAL MECHANICAL PROPERTIES (As Welded)*:

Mechanical Tests	100% CO_2	AWS Spec.
Tensile Strength	81,000 psi (558 MPa)	70,000—90,000 psi (490—620 MPa) Min.
Yield Strength	72,000 psi (496 MPa)	58,000 psi (390 MPa) Min.
Elongation % in 2” (50 mm)	26%	22% Minimum

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

CVN Temperatures	100% CO_2	AWS Spec.
Avg. @ 0°F (-20°C)	108 ft-lbs (146 Joules)	20 ft-lbs (27 Joules) Minimum
Avg. @ -40°F (-40°C)	82 ft-lbs (111 Joules)	20 ft-lbs (27 Joules) Minimum “J” Requirement

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Typical Operating Parameters*:

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)	All Positions	150	24	220	(5.6)	4.8	(2.2)	5/8	(16)
0.045	(1.2)	All Positions	200	26	370	(9.4)	7.6	(3.4)	5/8	(16)
0.045	(1.2)	Flat & Horizontal	250	28	530	(13.5)	10.3	(4.7)	3/4	(19)
0.045	(1.2)	Flat & Horizontal	300	31	730	(18.5)	15.4	(7.0)	3/4	(19)
0.052	(1.4)	All Positions	200	26	225	(5.7)	5.1	(2.3)	3/4	(19)
0.052	(1.4)	All Positions	250	28	320	(8.1)	8.4	(3.8)	3/4	(19)
0.052	(1.4)	Flat & Horizontal	300	29	435	(11.0)	11.7	(5.3)	1	(25)
0.052	(1.4)	Flat & Horizontal	350	31	585	(14.9)	15.0	(6.8)	1	(25)
1/16	(1.6)	All Positions	200	24	180	(4.6)	6.3	(2.9)	3/4	(19)
1/16	(1.6)	All Positions	250	27	210	(5.3)	9.6	(4.4)	1	(25)
1/16	(1.6)	Flat & Horizontal	350	28	410	(10.4)	16.1	(7.3)	1	(25)
1/16	(1.6)	Flat & Horizontal	450	29	580	(14.7)	22.6	(10.3)	1	(25)

- **Maintaining a proper welding procedure - including pre-heat and interpass temperatures - may be critical depending on the type and thickness of the steel being welded.**
- **See Above:** This information was determined by welding using 100% CO_2 shielding gas with a flow rate between 35-50 cfh (17-24 l/min).
- **All positions include:** Flat, Horizontal, Vertical Up, and Overhead

Available Diameters and Packages: For a complete list of diameters and packaging, please contact Hobart Brothers at (800) 424-1543 or (937) 332-5188

Diameter		33-lb. (15 kg) Spool	50-lb. (22.7 kg) Spool	60-lb. (27.2 kg) Coil
Inches	(mm)			
Net Pallet Weight		**2376-lb. (1078 kg)**	**1600 (726 kg)**	**1920-lb. (871 kg)**
0.045	(1.2)	S283312-K29	—	—
0.052	(1.4)	S283315-K29	—	—
1/16	(1.6)	S283319-K29	S283319-K27	S283319-K02

Conformances And Approvals

- **AWS A5.20,** E71T-1C H8, E71T-12CJ H8
- **AWS A5.20M,** E491T-1C H8, E491T-12CJ H8
- **ASME SFA 5.20,** E71T-1C H8, E71T-12CJ H8
- **ABS,** 100% CO2, 3YSA H10
- **Bureau Veritas,** 100% CO2, S3YM
- **CWB,** 100% CO2, E491T1-C1A4-CS2-H8 (E491T-12J-H8), [1.2 mm - 1.6 mm diameter electrodes]
- **Lloyd's Register,** 100% CO2, 3YS H15
- **MIL-E-24403/1, MIL-71T-1C, MIL-71T-1-HYC**
- **DNV-GL,** III Y40MS
- **AWS D1.8,** 100% CO2, 0.052"

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 36 St, Miami, FL 33166-6672 (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 Company is constantly improving products, Hobart reserves the right to change design and/or specifications without notice.

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