

Tube-Alloy[®] 218-O



WELDING POSITIONS:



FEATURES:

- No shielding gas required
- Very tough deposit
- Deposit will work harden under impact
- Good slag removal
- Austenitic manganese steel deposit with unlimited deposit thickness

BENEFITS:

- Suitable for use outdoors
- Suitable for severe impact applications, and also as a good base, for abrasion-resistant carbide overlays
- Can provide good abrasion resistance
- Reduces clean-up time, increases productivity
- Suitable for build-up, overlay, and joining Hadfield manganese steels ONLY

APPLICATIONS:

- Hadfield manganese steel only
- Manganese bucket teeth & lips
- Dredge pump casings
- Hammer mill hammers
- Manganese railroad crossovers
- Gyrotory crusher mantles/cones
- Crusher jaws and cones
- Impact crusher bars
- Joining manganese steels

WIRE TYPE: Slow-freezing, basic-type, flux-cored wire

SHIELDING GAS: None required

TYPE OF CURRENT: Direct Current Electrode Positive (DCEP)

STANDARD DIAMETERS: 0.045" (1.2 mm), 1/16" (1.6 mm), 7/64" (2.8 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 (%)	Tube-Alloy 218-O
Carbon (C)	1.00
Manganese (Mn)	15.00
Silicon (Si)	0.40
Nickel (Ni)	0.40
Chromium (Cr)	3.10
Iron (Fe)	Balance

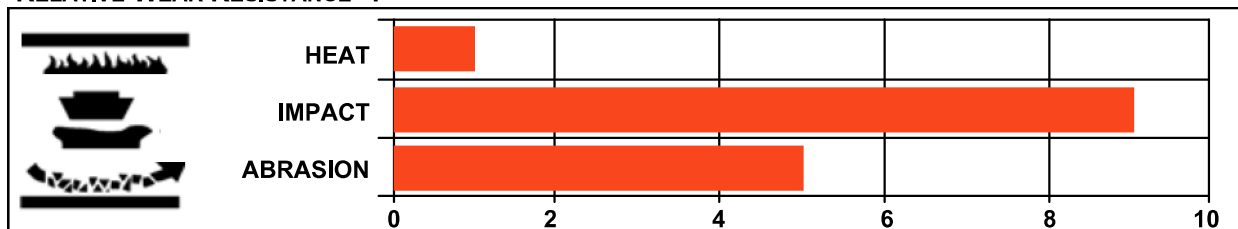
TYPICAL MECHANICAL PROPERTIES* (As Welded):

Mechanical Tests	Tube-Alloy 218-O
Tensile Strength	120,000 psi (827 MPa)
Yield Strength	80,000 psi (552 MPa)
Elongation % in 2" (50 mm)	32%

TYPICAL DEPOSIT HARDNESS*:

As Deposited	Work-Hardened
15-22 Rc	50-55 Rc

RELATIVE WEAR RESISTANCE**:



*Note: Relative wear resistance indicated by 0-10 scale. 0 = Very poor resistance; 10=Very good resistance

*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 standard industry practices. 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.

Tube-Alloy[®] 218-O

MICROSTRUCTURE: Austenitic manganese steel

MAXIMUM DEPOSIT THICKNESS: Unlimited

MACHINABILITY: Difficult

CUTTING: Difficult to oxy-fuel (flame) cut

SERVICE TEMPERATURE: Not to be used at elevated service temperatures

NON-MAGNETIC

TYPICAL OPERATING PARAMETERS:

Diameter		Weld Position	Amps	Volts	Deposition Rate		Contact Tip to Work Distance	
Inches	(mm)				lbs/hr	(kg/hr)	Inches	(mm)
0.045	(1.2)	Flat & Horizontal	120 - 160	19 - 23	4.0	(1.8) @ 130 Amps	1/2	(13)
0.045	(1.2)	Flat & Horizontal	160 - 190	24 - 25	7.0	(3.2) @ 180 Amps	3/4	(19)
0.045	(1.2)	Flat & Horizontal	190 - 230	26 - 27	10.0	(4.5) @ 220 Amps	3/4	(19)
1/16	(1.6)	Flat & Horizontal	225 - 275	23 - 25	6.0	(3.2) @ 200 Amps	1	(25)
1/16	(1.6)	Flat & Horizontal	275 - 350	24 - 27	10.0	(4.5) @ 250 Amps	1	(25)
1/16	(1.6)	Flat & Horizontal	350 - 400	26 - 29	14.0	(6.4) @ 300 Amps	1 1/2	(38)
7/64	(2.8)	Flat & Horizontal	350 - 400	24 - 27	11.0	(5.0) @ 300 Amps	1 1/2	(38)
7/64	(2.8)	Flat & Horizontal	400 - 450	26 - 29	14.0	(6.4) @ 350 Amps	1 1/2	(38)
7/64	(2.8)	Flat & Horizontal	450 - 500	28 - 32	18.0	(8.2) @ 400 Amps	2	(51)

- **Maintaining a proper welding procedure - including pre-heat and interpass temperatures - may be critical depending on the type and thickness of steel being welded or surfaced. Do NOT allow pre-heat and interpass temperature to exceed 500°F (260°C) when welding or overlaying austenitic manganese steels.**
- Out-of-position welding is limited to the use of the horizontal shelf technique.

AVAILABLE 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) Spool	60-lb. (27.2kg) Coil
Inches	(mm)		
0.045	(1.2)	S601812-029	—
1/16	(1.6)	S601819-029	—
7/64	(2.8)	—	S601839-002

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, 550 NW LeJune Road, Miami, FL 33126 (can 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: 210420 (Replaces 200825)

