



Tube-Alloy[®] 218-O MAIN LINE

OPEN ARC HARD SURFACING WIRE

Build-Up

Replaces HS-168A

260-A INDEX: 990129

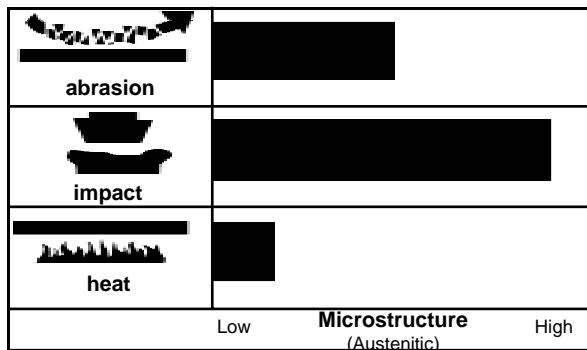
DESCRIPTION:

Tube-Alloy 218-O is a self-shielded, flux-cored wire that deposits a work-hardenable austenitic manganese steel alloy. It is designed for the build-up and overlay of austenitic manganese (Hadfield) steels only. It can also be used for joining austenitic manganese steel to manganese steel. The deposit is extremely tough, making it suitable for severe impact. After work-hardening under impact, it provides good abrasion resistance. Tube-Alloy 218-O is not limited to a maximum number of layers of build-up and provides an excellent base for more abrasion-resistant carbide alloys such as Tube-Alloy 240-O and 255-O.

OPERATIONAL CHARACTERISTICS:

Tube-Alloy 218-O has a steady arc with a globular transfer. Spatter and noise levels are minimal, and the slag cover is easily removed. It operates well in automatic applications without slagging between passes. Out-of-position welding is limited to a horizontal shelf technique.

RELATIVE WEAR RESISTANCE:



TYPICAL WELD METAL PROPERTIES* (CHEM PAD):

Weld Metal Analysis

| | |
|----------------|-------|
| Carbon (C) | 1.00 |
| Manganese (Mn) | 15.00 |
| Silicon (Si) | 0.40 |
| Chromium (Cr) | 3.10 |
| Nickel (Ni) | 0.40 |
| Iron (Fe) | Bal. |

TYPICAL MECHANICAL PROPERTIES* (AS WELDED):

| | |
|----------------------------|-----------------------|
| Tensile Strength | 120,000 psi (828 MPa) |
| Yield Strength | 80,000 psi (552 MPa) |
| Elongation % in 2" | 32% |
| Hardness—as deposited | 15-22 Rc |
| Hardness—work hardened | 50-55 Rc |
| Abrasion resistance | Fair |
| Impact resistance | Excellent |
| Machinability | Difficult |
| Flame cutting is difficult | Difficult |
| Non-magnetic | |

*The information contained or otherwise referenced herein is presented only as "typical" without guarantee or warranty, and McKay expressly disclaims any liability incurred from any reliance thereon. No data is to be construed as a recommendation for any welding condition or technique not controlled by McKay.



Tube-Alloy® 218-O

RECOMMENDED OPERATING PARAMETERS:

| Diameter | | Type of Power | Stick-out | | Optimum Amps | Volts | Deposition Rate | |
|----------|-----|---------------|-------------|-------|------------------|----------------|-----------------|--------------------|
| Inches | mm | | Inches | mm | | | Amps | lb/hr ¹ |
| .045 | 1.2 | DCEP | 1/2 - 1 | 13-25 | 120 - 160 | 19 - 23 | 130 | 4 |
| | | | | | 160 - 190 | 24 - 25 | 180 | 7 |
| | | | | | 190 - 230 | 26 - 27 | 220 | 10 |
| 1/16 | 1.6 | DCEP | 1 - 1-1/2 | 25-38 | 225 - 275 | 23 - 25 | 200 | 6 |
| | | | | | 275 - 350 | 24 - 27 | 250 | 10 |
| | | | | | 350 - 400 | 26 - 29 | 300 | 14 |
| 7/64 | 2.8 | DCEP | 1 - 1/2 - 2 | 38-51 | 350 - 400 | 24 - 27 | 300 | 11 |
| | | | | | 400 - 450 | 26 - 29 | 350 | 14 |
| | | | | | 450 - 500 | 28 - 32 | 400 | 18 |

Start with **middle ranges** and adjust accordingly. Higher amperages will increase deposition rate, dilution, and heat input to base metal, increasing voltage will widen and flatten bead profile, but excessive voltage will result in porosity. Too much electrical stick-out may result in increased spatter, too little may result in internal porosity.

AVAILABLE DIAMETERS AND PACKAGES:

| Diameter | | 25-lb. Spool | 60-lb. Coil | 100-lb. Auto-Pak |
|----------|-----|--------------|-------------|------------------|
| Inches | mm | | | |
| .045 | 1.2 | S601812-029 | — | — |
| 1/16 | 1.6 | S601819-029 | S601819-062 | — |
| 7/64 | 2.8 | — | S601839-062 | S601839-097 |

APPLICATIONS:

- Bucket Teeth
- Crusher Jaws and Cones
- Dredge Pump Casings
- Gyratory Crusher Mantles and Cones
- Hammer Mill Hammers
- Impactor Crusher Bars
- Manganese Steel Railroad Crossovers and Frogs

Material Safety Data Sheets on any McKay product may be obtained from McKay Customer Service. Because McKay is constantly improving products, McKay reserves the right to change design and/or specifications without notice.

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