

# Wearshield® Mangjet®

## Severe Impact

### Key Features

- ▶ For building up austenitic manganese steel and cladding carbon steels
- ▶ Produces an austenitic manganese deposit that will work harden in service
- ▶ Unlimited layers with proper preheat, interpass temperatures and procedures

### Typical Applications

- ▶ Dragline pins
- ▶ Dipper teeth
- ▶ Crusher screens and rolls
- ▶ Chain hooks
- ▶ Hammers
- ▶ Bucket teeth

### Welding Positions

All, except vertical down

### DIAMETERS / PACKAGING

Diameter in (mm)	Length in (mm)	50 lb (22.7kg) Carton
5/32 (4.0)	14 (350)	ED021976
3/16 (4.8)	14 (350)	ED021978
1/4 (6.4)	18 (450)	ED021979

### MECHANICAL PROPERTIES<sup>(1)</sup>

Rockwell Hardness (R <sub>c</sub> )	
As-Welded (2 Layers)	Work Hardened (2 Layers)
18	47

### DEPOSIT COMPOSITION<sup>(1)</sup>

On Carbon Steel	%C	%Mn	%Si	%Mo	%S
2 or More Layers	0.65	14.5	0.14	1.15	0.01

### TYPICAL OPERATING PROCEDURES

Polarity <sup>(2)</sup>	Current (Amps)		
	5/32 in (4.0 mm)	3/16 in (4.8 mm)	1/4 in (6.4 mm)
DC+	120-180	160-260	200-350
AC	125-210	175-275	225-375

NOTE: Work-hardened base metal or previously deposited weld metal should be ground off before applying a new deposit, since such areas are more prone to embrittlement and possible cracking. Areas that cannot be easily indented with a center punch should be removed.

When joining manganese steel, the joint should be prepared for 100% penetration. A cutting torch may be used to bevel the edges of the plate which can crack if care is not taken to prevent overheating the base metal.

Preheat is not necessary unless work is below room temperature, or if the part is unusually massive or complex in design. In such cases, heating the piece to about room temperature, or 38° - 66°C (100° - 150°F) at the most, should be sufficient.

As with all austenitic manganese welding products, interpass temperatures should be limited to 260°C (500°F) maximum. A stringer bead, or at most, a slight weave is recommended to limit heat build-up. Excessive heat build-up causes manganese carbide precipitation which damages the toughness of austenitic manganese.

#### IMPORTANT: SPECIAL VENTILATION AND/OR EXHAUST REQUIRED

Fumes from the normal use of some welding products can contain significant quantities of components - such as chromium and manganese - which can lower the 5.0 mg/m<sup>3</sup> maximum exposure guideline for general welding fume. BEFORE USE, READ AND UNDERSTAND THE MATERIAL SAFETY DATA SHEET (MSDS) FOR THIS PRODUCT AND SPECIFIC INFORMATION PRINTED ON THE PRODUCT CONTAINER.

<sup>(1)</sup> Composition and properties depend upon dilution. Single layer deposit properties depend upon base metal and/or build-up material. <sup>(2)</sup> Preferred polarity is listed first.

*Material Safety Data Sheets (MSDS) and Certificates of Conformance are available on our website at [www.lincolnelectric.com](http://www.lincolnelectric.com)*

#### TEST RESULTS

Test results for mechanical properties, deposit or electrode composition and diffusible hydrogen levels were obtained from a weld produced and tested according to prescribed standards, and should not be assumed to be the expected results in a particular application or weldment. Actual results will vary depending on many factors, including, but not limited to, weld procedure, plate chemistry and temperature, weldment design and fabrication methods. Users are cautioned to confirm by qualification testing, or other appropriate means, the suitability of any welding consumable and procedure before use in the intended application.

#### CUSTOMER ASSISTANCE POLICY

The Lincoln Electric Company is manufacturing and selling high quality welding equipment, consumables, and cutting equipment. Our challenge is to meet the needs of our customers and to exceed their expectations. On occasion, purchasers may ask Lincoln Electric for information or advice about their use of our products. Our employees respond to inquiries to the best of their ability based on information provided to them by the customers and the knowledge they may have concerning the application. Our employees, however, are not in a position to verify the information provided or to evaluate the engineering requirements for the particular weldment. Accordingly, Lincoln Electric does not warrant or guarantee or assume any liability with respect to such information or advice. Moreover, the provision of such information or advice does not create, expand, or alter any warranty on our products. Any express or implied warranty that might arise from the information or advice, including any implied warranty of merchantability or any warranty of fitness for any customers' particular purpose is specifically disclaimed.

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