

# LINCORE® FROG MANG®

Severe Impact

## KEY FEATURES

- Designed for repair of manganese frogs and manganese crossing diamonds in the railroad industry
- High alloy austenitic manganese deposit
- Unlimited layers with proper preheat and interpass temperatures and procedures

## TYPICAL APPLICATIONS

- Manganese crossing diamonds
- Manganese railroad frogs

## DIAMETERS / PACKAGING

Diameter in (mm)	9 lb (4 kg) Plastic Spool 36 lb (16.3 kg) Master Carton	25 lb (11.3 kg) Steel Spool
1/16 (1.6) 5/64 (2.0)	ED034485	ED026106 ED026105

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

Rockwell Hardness (R <sub>c</sub> )	
As-Welded	Work-Hardened
20 - 30	40 - 50

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

	%C	%Mn	%Si	%Cr
6 Layers	<2	<30	<1	<10

## TYPICAL OPERATING PROCEDURES

Diameter, Polarity ESO - in (mm)	Wire Feed Speed m/min (in/min)	Voltage (Volts)	Approx. Current (Amps)	Deposition Rate kg/hr (lb/hr)
1/16 in (1.6 mm), DC+ 1 (25)	5.1 (200)	27	220	3.0 (6.7)
	6.4 (250)	29	250	4.0 (8.7)
	8.3 (325)	32	300	5.3 (11.6)
5/64 in (2.0 mm), DC+ 1 1/4 (32)	3.8 (150)	27	240	3.4 (7.4)
	5.1 (200)	29	290	4.9 (10.7)
	6.4 (250)	31	340	6.4 (14.0)

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

NOTE: Remove all damaged and foreign material by the air-carbon arc gouging process and grinding. Make sure all defective metal is removed. In the event hairline cracks remain at flangeway depth, use a 1/8 in diameter E308 stainless product, such as Blue Max® or Red Baron® 308L AC-DC to tie up these cracks and avoid hot cracking during the buildup process. Use only light amounts and do not build-up with E308 stainless. It is for use in emergency situations where no other alternative is available to repair flangeway cracks. 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 SAFETY DATA SHEET (SDS) FOR THIS PRODUCT AND SPECIFIC INFORMATION PRINTED ON THE PRODUCT CONTAINER.

*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.

Lincoln Electric is a responsive manufacturer, but the selection and use of specific products sold by Lincoln Electric is solely within the control of, and remains the sole responsibility of the customer. Many variables beyond the control of Lincoln Electric affect the results obtained in applying these types of fabrication methods and service requirements.

Subject to Change – This information is accurate to the best of our knowledge at the time of printing. Please refer to [www.lincolnelectric.com](http://www.lincolnelectric.com) for any updated information.