Wearshield® 15CrMn

Severe Impact

Typical Applications

- Crusher hammers
- Rebuilding and joining of austenitic
- Manganese plates and parts
- Earth moving equipment

Welding Positions

All, except vertical down

Key Features

- Provides a premium austenitic chromium manganese deposit
- Resists severe impact or gouging even in a single layer over carbon steel
- Used to join Hadfield manganese steel to itself or to carbon steel
- Excellent for build-up on carbon steel prior to chromium carbide hardfacing deposit with an electrode such as Wearshield® 60
- Unlimited layers

DIAMETERS / PACKAGING

Diameter in (mm)	Length in (mm)	10 lb (4.5 kg) Carton 40 lb (18.1 kg) Master Carton
1/8 (3.2)	14 (350)	ED021980
5/32 (4.0)	14 (350)	ED021982
3/16 (4.8)	14 (350)	ED021984

MECHANICAL PROPERTIES[1]

Rockwell Hardness (R_c) (Single or Multiple Layers)	
As-Welded	Work Hardened
18-24	40-50

DEPOSIT COMPOSITION[1]

On Carbon Steel	%C	%Mn	%Si	%Cr
2 or More Layers	0.35	14.0	0.6	15.0

TYPICAL OPERATING PROCEDURES

Polarity[2]	Current (Amps) 1/8 in (3.2 mm)	5/32 in (4.0 mm)	3/16 in (4.8 mm)
DC+	140-160	190-210	220-250
AC	140-160	190-210	220-250

NOTE: In welding with Wearshield® 15CrMn, a short arc is preferred. The electrode can easily be dragged without fear of snuffing out the arc. For situations involving severe impact and abrasion, a build-up of Wearshield® 15CrMn capped with a single layer of Wearshield® 60 or Lincore® 60-O can provide excellent service. In depositing Wearshield® 15CrMn on itself or on austenitic manganese steel, preheat is generally unnecessary unless the metal is below 16°C (60°F). However, highly hardenable carbon or low alloy steel base metals may require preheat in the 150°C - 204°C (300° - 400°F) range to avoid heat affected zone cracking.

Wearshield® 15CrMn deposits work harden rapidly, which makes them difficult to machine. Best results are obtained with carbide or ceramic tool bits. Avoid superficial cuts, and maintain a sharp cutting edge. Grinding can also be done successfully. Because of the high chromium content, Wearshield®15CrMn cannot be cut with oxy-fuel processes. Plasma arc and air carbon arc processes can cut or gouge the weld deposit successfully. Limit interpass temperature to 260°C (500°F) to avoid embrittlement.

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/m³ 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.

[1] Composition and properties depend upon dilution. Single layer deposit properties depend upon base metal and/or build-up material. [2]Preferred polarity is listed first.

Material Safety Data Sheets (MSDS) and Certificates of Conformance are available on our website at 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 for any updated information.

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THE WELDING EXPERTS®

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