Wearshield® ABR

Abrasion & Impact

Typical Applications

- Crusher hammers
- Dozer blades
- Dipper teeth and lips
- Coal mining cutters
- Truck chain and gears

Welding Positions

All

Key Features

- Provides good resistance to abrasion, impact and some metal-to-metal wear
- Good hot forging properties
- Use on carbon, stainless and manganese steels
- Deposits limited to two layers
- Can be forged readily without affecting its mechanical properties

DIAMETERS / PACKAGING

Diameter in (mm)	Length in (mm)	10 lb (4.5 kg) Carton 40 lb (18.1 kg) Carton
1/8 (3.2)	14 (350)	ED021996
5/32 (4.0)	14 (350)	ED021998
3/16 (4.8)	14 (350)	ED022000

MECHANICAL PROPERTIES[1]

Rockwell Hardness (R_C)	
1 Layer	2 Layers
24-53	28-53

DEPOSIT COMPOSITION[1]

On Carbon Steel	%C	%Mn	%Si	%Cr	%Mo
2 Layers	2.1	1.1	0.75	6.5	0.40

TYPICAL OPERATING PROCEDURES

	Current (Amps)		
Polarity[2]	1/8 in (3.2 mm)	5/32 in (4.0 mm)	3/16 in (4.8 mm)
DC+	40-150	75-200	110-250
AC	50-165	80-220	120-275

NOTE: Wearshield® ABR can be forged readily without affecting its mechanical properties. As deposited, Wearshield® ABR weld metal is not machinable, although the deposit can be shaped by grinding.

To obtain a deposit that is machinable with carbide tools, heat to about 749ºC (1380ºF) and hold for one hour per inch of thickness.

Air cool to room temperature.

For maximum machinability, heat to 870° - 900°C (1600° - 1650°F) and hold for one hour per inch of thickness. Furnace cool to 650°C (1200°F) at a rate not exceeding 10°C (50°F) per hour, and air or furnace cool to room temperature. Variation in welding procedures will have little affect on abrasion resistance.

The abrasion resistance can be restored by heating to about 790°C (1450°F), quenching and tempering at 200°C (400°F).

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.

THE LINCOLN ELECTRIC COMPANY
22801 St. Clair Avenue • Cleveland, OH • 44117-1199 • U.S.A.
Phone: +1.216.481.8100 • www.lincolnelectric.com

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THE WELDING EXPERTS®

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