

mClad™ xWear™ Alumina Product Technical Data

MCOR™ 3880

MCOR™ 3880 (mClad™ xWear™ Alumina) is a two-component epoxy compound comprised of an advanced polymer system with proprietary blend of high density ceramics and sintered aluminum oxide. The MCOR™ 3880 is 100% solid, solvent-free (no VOCs), self-priming. mClad™ xWear™ Alumina has been formulated primarily to protect and repair metal, concrete, and other surface types suffering from sliding abrasion and subject to high wearing erosion, corrosion, abrasives, and chemical attack.

Normally applied high build as a liner or filler for wear areas to reclaim or clad surface areas subjected to abrasion and other corrosives. mClad™ xWear™ Alumina reclaims where substrate loss occurs and where surfaces are often repaired by costly weld overlay, re-pouring or sacrificial steel.

This toughened and highly durable compound material can be applied without the need for specialty tools to any thickness with multiple layering. MCOR™ 3880 will not corrode, will resist deforming, and is resistant to a wide range of chemicals. It will bond to a variety of substrates providing a sectional or monolithic liner highly enhanced with excellent abrasion and wear resistance for medium-to-coarse materials.

Applications Include

The mClad™ xWear™ Alumina is versatile, often utilized as cladding shield epoxy and/or metal fortified reclaimer.

- Aggregate flow, transport
- Heavy equipment wear areas
- High impact zones
- Slurry and flow areas
- Chutes and troughs
- Industrial corrosion and abrasion

Features

- "Green" - 100% solids, no VOCs
- Excellent bearing for even distribution of loads
- Resistant to thermal and mechanical shock
- Excellent wear and abrasion resistance
- Good chemical, corrosion, impact resistance
- Formulated resilience
- Pre-proportioned units
- Excellent adhesion
- Surface tolerant
- Restoring compound and/or liner
- Ultra high build

Volume Capacity / Theoretical Coverage

The volume capacity of 1 kg. of mixed MCOR™ 3880 is 728 cm³ [44 in³]. Theoretical coverage per 1 kilogram covers 728 cm² at 1 cm. thickness (3.1 sq.ft or 444 sq.in. @ 100 mils DFT).

Film Thickness

MCOR™ 3880 (mClad™ xWear™ Alumina) is a thixotropic material intended to be applied in various layers for specific needs. Intended as a cladding epoxy or filler at various thicknesses, the mClad™ xWear™ Alumina can be applied at 2.5 mm (100 mils) minimum and up to 1 cm (400 mils) per pass- vertical/overhead, without sagging, without mechanical support; and thicker if applied in multiple passes or with mechanical support/reinforcement, or horizontal, damned or formed.

Surface Preparation

The success of any coating application is directly proportional to the completeness of the substrate preparation and the care the application crew puts into the application. Surface must be clean and sound. Verify that the temperature of the surface is at least 3 degrees C (5 degrees F) higher than the dew point temperature to preclude condensation.

Metal: Before preparing steel, please inspect and remove oil, grease, or other contaminants - "Solvent Cleaning" (SSPC-SP1) may be required. Grind any weld spatter or steel weld inconsistencies. Abrasive blasting (or other approved mechanical methods) to SSPC SP-10/NACE No.2 "Near White Blast Cleaning" must be used in order to achieve a clean surface with a minimum profile of 76 microns (3 mils) remove dust and debris by high compressive air or solvent cleaning (SSPC-SP1) may be require again. MCOR™ Primecoat™ MTe is advised as a primer should the substrate be susceptible to flash-rusting.

Concrete: Remove all oil, dirt, and contaminates and prepare the concrete by abrasive blasting, high pressure water blasting, jetting and/or approved mechanical methods to SSPC SP-13/NACE No. 6 "Surface Preparation of Concrete." Surface should be dry and free of dust. Although primers are optional: should the substrate prove to be excessively outgassing, the MCOR™ Primecoat™ SE is recommend to reduce the occurrences of pinholing.

Application Method

Material is supplied in two (2) containers (base+cure) as a unit. If possible, always mix a complete unit in the proportions supplied. Use a calibrated scale to weigh out each component if mixing partial. Adding more or less hardener will adversely affect the cured physical properties. Measure the material temperature prior to mixing. If the material is cooler than 16 °C (60 °F), raise its temperature slowly to above 22 °C (72 °F). For working time to remain manageable, do not exceed 32 °C (90 °F).

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Important! Although the technical details and recommendations contained in this data sheet correspond to the best of our knowledge and experience, all the above information must, in every case be taken as merely indicative and subject to confirmation after long-term practical applications; for this reason, anyone who intends to use the product must ensure beforehand that it is suitable for the envisaged application. In every case, the user alone is fully responsible for any consequences deriving from the use of the product. The sole liability of MCOR and Epoxyc International, Inc. for any claims out of the manufacturer's use of sale of its products shall be for the buyer's purchase price.

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<<cont> After the components have been measured, mix thoroughly with a power-drill until the mixture becomes a uniform in color and viscosity with no visible streaks or lumps (3 - 5 minutes). Incomplete mixing will result in loss of physical properties and unmixed/malcured patches. Apply the mixture immediately with a trowel, spatula or putty-knife. Cover large holes or cracks with mechanical support (ie- mesh, weld rods, metal and fabric scrim) and apply material over the patch and onto an adjacent solid area on both sides.

Packaging & Color

A unit is a two-component (base+cure)

mClad™ xWear™ Alumina is available in:

- Black (BLK)

Storage & Handling

Shelf life: 36 months, sealed.

Store in a dry area away from direct sunlight.

Clean tools with MCOR™ #5 Cut & Clean.

Thinning

Thin with MCOR™ #1 Reduction not to exceed 2% by volume.

Safety

Consult Material Safety Data Sheet (SDS) for all material safety information.

Technical Properties

Type:		Filled/Slurry Epoxy Compound
Finish:		Course
Mixing ratio (by volume)		4 : 1 (by Weight)
Solids by volume:	ASTM D2697	100%
Solvents (VOC) by volume:		0%
Bond strength (steel):	ASTM D4541	15 MPa (2,000 psi)
Tensile strength:	ASTM D 638	14.7 MPa (2,130 psi)
Flexural strength:	ASTM D 790	26 MPa (3,800 psi)
Compressive strength:		123 MPa (17,900 psi)
Temperature exposure (dry):		-26 °C – 88 °C (-15 °F – 190 °F)
Temperature exposure (wet-max):		82 °C (180 °F)
Wear resistance:	Taber (2000 cycle/g)	0.9
Pot life:		25 min. @ 20 °C @ 200g mass
Return to Service (Cure):	Light Flow/Traffic	24 hrs @ 25 °C
	Heavy abuse	72 hrs @ 25 °C



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