# MCOR™ 6280 | FRP CladSpray™

## Product Technical Data

**An ultra-high build, spray applied fiber-reinforced-polymer (FRP) ceramic-novolac lining system**

MCOR™ 6280 (FRP CladSpray™) is a two-component, 100% solids, high strength fiber-reinforced-polymer (FRP) for reinforced structural-grade spray-applied renewal and lining. MCOR™ 6280 is specifically designed with highly functional, high density crosslinked novolac together with ceramics to create a hardened liner for wear areas to protect against abrasion and cavitation. Also formulated for upgraded chemical and temperature resistance. Being an FRP alternative, the MCOR™ 6280 enhances, adds and reinstates structural integrity while providing sealed barrier protection from corrosion.

Exhibiting ultra-high build-up capabilities up to 5mm per pass. Once cured, resists high concentrate chemical attack of caustics, acids, and hydrocarbons, with ceramic abrasion resistance while maintaining high adhesive bond strength. Formulated for high volume requirements to assist spray applicators seeking to utilize a plural-component heated spray system with an all-in-one-shot application of a novolac FRP lining. The propriety blended novolac resin system incorporates reinforcing fibers and thixotropes with a variety of hardened ceramics that once cured yields high mechanical and flexural strength. Contains no solvents (no VOCs). Bonds to a variety of substrates, such as concrete, steel, wood, some plastics and most construction materials. Delivers a renewed substrate while lining all-in-one shot.

### Applications

Protection, renewal, and sealed structural reinstatement and/or enhancement to fatigued, cracked, pitted, or corroded steel or concrete infrastructure where FRP lining would resolve, seal, and protect. Also for new, preventive maintenance and corrosion protection. A high wear, high chemical, and high temperature alternative to composite laminate systems, CIPP, or other FRP lining.

- Restoring and lining tank walls, floors, and ceilings
- Interior chemical immersion protection
- Secondary containment areas
- Deep shafts, tunnel and pipe lining
- Aqueducts and penstocks
- Rail cars, silos, transport or feed structures

### Features

- 100% solids, no VOCs
- Convenient 1:1 mix ratio
- Indefinite recoat window
- High chemical, wear, and heat resistance
- Structural, with adaptive flexibility
- No sag, ultra-high build
- Ultra-high adhesion, self-priming
- Fully monolithic system or for sectional lining

### 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-SP10/NACE 2 "Near-White Blast Cleaning" must be used in order to achieve a clean surface with a minimum profile of 75 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, to stripe coat any edges or bends in the metal for enhancing peak retention, or should the metal not possess the characteristics to achieve optimal profiling capability.

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 recommended to reduce the occurrences of pinholing. The MCOR™ Primecoat™ SE would also be advised for substrate surface conditioning and enhancement.

### Application Method

MCOR™ 6280 is designed to be sprayed using a heated plural component spray system. Plural component system must be designed for high volume/flow and high-pressure with storage heating, recirculating and agitation while capable to heat up to 60C (140F), and flowing through separate part A and part B heated hoses to maintain temperatures. Mixing occurs at a static chamber prior to a single whip hose; and must have purging capability and recirculation. The system must be fixed ratio of 1:1 by volume.

Minimum recommend spray system design specifications:

- Graco XP70-hf plural pump
- Graco PressureTrak (Ratio assurance pressure system)
- Insulated heated hoses (Full recirculation + purge system) w/ 3/8 whip hose
- Mixing manifold block, carriage, static mixer housing
- Solvent pump kit
- Heated hoppers with recirculation + agitation <or> Graco Xtreme-Duty Agitators for drums, with separate drum heaters
- Graco XHF Gun

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Purge and clean with MCOR #5 Cut & Clean.

MCOR™ spray guidelines are described in order to share with spray design experts, please consult further with Graco or similar distributors and system designer to enhance or customize your system. Should you require proven system designers from reputable Graco partners, please consult with MCOR™ to receive a referral list.

## Volume Capacity & Color

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

The volume capacity of a 1 kg of mixed MCOR™ 6280 is 0.88 Liters.

MCOR™ 6280 is available in:

- BZ (Bronze)

## Film Thickness / Theoretical Coverage & Kitting

MCOR™ 6280 is a 100% solid coating that will not shrink (WFT/DFT are the same). Product may be applied from 1mm (40 mils) up to 5mm (200 mils) maximum by spray, per coat.

Film thickness and coverage / 55 kg unit:
@ 1mm yields 37 $m^2$ (398 $ft^2$)
@ 2mm yields 18.5 $m^2$ (199 $ft^2$)
@ 3mm yields 12.3 $m^2$ (132 $ft^2$)
@ 4mm yields 9.25 $m^2$ (99 $ft^2$)
@ 5mm yields 7.4 $m^2$ (79 $ft^2$)

Film thickness and coverage / 600 kg unit:
@ 1mm yields 408 $m^2$ (4,391 $ft^2$)
@ 2mm yields 189 $m^2$ (2,195 $ft^2$)
@ 3mm yields 136 $m^2$ (1,463 $ft^2$)
@ 4mm yields 102 $m^2$ (1,097 $ft^2$)
@ 5mm yields 81.6 $m^2$ (878 $ft^2$)

NOTE: Theoretical- actual coverage will depend on surface conditions, irregularities, and surface profile.

## Thinning

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

## Technical Properties

| | | |
|---|---|---|
| Type: | | Thixotropic Ceramic Epoxy |
| Base component (consistency): | | Paste |
| Base component (color): | | Dark grey |
| Solidified component (consistency): | | Paste |
| Solidified component (color): | | Light grey |
| Finish: | | Matte, grey |
| Mixing ratio | | 1 : 1 (by volume) |
| | | 1 : 1 (by weight) |
| Solids by volume: | ASTM D2697 | 100% |
| Solvents (VOC) by volume: | | 0% |
| Bond strength (steel): | ASTM D4541 | 199 Bar (2,891 psi) |
| Durometer (Shore D) | ASTM D2240 | 74 (cured 7days @ 23 +/- 2 °C) |
| | | 82 (cured 7 days @ 50 °C) |
| Durometer (Barcol) | ASTM D2583 | 64 |
| Taber Abrasion (dry, CS-17) | ASTM D4060 | 318 mg (209 $mm^3$) @1000 cyc |
| Taber Abrasion (wet, H-10) | ASTM G195 | 686 mg (1,806 $mm^3$) @1000 cyc |
| Impact Strength: | | 2.4 m- 0.45 kilo (7.9 ft-lb) |
| Tensile strength: | ASTM D638 | 27.6MPa (4,000 psi) |
| Flexural strength: | ASTM D790 | 51.7 MPa (7,500 psi) |
| Compressive strength: | | 83 MPa (12,000 psi) |
| Temperature exposure (dry): | ISO 11357 | 314.3 °C (598 °F) |
| Temperature exposure (wet-max): | | 120 °C (250 °F) |
| Izod Impact Resistance | ASTM D256 | 0.241 (ft-lbf/in), 12.8 (J/m) |
| | | 0.602 (ft-lbf/$in^2$), 1,259.7 (J/$m^2$) |
| Pot life: | | 30 min.<br>@ 20 °C @ 200g mass |
| Cure time (return-to-service): | | 24 hours |

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