mPlait™ X
Product Technical Data

MCOR™ 2555

MCOR™ 2555 (mPlait™ X) is a medium-to-high build, brushable grade, advanced flouroceramic hybrid polymer epoxy coating incorporating a proprietary blend of Teflon® + high density ceramic for applications requiring high performance, cold applied abrasion protection.

MCOR™ 2555 (mPlait™ X) is the most durable member of the 2000 mPlait™ Series of products to coat areas exposed to the most wearing forces. The polymer is an ultra-high abrasion and chemical resistant epoxy coating. Formulated to tolerant heat, high impact, ultra-high wear and aggressive frictional forces. The coating is based on a combination of advanced curing agents and resin polymers which are highly filled with a dense ceramic matrix.

The polymer compound system cures as a high build, durable ceramic liner to combat internal components exposed to abrasion, wear, friction, impact, corrosives, and heat.

Features

- High build, ultra-high abrasion resistance
- Heat tolerance
- Chemical resistance
- Simple to apply
- 100% solids
- Surface tolerance

Applications Include

- Fluid and aggregate flow pumps and impellers
- Dredging equipment lining
- High flow troughs
- Pipe elbows
- High velocity frictional protection
- Silo and transfer areas
- Heat exchangers
- Nozzles, injectors and valves

Film Thickness & Theoretical Coverage

mPlait™ X is designed to be applied as a two-coat system. mPlait™ X can be applied onto a metallic surface at 380 microns (15 mils) minimum to 1.5mm (60 mils) maximum.

mPlait™ X is a 100% solid coating that will not shrink. 1.4 m^2/kg. at 0.5 mm DFT (15 ft^2/kg. at 20 mils DFT). Actual coverage will depend on surface conditions, irregularities, and surface profile.

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.

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-6/NACE No. 3 "Commercial 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.

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; if not, use a calibrated scale to weigh out each component or use measuring cups to measure by volume, if volume ratio is provided. 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 published working time to remain manageable, do not exceed 32 °C (90 °F). After the components have been measured, combine entire contents of cure with base and mix thoroughly with a power agitator or mixing stick. Mix for five (5) minutes until the mixture becomes uniform in color and viscosity with no visible streaks or lumps and be aware of pot life (higher temperature and mass accelerates pot life). When possible, MCOR™ recommends mPlait™ X as a two-coat system. Apply the mixture immediately (advanced curing agents are utilized to create strong crosslinking; hence, shortens pot life) with brush, roller, or spray.

Equipment

Brush: wide brush with short hair bristle.
Roller: mohair, nap or foam roller (only use high quality shed-resistant rollers)
Spray: MCOR™ recommends at minimal the use of a .016" orifice spray tip or greater, 65:1 spray pump or greater, 3/8" hoses, with 1/4" whip. Purge with MCOR™ #5 Cut & Clean.

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Volume Capacity & Color

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

The volume capacity of a 1 kg of mixed mPlait™ X is 705 cm^3 (43 in^3).

mPlait™ X is available in:

- Lt. Grey
- Drk. Grey

Storage & Handling

Shelf life: 24 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 1% by volume.

Limitations

Apply in good weather when air and surface temperatures are above 16 °C (60°F). For optimum application properties, condition the material to 22 °C (72 °F) temperature range prior to mixing and application.

Technical Properties

Type:		Brushable, Ceramic Epoxy
Finish:		Satin
Mixing ratio:		4 : 1 (by weight)
Solids by volume:	ASTM D2697	100%
Solvents (VOC) by volume:		0%
Bond strength (steel):	ASTM D4541	100 Bar (1450 psi)
Pot life:		25 min. (25 °C / 300 g mass)
Water absorption:	ASTM D1653	< 0.004 g/sq.m.
Tensile strength:	ASTM D638	58 MPa
Flexural strength:	ASTM D790	90 MPa
Compressive strength:	ASTM D695	82 MPa
Hardness (Shore D)		82
Tensile elongation:	ASTM D2370	8.5%
Flash point:	ASTM D3278	232 °C (450 °F)
Complete cure:		48 hours (25 °C)
Abrasion resistance	Taber CS-17	0.003g @ 1000 cycles
Temperature exposure, max (dry):		-18 °C – 110 °C (0 °F - 230 °F)
Temperature exposure, max (wet):		125 °C (257 °F)
Recoat Time		when firm (min.)
		10 hrs. @ 25 °C- min
		72 hrs.@ 25 °C- max

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