chester molecular ®

Technical Data Sheet

June 2025

Chester Surface Protector E

DESCRIPTION:

Chester Surface Protector E is a two-component flowable epoxy novolac coating material. Contains modified epoxy novolac resins and barrier fillers. It is designed to protect metal and concrete surfaces against aggressive chemicals at elevated temperatures. Cures at room temperature.

TYPICAL APPLICATION:

- **PROTECTION OF METAL AND CONCRETE SURFACES AGAINST CORROSION**
- **PROTECTION OF TANKS**
- **FLOORING**
- **PROTECTION OF PIPELINES**
- **PUMP PROTECTION**
- **PROTECTION OF FLUE GAS DUCTS AND DIFFUSERS**
- **MANHOLE COATINGS**
- **PROTECTION OF SUMP TRAYS**
- **PROTECTION OF SEWERS**

Technical data				
Cured Density	-----	-----	**1,30± 0,05g/cm^3**	
Mix Ratio by Volume	-----	-----	**whole pack**	
Mix Ratio by Weight	-----	-----	**3 : 1**	
Color			**cream/ grey**	
Tensile Shear (Stainless Steel)	ASTM 1002	ISO 4587	**21,5 MPa**	**3120 psi**
Tensile Shear (Mild Steel)	ASTM 1002	ISO 4587	**21,3 MPa**	**3090 psi**
Tensile Shear (Aluminum)	ASTM 1002	ISO 4587	**12,0 MPa**	**1740 psi**
Tensile Shear (Brass)	ASTM 1002	ISO 4587	**11,0 MPa**	**1595 psi**
Temperature Resistance Wet	-----	-----	**90^{O}C**	**176^{O}F**
Temperature Resistance Dry	-----	-----	**180^{O}C**	**248^{O}F**
Minimal Working Temperature	-----	-----	**-50^{O}C**	**-58 ^{O}F**
Working Life (68^{O}F)(20^{O}C)	-----	-----	**35 min**	
Hardness	ASTM D2240	-----	**83 ShD**	
Flexural strength		ISO 178	**105 MPa**	**15225 psi**
Recoat time	-----	-----	**up to 24 h**	

DIRECTIONS FOR USE

Conditions during the application.

The product is not recommended to apply when the ambient temperature is below 10°C(50°F) and the relative humidity is above 90% or when condensation occurs on the surface to be repaired.

Metal surface preparation.

All contaminants, grease, oil, loose corrosion products, old paintwork, etc., must be removed from the surface to be protected. Cleanrex, Cleanrex WZ-2, or Cleanrex RM are recommended for initial cleaning. The prepared surface should be roughened, if possible, by abrasive blasting (shot blasting, sandblasting – to a surface finish of at least Sa 2½), or using angle grinders, abrasive wheels, sandpaper, etc., and then degreased using Fast Cleaner F-7 or Multicleaner F-8. Always strive to thoroughly remove all contaminants and roughen the surface.

Concrete surface preparation

The surface must be clean and dust-free and free from loose pieces of concrete. New concrete must be cured for at least 28 days and cleaned of the cement wash. A slight surface dampness is allowed.

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Mixing and application of the composition.

The contents of the container marked **Reactor** pour it into a container labeled **Base**. Mix both components until obtaining a uniform color. It is recommended to mix total content of the packaging. It is the best to place the necessary coat at once, carefully rubbing it into the base.

Once the mix was prepared it should be directly applied, because curing starts immediately and every late could weaken the adhesion.

Two coats of 0,25 – 0,3 mm *(0,012" – 0,02")* thickness are recommended for applying. As the second coat of the material must be applied, the first one can not be fully cured. Recommended is using of brush or roller for applying this material.

Coverage rate

Using 1kg of the product you can obtain 1,28 m^2 coat of 0,6 mm (0,03") thickness.

To cover a surface of 1m^2 of 0,6 mm(0,03") thickness - you need 0,78 kg of the product.

Values given above are theoretical ones. In practice because of various roughness of the surfaces, decrements, irregularity – efficiency of the product may differ by ±15%

Post curing

The coating obtains full chemical resistance after 7 days at 20 °C (68°F) or after 18 hours at 20 °C (68°F) and 4 hours post curing at 80 °C. (176 °F) For curing at lower temperatures, consult the manufacturer.

CURE TIME ACCORDING TO THE TEMPERATURE

Ambient temperature °C (°F)	Working life [min]
10 (50)	60
20 (68)	35
30 (86)	15

It should be remembered that the rate of the reaction significantly depends, apart from the ambient temperature, on the quantity of the used material (the bigger mass of the mixed material, the reaction rate increases). The above presented times refer to the mass of 0,1 kg of the composite.

CHEMICAL RESISTANCE

Unless otherwise stated, the tests were carried out at 20 ° C (68°F). The samples were cured for 7 days at the temperature of 20 ° C (68°F). and post cured for 4 hours at the temperature of 80 °C (176°F).

1 – Prolonged immersion
2 – Short-term immersion
3 – Not recommended

Medium	Chemical resistance
Petrol	1
Disel fuel	1
Antifreeze (glycol)	1
Motor oil	1
Petroleum	1
Transformer oil	1
Petrol at 40 °C (104 °F)	1
Xylene at 40 °C (104 °F)	1
Toluene at 40 °C (104 °F)	1
Chlorobenzene	1
Ethyl acetate etylu	1
Ethanol	1
Methanol	2
Nitric acid 10%	1
Nitric acid 30%	2
Nitric acid 5% at 40 °C (104 °F)	1
Nitric acid 5% at 60 °C (140 °F)	2
Nitric acid 15%	1
Hydrofluoric acid 3%	1
Hydrofluoric acid 5%	2
Sulfuric acid 98 % at 60 °C (140 °F)	1
Hydrochloric acid 36 % at 40 °C (104 °F)	1
Hydrochloric acid 15% at 60 °C (140 °F)	2
Phosphoric acid 10%	1
Phosphoric acid 50%	2
Carbonic acid	2
Sodium hydroxide40% at 60°C (140 °F)	1
Potassium hydroxide 20% at 60 °C (140 °F)	1
Ammonia 25% at 80 °C (176 °F)	1
Calcium hypochlorite 50% at 60 °C (140 °F)	1
Amidosulfonic at 70°C (158 °F)	1
Citric acid 50% at 40 °C (104 °F)	1
Citric acid 50% at 60 °C (140 °F)	2
Acetic acid 3%	1

Medium	Chemical resistance
Acetic acid 10%	2
Lactic acid 10%	1
Lactic acid 70%	2
Tartaric acid 20%	1
Tartaric acid20% at 60°C(140°F)	2
Formic acid 25%	1
Formaldehyde 37% 40 °C(104°F)	1
Sea water	1
Brine saturated solution 80 °C (176 °F)-	1
Phosphoric acid 50% / Sulfuric acid 98% 1:1	1
Phosphoric acid 50% / Nitric acid 10% 1:1	1
Nitric acid 10% / Sulfuric acid 98% 1:1	2
Acetic acid 3% / Citric acid 50% 1:1	1
Phenol	2
Acetone	2

Full table of chemical resistance is on the website

OTHER INFORMATION

Storage

he product should be stored in original packaging at temperature between +0°C (32 °F) to +30°C (86 °F).