chester molecular®

**Technical Data Sheet**

June 2021

# *Chester Surface Protector CFT*

## *DESCRIPTION:*

Chester Surface Protector CF is a two-element thixotropic epoxy-ceramic composite. Contains modified epoxy resins and abrasion resistant ceramic fillers. Coating system for protecting, repairing or modify metal and concrete surfaces subjected to particulate abrasion and erosion. Do not contains metallic fillers – electrical insulating material. Cures at room temperature.

## *TYPICAL APPLICATION:*

- **PROTECTION OF HOPPERS**
- **PROTECTION OF CHUTES**
- **PROTECTION OF CYCLONES**
- **PROTECTION OF PIPE ELBOWS**
- **PROTECTION OF CENTRIFUGES**
- **PROTECTION OF AGITATORS**
- **SCREW CONVEYORS PROTECTION**
- **PUMPS PROTECTION**

| *Technical Data* | | | | |
|---|---|---|---|---|
| Cured Density | ----- | ----- | **1,75 ± 0,1 g/cm$^3$** | |
| Mix Ratio by Volume | ----- | ----- | **3:1** | |
| Mix Ratio by Weight | ----- | ----- | **6,6 : 1** | |
| Color | | | **brown** | |
| Tensile Shear (Stainless Steel) | ASTM 1002 | ISO 4587 | 20,1 MPa | 2915 psi |
| Tensile Shear (Mild Steel) | ASTM 1002 | ISO 4587 | 20,0 MPa | 2900 psi |
| Tensile Shear (Aluminum) | ASTM 1002 | ISO 4587 | **13,8 MPa** | **2000 psi** |
| Tensile Shear (Brass) | ASTM 1002 | ISO 4587 | **12,2 MPa** | **1770 psi** |
| Temperature Resistance Wet | ----- | ----- | **75$^O$C** | **167$^O$F** |
| Temperature Resistance Dry | ----- | ----- | **150$^O$C** | **302$^O$F** |
| Minimal Working Temperature | ----- | ----- | **-50$^O$C** | **-58 $^O$F** |
| Working Life 20$^O$C (68$^O$F) | ----- | ----- | **50 min** | |
| Hardness | ASTM D2240 | ----- | **89 ShD** | |
| Impact strength | ----- | ISO 179-1/1fU | **5,1 kJ/m$^2$** | |

## *DIRECTIONS FOR USE*

### *Conditions during the application.*

The product is not recommended to apply when the ambient temperature is below 8°C(46$^O$F) and the relative humidity is above 90% or when condensation occurs on the surface to be repaired.

### *Metal surface preparation.*

From the surface to be protect you need to delete all kinds of impurities, grease, oil, loose corrosion products, old paint coatings. For pre-cleaning is recommended to use the product Cleanrex, Cleanrex II, Fast Cleaner F-7. The surface of the part to be repaired should be degreased chemically or with a gas burner and mechanically cleaned - by shot blasting, sandblasting or with the use of angle grinders, pin grinding wheels, sandpaper, etc. and then if necessary degrease using the e.g. Chester Fast Cleaner F-7 or Ultra Fast Degreaser F-6. Always strive to thoroughly remove surface contamination and make the surface well roughened.

### *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.*

It is best to use two different spatulas to collect the Base and Reactor. Both components should be mixed on a flat, smooth surface or in company packaging until a uniform colour is achieved. It is advisable to mix the contents of the entire package. It is advisable to apply the mixture immediately after preparing the mixture, as the curing reaction begins immediately and any delay weakens the adhesion. It is recommended to apply 2 layers of the material, with a total thickness of 1.0 mm. In the case of very high compressive stresses, a layer with a minimum thickness of 2 mm is recommended. When applying the second and subsequent layers, the previous one must be hardened enough so that it is not damaged during the application of the next one. The recommended form of application is application with a spatula. Applications should be carried out at a temperature of 8 - 30°C

## *Coverage rate*

Using 1kg of the product you can obtain 0,57 $m^2$ coat of 1 mm thickness.

To cover a surface of 1$m^2$ of 1mm thickness - you need 1,75 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*

Post curing at a temperature of 80-100°C (176-212°F) for minimum 2h, after initial cure considerably improves mechanical properties, heat and chemical resistance. Optimal curing process: 7 days in 20°C (68°F) and post-curing at 100°C (212°F) for 2-4 hours. For curing at other temperatures, consult the manufacturer.

## *CURE TIME ACCORDING TO THE TEMPERATURE*

| Ambient temperature °C (°F) | Working life [min] |
|---|---|
| 10 (50) | 70 |
| 20 (68) | 50 |
| 30 (86) | 25 |

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

Tests were carried out at the temperature of 20°C (68°F). The samples were cured for 7 days at the temperature of 20°C (68°F).

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

| Solvent | Chemical resistance |
|---|---|
| Petrol | 1 |
| Diesel fuel | 1 |
| Antifreeze | 1 |
| Motor oil | 1 |
| Petroleum | 1 |
| Nitric acid 10% | 1 |
| Phosphoric acid 10% | 1 |
| Acetic acid 5% | 1 |
| Amines up to 20% | 1 |
| Hydrochloric acid 10% | 1 |
| Ammonia 20% | 1 |
| Water 80°C(176 °F) | 1 |
| Sea water | 1 |
| Sodium hydroxide 40% | 1 |
| Acetone | 3 |
| Methylene Chloride | 3 |

Full table of chemical resistance is on the website

## *OTHER INFORMATION*

### *Storage*

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

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