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Technical Data Sheet

July 2010

Chester Metal Super Y

DESCRIPTION:

Chester Metal Super Y is a two-element tixotropic epoxy-metallic composite. The material contains modified epoxy resins, ceramic, silicon-steel and fiber fillers. It is designed for complement, rebuilding and joining oiled metal surfaces in wet conditions. Cures under water.

TYPICAL APPLICATION:

- **LEAKAGES IN PIPELINES AND TANKS.**
- **REPAIR OF WET OR UNDERWATER ELEMENTS**
- **KORT NOZZLE RECONSTRUCTION**
- **SETTLING OF BRIDGE BEARING**
- **REPAIR CRACKS IN TANKS**

Technical data

Cured Density	-----	-----	**2,0 g/cm^3**	
Mix Ratio by Volume	-----	-----	**1 : 1**	
Mix Ratio by Weight	-----	-----	**1,5 : 1**	
Color			**gray**	
Tensile Shear (Stainless Steel)	ASTM 1002	ISO 4587	**18,1 MPa**	**2625 psi**
Tensile Shear (Mild Steel)	ASTM 1002	ISO 4587	**18,1 MPa**	**2625 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 (-50^{o}C)**	**194 ^{o}F (-58^{o}F)**
Temperature Resistance Dry	-----	-----	**180^{o}C (-50^{o}C)**	**356^{o}F (-58^{o}F)**
Minimal working temperature	-----	-----	**-50^{o}C**	**-58 ^{o}F**
Heat Distortion Temperature Ambiet Cure Post Cure	ASTM D648	-----	 **62^{o}C** **99 ^{o}C**	 **143^{o}F** **210^{o}F**
Heat Distortion Temperature Ambiet Cure Post Cure	-----	DIN 53462	 **60 ^{o}C** **89 ^{o}C**	 **140 ^{o}F** **192 ^{o}F**
Working Life (68^{o}F)(20^{o}C)	-----	-----	**50 min**	
Cured Hardness	ASTM D2240	-----	**87^{o}Sh D**	
Compressive Strength	ASTM D695	-----	**1325 kg/cm^2**	**18854 psi**
	-----	ISO 604	**130 MPa**	**18854 psi**
Thermal conductivity coefficient	-----	-----	**0.56 W/mK**	
Flexural strength	-----	ISO 178	**92 MPa**	
Flexural modulus	-----	-----	**8560 MPa**	
Impact strength	-----	ISO 179	**6.5 kJ/m^2**	

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DIRECTIONS FOR USE

Conditions during the application.

The product cannot be used under 8°C.

Surface preparation.

The surface in the part to be repaired shall be mechanically cleaned by means of blast cleaning, sanding, or with the help of the abrasive paper, grinders, pin-lift grinding wheels, etc. You should always aim at thoroughly remove all loose contamination and make the surface roughened. A correctly prepared surface shall be degreased using for ex. Chester Fast Cleaner. F-7 or Chester Ultra Fast Degreaser F-6.

Mixing and application of the composition.

Use two different spatulas to take the Base and the Reactor. Mix both elements on the flat smooth surface (do not mix them in their packages) until obtaining a uniform color. Once the mix was prepared it should be directly applied, because curing starts immediately and every late could weaken the adhesion. Necessary layer should be placed single, carefully rubbing it into the base. In case there is necessary second layer, first shouldn't be fully cured, otherwise there should be made rough surface. In the case of repairs of cracks, it is recommended to additionally reinforce the composite with a fiberglass net.

Post curing

Post curing in temperature 80-110°C (176-230°F) in minimum 2h, after initial cure considerably improves mechanical properties, heat and chemical resistance. Optimal cure e.g: tensile shear research, optained after 7 days in 20°C (68°F) and post-cure by heating to 100°C (212°F) for a period of up to 24 hours.

CURE TIME ACCORDING TO THE TEMPERATURE.

Ambient temperature °C (°F)	Time for application [min]	Time for treatment [h]
8 (46)	120	18
10 (50)	70	10
20 (68)	50	6
30 (86)	35	3

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 0.25 kg of the composite.

CHEMICAL RESISTANCE

Tests were carried at the temperature of 20°C(68°F). The tests were carried after 7 days of curing 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
Brake fluid	1
Motor oil	1
Petroleum	1
Nitric acid 10%	1
Nitrous acid 10%	1
Acetic acid 5%	2
Amines	1
Hydrochloric acid 10%	1
Ammonia 20%	1
Water 100 °C(212 °F)	1
Sea water	1
Ozone (dry)	1
Chlorine	1
Acetone	3
Methylene Chloride	3

Full table of chemical resistance is on the website http://www.chester.com.pl/GBA/multimedia/2/51/

OTHER INFORMATION

Storage

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

ISO 9001:2000