chester molecular®

Technical Data Sheet

September 2021

Chester Metal Slide

DESCRIPTION:

Chester Metal Slide is a two-element thixotropic composite with very good sliding properties. The material contains modified epoxy resins, molybdenum disulfide and fiber fillers. The epoxy putty cures at room temperature and is designed for filling, rebuilding, and bonding metal surfaces.

TYPICAL APPLICATION:

- **REBUILDING OF WORN JOURNALS AND PLAIN BEARING BUSHINGS**
- **REPAIR OF PISTON RODS AND CYLINDERS OF ACTUATORS**
- **REBUILDING OF SEALING SURFACES COOPERATING WITH O-RINGS**
- **REPAIR OF SLIDING GUIDES**

Technical data				
Cured Density	-----	-----	**1,5±0,05 g/cm^3**	
Mix Ratio by Volume	-----	-----	**2 : 1**	
Mix Ratio by Weight	-----	-----	**2: 1**	
Color			**dark gray**	
Tensile Shear (Stainless Steel)	ASTM 1002	ISO 4587	**24,3 MPa**	**3524 psi**
Tensile Shear (Mild Steel)	ASTM 1002	ISO 4587	**23,6 MPa**	**3423 psi**
Tensile Shear (Aluminum)	ASTM 1002	ISO 4587	**13,2 MPa**	**1914 psi**
Tensile Shear (Brass)	ASTM 1002	ISO 4587	**12,6 MPa**	**1827 psi**
Temperature Resistance Wet	-----	-----	**100^{O}C**	**212^{O}F**
Temperature Resistance Dry	-----	-----	**200^{O}C**	**392^{O}F**
Minimal working temperature	-----	-----	**-50^{O}C**	**-58 ^{O}F**
Heat Distortion Temperature	ASTM D648	ISO 75	**91^{O}C**	**215^{O}F**
Heat Distortion Temperature	----	DIN 53462	**86 ^{O}C**	**197^{O}F**
Working Life (68^{O}F)(20^{O}C)	-----	-----	**30 min**	
Hardness	ASTM D2240	-----	**88 ShD**	
Compressive Strength	ASTM D695	ISO 604	**146 MPa**	**21175 psi**
Thermal conductivity coefficient	-----	-----	**0,56 W/mK**	
Flexural strength	-----	ISO 178	**90 MPa**	**13050 psi**
Impact strength	-----	ISO 179	**5,8 kJ/m^2**	

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DIRECTIONS FOR USE

Conditions during the application.

The product cannot be used at a temperature lower than 5 ° C (41°F)or a relative air humidity higher than 90% and in conditions in which moisture condensation occurs on the surface to be repaired.

Surface preparation.

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.

Always strive to thoroughly remove surface contamination and make the surface well roughened. A properly prepared surface should be degreased using e.g. Chester Fast Cleaner F-7 or 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 or mix them in original packages until obtaining a uniform color. Efforts should be made to apply immediately after preparing the mixture, because the curing reaction starts immediately and any delay reduces 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 steel mesh or fiberglass net.

Post curing

Post curing at a temperature of 80-110°C (176-230°F) for minimum 2h, after initial cure considerably improves mechanical properties, heat and chemical resistance.

Optimal curing process: 7 days at 20°C (68°F) and post-curing at 110°C (230°F) for 4 hours.

CURE TIME ACCORDING TO THE TEMPERATURE.

Ambient temperature [°C]	Working life [min]	Time for machining [h]
5(41 °F)	50	24
10(50 °F)	40	14
20(68 °F)	30	5
30(86 °F)	15	5

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

The samples were subjected to optimal curing process. Unless otherwise stated, the tests were carried out at 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
Mineral oils	1
Acetic acid 3%	1
Hydrocarbons	1
Hydrochloric acid 10%	1
Ammonia 20%	1
Water 100°C(212 °F)	1
Sea water	1
Lubricating oils	1
Chlorine	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).