

Chester Metal Super AL

DESCRIPTION:

Chester Metal Super SL is a two-element thixotropic epoxy-metallic composite. The material contains modified epoxy resins, steel and fiber fillers. Cures at room temperature and is designed for filling, rebuilding, and bonding aluminum cast.

TYPICAL APPLICATION:

- REBUILDING, BONDING, FILLING THE ALUMINIUM CAST

Technical Data				
Cured Density	----	----	1,3 g/cm³	
Mix Ratio by Volume	----	----	2 : 1	
Mix Ratio by Weight	----	----	2,5 : 1	
Color				aluminum
Tensile Shear (Stainless Steel)	ASTM 1002	ISO 4587	18,6 MPa	2700 psi
Tensile Shear (Mild Steel)	ASTM 1002	ISO 4587	18,6 MPa	2700 psi
Tensile Shear (Aluminum)	ASTM 1002	ISO 4587	13,9 MPa	2015 psi
Temperature Resistance Wet	----	----	100°C	212°F
Temperature Resistance Dry	----	----	200°C	392°F
Minimal working temperature	----	----	-50°C	-58°F
Heat Distortion Temperature Ambiet Cure	ASTM D648	----	55°C	131°F
Post Cure			77°C	170°F
Heat Distortion Temperature Ambiet Cure	----	DIN 53462	50°C	122°F
Post Cure			68°C	154°F
Working Life (68°F)(20°C)	----	----	20 min	
Cured Hardness	ASTM D2240	----	87°Sh D	
Compressive Strength	ASTM D695	ISO 604	142 MPa	20590 psi
Thermal conductivity coefficient	----	----	0.56 W/mK	
Flexural strength	----	ISO 178	89 MPa	12910 psi
Impact strength	----	ISO 179	6.0 kJ/m²	

Chester Metal Super AL

DIRECTIONS FOR USE

Conditions during the application.

The product is not recommended to apply when the ambient temperature is below 4°C(39°F) and the relative humidity is above 90% or when condensation occurs on the surface to be repaired.

Surface preparation.

The surface in the part to be repaired shall be degreased chemically or by gas-jet, then 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 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, obtained 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]
5 (41)	50	14
10 (50)	35	12
20 (68)	20	4
30 (86)	15	2.5

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

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 3%	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).

