



Weicon Plastic Metal Ceramic BL



Weicon Ceramic BL is a 2 part epoxy resin system that is resistant to chemicals and offers extreme wear protection and high abrasion resistance. This grade of epoxy resin is mineral filled, flowable, and can be used in temperatures up to 180°C.

Ceramic BL can be used as a wear-resistant final coating the other grades of Plastic Metal. It is also well-suited for creating a system structure in combination with Weicon Plastic Metal GL. Due to the different colours of the two wear protection systems, the degree of wear can be easily established during visual inspections.

Weicon Ceramic BL is commonly used for the lining of heavily stressed pump housings, as wear protection for slide bearings, slides, funnels and pipes and for the repair of castings, valves and blower fans. It also has drinking water certification according to BS 6920.

Technical Data:

Property:	Typical Value:
Base	Epoxy
Filler	Silicon Carbide and Zirconium Silicate
Texture	Flowable
Colour after curing	Blue

Processing:

Processing temperature	+15°C to 40°C
Component temperature	> 3°C above dew point
Relative air humidity	< 85% max
Mixing ratio by volume	100:15
Mixing ratio by weight	100:8
Viscosity of the mixture at 25°C	23,000 mPa•s
Density of the mixture	1.8 g/cm ³
Consumption at layer thickness of 1mm	1.8 kg/m ²
Maximum layer thickness per work step	10mm

Curing:

Pot life at 20°C, 500g batch	55 minutes
Additional layer after	5 hours (35% strength)
Working strength after	8 hours (80% strength)
Final strength after	12 hours (100% strength)
Shrinkage	0.13%

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Important

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Properties After Curing:

Property:	Value:	Test Method:
Mechanical Properties After Curing:		
Measured after curing at 24 hours RT + 4 hours at 60 °C:		
Tensile Strength	59 MPa	DIN EN ISO 527-2
Elongation at Break (tensile)	0.9%	DIN EN ISO 527-2
E-Modulus (tensile)	7100-7300 MPa	DIN EN ISO 527-2
Compressive Strength	116 MPa	DIN EN ISO 604
Bending Strength	80 MPa	DIN EN ISO 178
Hardness	90 ± 3 Shore D	DIN ISO 7619
Adhesive Strength	17 MPa	DIN EN ISO 4624
Lap shear strength, 1.5mm thick material:		
Steel 1.0338, sandblasted	12 MPa	DIN EN 1465
Stainless Steel V2A, sandblasted	11 MPa	DIN EN 1465
Aluminium, sandblasted	7 MPa	DIN EN 1465
Galvanised Steel	4 MPa	DIN EN 1465
Thermal Parameters:		
Temperature Resistance	-35°C to 180°C	--
T _g after curing at room temperature	52°C, approx.	DSC
T _g after tempering at 120°C	69°C	DSC
Heat deflection resistance	55°C	DIN EN ISO 75-2
Thermal Conductivity	0.6 W/m·K	DIN EN ISO 22007-4
Heat Capacity	0.91 J/(g·K)	DIN EN ISO 22007-4
Electrical Parameters:		
Resistance	5.8•10 ¹¹ Ωm	DIN EN 62631-3-1
Magnetic	No	--
Specific Properties:		
IMPA Code		812937/38
ISSA Code		75.509.19/20
Marine Approval		DNV
Food Approval		ISEGA LFGB EG 1935/2004

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Surface Preparation:

Surface preparation is crucial for the application of Weicon Ceramic BL. Dust, dirt, oil, grease, rust and moisture or wetness have a negative impact on the adhesion. Before processing Ceramic BL, the surfaces must be free of any oil, grease, dirt, rust, oxides, paint and other impurities or residues. For cleaning and degreasing, we recommend Weicon Cleaner Spray S. Smooth and heavily soiled surfaces should additionally be treated by mechanical surface pre-treatment, e.g. by grinding or preferably by blasting. Metal parts that have come into contact with sea water or other salt solutions should first be rinsed thoroughly with demineralised water and, if possible, left to rest overnight so that all salts can be dissolved from the metal. After each mechanical pre-treatment, the surface should be cleaned again with Weicon Cleaner Spray S and protected from further contamination until the coating is applied.

Areas where no adhesion to the substrate is desired must be treated with silicone-free mould release agents. For smooth surfaces, we recommend Weicon Mould Release Agent Liquid F 1000 or, Weicon Mould Release Agent Wax P 500 for porous surfaces. After the surface pre-treatment, Ceramic BL should be applied as quickly as possible (within one hour) to avoid oxidation, flash rust or new contamination.

Processing, Application and Curing Time:

First, stir the resin. Then mix the resin and hardener together thoroughly and bubble-free for at least four minutes at 20°C. The included processing spatula or a mechanical mixer, such as the Stirrer Stainless Steel, can be used for this purpose. With mechanical mixers, a low speed of max. 500 rpm should be used. The components should be stirred until a homogeneous mixture is achieved. The mixing ratio of the two components must be strictly observed, as otherwise, strongly deviating physical values will result (max. deviation + /- 2 %). Only prepare a batch as large as can be processed within the pot life of 55 minutes. The indicated pot life time refers to a material batch of 500g and 20°C material temperature. Mixing larger quantities or higher processing temperatures will result in faster curing due to the typical reaction heat of epoxy resins.

For processing, we recommend an ambient temperature of 20°C at less than 85% relative humidity. The highest adhesive strength is achieved when the parts to be processed are heated to >35°C (>95°F) before application. For a thin pre-coat, work Ceramic BL intensively into the surface in crosswise layers using a paint brush to achieve maximum adhesion. By means of this technique, the epoxy resin penetrates well into all cracks and roughness depths.

Afterwards, a second application with a paint brush or foam roller can be carried out straight away, until the desired layer thickness is reached. A layer of approx. 0.25 to 0.50 mm can be achieved per work step. Make sure that the epoxy resin is applied evenly and without air bubbles. Further coats can be applied in each case after approx. 5 hours (layer sequence time).

Final cure will be achieved after 24 hours at 20°C. In low temperature environments, the cure time can be accelerated by evenly applying heat up to a maximum of 40°C (via a heat lamp, electric blanket, or hot air fan). The following rule of thumb applies: Each increase of 10°C above room temperature (20°C) will decrease the curing time by half. Temperatures between 16°C and 5°C will increase the curing time. At temperatures below 16°C the pot life will slow. Below about 5°C there is no reaction between the resin and the hardener.

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Quality
ISO 9001

Chemical Resistance After Curing:

Acetic Acid Dilute <5%	+	Hydrocarbons (Aromatic)	+
Acetone	O	Hydrochloric Acid	+
Alkalis (alkaline substances)	+	Hydrochloric Acid <10%	+
Amyl Acetate	+	Hydrofluoric Acid Diluted	O
Amyl Alcohols	+	Kerosine	+
Anhydrous Ammonia 25%	+	Impregnating Oils	+
Barium Hydroxide	+	Magnesium Hydroxide	+
Butyl Acetate	+	Maleic Acid	+
Butyl Alcohol	+	Methanol <85% (Methyl Alcohol)	-
Calcium Hydroxide (slaked lime)	+	Milk of Lime	+
Carbolic Acid	-	Naphthalene	-
Carbon Disulphide	+	Naphthene	-
Carbon Tetrachloride	+	Nitric Acid <5%	O
Caustic Potash Solution	+	Mineral Oil and Products	+
Chlorinated Water (swimming pool concentration)	+	Oxalic Acid <25%	+
Chloroacetic Acid	-	Oils, Vegetable & Animal	+
Chloroform	O	Perchloroethylene	O
Chlorosulphuric Acid (wet & dry)	-	Petrol (92-100 Octane)	+
Chromic Acid	+	Phosphoric Acid <5%	+
Chroming Baths	+	Phthalic Acid	+
Creosote Oil	-	Phthalic Acid Anhydride	+
Cresylic Acid	-	Potassium Hydroxide 0-20%	+
Crude Oil Products	+	Potassium Carbonate	+
Diesel Fuel	+	Sodium Bicarbonate	+
Ethanol < 85% (Ethyl Alcohol)	O		
Ethyl Alcohol	O	Sodium Carbonate (Soda)	+
Ethyl Benzene	-	Sodium Chloride (Cooking Salt)	+
Ethyl Ether	+	Sodium Hydroxide > 20%	O
Formic Acid >10%	-	Sulphur Dioxide (wet & dry)	+
Glycerine	+	Sulphuric Acid <5%	O
Glycol	O	Tannic Acid Dilute <7%	+
Grease, Oils and Waxes	+	Tetralin	O
Heating Oil, Diesel	+	Toluene	-
Humic Acid	+	Trichloroethylene	O
Hydrobromic Acid <10%	+	Turpentine Substitute (White Spirit)	+
Hydrocarbons (Aliphatic)	+	Xylene	-
+ = Resistant O = Limited Resistance - = Not Resistant			

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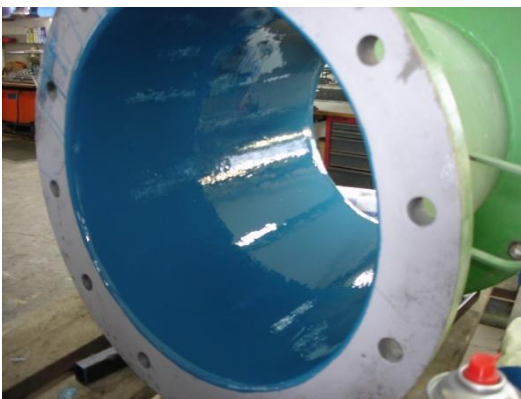


Quality
ISO 9001

The application of Ceramic BL



The finished product ready for installation



Availability:

Weicon Plastic Metal HP is available in 200gm, 500gm and 2kg. Other grades are also available. Associated Gaskets stock a large range of Weicon Epoxy Resin Systems as well as gasket materials, thermal insulation, and specialised electrical products. For more information on these products and many more, please visit our website or contact your nearest AG branch.

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