



Weicon Plastic Metal TB Flex F

Weicon Plastic Metal TB Flex F is a flame-retardant epoxy resin system that is commonly used for applications in the fire safety industry to fix wear protection ceramics or steel components to a wide variety of substrates, such as metal, concrete or similar materials. This 2 part system provides strong adhesion, is hard-flexible after curing and has been modified to be impact resistant. Even under the most extreme conditions, the adhesive does not become brittle. It demonstrates good wear protection properties in particle erosion, has good chemical resistance and is free of solvents. TB Flex F contains additives that trigger self-extinction within a few seconds and was examined in accordance with DIN EN ISO 340 at the DMT in Dortmund and successfully passed the test.

Technical Data:

Property:	Typical Value:
Base	Epoxy
Filler	Mineral
Texture	Pasty
Colour after curing	White

Processing:

Processing temperature	+15°C to 40°C
Component temperature	>3°C above dew point
Relative air humidity	< 85%
Mixing ratio by volume	100:77
Mixing ratio by weight	100:67
Viscosity of the mixture at 25°C	60,000 mPa•s
Density of the mixture	1.6 g/cm ³
Consumption at layer thickness of 1mm	1.6 g/cm ²
Maximum layer thickness per work step	20mm

Curing:

Pot life at 20°C, 500g batch	30 minutes
Repeated application possible after	5 hours (35% strength)
Capable of bearing mechanical loads	8 hours (80% strength)
Final strength after	24 hours (100% strength)
Shrinkage	0.31%

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Important

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Properties After Curing:

Property:	Value:	Test Method:
Measured after curing at 24h at room temp + 24 h at 60°C:		
Tensile Strength	32 MPa	DIN EN ISO 527-2
Elongation at Break (tensile)	5%	DIN EN ISO 527-2
E-Modulus (tensile)	2400-2600 MPa	DIN EN ISO 527-2
Compressive Strength	110 MPa	DIN EN ISO 604
Bending Strength	52 MPa	DIN EN ISO 178
Hardness	78 ± 3 Shore D	DIN ISO 7619
Adhesive Strength	21.7 MPa	DIN EN ISO 4624
Taber Test, H18, 1kg, 1000 rotations	0.3g/0.2cm ³	DIN ISO 9352
Lap shear strength, 1.5mm thick material:		
Steel 1.0338, sandblasted	22 MPa	DIN EN 1465
Stainless Steel V2A, sandblasted	26 MPa	DIN EN 1465
Aluminium, sandblasted	14 MPa	DIN EN 1465
Galvanised Steel	7 MPa	DIN EN 1465
Thermal and Electrical Parameters:		
Temperature Resistance	-35°C to 120°C	--
T _g after curing at room temperature	50°C	DSC
T _g after tempering at 120°C	90°C	DSC
Heat deflection resistance	79°C	DIN EN ISO 75-2
Thermal Conductivity	0.579 W/m•K	DIN EN ISO 22007-4
Heat Capacity	1.399 J/(g•K)	DIN EN ISO 22007-4
Resistance	8.85 · 10 ¹⁰ Ω·m	DIN EN 62631-3-1
Magnetic	No	--

Surface Preparation:

Surface preparation is crucial for the application of Plastic Metal TB Flex F. Before processing, 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 material 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, the mixture should be applied as quickly as possible (within one hour) to avoid oxidation, flash rust or new contamination.

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Specialised & Safety Products

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Processing and Curing Time:

Pot life of 30 minutes based on a material batch of 500g at 20°C. Mixing larger quantities or increased processing temperatures will reduce the pot life and lead to faster curing. Only prepare a batch large enough that can be applied within the pot life. Final cure will be achieved after 48 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.



Availability:

Weicon Plastic Metal TB Flex F is available in 200gm, 500gm and 1kg kits. 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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Quality
ISO 9001

Chemical Resistance After Curing:

Acetic Acid Dilute <5%	+	Hydrocarbons (Aromatic)	-
Acetone	O	Hydrochloric Acid <10%	+
Alkalis (Basic Minerals)	+	Hydrochloric Acid 10-20%	+
Amyl Acetate	+	Hydrofluoric Acid Dilute	O
Amyl Alcohols	+	Hydrogen Peroxide <30%	+
Anhydrous Ammonia 25%	+	Impregnating Oils	+
Barium Hydroxide	+	Magnesium Hydroxide	+
Butyl Acetate	+	Maleic Acid	+
Butyl Alcohol	+	Methanol <85% (Methyl Alcohol)	O
Calcium Hydroxide (slaked lime)	+	Milk of Lime	+
Carbolic Acid (Phenol)	-	Naphthalene	-
Carbon Disulphide	+	Naphthene	-
Carbon Tetrachloride	+	Nitric Acid <5%	O
Caustic Potash Solution	+	Oils, Mineral, Vegetable and Animal	+
Chlorinated Water	+	Oxalic Acid <25%	+
Chloroacetic Acid	-	Paraffin	+
Chloroform	O	Perchloroethylene	O
Chlorosulphonic Acid	-	Petrol (92-100 Octane)	+
Chromic Acid	+	Phosphoric Acid <5%	+
Chroming Baths	+	Phthalic Acid	+
Creosote Oil	-	Phthalic Acid Anhydride	+
Cresylic Acid	-	Potassium Hydroxide 0-20% (Caustic Potash)	+
Crude Oil	+	Soda Lye	+
Crude Oil Products	+	Sodium Bicarbonate (Sodium Hydrogen Carbonate)	+
Diesel Fuel Oil	+	Sodium Carbonate (Soda)	+
Ethanol < 85% (Ethyl Alcohol)	O	Sodium Chloride (Cooking Salt)	+
Ethyl Alcohol	O	Sodium Hydroxide <20% (Caustic Soda)	O
Ethyl Benzole	-	Sulphur Dioxide	+
Ethyl Ether	+	Sulphuric Acid <5%	O
Exhaust Gases	+	Tannic Acid Dilute <7%	+
Formic Acid >10%	-	Tetralin	O
Glycerine	+	Toluene	-
Glycol	O	Trichloroethylene	O
Grease, Oils and Waxes	+	Turpentine Substitute (White Spirit)	+
Heating Oil, Diesel	+	Xylene	-
Humic Acid	+		
Hydrobromic Acid <10%	+		
Hydrocarbons (Aliphatic)	+		
+ = Resistant		O = Limited Resistance	
		- = Not Resistant	

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