

# WEICON WR2



## Pasty | mineral-filled | wear-resistant | high abrasion-resistant

WEICON WR2 is a pasty wear protection and is particularly suitable for areas where the processing of casting compounds is not possible such as the repair of conveyors, guide rails and sliding ways. The epoxy resin system is also used to prevent wear on metal surfaces that are subject to high abrasion and erosion. It can serve as a wear-resistant underlayer before the final coating with WEICON Ceramic BL.

WR2 can be used in mechanical and plant engineering, in equipment engineering, and in many other areas of industry.

### Characteristics

Base	Epoxy
Filler	mineral
Texture	pasty
Colour	anthracite
Minimum shelf life	at room temperature 36 mon.

### Processing

Processing temperature	+15°C to +40°C
Component temperature	>3 °C above dew point
Relative air humidity	< 85 %
Mixing ratio by weight	100:33
Mixing ratio by volume	100:27
Viscosity of the mixture	at +25 °C 560.000 mPa·s
Density of the mixture	1,9 g/cm <sup>3</sup>
Consumption	Layer thickness 1.0 mm 1,9 kg/m <sup>2</sup>
Max. layer thickness	per step 20 mm

### Curing

Pot life	at 20 °C, 500 g batch	30 min.
Additional layer after	(35 % strength)	4 h
Working strength after	(80 % strength)	5 h
Final strength	(100 % strength)	12 h
Shrinkage		0,04 %

### Mechanical properties after curing

- Measured after curing at		24 h RT + 4 h +60 °C
Tensile strength	DIN EN ISO 527-2	63 MPa
Elongation at break (tensile)	DIN EN ISO 527-2	0,9 %
E-modulus (tensile)	DIN EN ISO 527-2	8000-8500 MPa
Compressive strength	DIN EN ISO 604	115 MPa
Bending strength	DIN EN ISO 178	96 MPa
Hardness (Shore D)	DIN ISO 7619	87±3
Adhesive strength	DIN EN ISO 4624	11 MPa
Taber Test		1,1 g / 0,6 cm <sup>3</sup>
Lap shear strength material thckn. 1,5mm DIN EN 1465		
	Steel 1.0338 sandblasted	16 MPa
	Stainless steel V2A sandblasted	16 MPa
	Aluminium sandblasted	9 MPa
	Galvanized steel	7 MPa

### Thermal parameters

Temperature resistance		-35°C (-4°F) to +120°C (+248°F)
Tg after curing at room temperature	(DSC)	~ +52 °C
Tg after tempering (at 80°C)	(DSC)	+80 °C
Heat deflection resistance	DIN EN ISO 75-2	+80 °C
Thermal conductivity	DIN EN ISO 22007-4	0,74 W/m·K
Heat capacity	DIN EN ISO 22007-4	0,77 J/(g·K)

### Electrical parameters

Resistance	DIN EN 62631-3-1	2,15·10 <sup>14</sup> Ω·m
Magnetic		no

### Approvals / Guidelines

ISSA Code	75.509.17/18
IMPA Code	812949/50

### Instructions for use

When using WEICON products, the physical, safety-related, toxicological and ecological data and regulations in our EC safety data sheets ([www.weicon.com](http://www.weicon.com)) must be observed.

### Surface Pre-Treatment

The successful application of the WEICON WR2 depends on the thorough pre-treatment of all surfaces. This is the most important factor for overall success. Dust, dirt, oil, grease, rust and moisture or wetness have a negative impact on the adhesion. Therefore, before processing WEICON WR2, the following points must be observed: The areas to be bonded or repaired 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 particularly heavily soiled surfaces should additionally be treated by mechanical surface pre-treatment, e.g. by grinding or preferably by blasting. In case of blasting, the surface should be brought to a degree of purity of SA 2 1/2 - "Near White Blast Cleaning" (according to ISO 8501/1-2, NACE, SSPC, SIS). In order to achieve an optimum surface roughness of 75 - 100 µm, angular, disposable blasting media (aluminum oxide, corundum) should be used. The surface quality is negatively influenced by the use of reusable blasting media (slag, glass, quartz), but also by ice blasting. The air

#### Note

The specifications and recommendations given in this technical data sheet must not be seen as guaranteed product characteristics. They are based on our laboratory tests and on practical experience. Since individual application conditions are beyond our knowledge, control and responsibility, this information is provided without any obligation. We do guarantee the continuously high quality of our products. However, own adequate laboratory and practical tests to find out if the product in question meets the requested properties are recommended. A claim cannot be derived from them. The user bears the only responsibility for non-appropriate or other than specified applications.

WEICON Middle East L.L.C.  
United Arab Emirates  
phone +971 4 880 25 05  
info@weicon.ae

WEICON Czech Republic s.r.o.  
Czech Republic  
phone +42 (0) 417 533 013  
info@weicon.cz

WEICON GmbH & Co. KG  
(Headquarters) Germany  
phone +49 (0) 251 9322 0  
info@weicon.de

WEICON Romania SRL  
Romania  
phone +40 (0) 3 65 730 763  
office@weicon.com

WEICON South East Asia Pte Ltd  
Singapore  
Phone (+65) 6710 7671  
info@weicon.com.sg

WEICON Colombia S.A.S  
Colombia  
Phone: +57 314 793 86 06  
Email: info@weicon.co

WEICON Inc.  
Canada  
phone +1 877 620 8889  
info@weicon.ca

WEICON Ibérica S.L.  
Spain  
phone +34 (0) 914 7997 34  
info@weicon.es

WEICON Italia S.r.L.  
Italy  
phone +39 (0) 010 2924 871  
info@weicon.it

WEICON SA (Pty) Ltd  
South Africa  
phone +27 (0) 21 709 0088  
info@weicon.co.za

WEICON Kimya Sanayi Tic. Ltd. Şti.  
Türkiye  
phone +90 (0) 212 465 33 65  
info@weicon.com.tr

## WEICON WR2

for blasting must be dry and oil-free. 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. Before each application of WEICON WR2, a test for soluble salts should be carried out according to the Bresle method (DIN EN ISO 8502-6).

The maximum amount of soluble salts remaining on the substrate should not exceed 40 mg/m<sup>2</sup>. Heating and repeated blasting of the surface may be necessary to remove all soluble salts and moisture.

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, for porous surfaces, WEICON Mould Release Agent Wax P 500.

After the surface pre-treatment, WEICON WR2 should be applied as soon as possible (within one hour) to avoid oxidation, flash rust or new contamination.

### Mixing

First, stir the resin. Then mix the resin and hardener together thoroughly and bubble-free for at least four minutes at 20°C (68°F). The included processing spatula or a mechanical mixer, such as a mortar stirrer, 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 30 minutes. The specified pot life refers to a material batch of 500 g and 20°C (68°F) material temperature. Mixing larger quantities or higher processing temperatures will result in faster curing due to the typical reaction heat of epoxy resins.

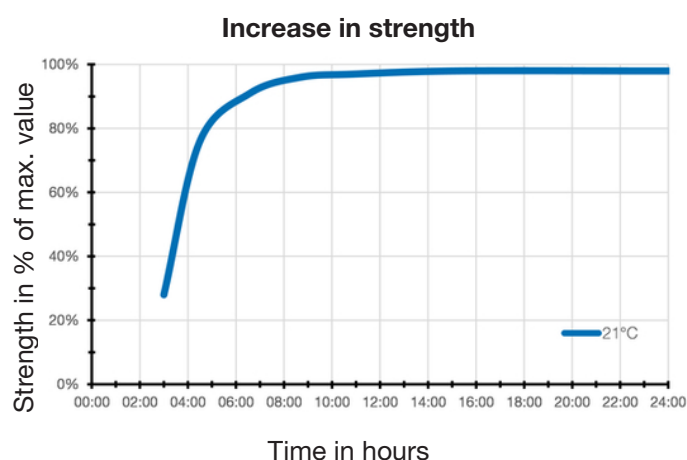
### Application

For processing, we recommend an ambient temperature of 20°C (68 °F) at less than 85% relative humidity. For a thin pre-coat, work WEICON WR2 intensively into the surface in crosswise layers using the Contour Spatula Flexy or a paint brush to achieve maximum adhesion. By means of this technique, the epoxy resin penetrates well into all cracks and roughness depths. Afterwards, further applications can be carried out straight away, until the desired layer thickness is reached. Make sure that the epoxy resin is applied evenly and without air bubbles. To fill large gaps or holes, fibreglass, expanded metal or other mechanical fixing materials should

be used. Finally, the surface can be smoothed easily with the help of a PE film and a rubber roller.

### Curing

Final hardness is reached after 24 hours at 20°C (68°F) at the latest. At lower temperatures, the curing can be accelerated by evenly applying heat up to max. 40°C (104°F), e.g. with a heating pack, hot air blower or fan heater. Higher temperatures shorten the curing time. The following rule of thumb applies: Each increase by +10°C (50°F) above room temperature (20°C/68°F) will decrease the curing time by half. Temperatures below 16°C (61°F) increase the curing time, until at approx. 5°C (41°F) and below, almost no reaction will take place at all.



### Storage

WEICON Epoxy Resin Systems should be stored in a dry place at room temperature. Unopened containers can be stored at temperatures from +18 °C to +28 °C. Opened containers must be used up within 6 months.

### Scope of delivery

Processing Spatula | Contour Spatula Flexy | Instructions for use | Gloves | Resin & Hardener

#### Note

The specifications and recommendations given in this technical data sheet must not be seen as guaranteed product characteristics. They are based on our laboratory tests and on practical experience. Since individual application conditions are beyond our knowledge, control and responsibility, this information is provided without any obligation. We do guarantee the continuously high quality of our products. However, own adequate laboratory and practical tests to find out if the product in question meets the requested properties are recommended. A claim cannot be derived from them. The user bears the only responsibility for non-appropriate or other than specified applications.

WEICON Middle East L.L.C.  
United Arab Emirates  
phone +971 4 880 25 05  
info@weicon.ae

WEICON Czech Republic s.r.o.  
Czech Republic  
phone +42 (0) 417 533 013  
info@weicon.cz

WEICON GmbH & Co. KG  
(Headquarters) Germany  
phone +49 (0) 251 9322 0  
info@weicon.de

WEICON Romania SRL  
Romania  
phone +40 (0) 3 65 730 763  
office@weicon.com

WEICON South East Asia Pte Ltd  
Singapore  
Phone (+65) 6710 7671  
info@weicon.com.sg

WEICON Colombia S.A.S  
Colombia  
Phone: +57 314 793 86 06  
Email: info@weicon.co

WEICON Inc.  
Canada  
phone +1 877 620 8889  
info@weicon.ca

WEICON Ibérica S.L.  
Spain  
phone +34 (0) 914 7997 34  
info@weicon.es

WEICON Italia S.r.l.  
Italy  
phone +39 (0) 010 2924 871  
info@weicon.it

WEICON SA (Pty) Ltd  
South Africa  
phone +27 (0) 21 709 0088  
info@weicon.co.za

WEICON Kimya Sanayi Tic. Ltd. Şti.  
Türkiye  
phone +90 (0) 212 465 33 65  
info@weicon.com.tr

# WEICON WR2

## Accessories

- 10000147 Cleaner Spray S, 500 ml, transparent
- 10000347 Cleaner S, 5 L, colourless, transparent
- 10024313 Surface Cleaner, 400 ml, transparent
- 10025288 Surface Cleaner, 5 L, transparent
- 10026647 Mould Release Agent Liquid F 1000, 250 ml, white, milky
- 10026712 Mould Release Agent Wax P 500, 150 g
- 10053995 Repair Stick Multi-Purpose, 115 g, vintage white
- 10000913 Glass Fibre Cloth Tape, 1 PCE, white
- 10010887 Processing Spatula short, 1 PCE
- 10022562 Processing Spatula long, 1 PCE
- 10016002 Pump Dispenser WPS 1500, 1 PCE
- 10039667 Cable Scissors No. 35, 1 PCE
- 10045523 Processing Kit, 1 PCE

## Recommended equipment

- Angle grinder
- Blast machine
- Heat pocket
- Hot or fan heater
- Smoothing trowel, spatula
- PE film 0.2 mm
- Fabric tape
- Brush
- Foam roller
- Rubber roller
- Lint-free cloth

## Conversion table

- $(^{\circ}\text{C} \times 1.8) + 32 = ^{\circ}\text{F}$
- $\text{mm}/25.4 = \text{inch}$
- $\mu\text{m}/25.4 = \text{mil}$
- $\text{N} \times 0.225 = \text{lb}$
- $\text{N}/\text{mm}^2 \times 145 = \text{psi}$
- $\text{MPa} \times 145 = \text{psi}$
- $\text{Nm} \times 8.851 = \text{lb}\cdot\text{in}$
- $\text{Nm} \times 0.738 = \text{lb}\cdot\text{ft}$
- $\text{Nm} \times 141.62 = \text{oz}\cdot\text{in}$
- $\text{mPa}\cdot\text{s} = \text{cP}$
- $\text{N}/\text{cm} \times 0.571 = \text{lb}/\text{in}$
- $\text{kV}/\text{mm} \times 25.4 = \text{V}/\text{mil}$

## Available sizes

- 1000087 WEICON WR2, 0,5 kg, anthracite
- 1000088 WEICON WR2, 2 kg, anthracite
- 10054401 WEICON WR2, 200 g, anthracite

	WEICON A	WEICON B	WEICON BR	WEICON C	WEICON F	WEICON F2	WEICON HB 300	WEICON HT 111	WEICON SF	WEICON ST	WEICON TI	WEICON UW	WEICON WR2	WEICON HP	WEICON Fire Safe	WEICON Anti-Static	WEICON Food Grade	WEICON Anti-Stick	WEICON Ceramic BL	WEICON GL	WEICON GL-S	WEICON Ceramic W	WEICON Ceramic HC 220	WEICON WP	WEICON WR	WEICON CBC
Repair and moulding	x	x	x	x	x	x	x	x	x	x	x	x	x													
Adhesive				x	x		x	x		x				x	x											
Wear, erosion and corrosion protection – abrasion-resistant coating																x	x	x	x	x	x	x	x	x		
Casting, relining and gap compensation – casting and injecting potting compound	x					x							x												x	x

To the product detail page:



Note

The specifications and recommendations given in this technical data sheet must not be seen as guaranteed product characteristics. They are based on our laboratory tests and on practical experience. Since individual application conditions are beyond our knowledge, control and responsibility, this information is provided without any obligation. We do guarantee the continuously high quality of our products. However, own adequate laboratory and practical tests to find out if the product in question meets the requested properties are recommended. A claim cannot be derived from them. The user bears the only responsibility for non-appropriate or other than specified applications.

WEICON Middle East L.L.C.  
United Arab Emirates  
phone +971 4 880 25 05  
info@weicon.ae

WEICON Czech Republic s.r.o.  
Czech Republic  
phone +42 (0) 417 533 013  
info@weicon.cz

WEICON GmbH & Co. KG  
(Headquarters) Germany  
phone +49 (0) 251 9322 0  
info@weicon.de

WEICON Romania SRL  
Romania  
phone +40 (0) 3 65 730 763  
office@weicon.com

WEICON South East Asia Pte Ltd  
Singapore  
Phone (+65) 6710 7671  
info@weicon.com.sg

WEICON Colombia S.A.S  
Colombia  
Phone: +57 314 793 86 06  
Email: info@weicon.co

WEICON Inc.  
Canada  
phone +1 877 620 8889  
info@weicon.ca

WEICON Ibérica S.L.  
Spain  
phone +34 (0) 914 7997 34  
info@weicon.es

WEICON Italia S.r.L.  
Italy  
phone +39 (0) 010 2924 871  
info@weicon.it

WEICON SA (Pty) Ltd  
South Africa  
phone +27 (0) 21 709 0088  
info@weicon.co.za

WEICON Kimya Sanayi Tic. Ltd. Şti.  
Türkiye  
phone +90 (0) 212 465 33 65  
info@weicon.com.tr

# WEICON WR2

## Chemical resistance after curing\* (Excerpt)

1,4-Dioxane	-	Glycol	+
Exhaust fumes	+	Uric acid	-
Adipic acid	-	Impregnating oils	+
aliphatic hydrocarbons	+	Iodides (K, Na etc.)	-
Formic acid >10 % (methanoic acid)	-	Potassium carbonate	+
Ammonia anhydrous 25%	-	Potassium hydroxide 0-20 % (caustic potash)	+
Aniline	-	Milk of lime	+
aromatic hydrocarbons	+	Cresol	-
Barium hydroxide	+	Magnesium hydroxide	+
Benzoic acid	-	Maleic acid (cis-ethylenedicarboxylic acid)	-
Benzyl alcohol	-	Methanol (methyl alcohol ) <85 %	o
Benzyl chloride	-	Methylene chloride	-
Boric acid	-	Mineral oil	+
Bromides	-	Naphthalene	+
Butadiene (1,3-)	-	Sodium bicarbonate (sodium hydrogen carbonate)	+
Butyric acid	-	Sodium carbonate (soda)	+
Butyl acetate	o	Sodium chloride (table salt)	+
Butyl alcohol	o	Nitrates	-
Calcium hydroxide (slaked lime)	+	Nitrobenzene	-
Chloroanilines	-	Oils, vegetable and animal	+
Chloroform (trichlormethane)	-	Oxalic acid <25 % (ethanedioic acid)	o
Chlorosulphuric acid (wet and dry)	-	Perchloraethylene	-
Chlorosilanes	-	Kerosene	+
Chlorinated water (swimming pool concentration)	-	Phenol	-
Chromates (K, Na, etc.)	-	Phosphoric acid <50%	+
Chromic acid	-	Phthalic acid, phthalic anhydride	-
Cyanides (K, Na etc.)	-	Nitric acid <5%	-
Cyclohexanone	-	Sulphur dioxide (wet and dry)	-
Diethyl ether	+	Carbon disulphide	-
Mineral oil and mineral oil products	+	Sulphuric acid <5%	+
Acetic acid diluted <5%	o	Soap solution	+
Ethanol <85 % (ethyl alcohol)	o	Turpentine	+
Greases, oils and waxes	+	Carbon tetrachloride (tetrachloromethane)	-
Hydrofluoric acid	-	Tetralin (tetrahydronaphthalene)	-
Tannic acid diluted <7%	o	Trichloraethylene	-
Glycerin (trihydroxipropane)	+	Hydrogen peroxide <30 % (hydrogen superoxide)	o

+ = resistant 0 = for a limited time - = not resistant \*The storage of all WEICON Plastic Metal types was carried out at +20°C chemical temperature.

**Note**

The specifications and recommendations given in this technical data sheet must not be seen as guaranteed product characteristics. They are based on our laboratory tests and on practical experience. Since individual application conditions are beyond our knowledge, control and responsibility, this information is provided without any obligation. We do guarantee the continuously high quality of our products. However, own adequate laboratory and practical tests to find out if the product in question meets the requested properties are recommended. A claim cannot be derived from them. The user bears the only responsibility for non-appropriate or other than specified applications.

WEICON Middle East L.L.C.  
United Arab Emirates  
phone +971 4 880 25 05  
info@weicon.ae

WEICON Czech Republic s.r.o.  
Czech Republic  
phone +42 (0) 417 533 013  
info@weicon.cz

WEICON GmbH & Co. KG  
(Headquarters) Germany  
phone +49 (0) 251 9322 0  
info@weicon.de

WEICON Romania SRL  
Romania  
phone +40 (0) 3 65 730 763  
office@weicon.com

WEICON South East Asia Pte Ltd  
Singapore  
Phone (+65) 6710 7671  
info@weicon.com.sg

WEICON Colombia S.A.S  
Colombia  
Phone: +57 314 793 86 06  
Email: info@weicon.co

WEICON Inc.  
Canada  
phone +1 877 620 8889  
info@weicon.ca

WEICON Ibérica S.L.  
Spain  
phone +34 (0) 914 7997 34  
info@weicon.es

WEICON Italia S.r.L.  
Italy  
phone +39 (0) 010 2924 871  
info@weicon.it

WEICON SA (Pty) Ltd  
South Africa  
phone +27 (0) 21 709 0088  
info@weicon.co.za

WEICON Kimya Sanayi Tic. Ltd. Şti.  
Türkiye  
phone +90 (0) 212 465 33 65  
info@weicon.com.tr