Epoxy Resin Systems

Plastic Metal

WEICON CBC

certified by ABS
vibration-resistant
shock-restistant

ISSA-Code 75.510.01
IMPA-Code 812955/56

WEICON CBC is suitable for the shimming and backfilling of systems difficult to align in the industrial and maritime sector. The "ABS Product Design Assessment" certified system serves as a replacement for fittings and worn metal sheets and ensures the direct contact to foundation plates.

The special epoxy resin system has a low viscosity, is very flowable and self-levelling. It has a pot life of 30 minutes and cures nearly shrink-free. It provides a permanent high-static stability and has a high resistance to ageing. The epoxy resin system adheres particularly well to steel and concrete. It has a good compressive strength and is resistant to oils, fuels and many chemicals. It is vibration-resistant as well as temperature-resistant.

Due to almost no cure shrinkage, machines and systems keep their specific alignment after the casting of WEICON CBC.

Characteristics

Base	epoxy
Filler	aluminium
Texture	flowable
Colour after curing	grey

Processing

Processing temperature	+15 °C to +40 °C
Component temperature	>3 °C over dew point
Relative air humidity	max. 85 %
Mixing ratio by weight	100:30
Mixing ratio by volume	100:52
Viscosity of the mixture at 25 °C and 20 $^1/_s$	45,000 mPa·s
Density of the mixture	1,5 g/cm³
Consumption at layer thickness of 1.0 mm	1.5 g/cm³
Max. layer thickness per work step	30 mm

Curing

Pot life at 20 °C, 10 kg batch	30 min.
Repeated application possible after (35 % strength)	6 Std.
Capable of bearing mechanical loads (80 % strength)	10 Std.
Final strength after (100 % strength)	24 Std.
Shrinkage	0,06 %

Mechanical properties after curing

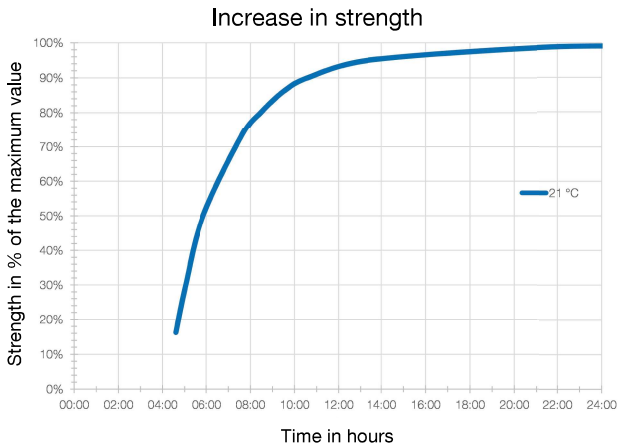
Tensile strength	DIN EN ISO 527-2	47 MPa
Elongation at break (tensile)	DIN EN ISO 527-2	1.8 %
E-modulus (tensile)	DIN EN ISO 527-2	3800-4000 MPa
Compressive strength	DIN EN ISO 604	70 MPa
Impact strength	DIN EN ISO 179-1/1eU	3.7 kJ/m²
Hardness (Shore D)	DIN ISO 7619	80±3
Adhesive strength	DIN EN ISO 4624	12 MPa
Lap shear strength material thickn. 1.5mm	DIN EN 1465	
Steel 1.0338 sandblasted		16 MPa
Stainless steel V2A sandblasted		17 MPa
Aluminium sandblasted		9 MPa
Galvanized steel		5 MPa

Thermal parameters

Temperature resistance		-40 °C bis +160 °C
T_g after curing at room temperature	(DSC)	approx. +52 °C
T_g after tempering (at 120 °C) Heat	(DSC)	+77 °C
deflection temperature Thermal	DIN EN ISO 75-2 (B)	+55 °C
conductivity	DIN EN ISO 22007-4	0.5 W/m·K
Heat capacity	DIN EN ISO 22007-4	1.05 J/(g·K)

Electrical parameters

Resistivity	DIN IEC93	$4.3 \cdot 10^{12}$ Ωm
Magnetic		no



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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) must be observed.

Surface pre-treatment

The successful application of WEICON CBC depends on the thorough preparation of the 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 CBC, the following points must be observed:

Foundation areas (building component and its foundation) must be clean, dry and free of grease. Therefore, all grease, oil, soilings, rust, loose concrete parts, cement milk and paint should be removed thoroughly. For cleaning and degreasing, we recommend WEICON Cleaner Spray S. The resin component of WEICON CBC should be preheated to approx. +25°C.

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 ½ -""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 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 CBC, 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/m². 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.

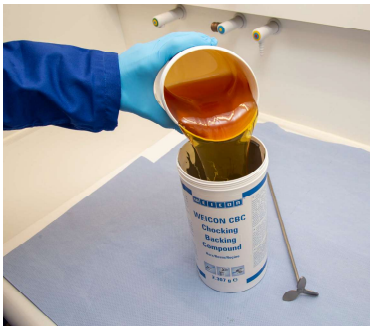
Areas where no adhesion to the substrate is desired must be treated with silicone-free mould release agents. For smooth surfaces, we recommend WEICON Mould Release Agent Liquid F 1000 or, for porous surfaces, WEICON Mould Release Agent Wax P 500.

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

Mixing

Before adding the hardener, the resin with its fillers must be stirred thoroughly and bubble-free. Then the hardener can be added. The components should be stirred well and bubble-free for at least four minutes with a mechanical stirrer at low speed of 300-1000 rpm in order to obtain a homogenous compound.

Caution! Do not immerse or remove drill with the Stirrer Stainless Steel attached in/from resin container while switched on!
This will produce air bubbles within the compound, which will later on have a negativ effect on the product's static qualities. Only mix as much of the porduct as will be used within the pot life. The given mixed ratio by weight (max. deviation +/- 2%) must be strictly followed. CBC is available in complete processing packages with matching amounts of resin and hardener. To avoid mistakes when mixing the product, a complete processing package should always used up. The specified pot life refers to a material batch of 10 kg and 20° C (68°F) material temperature. When mixing a larger amount, the compound will cure faster due to the characteristic reaction heat of epoxy resins. Portioning the total amount will extend the pot life.



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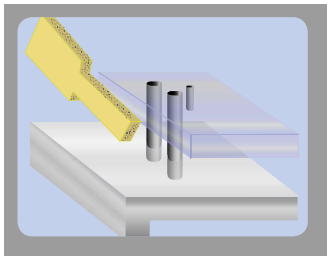
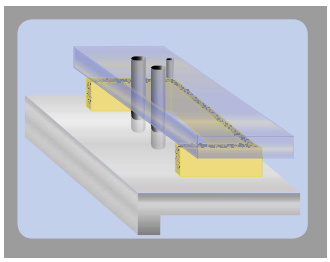
Formwork

Line the surfaces, which are going to be cast, with the already prepared formwork material and prepare for casting according to the formwork.

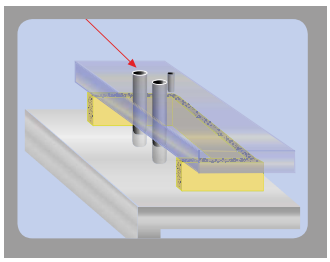
1 Cut the formwork material (foam material) to the required size. The front foam strip should reach the upper edge of the building component.



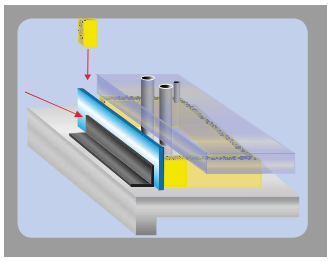
2 Before adjusting, coat the formwork material, e.g. made of foam boards, with a release agent, for example WEICON Mould Release Agent Wax P 500. When using adjustment screws for aligning the installation, they must also be coated with a release agaent wax, for example WEICON Mould Release Agent Wax P 500, to be protected from the resin and to ensure easy loosening of the screws after cure of the resin.



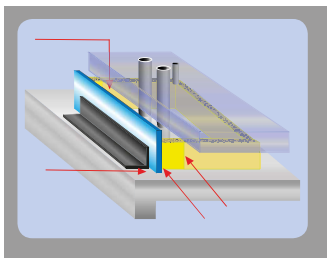
3 Exposed screw holes should be covered with a flexible foam tube. Before attaching the foam tubes, they must also be covered with release agent wax, for example WEICON Mould Release Agent Wax P 500.



4 The front part of the formwork is closed with a foam board and a folded sheet metal, leaving a gap of at least 40 mm to the base plate to ensure complete ventilation. For attaching the folded sheet metal, WEICON Speed-Flex is well-suitable.

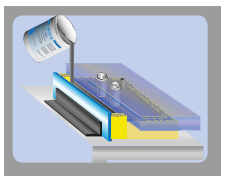


5 After completing the formwork, small cracks, gaps and angles should be sealed with WEICON Speed-Flex. Make sure that all areas are sealed well. Additional sealing after casting CBC is very difficult, should leakages appear then.



Once the formwork is completed according to the formwork plan, preparations for casting CBC can be made.

Casting



Apply the casting resin immediately, after mixing thoroughly. To prevent air bubbles, pour as closely to the casting surface as possible. For curing and complete ventilation, an ambient temperature of at least +20°C is ideal. Air bubbles can have a negative effect on the product's static qualities. Cast the cavity, until an overflow of 15 mm to 20 mm of the lower edge of the component's foot is reached. For producing a retain sample, the screw-on lid of the hardener container can be used.

Curing

Ideally, CBC should be processed at room temperature (+20° C). Higher temperatures shorten the pot life and curing time (general rule: increasing the room temperature by +10°C will shorten pot life and curing time approx. by half). Temperatures below +16°C increase pot life and curing time, down to approx. ca. +5°C, when no reaction will take place anymore.

At low ambient temperature, it must be ensured that the temperature is kept at at least +15°C until CBC is hardened completely. For heating the compound, only flame-free heat sources like electronic hot air blowers should be used.

Curing time at different temperatures:

+15°C	36 h
+20°C	24 h
+25°C	18 h
+30°C	12 h
+35°C	8 h

Removing formwork

After curing completely, the formwork can be removed carefully and completely. Then, bolts can be installed and nuts can be tightened with the predefined torque value (for securing the bolts, we recommend WEICONLOCK AN 302-72).

Storage

Store WEICON CBC at room temperature (+20°C) in a dry place. Unopened packages can be stored at temperatures from +18°C up to +28°C for at least 24 months from the date of delivery.

Scope of delivery

10953003 Processing Spatula, long
10953015 Protective Gloves (3.0 kg package)
Instructions for use

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Accessories

11202500 Cleaner Spray S, spray can 500 ml
15200005 Cleaner S, canister 5 l
11207400 Surface Cleaner, spray can 400 ml
15207005 Surface Cleaner, canister 5 l
10604025 Mould Release Agent Liquid F 1000, 250 ml
10604515 Mould Release Agent Wax P 500, 150 g
10953001 Processing Spatula, short
10953003 Processing Spatula, long
10953010 Stirrer Stainless Steel
15841500 Pump-Dispenser WPS 1500
13955001 Cartridge 310 ml empty
13250001 Cartridge Gun
52000035 Cable Scissors No. 35
10851010 Processing-Kit
13602310 WEICON Speed-Flex
10955001 Plastic box

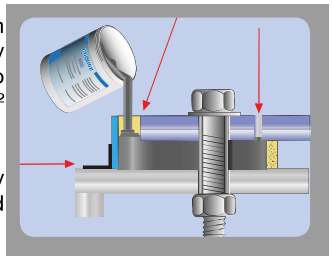
Recommended tools

Drilling machine
Foam stripes, foam tube
Folded sheet metal
Angle grinder
Blast machine
Heating pack, hot air blower or fan heater
Fabric tape
Paint brush, foam roller
Lint-free cloths

Available sizes

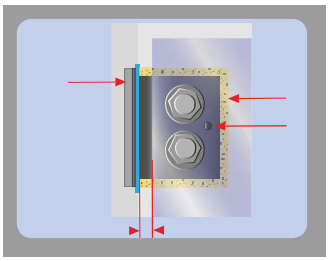
10110030 WEICON CBC 3.0 kg
10110110 WEICON CBC 10.0 kg

In the following processing instructions*, setting up the machine foot and the use of CBC are explained in detail.



In most static calculations, the pressure on the machine components cast with epoxy resin is specified with a load weight of no more than 0.7 N/mm² to 0.9 N/mm² (100 ~ 130psi).

The pressure on CBC due to the empty weight and bolt tension should be defined so that 3.5 N/mm² to 5 N/mm² (ca. 507psi bis 725 psi) are not exceeded. Bolt tension should be factor 2.5 higher than the weight of the machine or the building component, so the machine or building component does not move.



Bolt tension must be at least 50 N/mm² (7,250 psi) in order to ensure safety.

Continous block temperature should not exceed +90° C.

*As planning and calculating vibration insulating measures are very complex procedures, they should always be carried out by a specialist planner.

Conversion table

(°C x 1.8) + 32 = °F
mm/25.4 = inch
µm/25.4 = mil
N x 0.225 = lb
N/mm² x 145 = psi
MPa x 145 = psi
Nm x 8.851 = lb·in
Nm x 0.738 = lb·ft
Nm x 141.62 = oz·in
mPa·s = cP
N/cm x 0.571 = lb/in
kV/mm x 25.4 = V/mil

	WEICON A	WEICON B	WEICON BR	WEICON C	WEICON F	WEICON F2	WEICON HB 300	WEICON Ceramic BL	WEICON GL	WEICON Ceramic W	WEICON SF	WEICON ST	WEICON HP	WEICON TI	WEICON UW	WEICON WP	WEICON WR	WEICON WR2	WEICON CBC
Repair and moulding	x	x	x	x	x	x	x				x	x		x	x			x	
Adhesive				x									x		x				
Wear protection								x	x	x						x			
Potting and gap filling	x					x											x	x	x

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