RECKLI® Epoxy WST

modified epoxy resin

PROPERTIES

RECKLI Epoxy WST is a liquid, transparent, solvent-free two-component epoxy resin with high compressive strength and dimensional stability under heat. It is well-curing, even in thin layers.

APPLICATIONS

RECKLI Epoxy WST is used in model- and mould-making, especially when high reactivity and dimensional stability under heat are required.

For the manufacture of stable backfillings, RECKLI Epoxy WST is mixed with oven-dry fillers, such as quartz sand, chalk powder, slag or RECKLI Filler L, yielding an earth-moist ramming mass. To achieve hard, fast-curing compounds, add fine grains or powders of quartz, limestone, slate or wollastonite. The use in the construction-industry is only possible to a limited extent.

Combined with glass or carbon fibres, RECKLI Epoxy WST yields high-quality laminates or composites for various applications.

TECHNICAL DATA

property	value	method
mixing ratio (base : hardener):	3 : 1	(according to weight)
workable temperature:	+10 °C – +30 °C	
viscosity of base component:	1600 mPa·s	ISO 2555
pot life (200-g-mixture at +21 °C):	approx. 15 – 20 min	
earliest demoulding (4 mm layer thickness at +21 °C):	approx. 4 h	
full chemical and mechanical loading after:	3 – 4 days	
density:	1,1 g/cm³	
hardness:	80 Shore D	DIN 53505
ball impression hardness:	125 N/mm²	DIN 53456
dimensional stability under heat:	60 °C	DIN 53462
heat resistance (dry heat):	+100 °C	
appearance:	transparent	

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hardening progress at 21° C	Shore D DIN 53505	ball impression hardness DIN 53456
after 3 hours	64	40
after 4 hours	72	70
after 5 hours	75	83
after 6 hours	76	94
after 7 hours	76	97
after 8 hours	76	100
after 24 hours (1 day)	79	127
after 96 hours (4 days)	80	127

These data are typical guide values. They are not destined for the generation of specifications.

GUIDE FORMLATIONS

The reference values of compressive strength and density, as listed below, were determined when mixed with various oven-dry fillers. (compressive strength according to DIN 1164; cube 10 cm × 10 cm × 10 cm)

sand H33

resin content	5 %	10 %	15 %	20 %
density (kg/l)	1,71	1,86	1,72	1,68
resin content (g/l)	81	169	224	280
compressive strength (N/mm²)	34,0	58,0	73,0	68,0

quartz grain 0,5 – 1 mm

resin content	5 %	10 %	15 %	20 %
density (kg/l)	1,72	1,82	1,88	1,88
resin content (g/l)	82	166	245	313
compressive strength (N/mm²)	26,0	47,0	63,0	74,0

quartz grain 0 – 3 mm

resin content	5 %	10 %	15 %	20 %
density (kg/l)	1,87	1,95	2,07	1,97
resin content (g/l)	89	177	270	328
compressive strength (N/mm²)	35,0	54,0	82,0	76,0

slag 0,4 – 1,4 mm

resin content	5 %	10 %	15 %	20 %
density (kg/l)	1,75	1,81	1,93	1,97
resin content (g/l)	83	165	252	328
compressive strength (N/mm²)	29,0	50,0	78,0	98,0

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resin content	20 %	30 %	40 %	50 %
density (kg/l)	0,49	0,53	0,58	0,63
resin content (g/l)	82	122	166	210
compressive strength (N/mm²)	8,5	11,0	13,5	27,0

Values of compressive strength and flexural strength of other mixings according to DIN 53454 or, respectively, DIN 53452, can be established with the filler expected to be used by our laboratory.

SURFACE PREPARATION

For coatings or adhesions, the substrate must be stable, sound, dry, clean and free of oil, grease or wax.

PROCESSING

Add the hardener (B) to the base component (A) and mix them homogenously. Transfer the mixture into a second receptacle and stir it up again. Thereby the incorporation of larger amounts of air should be avoided. Fillers should be preferably added to the mixture rather than to the base component before mixing. Once mixed, the processing of the material must be completed within the pot life (15 – 20 minutes). Mixing larger quantities decreases the processing time.

CLEANING OF EQUIPMENT

For the cleaning of the tools and the equipment, use dry, absorbing cloths, if necessary RECKLI Epoxy Cleanser in addition. Immersion in solvents is not sufficient.

PACKAGING SIZES

double drum: 4 kg | double can: 0,8 kg
The hardener is enclosed in the lid.

STORAGE

Store in a dry place at room temperature. RECKLI Epoxy WST is storable for 6 months from delivery when kept in the closed original packaging at about 18 °C. Opened drums must be closed airtight right after use.

SPECIAL REMARKS

Storage at low temperatures may cause partial crystallisation of the base component, even if only parts of the container are exposed to cold. In this case, the material can be melted in the closed container at 40 – 50 °C. When mixed up, it is usable again.

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GENERAL INFORMATION

For further information please also see:
„General advice for the processing of RECKLI two-component resins“.

SAFETY

Protect skin and eyes from material splashes. Provide sufficient ventilation in the working place. Please consult the relevant safety data sheet and attend to the indications on the label of the package regarding the Dangerous Goods Regulation. This pamphlet is intended solely as an application directive. It does not claim to be binding and valid for all modes of application. A preliminary test under operation conditions is highly recommended.
This pamphlet replaces all previously published pamphlets concerning RECKLI Epoxy WST, stating them as no longer being valid.

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APPENDIX

CHEMICAL RESISTANCE

In order to estimate the stability towards certain chemicals, the increase or loss of weight of a sample has been determined after prolonged immersion in the relevant medium. The data stated below refer to the assumption of chemical stability being represented by a change of weight of less than 2 % after 28 days. According to the application's characteristics, the decisive criterion might have to be set differently.

test medium	change of weight (%) after 7 days	after 28 days	resistant
ammonia solution (25%)	+ 0,36	+ 0,92	yes
ammonium carbonate (5%)	+ 0,18	+ 0,56	yes
ammonium chloride (5%)	+ 0,15	+ 0,49	yes
apple juice	+ 0,23	+ 0,71	yes
brake fluid	+ 0,56	+ 1,48	yes
calcium chloride (5%)	+ 0,20	+ 0,54	yes
citric acid (5%)	+ 0,32	+ 0,67	yes
dichloromethane	decomposition		no
edible oil	+ 0,29	+ 0,43	yes
engine oil (HD oil)	+ 0,23	+ 0,25	yes
gasoline / premium-unleaded	+ 0,11	+ 0,19	yes
hydrochloric acid (10%)	+ 0,76	+ 1,74	yes
hydrochloric acid (37%)	+ 3,76	+ 9,16	no
isopropanol	- 0,06	+ 0,12	yes
orange juice	+ 0,21	+ 0,65	yes
phosphoric acid (10%)	+ 3,68	+ 8,63	no
phosphoric acid (50%)	+ 4,50	+ 10,32	no
potassium carbonate (5%)	+ 0,17	+ 0,64	yes
potassium chloride (5%)	+ 0,18	+ 0,59	yes
sodium carbonate (5%)	+ 0,13	+ 0,37	yes
sodium chloride (5%)	+ 0,18	+ 0,46	yes
sodium hydroxide (5%)	+ 0,14	+ 0,95	yes
sodium hydroxide (30%)	+ 0,01	+ 0,05	yes
sulfuric acid (10%)	+ 2,05	+ 4,95	no
sulfuric acid (38%)	+ 0,86	+ 1,65	yes
tartaric acid (5%)	+ 0,65	+ 1,39	yes
water/tap water	+ 0,20	+ 0,47	yes
white spirit	- 0,03	+/- 0,00	yes
wine vinegar (5%)	+ 3,09	+ 5,40	no
xylene	+ 0,01	+ 0,23	yes

(temperature: 21 °C; sample dimensions: 10 mm × 15 mm × 120 mm)

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