Material for Block-Moulds





1. Case-mould Preparation	1.1 absorbing surfaces1.2 non-absorbing surfaces	RECKLI Polishing Wax RECKLI Mould Wax
2. Front Layers Pouring technique	2.1 elastic 2.2 hard-flexible	RECKLI PUR Elastomer A 30, 40, 55, 70 Types K RECKLI PUR Compound D 40
3. Front Layers Painting technique	3.1 hard3.2 elastic3.3 hard-flexible	RECKLI Epoxy OH RECKLI PUR Elastomer thix RECKLI PUR Elastomer thix black RECKLI Epoxy OH/D 50 RECKLI Epoxy E 12/A 60 thix
4. Bonding Layers Primer layer	4.1 flexible front layer4.2 hard front layer4.3 hard-elastic front layer	RECKLI Construction Resin EP and glass fibres 3-5 mm RECKLI Construction Resin EP/Epoxy PB and quartz powder RECKLI Epoxy E 12/A 60 thix
5. Backings Epoxy mortar	5.1 Shape's temperature resistance 40 °C 5.2 Shape's temperature resistance 90 °C	RECKLI Construction Resin EP RECKLI Epoxy PB
6. Covered Moulds GRP technique	 6.1 GRP resin, pasty Shape's temperature resistance 60 °C 6.2 GRP stamping mass, dry Shape's temperature resistance 75-85 °C 6.3 GRP laminating, liquid Shape's temperature resistance 60 °C 	RECKLI Epoxy Filler GF RECKLI Epoxy Supporting Material EP-F Type L/Type LT RECKLI Epoxy WST
7. Gypsum Release Agent	for potter's moulds	RECKLI Gypsum Release Agent GTM RECKLI Gypsum Release Agent GTM-VB
8. Mould Compound		RECKLI Plastic Grouting ZH
9. Mould Making Adhesive	hard foam, timber, gypsum etc.	RECKLI Epoxy Adhesive Paste
10. Mould Making Sealants	10.1 free of solvents 10.2 containing solvents	RECKLI Epoxy Flooring Resin RECKLI PUR Sealant RECKLI EK-PU Plastic Sealant RECKLI Epoxy Solution
11. Gypsum Primer	Bonding agent between gypsum backing and front layer	RECKLI Epoxy Construction Resin EP

1. Model Preparation

Foundations

1.1 Absorbing surfaces RECKLI Polishing Wax

1.2 Non-absorbing surfaces RECKLI Mould Wax

Application

The release agents are ready-to-use and can be painted or sprayed. For a safe release 2 - 3 layers are to be applied. Before application of a following layer the preceding one must be completely dry. Consumption: Approx. 50 g/m²



2. Front Layer (pouring technique)

Properties

2.1 elastic RECKLI PUR-Elastomer A 30, 40, 55, 70 Types K

2.2 hard-flexible RECKLI PUR Compound D 40

Application

Preparation of the foundations according to 1.1 or 1.2. RECKLI PUR Elastomer and RECKLI PUR Compound D 40 are twocomponent liquid resins curing nearly free of shrinkage. Hardener and base component are mixed thoroughly and poured onto the model surface (v. relevant technical pamphlet). Layer thickness depending on the case of application: 10 - 20 mm

Consumption: Approx. 1.4 kg/l volume

Pot life: PUR Elastomers approx. 20 - 25 minutes (500 g) PUR Compound D 40 approx. 30 - 35 minutes (500 g)



3. Front Layer (painting technique)

Properties 3.1 hard RECKLI Epoxy OH

Application

RECKLI Epoxy OH is a hard, impactresistant gel-coat resin being applied onto the model surface in two layers. We suggest to add a small quantity of pigment paste to one of the layers, so that the layer thickness can be controlled easier.

Total layer thickness: Approx. 2 - 3 mm.

A bonding layer is applied between the Epoxy OH gel-coat layer and backing (v. 4.2). The backing is stamped into the wet bonding layer.

Consumption: Approx. 1.5 kg/m² per mm layer thickness

Pot life: Approx. 20 - 25 minutes (200 g)



Properties

3.2 elastic RECKLI PUR Elastomer thix RECKLI PUR Elastomer thix black

Application

RECKLI PUR Elastomer thix and thix black are two-component pasty resins. The technical difference is the viscosity. RECKLI PUR Elastomer thix results into a layer thickness of approx. 1 mm per operation (-thix black = 10 mm). A bonding layer (v. 4.1) is to be applied between front layer and backing (v. 5.) Consumption: Approx. 1.4 kg/m² per mm layer thickness

Pot life: PUR Elastomer thix approx. 8 - 10 minutes (200 g) PUR Elastomer thix black approx. 6 - 8 minutes (200 g)



Properties 3.3 hard-flexible RECKLI Epoxy-OH/D50 RECKLI Epoxy E 12/A 60 thix

Application

RECKLI Epoxy OH/D 50 and E 12/A 60 thix are hard and flexible combinations having been exactly matched to each other. The two-component resins are painted onto the case-mould surface one after the other. The hard type Epoxy OH/D 50 forms the surface of the block-mould. The elastic layer of Epoxy E 12/A60 functions as flexible buffer after having been applied by spatula onto the hard layer. There is a strong bonding between the two layers resulting in a two-layer system with different hardnesses. The advantage compared to the hard one-layer system according to 3.1 is that the flexible buffer layer allows easier release especially at narrow spots.

Layer thickness: Approx. 2 - 3 mm/layer

Consumption: Epoxy OH/D50 approx. 3 - 4 kg/m² Epoxy E 12/A 60 approx. 2 - 3 kg/m²

Pot life:

Epoxy OH/D50 approx. 15 - 20 minutes (200 g) Epoxy E 12/A 60 approx. 25 - 30 minutes (200 g)

A bonding layer is to be applied between the front-layer combination and backing (v. 4.3).



4. Bonding Layers

Foundation

4.1 flexible front layer

Working steps

The bonding layer's function is to form a strong firm bond between the cured, elastic front layer of RECKLI PUR Elastomer or RECKLI PUR Elastomer thix and the backing. The best bonding values are achieved, if glass fibres are added to and mixed with RECKLI Construction Resin EP or RECKLI Epoxy PB until there is a pasty consistency like sauerkraut. This pasty mass is manually applied onto the front layer, whereas the hands are to be protected by rubber gloves. The backing material is stamped into this fresh bonding layer.

Layer thickness: 2 - 3 mm

Recipe

 Construction Resin EP

 or Epoxy PB
 80 %
 1000 g/l

 Glass fibres 3 - 5 mm
 20 %
 250 g/l

Consumption:

Approx. 1.5 - 2 kg resin per m² for 2 - 3 mm layer thickness

Pot life:

Construction Resin EP approx. 40 - 50 minutes (200 g) Epoxy PB approx. 30 - 35 minutes (200 g)



Foundation

4.2 Hard front layer

Working steps

In order to get a bonding layer for hard surfaces, a certain quantity of quartz powder depending on the powder's ingredients is added to RECKLI Construction Resin EP or RECKLI Epoxy PB until there is a pasty, consistency suitable for painting. This filled resin mass is painted onto the hard front layer.

Layer thickness: 2 - 3 mm

The backing material is stamped into this fresh bonding layer.

Recipe

Construction Resin EP		
or Epoxy-PB	65 %	1000 g/l
Quartz powder W 1	35 %	500 g/l

Consumption:

Approx. 1.5 - 2 kg resin per m² for 2 - 3 mm layer thickness

Pot life:

Construction Resin EP approx. 40 - 50 minutes (200 g) Epoxy PB approx. 30 - 35 minutes (200 g)



Foundation

4.3 Hardt-flexible front layer

Working steps

A second flexible layer made of RECKLI Epoxy E12/A 60 thix is the bonding layer, when there is a hard-flexible front layers according to 3.3

The backing material (v. 5) is stamped into the fresh (second) layer of Epoxy E12/ A 60 thix. Layer thickness: Approx. 2 mm

Consumption: Approx. 2 - 3 kg per m² for 2 mm layer thickness

Pot life: Approx. 25 - 30 minutes (200 g)



5. Backing

Properties

5.1 Shape's temperature resistance 40 °C

RECKLI Construction Resin EP

5.2 Shape's temperature resistance 90 °C

RECKLI Epoxy PB

Application

RECKLI Construction Resin EP and RECKLI Epoxy PB are binders based on epoxy resins for the manufacture of polymer concrete. For making backings with high exactness of measurements, the binder can be mixed with quartz sand with varying grain sizes from 0.2 mm. Light backings with a specific gravity of approx. 0.6 g/cm³ can be produced by using RECKLI Filler L instead of quartz sand.

Pot life:

RECKLI Construction Resin EP approx. 40 - 45 minutes (200 g) RECKLI Epoxy PB approx. 30 - 35 minutes (200 g)

Recipe quartz sand backing

Specific gravity approx. 1,8 g/cm³

Quartz sand				
0,2-1 mm	90-95 %	1,62-1,71 kg/l		
Construction Resin EP or				
Epoxy PB	10-5 %	0,18-0,09 kg/l		

Recipe light-filler backing

Specific gravity approx. 0,6 g/cm³

Filler L	65 %	0,4 kg/l
	(according to weight)	
Construction	n Resin EP or	
Epoxy PB	35 %	0,2 kg/l
	(according to weight)	0,6 kg/l



6. Thin-walled Cover Mould (support moulds)

Working steps

6.1 GRP Pasty Material Shape's temperature resistance 60 °C

RECKLI Epoxy Filler GF

Application

RECKLI Epoxy Filler GF is a pasty, glassfibre reinforced resin for making thin-walled, light support moulds.

Bars, tubes or angles can be embedded firmly, in order to increase the stability.

Layer thickness: 5 - 10 mm

Consumption: 6 - 10 kg/m²

Pot life: Approx. 15 - 20 minutes (1000 g)

6.2 GRP Stamping Material Shape's temperature resistance 75 - 80 °C

RECKLI Epoxy Supporting Material EP-F Type L/Type LT

Application

For manual production of thin-walled support moulds we suggest to firstly paint the fine layer EP-F Type L onto the model surface before putting on the nearly dry stamping mass EP-F Type LT (consistency like sauerkraut). The closed fine layer smoothens the rough-fibred bearing layer EP-F Type LT on the surface. This makes releasing and cleaning easier and reduces the danger of injuries by protruding fibres. The front and the back side are to be smoothened by EP-F Type L. RECKLI Support Mould EP-F Type LT is mixed manually (hands protected by rubber gloves) and applied in a layer thickness of 8 - 10 mm.

Layer thicknesses: Supporting Material EP-F Type L 2 - 3 mm Supporting Material EP-F Type LT 8 - 10 mm

Consumption: Supporting Material EP-F Type L 2 - 3 kg/m² Supporting Material EP-F Type LT 8 - 10 kg/m²

Pot life: Supporting Material EP-F Type L approx. 30 - 40 minutes (1000 g) Supporting Material EP-F Type LT approx. 45 - 55 minutes (1000 g)



Application

This two-component epoxy resin with a high temperature resistance is especially suitable as laminating resin for thin-walled covers. This resin has a medium viscosity and can be easily painted or rolled on. Glass- cloths or mats are fully embedded into each resin layer. 3 - 4 laminating layers result in a stable cover.

Consumption:

Approx. 0.7 - 1 kg resin per mm layer thickness

Pot life: Approx. 15 - 20 minutes (200 g)



7. Gypsum Release Agents for Block-moulds

7.1 RECKLI Gypsum Release Agent GTM

Properties

Water-based, release agent with only little affects to the environment. It is used for release between block-mould surfaces made of RECKLI PUR Elastomers, RECKLI silicone rubbers or RECKLI epoxy resins and liquid plaster of Paris. When this release agent is used, there is no swelling of the block-mould surfaces. The absorption capacity of the gypsum potter's mould is hardly affected.

Consumption: Approx. 50 g/m²

7.2 RECKLI Gypsum Release Agent GTM-VB

Properties

Like 7.1 with improved water absorption of the gypsum surface

Consumption: Approx. 50 g/m²



8. Model Compound

Properties

Hard-flexible, free of solvents RECKLI Plastic Grouting ZH

Application

RECKLI Plastic Grouting ZH is a hardflexible compound curing nearly free of shrinkage. When cured, the model can be excellently worked: grinding, drilling, gluing, application by spatula etc. Consumption: Approx. 1.6 kg/l volume

Pot life: Approx. 30 - 35 minutes (200 g)

9. Adhesive for Mould Making

Properties

Low-tension adhesion RECKLI Adhesive Paste EP Adhesive paste free of solvents, two components

Application

For low-tension adhesion of hard foam, timber, gypsum, ceramics, especially suitable for gluing of large-volume hard-foam blocks being used for computer-aided design (CAD) of models. Consumption: Approx. 800 g/m²

Pot life: Approx. 40 - 50 minutes (200 g)

10. Sealants

Properties

10.1 free of solvents, two components

RECKLI Flooring Resin EP

Properties

10.2 containing solvents 10.2.1 rapidly drying, one component RECKLI PUR Sealant

Properties

10.2 containing solvents 10.2.2 normally drying, one component

RECKLI EK-PU-Plastic Sealant

Properties

10.2 containing solvents 10.2.3 two components RECKLI Epoxy Solution

Application

Application

Especially for sealing of hard foams for achieving a smooth, perfectly shining surface

For sealing of foundations being dry,

absorptive and resistant to solvents, rapid drying, dry to permit handling after 1 - 2 Consumption: Approx. 200 g/m²/painting

Pot life: Approx. 40 - 45 minutes (200 g)

Consumption: Approx. 150 g/m²/painting

Application

hours.

Like 10.2.1, dry to permit handling after 3 - 5 hours.

Consumption: Approx. 150 g/m²/painting

Application

For sealing of foundations being absorptive and resistant to solvents, satisfactory bondings also to foundations not being absolutely dry. Consumption: Approx. 150 g/m²/painting

Pot life: Approx. 24 hours

11. Primer for gypsum backings

Property

Bonding agent between gypsum and RECKLI PUR Elastomer RECKLI Construction Resin EP

Application

Bonding agent between gypsum and a front cast of RECKLI PUR Elastomer. A maximum drying time of 3 - 4 hours should not be exceeded. If it happens, a new application of primer is necessary; in this case the previous layer must be ground for better bonding. Consumption: Approx. 200 g/m²/painting

Notes as to Consumption Rates and Pot life

The consumption rates we stated are due to experience from practice. Depending on the actual case of application there may be higher or lower consumption rates than those stated by us.

Our indications on pot life and workable time are to be understood as general directives, too. There is a strong dependency between pot life and the temperature of the material / the surrounding area. The quantity of the mixed material is also an important factor.

Temperatures of 18 °C to 20 °C were the basis for our indications. The mixed quantity is stated behind the pot life. Higher temperatures and large mixing quantities reduce the workable time proportionally to a great extent. E.g. the RECKLI PUR Elastomers A 30 to A 70 cannot be poured, when the material temperature is higher than 30 °C and the mixed quantity exceeds 40 kg.

Please observe the relevant technical pamphlets and our application directions.

Samples of Block-moulding



















Formliners

Mould making Technique Resins for Mould and Pattern making

RECKLI GmbH

Adresse/Address: Eschstraße 30 Postadresse/Mailing Address: Postfach 1013 29 44629 Herne 44603 Herne

e Germany e Germany Tel. +49 2323 1706-0 Fax +49 2323 1706-50

info@reckli.de www.reckli.de