RECKLI®

Application Guide
RECKLI Formliners

RECKLI formliners are made from rubber-like polyurethane elastomers with a high level of flexibility and elasticity. This achieves the damage-free Unmoulding of exposed concrete surfaces and the precise, sharp-edged reproduction of texture profiles. RECKLI formliners can be used in the production of precast elements as well as in-situ concrete.

These instructions do not provide any guarantee of characteristics or warranties regarding RECKLI formliners. They serve solely to describe the proper handling and use of the products.

The user is obliged to follow these instructions precisely when using RECKLI formliners. It must be ensured that all persons using RECKLI formliners are provided with these instructions. Where accessories designed for use with RECKLI formliners are applied, the corresponding instructions for use and safety of such accessories must also be strictly observed.

RECKLI formliners may only be used by personnel with appropriate professional training and experience in handling formwork and construction materials.

RECKLI accepts no liability for damages, defects, or consequential losses arising from non-compliance with these instructions or from improper use of the products.

Nothing in these instructions shall limit RECKLI's statutory liability in cases of intent, gross negligence, injury to life, body, or health, or under mandatory product liability law.

Application Guide RECKLI Formliners

Application Guide **Page 5**

1. Preparing the Mould Page 5
2. Preparing the Formliner Page 5
   - 2.1 Cutting the Formliner Page 5
   - 2.2 Buffing the Formliner Page 6
3. Inserting, Joining and Positioning Formliners in the Mould Page 6
4. Affixing the Formliners Page 7
5. Apply Release Wax Page 9
6. Casting Page 11
7. Removal Page 12
8. Cleaning the Formliner Page 12

Special Areas of Application and Application Aids **Page 13**

1. Joins, Corners, Edges Page 13
2. Formwork Page 15
   - 2.1 Formliner Cut-outs Page 15
   - 2.2 Counter Profiles in Stop Off Paste PUR Page 15
   - 2.3 Counter Formliner Page 17

Repairs, improvements, leveling **Page 18**

1. Repairs Page 18
2. Leveling the Back of the Formliner Page 20

Additional advice **Page 21**

1. Storage Page 21
2. Transport Page 21
3. Texture Design/Repeat Page 21
4. Dimensional Tolerances Page 21
5. Disposal Page 21

RECKLI Accessories **Page 22**

Our textured formliners come in three different variants. They are designed to be used 100 times (C series), 50 times (F series) or 10 times (T series).

The specified number of applications is only guaranteed if accessories, such as release agents, adhesive and Elasto Filler, designed for use with RECKLI textured formliners are used. The formliner must also be fully glued onto the formwork.

Rolled formliners must be unrolled immediately after delivery.

The formliners are only resistant to temperatures up to 65°C. If the formliners are exposed to higher temperatures, damage may occur.

Avoid contact between the formliners and sharp or angular objects as this may result in damage to the formliner.

Application Guide

1 Preparing the Mould

The wood or steel surface must be dry, free from dust and oil and lying flat, straight and even.

2 Preparing the Formliner

2.1 Cutting the Formliner
To establish the dimensions of the textured side, the formliner must first be laid out flat. Now use the RECKLI formliner knife to cut the formliner along the cutting bar or use a circular saw with suitable guide bars.

Please observe the information regarding dimensional tolerance.

Tip

It's a good idea to first glue the formliner to a board before cutting it to size.

2.2 Scuffing the Formliner

Before applying adhesive, the back of the formliner must be scuffed lightly. Excess dust must be blown away using a compressed air hose.

Tip

We recommend using an electronic angle grinder with speed regulation.

3 Inserting, Joining and Positioning Formliners in the Mould

Prepare a frame in the required size and secure this to the shell. Now, the formliners must be positioned as required and joined. If applicable, please observe any order labelling on the backs of the formliners during this step. Texture-related height differences must be compensated. (See 20 **Repairs, improvements, leveling**)

4

Affixing the Formliners

The formliners must be affixed thoroughly and individually to the shell. To do so, the formliners are rolled halfway one after the other. Use the RECKLI toothed smoother to apply RECKLI formliner adhesive to the accessible shell area and slowly unfurl the rolled-up formliner onto the adhesive. Repeat this process with the other side.

Tip

Corners and formliner joins should be secured after gluing to achieve optimal adhesion. It's a good idea to affix the formliners to boards as auxiliary forms that can then be secured to the shell or production table. Formliners can be removed from the table or shell together with the wooden boarding so they are immediately ready to use for e.g. for smooth exposed concrete. The formliners can be stored or disposed of together with the wooden boards.

!!

Important

Never use too much adhesive (consumption: 750 – 1000 g formliner adhesive per square meter of formliner) and observe the processing time (see technical factsheet).

!

Please Note

Formliners can be affixed to steel or wood surfaces. Freshly glued formliners should not be stepped on to avoid deformation. This applies until the adhesive has hardened.

Possible RECKLI Adhesives:

Datasheet	Type	Use	Instructions
	Formliner Adhesive 1K	Precast/ in-situ concrete	Ready to use
	Formliner Adhesive SO	Precast/ in-situ concrete	See general advice for the processing of RECKLI two-component resins

Step-by-Step

Tipp

From a **texture depth of 10 mm**, the formliner edges must be sealed with RECKLI formliner adhesive when affixing two textured formliners together. This prevents cement from penetrating the formliner joins later on. First buff the sides of the formliners and then remove any excess dust. Formliner adhesive can then be applied to the sides.

Place the formliner into the mould and position it

1. Roll half of the formliner from the narrower side / fold the formliner in half from the narrower side
2. Evenly apply RECKLI formliner adhesive to the exposed shell using a RECKLI toothed smoother
3. Now roll the rolled side of the formliner carefully and slowly into the fresh adhesive
4. Repeat the process with the other half of the formliner

5

Apply Release Wax

Before concrete is poured, the formliner must be prepared using two rounds of RECKLI release wax at an angle of 45 – 60 degrees. Apply sufficient release wax (see corresponding technical factsheet) using a suitable spraying device (pump sprayer or airless device), ensuring the best possible release and optimal final concrete result. Especially when dealing with undercuts and ridges, ensure that all surfaces are sufficiently covered with release wax. Excess release wax must be removed from the texture's deep indentations. Where possible, tilt the shell/table into a vertical position after applying the release agent, allowing any excess to run off. Allow the release wax to fully dry and air before pouring the concrete.

!

Please Note

The formliner must be protected after release wax is applied, so the formliner should be covered with the RECKLI covering sheet.

Suitable RECKLI products

Datasheet	Type	Use
	RECKLI Stripping Wax TL-SO, solvent-containing	Precast
	RECKLI Stripping Wax TL-SO	In-situ concrete
	RECKLI Stripping Wax TL-W	Precast
	RECKLI Stripping Wax TL-Eco	Precast/ in-situ concrete

6

Casting

Further to norm requirements, the formliners do not require any additional measures regarding the type, composition, consistency or standard of fresh concrete. Casting can proceed as usual. When using external vibrators, you must take into consideration that the formliners' elasticity will absorb part of the vibration. This must be compensated for through longer or more intense vibration.

Tip

To get the best results, we recommend carrying out a practice cast in advance to ensure compatibility between the concrete recipe and formliner.

When using UHPC, TL or TL-SO release wax must be used. TL-W is not suitable in this case.

Please Note

Monitor the temperature of the concrete during casting. Temperatures above 65°C will damage the formliner.

Ensure that spacers do not press into the formliner, and that minimum coverage is always measured from the deepest point of the texture.

7

Removal

Separate the concrete element and the mould slowly.

Please Note
The concrete must be removed as soon as possible in compliance with the applicable cement and concrete norms.

8

Cleaning the Formliner

If there is any concrete residue or other soiling on the formliner, it must be cleaned with a cloth and RECKLI release wax.

Please Note
Mechanical cleaning may damage the surface of the formliner.

Special Areas of Application and Application Aids

1 Joins, Corners, Edges

As with smooth exposed concrete, the joins, edges and corners of textured concrete are designed using suitable molding. It must be established whether the dimensions of any such molding are based on the deepest point, shallowest point or center of the texture. The thickness of the form-liner backing should be taken into account when establishing measurements.

Sketch ①
Butt joint

Sketch ②
Smooth frame with chamfer deep in concrete

Sketch ③
Smooth frame with chamfer high in concrete

Sketch 4

Chamfered cove, high in concrete

Sketch 5

Chamfered cove, deep in concrete

Sketch 6

Chamfer in Formliner

Sketch 7

Cove with chamfer, high in concrete

Sketch 8

Cove with chamfer, middle in concrete

Sketch 9

Cove with chamfer, deep in concrete

2 Formwork

2.1 Formliner Cut-Outs

Cut-outs, e.g. for doors or windows, in concrete elements can be made by precisely cutting the formliner and inserting formwork. To save cutting the formliner see below alternative.

2.2 Counter Profiles in RECKLI Stop Off Paste PUR

First mark the area to be blocked off on the formliner and clean it thoroughly with RECKLI TL or RECKLI TL-SO. Cover the formliner with 2 coats of RECKLI mold wax and leave to air dry until the solvent has evaporated, leaving a silky-matte sheen on the formliner. Then add several layers of RECKLI PUR barrier paste – at least 5mm higher than the highest point – to the area. Now position strips of wood onto the fresh barrier paste and press until the material is squeezed out at the sides. Once the barrier paste has hardened (around 1 hour), the board with the paste can be removed and the counter profile cut to size precisely using a circular saw.

Please Note
The areas treated with RECKLI mold wax must be neutralized with RECKLI release wax to prevent color deviations on the finished concrete piece. Use a clean rag soaked in the right RECKLI release wax. Use this rag to thoroughly remove all traces of mold wax residue from the textured formliner.

2.3 Counter Formliner

Counter formliners are perfectly fitting counterparts for certain formliner areas. When using symmetrical textures (ribbed and wave patterns), a strip of formliner with the relevant texture can be used instead of a counter profile in RECKLI PUR barrier paste.

Repairs, Improvements, Leveling

1

Repairs

RECKLI Elasto-Filler spackling paste can be used to repair and improve damaged and/or torn RECKLI textured formliners.

To achieve proper adhesion of the spackling paste, the area to be treated must be clean and dry as well as free from dust, oil, wax and fat. The repair site must also be scuffed with sandpaper. RECKLI Elasto Filler must be used to fill the repair site within the processing time. Excess material must be removed while fresh. Textural improvements and leveling must also be carried out fresh. Any remaining residue can be sanded away after around 2 – 3 hours, and the material will be sturdy after around 4 – 5 hours.

To strengthen breakages and joins, clean the join or crack edges carefully. Place PE film or oiled paper under the join site to prevent the formliner from sticking to the surface below due to excess Elasto Filler being squeezed out. Then apply RECKLI Elasto Filler to the repair sites and press together lightly. Any Elasto Filler that is squeezed out should be removed while fresh, as cured it can only be sanded or cut off. Once the Elasto Filler has cured, place the formliner on its textured site. Sand an area around 3 – 5 cm wide on the back of the formliner on both sides of the seam at a depth of around 3mm. Fill the sanded depression with RECKLI Elasto Filler and level. After around 2 –3 hours, this join site must be surface-ground. Then turn the formliner back over and rub the repaired tear site with RECKLI TL/TL-SO or TL-W release wax.

!

Please Note
The results of repairs may vary depending on the individual case. RECKLI does not accept liability for this. A seam site can never fully replace an undamaged formliner. There is also the risk of the repaired formliner damage showing up in the finished textured surface despite work being carried out carefully.

RECKLI

2

Leveling the Back of the Formliner

Due to the texture, it cannot be guaranteed that all formliners are always the same thickness. It may therefore be necessary to level the back of the formliner through sanding or filing. Place the formliners on their textured sides and position them together. The thicker formliner should then ideally be reduced in size to correspond with the thinner formliner by sanding back with a circular or band sander.

If the difference in thickness is too great, it may be simpler to increase the back of the thinner formliner by applying RECKLI formliner adhesive or RECKLI elastic spackling paste at the edge. Buff the area to be leveled with sandpaper and properly mix some RECKLI SO formliner adhesive or RECKLI Elasto Filler. Pour or otherwise apply this to the area to be leveled, then smooth over. As a thickness gauge, a wooden bar is secured along the edge of the formliner at the required thickness. Apply RECKLI form wax to the bar in advance to avoid it sticking to the adhesive or spackling paste. Once the adhesive or spackling paste has hardened, the edges of the formliner will be the same size and the formliner fully functional.

Additional Advice

1. Storage
Formliners that have already been glued may be stored together with their boards. All formliners need to be stored in a dry and level place. RECKLI textured formliners have to be protected from weather and environmental influences such as direct sunlight, rain, frost, wind etc. This is done best by covering them with a dark sheet.

2. Transport
Formliners delivered in transport and bearing sleeves should only be transported rolled up and in these sleeves. Formliners delivered in transport boxes must continue to be transported in this manner

3. Texture Design/Repeat
Parallel textures are designed to run into one another. The join is almost invisible. Due to the differing sizes of formliners, repeats cannot be avoided over large areas of exposed concrete.

4. Dimensional Tolerances
As RECKLI textured formliners are made from rubber-like polyurethane, temperature, compression and stretching during transport and storage may lead to deviations in measurements. These can be corrected through stretching and applying pressure during gluing.

Please Note
Formliners designed for use 100 times are provided slightly oversized for this reason: they must be cut to size on site. (see cutting formliners)

Formliners designed for use 50 or 10 times are provided in one set size. Minimal size deviations cannot be completely prevented.

5. Disposal
RECKLI textured formliners are made from polyurethane elastomers, so can be disposed of under waste code 120105 of the European Waste List (waste from mechanical molding/plastic parts/ plastic shavings and turnings) via local waste disposal as “waste requiring special supervision”.

RECKLI Accessories

Cutting Bar

RECKLI Formliner Knife

RECKLI Protective foil

RECKLI Stirring Tub

RECKLI Spiral Agitator

RECKLI Toothed Trowel

RECKLI Toolkit

RECKLI Formliner Adhesive SO

RECKLI Formliner Adhesive 1K

RECKLI-TL-Eco

RECKLI Stripping Wax TL-SO

RECKLI-Mould Wax

RECKLI Stripping Wax TL

RECKLI Stop Off Paste PUR

RECKLI-Elasto-Filler

RECKLI Formliner Cleanser

RECKLI Stripping Wax TL-W

Contact

RECKLI GMBH
Industriestraße 36
D-44628 Herne
T +49 (0) 2323 1706-0
F +49 (0) 2323 1706-50
info@reckli.de
reckli.com