RECKLI
Form-Liners & Moulds
Changing the face of concrete

Dimples (25mm deep * 125mm diameter) @ Stage 2, Living Carlton Apartments, Carlton, Victoria.

MOULDS FOR
ART
ON CONCRETE
History of Reckli Group Australia

Reckli in Australia was formed in 2004 by John Joveski, who since 1989 has been involved with reinforcing steel supply to the Precast & Insitu-Cast Concrete Wall industry in Victoria.

Having identified a lack of local availability of mould suppliers to the Precastors & Insitu-Cast Wall manufacturers, John discovered Reckli, a world leader in this field, who had no representation in Australia, thus seemed to be a perfect opportunity.

The first Reckli office in Australia was set up in North Laverton, Victoria in 2004.

Here we displayed the different standard sample profiles where orders were arranged and sent to Germany, where they were manufactured and delivered via Seafreight or Airfreight to Australia.

As demand for form-liners grew, the tight construction time constraints also put pressure on safe and quick supply of our form-liners from Germany, thus in late 2009, we moved to Derrimut and again in September 2012 we moved to our current larger location 84 Hunter Road Derrimut, Victoria, 3030 Australia.

We can now make all form-liners here and supply standard form-liners in 2 weeks (Ex-Melbourne).

As Reckli-AU has earned the confidence & respect of Designers, we have also invested in the ability to make unique/custom moulds (project specific) at our current facility.

Along with the support of Reckli-International’s other 100 offices in over 60 Countries, we have our own in-house Industrial Designers, Interior Designer, CNC Programmers, state of the art 3-d CNC Milling Machines and Laser cutting/engraving machines and various other specific machines.

What this means ... we can make form-liners to almost any profile, FAST and of HIGH QUALITY, here in Melbourne Australia.

Disclaimer:

All form-liner dimensions are nominal. Actual dimensions may vary slightly depending upon design. Despite our carefully controlled production processes, dimensional tolerances are unavoidable. Due to the high elasticity of our form-liners, they can also stretch and be compressed during packing and transport, which may add to dimensional variations.

Methods of concrete panel manufacture vary between all manufacturers and also at different times of the year, so we recommend you adopt our suggestions outlined in our “Application Guideline for Reckli Form-Liners” (refer to pages 50-63).

Limited Warranty:

Reckli warrants their form-liners to be of uniform quality within manufacturing specifications and will perform as represented, provided that the concrete construction practices used are in accordance with our guidelines and installation instructions. Reckli assumes no responsibility for any damage to form-liners due to the improper use or application of a non-Reckli form release agents. Our obligation under this warranty shall be limited to refunding the purchase price or replacing that portion of the material proven to be defective. Reckli make no other warranty expressed or implied, including, without limitation, warranties of fitness or merchantability, with respect to its products. For more information refer to page 50–63.
| A | Abruzzo | 2/187 | 28 |
|   | Ahv   | 2/20 | 6  |
|   | Aller  | 2/26 | 6  |
|   | Alguía | 2/147 | 16 |
|   | Alsat  | 1/138 | 20 |
|   | Alster | 2/22 | 6  |
|   | Altinhö| 2/22 | 6  |
|   | Amazonas | 2/96 | 22 |
|   | Ameide | 1/01 | 11 |
|   | Amrum  | 2/106 | 2 |
|   | Andalucía | 2/146 | 11 |
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|   | Ardeche | 2/130 | 10 |
|   | Ardenne | 2/180 | 29 |
|   | Arno   | 2/68 | 5  |
|   | Asturias | 2/181 | 29 |
|   | Aurillac | 2/327 | 20 |
|   | Ausbruck (Stack-Bond) | 2/718 | 14 |
|   | Ausbruck (Stretcher-Block) | 2/718 | 14 |
|   | Auvergne | 2/139 | 16 |
| B | Baltrum | 2/25 | 10 |
|   | Bavaria | 2/158 | 19 |
|   | Bohemia | 1/163 | 23 |
|   | Borkum | 2/01 | 11 |
|   | Bornholm | 1/18 | 8  |
|   | Bourgogne | 2/137 | 16 |
|   | Brabant | 2/164 | 17 |
|   | Bragance | 2/174 | 13 |
|   | Breogane | 2/136 | 10 |
|   | Broadway | 2/702 | 11 |
|   | Burgenland | 2/191 | 28 |
| C | Camargue | 2/140 | 16 |
|   | Champagne | 2/188 | 29 |
|   | Charente | 2/601 | 30 |
|   | Charentes | 2/121 | 19 |
|   | Céte   | 2/166 | 18 |
|   | Colorao | 2/86 | 2 |
|   | Columbus | 2/169 | 14 |
|   | Corse  | 1/45 | 13 |
| D | Dachstein | 2/141 | 14 |
|   | Dalarna | 2/186 | 28 |
|   | 3D Form-Liners | 2/30 |
|   | Dan   | 2/71 | 20 |
|   | Donau  | 2/24 | 6  |
|   | Dortmund | 2/126 | 12 |
|   | Dray   | 2/24 | 6  |
|   | Duero  | 2/86 | 15 |
|   | Durancé | 1/354 | 17 |
| E | Eder   | 2/25 | 6  |
|   | Elbe   | 2/26 | 7  |
|   | Embrun  | 1/362 | 18 |
|   | Em   | 2/27 | 9  |
|   | Enschet | 2/28 | 6  |
|   | Engerdal | 2/312 | 16 |
|   | Estere  | 2/186 | 17 |
|   | Estâles | 2/186 | 17 |
|   | Euphrat | 2/105 | 4 |
| F | Fehmarn | 1/03 | 8  |
|   | Fischland | 2/157 | 16 |
|   | Führ   | 1/04 | 8  |
|   | Fort-de-France | 1/3478 | 3 |
|   | Fraser  | 2/163 | 7  |
|   | Friesland | 2/175 | 22 |
|   | Fuka   | 2/29 | 23 |
| G | Ganges | 2/178 | 15 |
|   | Garonne | 2/96 | 2  |
|   | Gelderland | 2/183 | 28 |
|   | Ginásio | 1/93 | 12 |
|   | Göteborg | 1/94 | 24 |
|   | Gysenberg | 2/195 | 23 |
| H | Halfbaks | 2/177 | 24 |
|   | Havel  | 2/30 | 10 |
|   | Helgoland | 1/05 | 11 |
|   | Holledau | 2/197 | 23 |
|   | Hudson  | 2/126 | 16 |

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Broken Rib Patterns

2/108 B-Indus
Named after a river in Indian region

2/106 B-Amur
Named after a river in Northeast China

2/107 B-Mekong
Named after a river in Southeast Asia

2/30 B-Havel
Named after a river in Berlin

2/150 B-Vosges
Named after a river in Northeast France

1/316 B-Pennsilva
Named after a village in the UK

2/56 B-Garonne
Named after a river in Southeast France

2/87 B-Ohio
Named after a river in Ohio USA

1/37 B-Rippe Type J
Named after a village in the UK

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Rough Cast and Textured Patterns

Manufacturers of Form-Liners & Rubber Moulds for Patterns on Concrete Panels & other Concrete Elements

National Centre 84 Hunter Road Derrimut, Victoria, 3030 Australia  TEL: 1300 PATTERNS (72 88 37 67)  F 03 8361 7186  E australia@reckli.com.au  W www.reckli.com.au

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2/91 Rio Grande
Named after a river in Mexico

PATTERN DEPTH = 7mm
Form Liner

2/69 Marne
Named after a river in France

PATTERN DEPTH = 11mm
Form Liner

2/34 Lahn
Named after a river in Germany

PATTERN DEPTH = 3mm
Form Liner

2/131 Lausitz
Named after a region in Eastern Germany

PATTERN DEPTH = 3mm
Form Liner

2/33 Isar
Named after a river in Northern Germany

PATTERN DEPTH = 3mm
Form Liner

2/132 Taunus
Named after a region in Southwest Germany

PATTERN DEPTH = 3mm
Form Liner

2/68 Arno
Named after a river in Italy

PATTERN DEPTH = 11mm
Form Liner
### Wood Patterns

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<tr>
<th>Pattern ID</th>
<th>Pattern Name</th>
<th>Description</th>
<th>Pattern Depth</th>
<th><a href="http://www.reckli.com.au">www.reckli.com.au</a> Link</th>
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<tbody>
<tr>
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<td>2/20 Ahr named after a river in Germany</td>
<td>PATTERN DEPTH = Less than 1mm</td>
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<td>PATTERN DEPTH = Less than 1mm</td>
<td><a href="http://www.reckli.com.au/alster/">www.reckli.com.au/alster/</a></td>
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<td>PATTERN DEPTH = 3mm</td>
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<td>2/21 Aller named after a river in Germany</td>
<td>PATTERN DEPTH = Less than 1mm</td>
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</tr>
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<td>2/24 Donau</td>
<td>Named after a river in Central Europe</td>
<td>2/24 Donau named after a river in Central Europe</td>
<td>PATTERN DEPTH = 2mm</td>
<td><a href="http://www.reckli.com.au/donau/">www.reckli.com.au/donau/</a></td>
</tr>
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<td>2/74 Ural</td>
<td>Named after a river in Russia</td>
<td>2/74 Ural named after a river in Russia</td>
<td>PATTERN DEPTH = 5mm</td>
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<td>2/25 Eder</td>
<td>Named after a river in Germany</td>
<td>2/25 Eder named after a river in Germany</td>
<td>PATTERN DEPTH = 6mm</td>
<td><a href="http://www.reckli.com.au/eder/">www.reckli.com.au/eder/</a></td>
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<tr>
<td>2/82 Colorado</td>
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<td>PATTERN DEPTH = 7mm</td>
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Wood Patterns

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Abstract Patterns

Changing the face of concrete
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### Brick and Masonry Patterns

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<th>Pattern Name</th>
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<th>Pattern URL</th>
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<td><a href="http://www.reckli.com.au/po/">www.reckli.com.au/po/</a></td>
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<tr>
<td>1/165 B Reno</td>
<td>Named after a river in Northern Italy</td>
<td><a href="http://www.reckli.com.au/breno/">www.reckli.com.au/breno/</a></td>
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</tbody>
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Stone and Rock Patterns

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Stone and Rock Patterns

2/71 Don
Named after a river in Russia

2/340 Miribel
Named after a region in Eastern France

2/47 Rhein
Named after a river in Europe

2/327 Aurillac
Named after a region in France

2/710 Stack-Stone

1/138 Alsace
Named after a region in France

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**Oriental and Eastern Patterns**

*Manufacturers of Form-Liners & Rubber Moulds for Patterns on Concrete Panels & other Concrete Elements*

**National Centre** B4 Hunter Road Derrimut, Victoria, 3030 Australia  **TEL: 1300 PATTERNS (72 88 37 67)  F 03 8361 7186 E australia@reckli.com.au  W www.reckli.com.au*

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Rib and Wave Patterns

2/750 Sahara
Named after a desert in Northern Africa

1/198 Traun
Named after a region in Austria

1/42 Madeira
Named after a region in Portugal

1/172 Sinus 27/100
Latin for “Wave”

2/94 Orinoco
Named after a river in South America

1/171 Sinus 18/76
Latin for “Wave”

1/134 Riviera
Named after a region in Italy

2/95 Amazonas
Named after a region in Peru

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Rib and Wave Patterns

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All patterns on this page are available within 2 weeks Ex-Melbourne (Made in Melbourne)
2/176 Raba (see specs on page 24)

1/31 Rippe Type C (see specs on page 24)

1/46 Rippe Type N (see specs on page 24)

1/34 Rippe Type F (see specs on page 24)
Anti Slip Patterns

2/118 Riffel 2-Fach

[Image of 2/118 Riffel 2-Fach pattern]

PATTERN DEPTH = 2mm
Form Liner

2/117 Riffel 5-Fach

[Image of 2/117 Riffel 5-Fach pattern]

PATTERN DEPTH = 2mm
Form Liner

2/178 Anti Slip (See spec on page 27)

2/120 Rhombus Step Treads (See spec on page 27)

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Anti Slip Patterns

2/178 Antislip

2/115 Pastillen

2/120 Rhombus

2/119 Pikes

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2/186 Dalarna
Named after a region in Sweden

2/185 Simmental
Named after a region in Switzerland

2/183 Gelderland
Named after a region in Netherlands

2/180 Steiermark
Named after a region in Austria

2/191 Burgenland
Named after a region in Austria

2/187 Abruzzo
Named after a region in Italy

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3D Form-liners (Made To Order)

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Non Standard Examples Of Graphic Designed Form-liners
(Made To Order)
Pixel Form-liners (Made To Order)

RECKLI Pixeled pattern Form-Liners are the new alternative way to transfer a photo image onto a concrete panel without needing to increase the structural panel thickness.

Easy...
Step 1... Chose your image (colour or mono-tone)
Step 2... Chose your finished image size (on concrete panel)
Step 3... email us your request
Result... We will reply with electronic mock up.

Why RECKLI Pixeled pattern Form-Liners?...
Because;
- They are made in Melbourne (no import delays)
- They are made by us (last minute changes = OK!)
- They are re-usable
- Image is minimal depth (no need to thicken up concrete panel)

See more photos at: www.reckli.com.au/pixel/
Photo Engraved Form-liners (Made To Order)

See more photos at: www.reckli.com.au/photoengraved/
Photo Engraved Form-liners (Made To Order)

Riverstone Crossing Estate at Upper Coomera (North of Gold Coast, Queensland)

See more photos at: www.reckli.com.au/photoengraved/
Photo Engraved Form-liners (Made To Order)

See more photos at: www.reckli.com.au/photoengraved/
Photo Engraved Form-liners (Made To Order)

See more photos at: www.reckli.com.au/photoengraved/
Custom Patterns (Made To Order)

Sand-dune at Peppermint Grove Library, South Perth

‘The Knot’ at North Richmond Community Health Centre, Melbourne

“Circuit-board” at Edith Cowan University, Joondalup, North Perth

See more photos at: www.reckli.com.au/custom/
Custom Patterns (Made To Order)

Mater Children’s Hospital, Brisbane

Waverley Park Noise Walls, Monash FWY, Melbourne

Roses at Glen Eira Office Block, South East of Melbourne

See more photos at: www.reckli.com.au/custom/
Custom Patterns (Made To Order)

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See more photos at: www.reckli.com.au/custom/

- Dimples at Melbourne Convention and Exhibition Centre
- Waves at Burrinja Cultural Centre, Upwey (S.E Melbourne)
- Sunburst at Sunshine Hospital, West of Melbourne
Custom Patterns (Made To Order)

See more photos at: www.reckli.com.au/custom/
Custom Patterns (Made To Order)

Tyre Tracks, Noise Wall at Kings Rd and Calder FWY Interchange, Northwest of Melbourne

Sloping Pattern at Novotel Hotel, Brisbane Airport

Water Swirl at Victorian Desal, Wonthaggi, South East of Melbourne

See more photos at: www.reckli.com.au/custom/
Custom Patterns (Made To Order)

Hex Shapes on Noise Wall, Great Eastern HWY, Perth

Bluestone Stack Bond Fence at Garden House Apartments Carlton (North of Melbourne)

Hex Noise Wall at Penninsula Link (S.E Melbourne)

See more photos at: www.reckli.com.au/custom/
Pre Cast Being Made With Reckli Form-Liners
In-Situ Cast Preparations With Reckli Form-Liners

Manufacturers of Form-Liners & Rubber Moulds for Patterns on Concrete Panels & other Concrete Elements

National Centre 84 Hunter Road Derrimut, Victoria, 3030 Australia  TEL: 1300 PATTERNS (72 88 37 67)  F 03 8361 7186  E australia@reckli.com.au  W www.reckli.com.au
Site Cast Preparations With Reckli Form-Liners

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CNC Machining and Making Master Moulds

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Quick Shapes

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Disclaimer:
All form-liner dimensions are nominal. Actual dimensions may vary slightly depending upon design. Despite our carefully controlled production processes, dimensional tolerances are unavoidable. Due to the high elasticity of our form-liners, they can also stretch and be compressed during packing and transport, which may add to dimensional variations.

All methods of concrete panel manufacture vary between all manufacturers and also at different times of the year; we recommend you adopt our suggestions outlined in our “Application Guideline for Reckli Form-Liners”.

Limited Warranty:
Reckli warrants their form-liners to be of uniform quality within manufacturing specifications and will perform as represented, provided that the concrete construction practices used are in accordance with our guidelines and installation instructions.

Reckli assumes no responsibility for any damage to form-liners due to the improper use or application of a non-Reckli form release agent.

Our obligation under this warranty shall be limited to refunding the purchase price or replacing that portion of the material proven to be defective. Reckli make no other warranty expressed or implied, including, without limitation, warranties of fitness or merchantability, with respect to its products.
Application Guideline for RECKLI Form-liners

1. Classification
We distinguish our formliners with the prefix numbers 1/.. and 2/.. The most important distinguishing features are listed in table 1. There is also available another type of formliner with the prefix number 3/.. These formliners are for one use only. This working guide applies only to the formliners with the prefix 1/.. and 2/.. For the OneTimer Formliners prefix number 3/.. there is a separate catalogue with the relevant guide.

2. Material
The formliners consist of rubber-like Polyurethane Elastomers. The high flexibility and elasticity allow a damage-free release of the concrete and exact reproduction of the pattern and allowing for undercuts and shallow grooves.

3. Delivery
For the formliners with the index 1/.. we deliver them flat on pallets or in chipboard boxes. The formliners 2/.. are rolled up on heavy duty cardboard rolls for transport and storage and wrapped in heavy brown kraft paper and/or polyethylene for extra protection against dirt. Depending on the size and weight they are additionally strapped to non-returnable pallets. (Picture 1)

4. Delivery Check
Upon delivery please check your consignment immediately for any damage sustained in transport. If you note any damage to your consignment you must describe it in detail on the delivery note and get the driver to countersign your comments. Before using the formliners first check the required dimensions as detailed on the package especially to the longitudinal direction (ld) of the pattern if here is one.

5. Storage
Before fixing all formliners must be stored dry and level to avoid deformation of the pattern. If using the 2/.. formliners loosely (not adhered) they can be rolled up tightly again onto the cardboard rolls after use. Make sure the formliners rolls do not have any heavy or sharp objects stored on top of them as this would lead to permanent deformation. The formliners must be protected against intensive weathering such as UV light, rain, frost and any other aggressive conditions. This is best accomplished by covering with dark or black polyethylene or other waterproof sheets. (Picture 2)

6. Transport
6.1 Boxes and pallets
The boxes and pallets with the formliners 1/.. can usually be transported and moved by fork-lift or crane. The pallets with the formliner rolls can also be transported and moved by fork-lifts or cranes.

6.2 Single formliner rolls
Up to a length of approx. 1.50 m the cardboard rolls can be lifted by placing the fork or forks of the fork-lift into the cardboard tube. For rolls of formliner in excess of 1.5 m it is necessary to use extension forks or a carpet ‘spike’ as otherwise the forks would pierce the cardboard roll and probably the liner as well. If using a crane for lifting make sure you use wide nylon lifting straps evenly distributed along the length of the roll. Do not use wires ropes or chains. For large size formliners it can be useful to place a steel tube through the cardboard roll, make sure you use separate lifting straps from each pole end to crane hook to ensure even lifting. (Picture 3)

7. Heat Resistance
The formliners can used in temperatures up to +65° C. Temperatures which exceed this value will damage the material. Should you expect a concrete temperature on the interface to the formliner of more than +65° C due to the concrete mass or other circumstances the mix design or other suitable actions should be adjusted to allow for the safe use of the formliner within its temperature constraints.

Table 1

<table>
<thead>
<tr>
<th></th>
<th>Formliners 1 /..</th>
<th>Formliners 2 /..</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depth of structure*</td>
<td>&gt; 25 mm</td>
<td>1 - 25 mm</td>
</tr>
<tr>
<td>Maximum size*</td>
<td>approx. 1.00 m x 5.00 m</td>
<td>approx. 4.00 m x 10.00 m</td>
</tr>
<tr>
<td>Type of elastomer</td>
<td>light $\gamma = 0.9$</td>
<td>normal $\gamma = 1.4$</td>
</tr>
<tr>
<td>Re-uses</td>
<td>50 times</td>
<td>100 times</td>
</tr>
<tr>
<td>Kind of delivery</td>
<td>Packed flat</td>
<td>Rolls</td>
</tr>
</tbody>
</table>

* The exact sizes you find in our catalogue under the photos of the pattern.
8. Pattern Design
There is no intended repeatability (with the exception of any of the rib type patterns) in the formliner patterns within the maximum mould size as compared to wallpapers. A number of patterns are designed in a way that they can be placed together side by side continuously. With a little care the joints in the patterns can be made almost invisible. (Picture 4-5)
For the building of our master moulds we use a combination of natural and man made materials of commercial grade quality which are formed using current standard working practices. Unavoidable tolerances, discrepancies and imperfections caused by the use of these materials can and will be reflected in the patterns of the formliners.
The measurements shown in the sectional drawings under and beside the pattern photos in our pattern book are average values and nominal dimensions which have the stated tolerances. In using these sizes for the calculation of your requirements you should not expect that there is an equal repetition of measurements within the same formliner. The same criteria will apply whether you place two full sizes sheet formliners together or two or more ‘made to measure’ (smaller) formliners. Therefore it may be necessary to re-cut the formliners to their final dimension on site. It is always advisable to cut formliners a couple of millimetres longer than required for a tight fit against the formwork guide battens. (see 10.1)

9. Cutting
9.1 Oversize and tolerances
Due to their high elasticity the formliners will be stretched or compressed during packing and transport which can lead to dimensional tolerances. Therefore, to protect the liner edges against damage we always supply the formliners oversized. They must be cut to their final dimension on site. It is always advisable not to expect that there is an equal discrepancies and imperfections caused by the use of these materials can and will be reflected in the patterns of the formliners. The measurements shown in the sectional drawings under and beside the pattern photos in our pattern book are average values and nominal dimensions which have the stated tolerances. In using these sizes for the calculation of your requirements you should not expect that there is an equal repetition of measurements within the same formliner. The same criteria will apply whether you place two full sizes sheet formliners together or two or more ‘made to measure’ (smaller) formliners. Therefore it may be necessary to re-cut the formliners to their original dimension from time to time. This of course will only apply if the formliners are not fixed by gluing. Despite the most carefully controlled production process, dimensional tolerances of some mm in the rear wall thickness of the formliners is unavoidable. This is due to material and production factors which we are unable to negate. These dimensional differences are unavoidable whether you have a formliner produced in its maximum size or a smaller ‘made to measure’ formliner within the maximum size of the same formliner. Therefore it may be necessary to grind the formliners edges to even and level them or to thicken the seam area with RECKLI-Formliner Adhesive SO or RECKLIElasto Filler when required to place them horizontally next to another formliner. (see 20.2)

9.2 Formliners with prefix number 1/..
These formliners are normally supplied in fixed widths whereas the length/height (ld) is variable. If you have to put 2 or more formliners together (side by side) to reach a total area for the shutter or mould, cutting will probably be necessary. To make perfect cuts the formliners onto a flat, clean even surface and cut them using a suitable hand panel or circular power saw. (Picture 6) If using a power saw it is most important to allow the saw blade to rotate freely into the cut and during the cut. Keep the sawn material (waste part) pulled away from the blade to avoid it flapping against the rotating saw blade, otherwise heat will be generated and the formliner can burn. On long cuts it is a good idea to pull the power saw away from the cut and let the saw spin under power to dissipate any build-up of heat.

9.3 Formliners with prefix number 2/..
Roll out these formliners onto a flat, clean even surface and cut them with the...
Application Guideline for RECKLI Form-liners

10. Application in Pre-cast Concrete

10.1 Fitting the formliner to the formwork or mould

After cutting the liner lay it loose into the formwork/mould frame. The formliners with prefix number 1/.. should have been cut with an over-size of 1-2 mm. So that you can compress them into the dimension frame for getting a tight compressive fit all round. The liners with prefix number 2/.. should also be cut to an oversize of 1-2 mm. It is easy to compress them so that they will be a tight fit around the edges of the formwork/mould.

Note: It is very difficult to make mitred, bevel cuts with a knife to an unfixed formliner. When such bevels are required we can suggest two methods: a) place the area to be mitred onto a board, place another board above the formliner and fix thereby compressing the formliner. Set the power saw to the required angle and depth and cut the board and the formliner together. (Picture 8+9) b) Perform this task with a power saw min. 24 hours after the formliner has been adhered. Cutting the fixed formliner and the plywood will give a more precise finish. We also advise the 24 hour delay for the drilling of any ‘tie-bolt’ holes.

10.2 Fixing by adhering

Loose formliners have to be refitted into the mould after every cast. To avoid this you can glue the formliner on to the ‘tilt-up’ or vibrating tables (see 12.) This is always an advantage when you have to produce a series of elements of the same size. Loose formliners will also be more prone to stretching from their constant handling.

10.3 Setting & Placing the formwork/mould edges

You can of course place your form - work/mould dimension frame directly on to the formliners which have shallow patterns or textures of approx. 1-2 mm. Patterns with a depth of up to 5 mm can be sealed sufficiently by a compression band.

For deeper patterns we suggest you make ‘pattern stop-offs’ (see 19.2) or in symmetrical patterns (ribs or waves) you can use the same formliner piece inverted. (Picture 10) Please Note: If the frame is pressed too firmly on to the formliner for too long, there will be a permanent depression in the formliner giving a noticeable difference to the pattern if and when the frame has to be moved to a different part of the formliner.

10.4 Vibration

It is possible that the frequencies of an external vibrator can make the formliner ‘flutter’ and draw air under the formliner. This can result in air ‘cushions’ or ‘bubbles’ in the formliner which can lead to indentations in the concrete surface. Therefore the vibrator and its vibration frequency must be checked and adjusted correctly.

10.5 Stripping/Striking

Formliners that are laid loose in the mould are generally removed from the concrete elements and replaced back into the moulds ready for reuse. Care should be taken during the stripping/striking process that the formliner will not fall off the concrete element when the tilting table is in the vertical. The formliner would almost certainly be damaged. (Picture 11-13) To avoid this happening you can glue the liners onto the formwork/tilting table. (see 12.)
11. Application for In-situ Concrete

11.1. Fixing by adhering
When used for in-situ concrete the form-liners must be glued down. (see 12.)

11.2 Fixing by nails
For minimum use or the immediate change of shutter sizes after the first pour, the formliners with prefix number 1/.. can be nailed onto the formwork. The nail centres should be approx. 20-25 cm. Use ‘lost heads’ or ‘ovals’ nails so that it is possible to pull the nail heads through the formliner during stripping/striking. Depending on the pattern or texture always nail through the high points of the pattern. This will ensure that nail holes are in the negative part of the concrete and not so easily noticed.

The formliners with prefix number 2/.. should not be nailed to the formwork. Due to the weight of the formliners there would be too much weight placed on the nails when lifted into the vertical position and this can result in the formliner tearing.

12. Adhering
Please Note: It can be to your advantage to glue the formliners onto plywood sheets and use these sheets as auxiliary/slave formwork which you can then fix onto your load bearing formwork or casting table. The plywood can be fixed from the rear using wood screws. The plywood can easily be removed from the load bearing formwork after use. It will also be easier to store and dispose of the formliners when they are glued to plywood.

12.1 Principles of fixing
RECKLI-Formliners must adhered completely. Point or spot gluing will lead to stretching of the formliners during stripping/striking. This type of stretching will lead to raised round areas in the formliner which will show itself as dents in the concrete. It is possible to glue on to steel as well as on timber.

The easiest surface to glue on to is the horizontal surface. Other shutter/mould applications which you might encounter might be inclined, (Picture 17) half or quarter columns etc. On vertical or rounded surfaces the adhesive would flow down to the lowest point leaving insufficient adhesive for a complete fixing. In these applications the Formliner Adhesive should be thickened with our RECKLI-Standardiser 100 to make it more ‘pasty’. Please ask for our special advice.

On inclined or vaulted surfaces the formliners can slide on the adhesive because of their weight and the adhesive is not a contact adhesive. Therefore the formliner must be clamped, propped or pinned with laths to the formwork/mould until the adhesive has cured. It is easier to add the clamps and laths incrementally as you work round the curve or radius.

You should not walk on or kneel on a freshly adhered formliner as this will push away the adhesive under the formliner and can result in dents in the formliner and show itself as circular raised areas in the concrete.

12.2 Adhesive
RECKLI-Formliner Adhesive SO is not a contact adhesive. It is a 2-component adhesive. The mixing ratio is 4:1 by weight. If it is necessary to weigh out smaller quantities of adhesive this must be done by weight. For mixing the adhesive a slow speed electric drill with the correct mixing paddle should be used. (Picture 14) The base solution must be mixed first. The hardener is then added to the base solution and mixed thoroughly. To avoid any ‘soft spots’ or uncured material the adhesive must be placed into another empty, clean container and mixed again. (Picture 15+16)

You should use only as much adhesive as you can work with within the pot-life. The pot-life depends on the ambient temperature but as a rough guide you will have approximately 30-40 minutes at 18-20° C. Adhesive consumption is approx. 750-1000 g/m2. After 24 hours the adhesive is cured. You should give a longer curing time during winter periods with lower temperatures. The formwork, mould or the tilting table can now be used.

12.3 Surface / Formliner rears
All surfaces that you wish to adhere to must be even, clean and dry. Any grease, oil or mud should be sanded off the shutter not washed off. A superior bonding of the formliner to the shutter will be achieved if you sand the rear of the formliners. (Picture 18) A light sanding which will roughen the rear will be sufficient. (12.4.1.1 or 12.4.2.1)
12.3.1 Timber
The most suitable foundation for RECKLI Formliners are new clean untreated plywood sheets designated as suitable for shuttering. (Picture 19) Resin coated plywood plates must be ground off to the rough timber surface.

12.3.2 Steel
Steel must be rust free and the work will benefit from a light sand-blast. If this is not possible the minimum should be the use of an angle grinder to the surface. When using RECKLI Formliner Adhesive SO no primer is required.

12.4 Adhering
12.4.1 Formliners with prefix number 1/..
12.4.1.1 Roughening of the formliner rear
Lay the formliners onto their patterned surface for roughening the rear by using a grinding machine. Circular grinding machines or belt sanders are better suitable for this work than vibratory grinders. The grinding dust must be removed completely by sweeping or rubbing off or by blowing off with compressed air.

12.4.1.2 Checking dimensions with a 'Dry run'
Lay the liners loosely onto the surface to be adhered, adjust them and check against your measurements. Lay out a temporary right angle on to your shutter/mould and lay the liners against this frame. Remove and stack the formliners onto a clean surface.

12.4.1.3 Adhering/Gluing
After mixing the RECKLI-Formliner Adhesive SO (see 12.2) pour it onto the surface to be glued and spread the adhesive evenly over the surface using the supplied serrated trowel. (Picture 19+20) Take care that you spread the adhesive equally. Spread only so much adhesive over the formwork surface as you need for the gluing of one formliner or that you can work with within the adhesive’s pot life. Make sure that the edges of the formliner have sufficient adhesive as this is the most critical area of stress when stripping and concrete will always try to enter at the edge of the glue line and get behind the formliners. Lay the formliner onto the fresh adhesive along the temporary right angle. (Picture 21) Please take care that there are no air bubbles under the liner. The best way to avoid this is by sliding the formliner backwards and forwards on the adhesive. Then apply the adhesive for the next liner. Press the liner against the first one making sure you coat the vertical surface of the first formliner with adhesive to give a grout free join. (Picture 22)

Any surplus that has been squeezed out can be wiped off after fixing or left to dry and sanded down.

Carry on in this order until you reach your total shutter requirement. When fixing the formliner onto the shutter check that the formliners will reach the required point on the shutter/mould. Use rips of plywood / wood and pin down edges of liner to prevent them from lifting. You need gentle pressure on the edges for 24 hrs. minimum. Nail through the liner into the plywood. Note: Do not drive the nails home, excessive pressure will raise the edge of the formliner and take it out of contact with the shutter. If using steel shutters use weight on the timber/ply rips.

12.4.1.4 Gluing onto vaulted or curved surfaces
The formliners 1/.. are flexible and can be deformed to various degrees to accommodate shutter and mould shapes but because they are flexible and have a ‘spring’ value you will have to support/contain the formliners to the shutter/mould profile until the adhesive cures. To reduce the ‘spring’ in the formliner you can cut kerfs in the rear of the formliner which makes curving the formliner easier, on extreme curves you can cut Vs in the back of the liner. The depth of these cuts will depend on the thickness of the formliner. Cut only into the rear thickness of the formliner do not cut near the pattern thickness. (Picture 23+24)
12.4.2 Formliners with prefix number 2/..
12.4.2.1 Roughening of the formliner rear
Before gluing/adhering the rear of the formliner must be roughened. Lay the formliners onto their patterned surface for roughening the rear by using a grinding machine. Circular grinding machines or belt sanders are better suitable for this work than vibratory grinders. The grinding dust must be removed completely by sweeping or rubbing off or blowing off with compressed air.
Then turn the formliner back onto its rear side and roll it up again on to the ‘transport jacket’ (cardboard roll) making sure that formliner is in the right position to be rolled out onto the Formliner Adhesive and shutter. The use of the stripping jackets will make it easier to move the formliners around the working area.

12.4.2.2 Checking dimensions with a ‘Dry run’
Roll the liner loosely onto the surface to be adhered, adjust and check against your measurements. If necessary mark reference points on the shutter/mould. Lay out a temporary right angle on to your shutter/mould and lay the liner against this frame. Roll the liner loose onto the surface to be adhered and straight and fit it exactly. Take note of any pattern that has parallel ribs or grid details.

12.4.2.3 Adhering/Gluing
Mix the adhesive (see 12.2) pour it onto the shutter/mould surface, spread the adhesive with a serrated trowel. Lifting the formliner by its stripping jacket, place it next to the start of the vertical part of the right angle ‘setting out’ frame roll the liner slowly onto the fresh adhesive.
An even and uniform thickness of the adhesive is most important. Check against excess adhesive which can lay in pools.
In moving the adhesive with the serrated trowel you should look for the distinctive ‘tram-line’ effect on the adhesive the shutter/mould surface should be clearly visible.
Now roll the liner onto the fresh adhesive and repeat the pouring, spreading and rolling the liner along the shutter/mould strip by strip until you reach the end of the first liner half.
Make sure that there are no air bubbles under the formliner. Press out the air to the front and the sides. During fixing check that you are reaching your datum/pattern points on the formliner or the parallel running of ribs or joints if there are any in the patterns.
Now roll up the second half of the liner to its middle until you reach where you have started spreading the adhesive for the first half and repeat the first half procedure until you reach the end of the second formliner half.

12.5 Removal of glued formliners
When the formliner adhesive has been mixed and applied correctly the fixing should be considered permanent.
The removal of glued formliners should be considered a major task and would be very difficult to remove them from the shutter/mould without damage to the formliner. Therefore it can be an advantage not to glue the formliner directly onto the structural formwork but onto separate plywood sheets as ‘slave’ formwork and then to fix these to the structural formwork.
If it is absolutely necessary to remove formliners from the shutter/mould you can use the peel-off method. Cut in at the glue line on one corner pulling the formliner up and cutting away at the glue line carry on until you have a large enough piece of formliner to attach a clamp to which can be attached to a crane, fork lift etc. to apply more force while cutting away at the glue line. Any residue can be sanded off the shutter and formliner with a belt sander.
13. Release Agents

13.1 Choice of release agent

The choice and application of the correct release agent is most important to obtain an efficient release and high a quality concrete finish. We supply three different release agents depending on the application.

RECKLI-Stripping Wax TL contains solvents. RECKLI-Stripping Wax TL-W is water-based. These two release agents are more suited to pre-cast concrete. RECKLIStripping Wax TL-SO also contains solvents and is especially designed for in-situ concrete. (Table 2)

13.2 Application

The stripping wax must be brushed or sprayed on a minimum two times.

13.3 Protection of the wax film against weathering

After evaporation of the solvents in Stripping Wax TL and TL-SO or the drying of the water-based Wax TL-W you can use the formliner/mould. To avoid any damage by rain and weather to the wax film you should protect the liners with polyethylene or any light plastic covers. (Picture 28) If the wax film has been reduced or damaged it should be reapplied.

Note: You will find that a ‘fan’ spray will give the best and most even application of the Stripping Wax’s TL and TL-SO. Make sure that your sprayer has solvent resistant gaskets.

14. Bar spacers

Bar spacers that offer the largest contact areas should be used. Chair type spacers give a point loading and will press into the formliner (Picture 29) and will therefore show through the concrete. The minimum concrete covering over the reinforcement is always measured from the deepest point in the concrete surface. Therefore the bar spacers must be set onto the highest points of the formliner pattern. It is of great advantage to hang up the reinforcement for avoiding a loading of the liners. (Picture 30)

Table 2

<table>
<thead>
<tr>
<th>Application</th>
<th>Type</th>
<th>Consumption per coat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-cast concrete</td>
<td>RECKLI-Stripping Wax TL</td>
<td>50 -100 g/m²</td>
</tr>
<tr>
<td></td>
<td>contains solvents</td>
<td>2 coats required</td>
</tr>
<tr>
<td>Pre-cast concrete</td>
<td>RECKLI-Stripping Wax TL-W</td>
<td>50 -100 g/m²</td>
</tr>
<tr>
<td></td>
<td>water-based</td>
<td>2 coats required</td>
</tr>
<tr>
<td>In-situ concrete</td>
<td>RECKLI-Stripping Wax TL-SO</td>
<td>50 -100 g/m²</td>
</tr>
<tr>
<td></td>
<td>contains solvents</td>
<td>2 coats required</td>
</tr>
</tbody>
</table>

15. Concrete Casting

RECKLI-Formliners allow the use of all types of cement based concrete. When using external vibrators you should note that some of the vibration frequencies will be absorbed by the elasticity of the formliner. This can be compensated for by a longer vibration time.
16. Striking / Stripping
16.1 Striking / Stripping timing
It is easier to release RECKLI-Formliners within 24 hrs of casting. Specification and striking times for your particular application should overrule RECKLI’s suggestion.

16.2 Unfixed formliners
Formliners that are laid loosely in the mould will peel off of the concrete during stripping due to their weight. (Picture 11-13) If this should not happen due to the depth of pattern, peel off the liners carefully starting from a corner. Do not tear at the formliner, doing so could exceed its stretching capacity.

16.3. Adhered formliners
Release the pre-cast concrete elements from their moulds or the shutter from the concrete.

The releasing of the element from the mould or the shutters from the concrete should be done slowly and carefully. You must allow the formliners time to stretch and release themselves from the concrete they should need the minimum effort from you. (Picture 31-35)

In every instance avoid the use of sharp or edged tools to hasten the stripping process as damage will be done to the formliners.

17. Cleaning
17.1 Formliner surfaces
When the formliners are provided with the correct amount of Stripping Wax the formliner will be clean and ready for reuse after striking/ stripping, reapply more Stripping Wax ready for the next cast.

If, for any reason it becomes necessary to clean the formliner, take a dry, clean rag and soak it with the relevant Stripping Wax and clean off any cement splashes or dirt on the formliner.

17.2 Tools and equipment
For cleaning tools and equipment after use, use RECKLI-EK-PU Thinner. Clean thoroughly while the formliner adhesive is fresh. Use a brush, it is not sufficient to lay the tools in the thinner. You will not be able to remove the cured 2-component material once it has hardened.
18. Joints / Corners / Edges

18.1. Use of profiled fillets

Profiled fillets for shaping corners, edges and joints should be considered. You must calculate the thickness of the profile as to what part of the pattern it is required to be aligned to i.e., top, middle or bottom. The thickness of the formliner back must also be considered. (see sketch 1-5) (Picture 36-39)
18.2 Formliner joints

When placing formliners with coarse or rank patterns side by side care must be taken to see that the joints from this operation are sealed correctly. RECKLI-Formliner Adhesive can be used after you have glued the formliner down. You can also use standard building One Component Silicone applied to the formliner when the adhesive has cured.

We do not advise butting or mitring formliners together for 90° corners for such kind of patterns. They will never look good.

Make a feature at the corners by introducing a plain band to the pattern, the corner will look sharper and straighter. The formliner will also have a straight line to finish to. (see sketch 6-9)

Of course for patterns with straight lines like ribs and waves it is of advantage to cut the liners mitred for 90° corners. (Picture 40+41)
19. Stop-offs / Counter impressions

19.1 Cuts out
Pattern stop-offs for i.e. windows, doors or lighting can be formed by cutting out the shapes in the formliners and inserting a frame. This is suitable if the same openings are to be used in the same position for every use of the formliner. (Picture 42)

19.2 Pattern stop-offs using RECKLI-Mould Paste PU
If they are to be used once or twice or the formliner needs to be used in a different position then RECKLI-Mould Paste PU should be used. (Picture 43-44)
Select the area for the pattern stop-off and paint on RECKLI-Mould Paste exceeding the area by at least 100 mm all round. On textures, shallow patterns deep ribs place a frame larger than the required stop-off.
Use clay or Plastercine to fill in the space between the bottom of the frame and the pattern detail.
On deep rib patterns, to save material block off with timber pieces. Paint the frame, clay, Plastercine with a coat of Mould Wax. Mix and pour the Mould Paste PU inside the frame forcing the material into the pattern detail with a spatula. You can mix and pour wet on wet material to reach the required level which should be approx. 6mm higher than the highest part of the pattern. Place a clean dry board onto the fresh Mould Paste PU making sure it is level. Leave to harden. When hardened remove from formliner and trim off surplus material for sharp square or cut bevelled edges.

19.2.1 Properties of RECKLI-Mould Paste PU
RECKLI-Mould Paste PU is a pasty elastic 2-component material. The mixing ration is 10:1 by weight. If using only part quantities from a drum the amounts of base solution and hardener must be weighed out, never mix by volume. For mixing use a slow speed electric drill with the correct mixing agitator. Mix only so much paste as you can work with within the pot-life. The pot-life is approx. 10-15 minutes depending on temperature. The curing time is approx. 1 hour. The consumption depends on the type of pattern. The specific weight is approx. 1.4 g/cm3.

19.2.2 Removing of mould wax residues
To avoid different colours in the finished concrete, the area treated with RECKLI-Mould Wax must be removed and cleaned by using RECKLI-Stripping Wax. Soak a clean cloth with RECKLI-Stripping Wax TL, TL-SO or TL/W and wash and clean off the areas where the Mould Wax remains.
If this procedure is not carried out carefully, colour differences in the finished concrete surface should be expected.

19.3 Inverted formliners
For symmetrical patterns (ribs or waves) you can use the same formliner pieces inverted for stop-offs. (Picture 10)

20. Repairing / Patching & Equalizing of Formliners

20.1 Repair
With RECKLI-Elasto Filler you can patch and repair damaged or torn formliners. To get a correct bonding of the Elasto Filler to the formliner the damaged area holes or tears must be clean, dry, dust, oil, wax and grease free. The area to be repaired or filled must be roughened by sand paper.
The filler must be applied quickly and within the pot life time. Surplus material must be removed while the material is still fresh. Texture and shape modelling must be done also within the pot-life.
Any hardened residue can be ground off after approx. 2-3 hours. After 4-5 hours you can load the repaired area.
Tears and splits: Carefully clean and pretreat the sides of the split or tear as above mentioned.
Under the tear lay a piece of polyethylene to avoid unwanted bonding of the paste. Apply RECKLI-Elasto Filler to the sides of the tear and press the tear together.
Surplus filler can be removed with cloth or spatula and is best removed while fresh. Cured filler you can only remove by sanding or cutting. After curing turn the liner on to its front side. Grind out 3-5 cm left and to the right of the tear line and approx. 3 mm deep. Fill this recess with the Elasto Filler and smooth it. After 2-3 hours hardening it can be ground level. Turn the formliner back onto its rear and apply RECKLI-Stripping Wax to the repaired area.

Note: We must categorically point out that a repaired seam cannot possibly give the same result as an undamaged formliner. There is always the possibility of the repaired formliner tear showing through in the patterned surface even when the repair has been carried out extremely careful.
20.1.2 Properties of RECKLI-Elasto Filler
RECKLI-Elasto Filler is composed of 2 liquid components. The mixing ratio is 8:1 by weight. After mixing the hardener with the base component a thixotropic action will take effect after about 2-3 minutes. The thixotropic effect increases until the end of the materials workable time. In this time RECKLI-Elasto Filler can be used as a pourable material and as a filler. The pot-life takes approx. 10 minutes at +18°C. The layer thickness can be up to 10 mm in one application. Consumption depends on the area to be repaired. The specific weight is approx. 1.4 g/cm³.

Note: To extend the workable time of Elasto Filler spread the mixed filler onto a board as a thin coat.

20.2 Equalizing of formliner rears
As already mentioned (see 9.) dimensional tolerances of some mm in the rear wall thickness of the formliners is unavoidable. Therefore, sometimes it is necessary to adjust the thickness of the formliner rear. This you can do by grinding down the thicker one or by increasing the thickness of the thinner one. Turn the liners on to their pattern sides put them together and grind or sand down the thicker parts along the edges in a flat strip until you have reached the thickness of the thinner formliner. (Picture 46)

Be sure to ‘feather’ away the grinding or sanding to the centre of the formliner so that you do not leave a step.

When the difference of the rear thickness is too big, it could be easier not to grind the formliner down but to increase the thickness of the thinner one. Turn the liners on to their pattern side. Clean the area to be levelled by grinding or sanding which also acts as preparing the foundation.

Place a piece of timber along the edge to be levelled to the required height. Paint the board with RECKLI-Mould Wax allow to dry and fix along the formliner edge which you wish to fill level. Mix the RECKLI-Formliner Adhesive S0 (see 12.2) and pour it onto the roughened rear part of the formliner. (Picture 47)

Being a liquid it should find its own level. Take RECKLI-Elasto Filler (see 20.1.2) for the levelling material when the area to be levelled is not too large. (Picture 48)

After the Formliner Adhesive or the Elasto Filler has cured remove the board along the formliner edge. If necessary grade the repair into the formliner by grinding or sanding which will also remove any high spots. The formliner is now ready for use. (Picture 49)

21. Waste disposal
RECKLI-Formliners are made from Poly-urethane Elastomers. The code of the European Waste Register is 12 01 05.
## 22. Product & Consumption Table

### 22.1 Material - Please refer to the relevant technical pamphlets, too.

<table>
<thead>
<tr>
<th>Material</th>
<th>Application</th>
<th>Consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>RECKLI-EK-PU Thinner</td>
<td>Cleaning of tools and equipment</td>
<td>Depending on the degree of contamination</td>
</tr>
<tr>
<td>RECKLI-Elasto Filler</td>
<td>Repair of damaged formliners and equalizing of formliner rears</td>
<td>Depending on the volume of damage or filling, $\gamma = 1.4$</td>
</tr>
<tr>
<td>RECKLI-Formliner Adhesive SO</td>
<td>Adhesive for full entire surfaces on steel or timber and equalizing of formliner rears</td>
<td>Approx. 750-1000 g/m$^2$</td>
</tr>
<tr>
<td>RECKLI-Mould Paste PU</td>
<td>For making pattern stop-offs</td>
<td>Depending on the pattern, $\gamma = 1.4$</td>
</tr>
<tr>
<td>RECKLI-Mould Wax</td>
<td>Release agent for RECKLI-Mould Paste PU and for steel or timber gauges while equalizing of formliner rears</td>
<td>Approx. 150-200 g/m$^2$</td>
</tr>
<tr>
<td>RECKLI-Standardiser 100</td>
<td>Thickener for Formliner Adhesive for gluing on vaulted or curved surfaces</td>
<td>1.5 %</td>
</tr>
<tr>
<td>RECKLI-Stripping Wax TL</td>
<td>Release agent for pre-cast concrete, contains solvent</td>
<td>Approx. 100-150 g/m$^2$ depending on the pattern</td>
</tr>
<tr>
<td>RECKLI-Stripping Wax TL-SO</td>
<td>Release agent for in-situ concrete, contains solvent</td>
<td>Approx. 100-150 g/m$^2$ depending on the pattern</td>
</tr>
<tr>
<td>RECKLI-Stripping Wax TL-W</td>
<td>Release agent for pre-cast concrete, water-based</td>
<td>Approx. 100-200 g/m$^2$ depending on the pattern</td>
</tr>
</tbody>
</table>

### Tool / Equipment - Application / Use

<table>
<thead>
<tr>
<th>Tool / Equipment</th>
<th>Application / Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boards / rips / laths</td>
<td>Restraining of formliner during and after adhering, boards for pressing into Mould Paste PU for stop-offs</td>
</tr>
<tr>
<td>Brush</td>
<td>Cleaning tools</td>
</tr>
<tr>
<td>Buckets</td>
<td>To decant after mixing 2-component material in original container</td>
</tr>
<tr>
<td>Circular grinder / belt grinder</td>
<td>Removing residue of adhesive film / grinding rear of formliner for better bonding / grinding of recesses for strengthening of repaired rears / equalizing of formliner rear</td>
</tr>
<tr>
<td>Cloth / rags</td>
<td>Removing of Mould Wax residues while using Mould Paste PU / soaking up of surplus of Stripping Wax</td>
</tr>
<tr>
<td>Gauging/pointing trowel</td>
<td>Scraping material from pails or drums</td>
</tr>
<tr>
<td>Hand circular saw</td>
<td>Cutting of formliners index 1/.. and pattern stop-offs</td>
</tr>
<tr>
<td>Marker-pencil</td>
<td>Marking of stop-off lines</td>
</tr>
<tr>
<td>Metal / wood straight edges</td>
<td>Straight edges for cutting liner index 2/..</td>
</tr>
<tr>
<td>Mixing paddle</td>
<td>For electric hand drilling machine for mixing 2-component material</td>
</tr>
<tr>
<td>Polyethylene</td>
<td>Protection of formliners and Stripping Wax application against weathering</td>
</tr>
<tr>
<td>RECKLI-Formliner Knife / hand panel saws</td>
<td>Cutting of formliner index 2/..</td>
</tr>
<tr>
<td>Sandpaper</td>
<td>Cleaning and sanding of formliners / removal of surplus Elasto Filler and levelling of repaired areas</td>
</tr>
<tr>
<td>Screw clamps</td>
<td>To apply pressure to boards while Formliner Adhesive cures / clamp preparation for peeling off of glued formliners</td>
</tr>
<tr>
<td>Serrated trowel</td>
<td>Spreading of Formliner Adhesive</td>
</tr>
<tr>
<td>Slow speed electric hand drill</td>
<td>Mixing of 2-component material</td>
</tr>
<tr>
<td>Spatula</td>
<td>Mixing and application of Elasto Filler, cleaning and pointing joint lines and smaller quantities of Formliner Adhesive</td>
</tr>
<tr>
<td>Spray</td>
<td>Application of Stripping Wax</td>
</tr>
<tr>
<td>Stanley or RECKLI-Formliner Knife</td>
<td>Peel off of adhered liners from form-work</td>
</tr>
<tr>
<td>Tape measure</td>
<td>Checking of formliner measurements</td>
</tr>
<tr>
<td>Weighing scales</td>
<td>Weighing out of smaller quantities of 2-component materials</td>
</tr>
</tbody>
</table>
For the production of premium exposed aggregate concrete, available in different washing depths

**RECKLI CR Type N**

is a solvent-based concrete surface deactivating agent used to produce ne to coarse exposed aggregate concrete using the negative or positive process. RECKLI CR Type N is available in 3 different washing depths. (Light / Medium / Heavy)

**Benefits:**
- Homogeneous washing pattern
- Quick and easy washing
- Low consumption
- Very short drying time
- Easy formwork cleaning

**Areas of Application:**
- Architectural façade elements
- Precast concrete elements
- Cast-in-place concrete elements
- Roughening of separating joints
- Cast stone and general concrete products

Please follow the instructions of the corresponding technical data sheet when applying the product.

<table>
<thead>
<tr>
<th>RECKLI CR Type N</th>
<th>Colour</th>
<th>Size</th>
<th>Washing depth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Light</td>
<td>brown</td>
<td>2-4/8 mm</td>
<td>Approx. 1.0 mm</td>
</tr>
<tr>
<td>Medium</td>
<td>grey</td>
<td>8-12 mm</td>
<td>Approx. 3.0 mm</td>
</tr>
<tr>
<td>Heavy</td>
<td>red-violet</td>
<td>16-22 mm</td>
<td>Approx. 6.0 mm</td>
</tr>
</tbody>
</table>

Washing depths are approximate only. They depend on the cement grade, w/c ratio, aggregate mix and powder ratio. We will be pleased to assist you with the selection of the most appropriate type.
1. Definitions
1.1 “Seller” means Global Enterprise Company Pty Ltd T/A Reckli Form Liners & Moulds, its successors and assigns and any person acting on behalf of and with the authority of Global Enterprise Company Pty Ltd T/A Reckli Form Liners & Moulds.
1.2 “Buyer” means the person/party purchasing the Goods as specified in any invoice, document or order and if there is more than one Buyer a reference to each Buyer jointly and severally.
1.3 “Goods” means all Goods or Services supplied by the Seller to the Buyer at the Buyer’s request from time to time (where the context so permits the terms ‘Goods’ or ‘Services’ shall be interchangeable for the other).
1.4 “Price” means the Price payable for the Goods as agreed between the Seller and the Buyer in accordance with clause 4 below.

2.0 Acceptance
2.1 The Buyer is taken to have exclusively accepted and is immediately bound, jointly and severally, by these terms and conditions if the Buyer places an order for or accepts delivery of the Goods.
2.2 These terms and conditions may only be amended with the Seller’s consent in writing and shall prevail to the extent of any inconsistency with any other document or agreement between the Buyer and the Seller.
2.3 Goods are supplied by the Seller only on the terms and conditions of trade herein to the exclusion of anything to the contrary in the terms of the Buyer’s order notwithstanding that any such order is placed on terms that purport to override these terms and conditions of trade.

3.0 Change in Control
3.1 The Buyer shall give the Seller not less than fourteen (14) days prior written notice of any proposed change of ownership of the Buyer and/or any other change in the Buyer’s details (including but not limited to changes in the Buyer’s name, address, contact phone or fax number/s, or business practice). The Buyer shall be liable for any loss incurred by the Seller as a result of the Buyer’s failure to comply with this clause.

4.0 Price and Payment
4.1 At the Seller’s sole discretion the Price shall be either:
(a) as indicated on any invoice provided by the Seller to the Buyer; or
(b) the Seller’s quoted price (subject to clause 4.2) which will be valid for the period stated in the quotation or otherwise for a period of thirty (30) days.
4.2 The Seller reserves the right to change the Price if a variation to the Seller’s quotation is requested. Any variation from the plan of scheduled works or specifications (including, but not limited to, any variation as a result of additional works required due to unforeseen circumstances change to design or as a result of any increase to the Seller’s in the cost of materials and labour) will be charged for on the basis of the Seller’s quotation and will be shown as variations on the invoice. Payment for all variations must be made in full at the time of completion.
4.3 At the Seller’s sole discretion a non-refundable deposit may be required.
4.4 Time for payment for the Goods being of the essence, the Price will be payable by the Buyer on the date/s determined by the Seller, which may be:
(a) on delivery of the Goods;
(b) the date specified on any invoice or other form as being the date for payment; or
(c) failing any notice to the contrary, the date which is seven (7) days following the date of any invoice given to the Buyer by the Seller.
4.5 Payment may be made by cash, cheque, bank cheque, electronic/on-line banking, credit card (plus a surcharge of up to two and a half percent (2.5%) of the Price), or by any other method as agreed to by the Buyer and the Seller.
4.6 The Seller reserves the right to change the Price if the Buyer does not include GST. In addition to the Price the Buyer must pay to the Seller an amount equal to any GST the Buyer is required to pay for any supply by the Buyer under this or any other agreement for the sale of the Goods. The Buyer must pay GST, without deduction or set off of any amount, at the same time and on the same basis as the Buyer pays the Price. In addition the Buyer must pay any other taxes and duties that may be applicable in addition to the Price except where they are expressly included in the Price.

5.0 Delivery of Goods
5.1 Delivery (“Delivery”) of the Goods is taken to occur at the time that:
(a) the Buyer or the Buyer’s nominated carrier takes possession of the Goods at the Seller’s address; or
(b) the Seller (or the Seller’s nominated carrier) delivers the Goods to the Buyer’s nominated address even if the Buyer is not present at the address.
5.2 At the Seller’s sole discretion the cost of delivery is either included in the Price or is in addition to the Price.
5.3 The Buyer must take delivery by receipt or collection of the Goods whenever they are tendered for delivery. In the event that the Buyer is unable to take delivery of the Goods as arranged then the Seller shall be entitled to charge a reasonable fee for redelivery and/or storage.
5.4 Payment of the Goods is by a party nominated by the Seller is deemed to be delivery to the Seller for the purposes of this agreement.
5.5 The Seller may deliver the Goods in separate instalments. Each separate instalment shall be invoiced and paid in accordance with the provisions in these terms and conditions.
5.6 At any time or date given by the Seller to the Buyer is an estimate only. The Buyer must still accept delivery of the Goods even if late and the Seller will not be liable for any loss or damage incurred by the Buyer as a result of the delivery being late.

6.0 Risk
6.1 Risk of damage to or loss of the Goods passes to the Buyer on Delivery and the Buyer must insure the Goods or on delivery.
6.2 If any of the Goods are damaged or destroyed following delivery but prior to ownership passing to the Buyer and/or any other change in the Buyer’s details (including but not limited to changes in the Buyer’s name, address, contact phone or fax number/s, or business practice). The Buyer shall be liable for any loss incurred by the Buyer as a result of the delivery being late.

7.0 Title
7.1 The Seller and the Buyer agree that ownership of the Goods shall not pass until:
(a) the Buyer has paid the Seller all amounts owing to the Seller; and
(b) the Buyer has met all of its other obligations to the Seller.
7.2 Receipt by the Seller of any form of payment other than cash shall not be deemed to be payment until that payment has been honoured, cleared or recognised.
7.3 It is further agreed that:
(a) until ownership of the Goods passes to the Buyer, the Seller is entitled to receive all insurance proceeds payable for the Goods. The production of a receipt by the Seller of any form of payment other than cash shall not be deemed to be payment until that payment has been honoured, cleared or recognised.

8.0 Personal Property Securities Act 2009 (“PPSA”)
8.1 In this clause financing statement, financing change statement, security agreement, and security interest has the meaning given to it by the PPSA.
8.2 Upon assenting to these terms and conditions in writing the Buyer acknowledges and agrees that these terms and conditions constitute a security agreement for the purposes of the PPSA and creates a security interest in all Goods that have previously been supplied and that will be supplied in the future by the Seller to the Buyer.
8.3 The Buyer undertakes to:
(a) promptly sign any further documents and/or provide any further information (such information to be complete, accurate and up-to-date in all respects) which the Seller may reasonably require to:
(i) register a financing statement or financing change statement in relation to a security interest on the Personal Property Securities Register;
(ii) register any other document required to be registered by the PPSA; or
(iii) correct a defect in a statement referred to in clause 8.3(a)(i) or 8.3(a)(ii);
(b) indemnify, and upon demand reimburse, the Seller for all expenses incurred in registering a financing statement or financing change statement on the Personal Property Securities Register established by the PPSA or releasing any Goods charged thereby;
(c) not register a financing change statement in respect of a security interest without the prior written consent of the Seller;
(d) not register, or permit to be registered, a financing statement or a financing change statement in relation to the Goods in favour of a person other than the Seller without the prior written consent of the Seller; and
(e) immediately advise the Seller of any material change in its business practices of selling the Goods which would result in a change in the nature of proceeds derived from such sales.
8.4 The Seller and the Buyer agree that sections 96, 115 and 125 of the PPSA do not apply to the security agreement created by these terms and conditions.
8.5 The Buyer waives their rights to receive notices under sections 95, 118, 121(a), 130, 132(3)(b) and 132(4) of the PPSA.
8.6 The Buyer waives their rights as a grantor and/or a debtor under sections 142 and 143 of the PPSA.
8.7 Unless otherwise agreed to in writing by the Seller, the Buyer waives their right to receive a verification statement in accordance with section 158 of the PPSA.
8.8 The Buyer must unconditionally ratify any actions taken by the Seller under clauses 8.3 to 8.5.
8.9 Subject to any express provisions to the contrary nothing in these terms and conditions is intended to have the effect of contracting out of any of the provisions of the PPSA.

9.0 Security and Charge
9.1 In consideration of the Seller agreeing to supply the Goods, the Buyer charges all of his rights, title and interest (whether joint or several) in any land, mortgagor or other assets capable of being charged, owned by the Buyer now or in the future to the Seller for the purposes of this security agreement (including, but not limited to, the payment of any money).
9.2 The Buyer indemnifies the Seller from and against all the Seller’s costs and disbursements including legal costs on a solicitor and own client basis incurred in exercising the Seller’s rights under this clause.
9.3 The Buyer irrevocably appoints the Seller and each director of the Seller as the Buyer’s true and lawful attorneys to perform all necessary acts to give effect to the provisions of this clause 9 including, but not limited to, signing any document on the Buyer’s behalf.

10.0 Defects, Warranties and Returns, Competition and Consumer Act 2010 (CCA)
10.1 The Buyer must inspect the Goods on delivery and must within forty-eight (48) hours of delivery notify the Seller of any evident defect/damage, shortage in quantity, or failure to comply with the description or quantity. The Buyer must notify any other alleged defect in the Goods as soon as reasonably possible after any such defect becomes evident. Upon such notification the Buyer must allow the Seller to inspect the Goods.
10.2 Under applicable State, Territory and Commonwealth Law (including, without limitation the CCA), certain statutory implied guarantees and warranties (including, without limitation the statutory guarantees under the CCA) may be implied into these terms and conditions (Non-Excluded Guarantees).
10.3 The Seller acknowledges that nothing in these terms and conditions purports to modify or exclude the Non-Excluded Guarantees.
13.3 Cancellation

13.1 The Seller may cancel any contract to which these terms and conditions apply or cancel delivery of Goods at any time before the Goods are delivered by giving written notice to the Buyer. On giving such notice the Seller shall repay to the Buyer any money paid by the Buyer for the Goods. The Seller shall not be liable for any loss or damage whatsoever arising from such cancellation.

13.2 In the event that the Buyer cancels delivery of Goods the Buyer shall be liable for any and all loss incurred (whether direct or indirect) by the Seller as a direct result of the cancellation (including, but not limited to, any loss of profits).

13.3 Cancellation of orders for Goods made to the Buyer’s specifications, or for non-stocklist items, will be limited to, any loss of profits).

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13.3 Cancellation of orders for Goods made to the Buyer’s specifications, or for non-stocklist items, will be limited to, any loss of profits).

14.2 The Buyer agrees that the Seller may exchange information about the Buyer with those credit providers and with related body corporates for the following purposes:

(a) to assess an application by the Buyer and/or
(b) to notify other credit providers of a default by the Buyer and/or
(c) to exchange information with other credit providers as to the status of this credit account, where the Buyer is in default with other credit providers; and/or
(d) to assess the creditworthiness of the Buyer including the Buyer’s repayment history in the preceding two years.

14.3 The Buyer consents to the Seller being given a consumer credit report to collect overdue payment on commercial credit.

14.4 The Buyer agrees that personal credit information provided may be used and retained by the Seller for the following purposes and for other agreed purposes or required by:

(a) the provision of Goods; and/or
(b) analysing, verifying and/or checking the Buyer’s credit, payment and/or status in relation to the provision of Goods; and/or
(c) processing of any payment instructions, direct debit facilities and/or credit facilities requested by the Buyer; and/or
(d) enabling the collection of amounts outstanding in relation to the Goods.

14.5 The Seller may request the Buyer to provide the Buyer to a CRB for the following purposes:

(a) to obtain a consumer credit report;
(b) allow the CRB to create or maintain a credit information file about the Buyer including credit history.

14.6 The information given to the CRB may include:

(a) personal information as outlined in 14.1 above;
(b) name of the credit provider and that the Seller is a current credit provider to the Buyer;
(c) whether the credit provider is a licensee;
(d) type of consumer credit;
(e) details concerning the Buyer’s application for credit or commercial credit (e.g. date of commencement/ termination of the credit account and the amount requested);
(f) advice of consumer credit defaults, overdue accounts, loan repayments or outstanding monies which are overdue by more than sixty (60) days and for which written notice for request of payment has been made and debt recovery action commenced or alternatively that the Buyer no longer has any overdue accounts and the Seller has been paid or otherwise discharged and all details surrounding that discharge(e.g. dates of payments);
(g) information that, in the opinion of the Seller, the Buyer has committed a serious credit infringement;
(h) advice that the amount of the Buyer’s overdue payment is equal to or more than one hundred and fifty dollars ($150).

14.7 The Buyer shall have the right to request (by e-mail) from the Seller:

(a) a copy of the information about the Buyer retained by the Seller and the right to request that the Seller correct any incorrect information; and
(b) that the Seller does not disclose any personal information about the Buyer for the purpose of direct marketing.

14.8 The Seller will destroy personal information upon the Buyer’s request (by e-mail) if it is no longer required unless it is required in order to fulfill the obligations of this agreement or is required to be maintained and/or stored in accordance with the law.

14.9 The Buyer can make a privacy complaint by contacting the Seller via e-mail. The Seller will respond to that complaint within seven (7) days of receipt and will take all reasonable steps to make a decision as to the complaint within thirty (30) days of receipt of the complaint. In the event that the Buyer is not satisfied with the resolution provided, the Buyer can make a complaint to the Information Commissioner at www.oaic.gov.au.

15.0 General

15.1 The failure by the Seller to enforce any provision of these terms and conditions shall not be treated as a waiver of that provision, nor shall it affect the Seller’s right to subsequently enforce that provision. If any provision of these terms and conditions shall be invalid, void, illegal or unenforceable the validity, existence, legality and enforceability of the remaining provisions shall not be affected, prejudiced or impaired.

15.2 These terms and conditions and any contract to which they apply shall be governed by the laws of Victoria in which the Seller has its principal place of business, and are subject to the jurisdiction of the courts in Victoria.

15.3 Subject to clause 10, the Seller shall be under no liability whatsoever to the Buyer for any indirect and/or consequential loss and/or expense (including loss of profit suffered by the Buyer arising out of a breach by the Seller of these terms and conditions (alternatively the Seller’s liability shall be limited to damages which under no circumstances shall exceed the Price of the Goods).

15.4 The Buyer shall not be entitled to set off against, or deduct from the Price, any sums owed or claimed to be owed to the Buyer by the Seller nor to withhold payment of any invoice because part of that invoice is in dispute.

15.5 The Seller may license or sub-contract all or any part of its rights and obligations without the Buyer’s consent.

15.6 The Buyer agrees that the Seller may amend these terms and conditions at any time. If the Seller makes a change to these terms and conditions, then that change will take effect from the date on which the Seller notifies the Buyer of such change. The Buyer will be taken to have accepted such changes if the Buyer makes a further request for the Seller to provide the Goods to the Buyer.

15.7 Neither party shall be liable for any default due to any act of God, war, terrorism, strike, lock-out, industrial action, fire, flood, storm or other event beyond the reasonable control of either party.

15.8 The Buyer warrants that it has the power to enter into this agreement and has obtained all necessary authorisations to allow it to do so, it is not insolvent and that this agreement creates binding and valid legal obligations on it.
...Why Reckli?

- **Reliability** ... German quality.
- **Experience** ... We've been making moulds since 1968.
- **Care** ... We are focused on the best visual result.
- **Know how** ... We've been involved in Thousands of projects worldwide.
- **Local office** ... Supported by an international network with offices in over 60 countries.
- **Integrity** ... Be assured that we will work ethically and professionally.