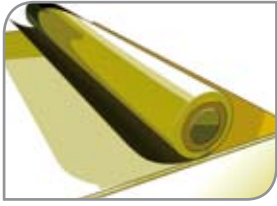




## Processing guidelines for KömaFoam lightweight panels



## Laminating



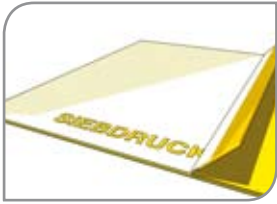
Manual & mechanical laminating, page 6

## Cutting out



Cutting out, page 10

## Screen printing



Screen printing, page 7

## Punching



Punching, page 11

## Digital printing



Digital direct printing, page 7

## Joining

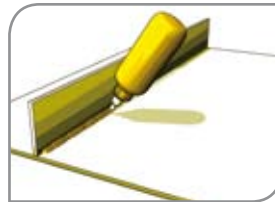


Slot connections, page 11

## Decorative techniques

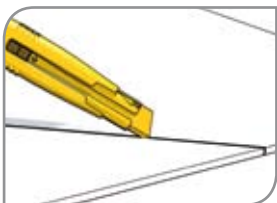


Painting, coating, spraying, page 8



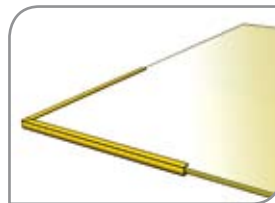
Glued connections, page 12

## Cutting

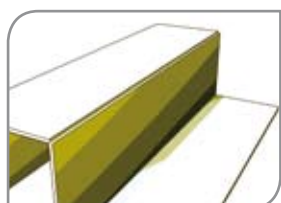


Edging/trimming, page 9

## Framing



Framing, edge protection, page 13

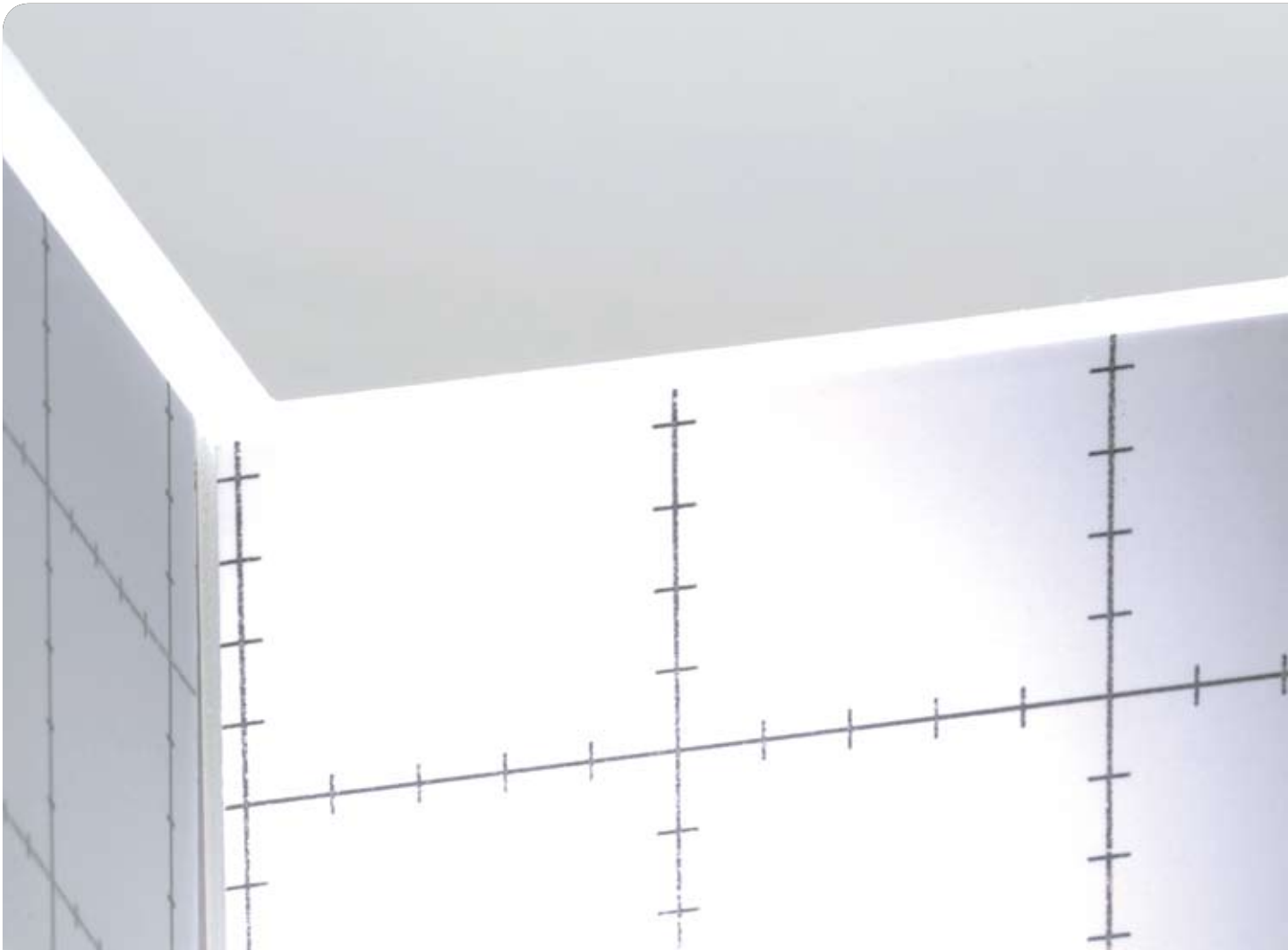


Three-dimensional shapes, page 9

## Mounting



Fastening, page 13



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## Processing and mounting made easy

**KömaFoam lightweight panels make an ideal base for signs, decorations and store furnishings. They offer good stability at a low weight. Visual marketing designers appreciate the universal versatility of the lightweight panels. From processing to final application, KömaFoam ensures optimal cost-efficiency and top quality.**

Both the processing possibilities and the application variety of KömaFoam lightweight foam panels are enormous. Outstanding material properties ensure this:

- light weight
- high durability
- can be printed and laminated on both sides  
(do not use water-based inks)
- brilliant surface finish
- good flexural stiffness
- high dimensional stability
- can be easily glued  
(do not use solvent-based adhesives)

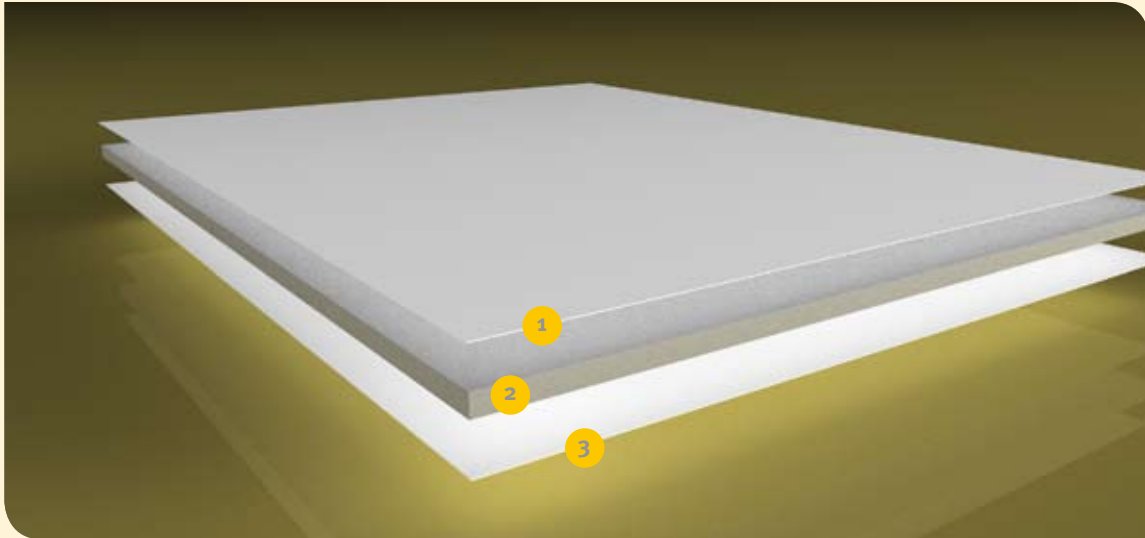
Processing possibilities at a glance	KömaFoam Basic	KömaFoam Standard	KömaFoam Flat	KömaFoam Adhesive
Lamination	•			•
Screen printing / Digital printing	•	•	•	
Format/edge trimming with cutter knife	•	•	•	•
Cutting out	•	•	•	•
Punching	•	•	•	
Butt adhesion	•	•	•	•
Structural forming	•	•	•	•
Painting/spraying	•	•	•	
Covering with fabric	•	•	•	•



## On inner and outer values

The term “lightweight panel” already says it all – yet the performance data of KömaFoam lightweight panels is sure to surprise even experienced specialists. For instance, the KömaFoam 5 mm standard panel weighs just 1,700 grams in the 2,440 x 1,220 mm format – corresponding to 3.0 square metres. Low weight is

made possible through an innovative polystyrene foam technology in which millions of air-filled bubbles form a honeycombed, high-strength structure. Embedded in two stable overlays, the foam core provides an outstanding dimensional and printing stability.



1. Overlay
2. Polystyrene foam core
3. Overlay

## Important notes:

### Packaging

Special corrugated cardboard cartons protect the panels from damage during transport.

### Storage

The panels should always be stored dry and lying flat on an even base at temperatures between 15 and 25 °C. To prevent any dents or pressure marks from forming, no other objects should be placed on the KömaFoam lightweight panels during storage.

### Removing and handling panels

Clean hands are mandatory when removing panels for further processing. If possible, wear white cotton gloves for direct contact with the panels. This will protect the panel overlays from fingerprints and soiling.

After removing a panel from the package unit, please be sure to close it again.

Due to the sensitivity of edges to pressure, panels should not to be knocked or piled with force. To avoid direct contact with the floor, panel scraps can be used for edge protection.

### Disposing of panel scraps

Polystyrene foam panel clippings can either be thermally recycled or disposed of as domestic refuse.

### Processing

Cutting should take place at temperatures between 15 and 25 °C. In the case of substantial temperature differences from the storage temperature, the panel material should first become acclimatised before processing. Before printing, the side to be printed on should be cleaned with a dust-trapping or anti-static cloth. Cleaners, including PCR rollers, are also suitable for clearing the surface from dust or dirt particles. KömaFoam panels can be printed on using commercial UV-hardening and solvent-based inks. Please note the printer manufacturer’s ink profiles for the material.

If possible, place the panels on an even surface after printing for ventilation.

## Laminating

### Manual cold lamination, dry

The masking paper should be detached about 3 cm from the adhesive film and folded back with a sharp bend. Avoid any contact with the exposed adhesive area.

Place the lamination motif on the panel and align it. The motif you have placed on the panel should not come into contact with the adhesive area, as it will be held aloft by the folded paper. Slowly and continuously remove the masking paper with one hand; at the same time, press the lamination motif over its entire surface and as evenly as possible using a cloth or hand-roller. Now you can cut the motif into the end format with a cutter knife or cutting machine.

### Mechanical cold lamination, dry

The masking paper should be detached about 3 cm from the adhesive film and folded back with a sharp bend. Avoid any contact with the exposed adhesive area. Place the lamination motif on the panel and align it. The motif you have placed on the panel should not come into contact with the adhesive area, as it will be held aloft by the folded paper. Press the edge of the image over its entire surface in the adhesive area using a cloth or hand-roller.

Adjust the roll pressure and the roll gap. The gap should be 0.5 to 1 mm less than the KōmaFoam panel thickness. Now guide the panel with the adhered motif straight into the laminating machine's roll gap.

For large-scale work, we recommend placing the lamination motif with the image facing downwards above the top laminating roll. This ensures that the motif is laminated onto the panel without any creases across the entire format. Now pull the lamination motif tight on the roller with one hand and remove the masking paper evenly with the other hand. Do not interrupt the lamination process – otherwise unattractive creases could develop.

Now you can cut the layout into the end format using a cutter knife or cutting machine.



## Screen printing

KömaFoam panels can be printed with commercial acrylic inks (do not use water-based inks).

Brilliant printed results can be obtained with all KömaFoam panel surfaces by observing these guidelines for grid screen printing:

- 24 line per centimetre screen ruling
- Squeegee hardness 60 – 65 shore A
- Use optimal fabric tension to keep the off-contact distance as minimal as possible

See the manufacturers' addresses on page 15

### *Tip!*

The squeegee should always cover the panel format completely – even if you only intend to process smaller areas. This will help you to avoid pressure marks and streaks. Incidentally: Rounded squeegee corners decrease the pressure on the edges.

## Digital direct printing

KömaFoam lightweight panels open up new possibilities when used for large-format printing and quick motif changes. Thanks to their outstanding material properties, KömaFoam lightweight panels fully meet

the high quality requirements of inkjet direct printing procedures. With optimised ink adhesion, the primer finish ensures a finely graduated printed image.



### *Tip!*

To test printing settings, it's best to use KömaFoam scraps!

## Decorative techniques

### Painting/coating/spraying

KömaFoam Flat has proved itself over the years as an ideal base for painting and coating. Good results with optimal coating are always obtained with solvent-based markers, inks, paints and sprays (do not use water-based inks). Due to the plastic-coated surface of KömaFoam Flat, we recommend using solvent-based inks and paints.

### Covering

All KömaFoam panels are highly suitable for fabric covering. The fabric can be attached on the back side with decorative needles, Velcro, foam band or staples, depending on the fabric structure.

### Applying foil wraps

The plastic-coated surfaces of KömaFoam Flat make it possible for applications to be repositioned spontaneously without any damages. Pull off the application tape slowly at a flat angle, so that the overlay is not partially loosened from the foam core. Surplus glue can be removed using methylated spirit.



### Tip!

Incidentally, you can coat or roll paint the edges of the polystyrene foam core with solvent-based colours. This offers additional design possibilities.







## Edging/trimming

### Blade cutting, manually with cutter knife (1)

Use a cutting mat as a base. You can measure the cut directly on the panel. Position the cutting ruler and secure it with your hand so that it doesn't slip. The cutter knife should be guided as flatly as possible without pauses along the cutting edge. Panel thicknesses over 5 mm are best cut with numerous flat drawing cuts.

### Blade cutting, manually with guided cutting attachment (2) (MARTOR-Condex)

Use a cutting mat as a base. You can measure the cut directly on the panel. Position the guide rail and secure it with your hand so that it doesn't slip. Now lower the cutting head and guide it in a single sweep across the panel.

Gate shears and laser cutters should not be used due to the danger of material deformations and messy edges. Thermal cutting is unfeasible due to the thermoplastic panel core.

### Tip!

You can only obtain clean edges with sharp blades. Smooth down the joint offset with fine sandpaper. Incidentally, by adhering a thin layer of foam rubber across the entire surface, you will make additionally sure that the cutting ruler and the steel/aluminium rails won't slip.



## Three-dimensional shapes

### Bending thin panels (3 – 5 mm) on the edge of the table

Mark the positions in which the panel is to be bent on the cut panel. Then place it on a table and slowly fold

the material on the edge of the table in line with the markings. Be careful not to tear the panel overlays in the process. You can form a shape with the resulting segments.



## Cutting out (contour cutting), manually/mechanically

### Cutting out, manually with cutter knife (1)

First transfer the contour onto the panel. It's best to cut out small radiuses in segments. In contrast, best results with larger radiuses and straight sections can be obtained using the longest guided cuts possible without pausing.

### Cutting out, manually with a scroll jigsaw

First transfer the contour onto the panel. The jigsaw should be adjusted to high-speed for cutting out. Use suitable blades, such as the BOSCH T113A. Then, using minimal pressure, cut along the contour. It's best to cut out small radiuses in segments. Before proceeding, be sure to remove sawdust by blowing on the panel or using an anti-static cloth.

### Cutting out, mechanically with an oscillating tool (2)

KömaFoam panels can be oscillation cut up to a thickness of 10 mm. The precise installation is carried out with the help of a laser fitting system. Even the finest contour lines can be carried out with the oscillating blade of a knife that is guided tangentially.

We advise against using milling machines due to the accumulation of dust and the electrostatic charging of the material.

See the manufacturers' addresses on page 15



### Tip!

You can only obtain clean edges with sharp blades. Smooth down the joint offset with fine sandpaper.



## Punching

KömaFoam panels up to a panel thickness of 10 mm can be processed using conventional die-cutting platen presses. For this process, punching tools with finely serrated punching lines are recommended. For panel thicknesses up to 5 mm, it is normally possible to use straight punching lines. However, due to mate-

rial displacement, this can lead to slightly deformed edges (bompage effect). You should always fully line the cutting die with compressible, elastic materials – these function as ejectors. For the lining, always take the panel thickness and the punching line height into account.

## Slot connections

### Connector slot mounts (e.g. for posters)

Cut the supporting pieces into suitable forms. You should then cut matching connector slots into the back of the poster panel. You will obtain an optimal hold if you cut the connector slots somewhat smaller than the material thickness of the supporting piece. Then piece together the poster and the supporting pieces so that a slight pressure is formed.

### Grid structures using crosshatch technique (e.g. for shelving elements)

Grids are made with evenly arranged connector slots. In this process, the connector slots must be able to optimally accommodate the material thickness. Sections pieced together into a grid are resilient yet light – the grid can either be mounted or placed up on an underlying surface.

### Crosshatch construction (e.g. for decorative trees)

Cut the panel segments to the same size. In both parts, cut a connector slot to the centre – in the lower segment from above and in the upper segment from below. Then piece the individual segments together.



### Tip!

It's worth saving scraps of KömaFoam. You can always use them as supporting pieces and reinforcements. But they also work well as scrapers for surplus glue or as edge protectors.

## Glued connections

We recommend adhesive bonding for permanent, large-format applications – for example, when building scenery. The segments can be quickly and reliably joined. Additionally, they can be reinforced by gluing added strips to the back side.

Glued surface layers can be quickly formed and are extremely practical for model building and various modelling techniques used in architecture and design development – also perfect for the production of 3-D models.

### Do not use solvent-based adhesives.

#### Adhering surface layers (1)

The easiest technique used in adhesive bonding is to glue surface layers together. Panel bonds in variable strengths can be produced with contact adhesive, double-sided tape or self-adhesive foam tape strips. Conventional model-building tools, including cutter knives, wood-carving knives, graters, files and sandpaper, are suitable for further processing.

#### Butt joint, bluntly glued (2)

Panel segments can be permanently joined by gluing the abutting edges together with contact adhesive. Depending on the size and the desired stability, cut-out strips of panel can be added on the back side over the abutting edge for additional reinforcement.

#### Inserted T-supports, glued

Cut a support and two strips for stabilising. The two stabilising strips should be glued parallel to one another on the back side of the panel segment, creating a connecting slot for the support. You will obtain an optimal hold if you make the connector slot somewhat smaller than the material thickness of the supporting strip. Then slide the supports into the slot, ensuring that a slight pressure is formed – be sure to coat the three contact sides with glue beforehand.

#### Structural H-support connector, glued

Two panel surfaces can be glued together permanently with a structural H-support connector. Essentially, the procedure is the same as constructing an inserted T-support – when joining two panels, however, a structural H-profile is created. The number of H-supports required depends on the size and desired stability.



### Tip!

It's best to spread the contact adhesive (such as UHU®) on the foam edges and surfaces using a scrap of KömaFoam. In general, KömaFoam scraps are highly useful: as mounts, supporting pieces and also reinforcements for structural joints. When using contact adhesive, the material should always be allowed to ventilate well.



## Framing / edge protection

For sophisticated framings, specialist shops offer stylish plastic and aluminium profiles in various colours and designs.

KömaFoam is an ideal solution for light, stable frame mats. Its bright white, velvety-matt surfaces lend photographs or graphic art a high-end frame. Naturally, the material is pH-neutral.

### Gluing open edges with stripes (1)

Stripes from specialist shops – you can also make these yourself from thin PVC panels – are cut to length with the cutter knife and then glued to the panel edges with contact adhesive.

### Framing the panel with clamp moulding (U, H and W-PVC profiles)

First mitre-cut the clamp moulding. Carefully edge the KömaFoam panel and slide in the moulding. If the frame will not carry a load, no additional gluing is necessary. For load-bearing H and W profiles, however, a further gluing of the panel edge is usually necessary.

### Bordering the panel with aluminium frame moulding

Mitre-cut the frame moulding. Then join the non-clamp moulding with the corner connectors. The KömaFoam panel is only inserted before mounting the last strip of moulding. Additional gluing is not necessary.

## Fastening

Naturally, KömaFoam panels can also be secured using nails and wood screws. For aesthetically ambitious presentations, however, it is often preferable to create adhesive bonds using foam tape or Velcro.

You can obtain an attractive effect of depth quite easily by cutting spacers made of KömaFoam scraps yourself. Special KömaFoam metal hooks, which can be securely embedded in the polystyrene foam, are suitable for ceiling danglers. But normally a simple borehole and nylon thread are enough to hang decorations, which are usually lightweight.

### Fastening with Velcro strips

Secure both sides of the hook and loop tape together before cutting the Velcro strips to the desired length. Make sure that the surfaces to be glued are clean and also free of any grease or oil. Now, using light pressure, you can attach the adhesive sides of the hook and loop tapes to the panel and the background.

When fastening with Velcro, please make sure that the back side of the KömaFoam panel is always attached to the loop side – this will ensure that you avoid scratch marks on images that could otherwise result from an open hook tape. You can obtain a stronger joint by increasing the number of Velcro strips or the length of the strips.



### Tip!

KömaFoam scraps can help you determine how much of the image you would like to crop in the frame. A scrap of KömaFoam can also be useful as a scraper for spreading contact adhesive. When using contact adhesive, the material should always be allowed to ventilate well.

## Examples of use





## Useful addresses

**Biedermann GmbH**  
Heubergstrasse 19  
70806 Kornwestheim, Germany  
Tel: +49 (0)7154 83990  
Fax: +49 (0)7154 839983  
Web: [www.biedermannmbh.de](http://www.biedermannmbh.de)  
E-mail: [info@biedermannmbh.de](mailto:info@biedermannmbh.de)

*Products:*  
*Laminators, cover, sealing and finishing films,  
mat cutting machines*

**Keencut Ltd.**  
Baird Road  
Willowbrook Industrial Estate  
Corby  
Northants  
England, NN 17 5ZA  
Tel: +44 1536 263 158  
Fax: +44 1536 204 227  
Web: [www.keencut.com](http://www.keencut.com)  
E-mail: [info@keencut.co.uk](mailto:info@keencut.co.uk)

*Products:*  
*Cutting bars, mat cutters,  
rotational cutting devices, rulers*

**Logan Graphic Products, Inc.**  
1100 Brown Street  
Wauconda, IL 60084 USA  
Tel: +1 800 331 6232  
Fax: +1 800 331 6329  
Web: [www.logangraphic.com](http://www.logangraphic.com)  
E-mail: [info@logangraphic.com](mailto:info@logangraphic.com)

*Products:*  
*Freestyle cutting equipment*

**Martor KG**  
Heider Hof 60  
42653 Solingen, Germany  
Tel: +49 (0)212 258050  
Fax: +49 (0)212 2580555  
Web: [www.martor.com](http://www.martor.com)  
E-mail: [info@martor.com](mailto:info@martor.com)

*Products:*  
*Knives, blades, safety knives, knives for graphics  
and model making, scrapers*

**Zünd Systemtechnik AG**  
Industriestrasse 8  
CH – 9450 Altstätten  
Tel: +41 71 757 81 00  
Fax: +41 71 757 81 11  
Web: [www.zund.com](http://www.zund.com)  
E-mail: [info@zund.com](mailto:info@zund.com)

*Products:*  
*Fret saw systems*

**Multi Cut GmbH**  
Britzer Strasse 54  
16225 Eberswalde, Germany  
Tel: +49 (0)3334 277890  
Fax: +49 (0)3334 277891  
Web: [www.multi-cut.de](http://www.multi-cut.de)  
E-mail: [info@multi-cut.de](mailto:info@multi-cut.de)

*Products:*  
*Water-jet cutting, plasma cutting, fret saw systems*

**Coates Screen Inks GmbH**  
Wiederholdplatz 1  
90451 Nürnberg, Germany  
Tel: +49 (0)911 64220  
Fax: +49 (0)911 6422200  
Web: [www.coates.de](http://www.coates.de)  
E-mail: [info@coates.de](mailto:info@coates.de)

*Products:*  
*Screen printing inks*

**Pröll KG**  
Treuchtlinger Strasse 29  
91781 Weißenburg i. Bay., Germany  
Tel: +49 (0)9141 9060  
Fax: +49 (0)9141 90649  
Web: [www.proell.de](http://www.proell.de)  
E-mail: [info@proell.de](mailto:info@proell.de)

*Products:*  
*Screen printing inks*

**Marabu GmbH & Co.KG**  
Asperger Strasse 4  
71732 Tamm, Germany  
Tel: +49 (0)7141 6910  
Fax: +49 (0)7141 691147  
Web: [www.marabu.de](http://www.marabu.de)  
E-mail: [info@marabu.de](mailto:info@marabu.de)

*Products:*  
*Screen printing inks, digital printing inks*

**Fujifilm Sericol Deutschland GmbH**  
Weusterstrasse 9  
46215 Bottrop, Germany  
Tel: +49 (0)2041 47570  
Fax: +49 (0)2041 4757101  
Web: [www.fujifilmsericol.de](http://www.fujifilmsericol.de)  
E-mail: [information@fujifilmsericol.de](mailto:information@fujifilmsericol.de)

*Products:*  
*Inks for screen printing, flexo UV,  
flatbed and wide format*



## For the sake of the environment

### “Recycling and reuse”

There are no toxic or harmful substances in KömaFoam that can evaporate over the time. KömaFoam is free from formaldehyde, asbestos, lindane, PCB, PCP and CFCs. What's more, it is cadmium and lead-free and is also made without any monomers, biocides and plasticisers.

This is why KömaFoam poses absolutely no hazard to people or the environment, neither during its manufacture, while in use, nor after disposal.

Polystyrene foam panel clippings can be thermally recycled. KömaFoam panel scraps can be disposed of as domestic refuse.



## Certified according to DIN ISO 9001

### “Uncompromising quality from start to finish”

Systematic research and development work and decades of experience with plastics are the basis for the generally recognised high quality of our products.

We carry out tests at all stages – starting with the raw materials on delivery through to final inspection of the finished products.

Regular examinations and analyses conducted by independent testing institutes confirm the high degree of care we take during the production process. Our quality assurance system is certified according to DIN ISO 9001.



Mit freundlicher Empfehlung: