

Working directions for FOAM- X[®] NEW

Bending

Cold bending of thin sheets

- FOAM-X[®]NEW lightweight sheets can be cold folded over a table edge. However, it is essential that the quality of the bend is verified and corresponds to expectations before launching series production.

Special bonding techniques

Bonding FOAM-X[®]NEW lightweight boards

- The liners of FOAM-X[®]NEW lightweight boards consist of multilayered coated paper. This means they can be bonded with any standard cold-bonding agent and laminated using special water-based polyvinyl acetate (PVA) adhesives.

T-joints with FOAM-X[®]NEW lightweight boards

- T-joints of thick FOAM-X[®]NEW lightweight boards can be constructed by machining a groove as wide as the inserted sheet and down to the outer liner out of the core material.
- The perpendicular panel is then glued into the groove with a compatible adhesive.

Cutting - Die-cutting

Cutting

FOAM-X[®]NEW lightweight boards up to 5 mm thick can be cut easily with rigid general purpose knives (cutter knives).

- Several light cuts give a better result than one single firm cut. Secure the metal ruler against slipping.
- FOAM-X[®]NEW can also be cut with so-called sheet cutters. A significant advantage of using these machines is the absence of dust and chips.
- If guillotine shears are used, buckling and some rounding on one side of the cutting edges are inevitable.

Die-cutting

FOAM-X[®]NEW can be used on all well-known die cutting machines.

For smaller quantities, it is advisable to use a small semiautomatic die punching unit or stamp. Depending on the application either straight or fine-toothed blades are used on the die cutting plate.

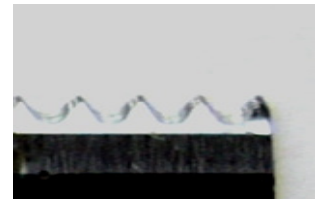
FOAM-X[®]NEW has a relatively soft core and therefore requires special attention.

TO PRODUCE EDGES THAT DO NOT TAPER OFF (MEMORY EFFECT)

Use fine-toothed knives

Feature:

- Edges do not taper off



The die has to be completely fixed with plate rubber, so that the tops of the fine-toothed knives are covered by 1mm. On the table it is recommended to use a strong, but pliable hard rubber material. The points of the knives should sink into this underlay.

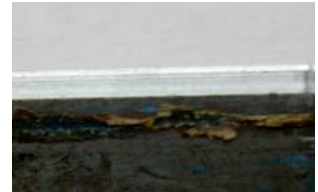
Screen printed boards should be stored for at least 24 hours before die cutting, to allow their moisture content to reach equilibrium with the cutting shop environment.

TO PRODUCE EDGES THAT TAPER OFF (PILLOW EFFECT / NON MEMORY)

Use straight-edged blades

Feature:

- Edges taper off



FOAM-X [®] NEW Sheet thickness	Plate rubber thickness	Cutting knife height above the board material	Bloc/Plate thickness approx.
3 mm	8 mm	5 mm	18 mm
5 mm	10 mm	8 mm	15 mm

Thickness of blade: 0,7mm (maximum)

Type of blade: V-shaped

Hardness of foam rubber: 20-25 shore

Placing your plate rubber:

Cover the block including the placed blades, which you get from your die cut tool supplier with the recommended rubber that has at least an overlap towards the edges of min. 3cm.

Cover the rubber first with glue on the direction of the bloc / plate.

After the first punch the cut out, glued rubber parts will be fixed on the plate.

Put cardboard on the punching table to achieve a better result.

All results depend on an optimal adjusted die cutting machine!

Computer-controlled-cutting processes

- **Cutting plotter**

Even complicated shapes can be produced from FOAM-X[®] NEW sheets with suitably equipped cutting plotters.

- **Water-jet cutting**

FOAM-X[®]NEW sheets lend themselves well to water-jet cutting.

- **Laser cutting**

This cutting process is not recommended for expanded rigid sheet material because of the heat released into the material due to its polarity.

Mounting

Adhesive films and vinyl graphics

FOAM-X[®]NEW is ideally suited to the application of lettering films and vinyl graphics. In order to choose the right film for the location (indoor use) and the desired period of use (durability) of the film need to be taken into account.

Mounting of short term signage

- Prevent the build-up of static charges (attraction of dirt particles).
- Work with woollen gloves if necessary.
- Use a quality permanent mounting film with an appropriate glue spread.
- Always recondition / pre-dry images and inkjet prints before mounting them.
- Regularly check the settings on the laminator (pressure, parallelism of the rollers).
- If a transparent encapsulating film is used, the formation of air bubbles can be prevented by warm lamination at 50°C.
- Leave freshly mounted photographs and prints to rest flat for at least 3 hours (beware of transport damages).
- Mount similar substrates on both sides

Troubleshooting

- Poor adhesion and bubbles can usually be counteracted by improved or modified working techniques (correct cleaning and drying, higher roller pressure and, above all, allowing a longer waiting time before transport).
- Bowing may be caused by too fresh, i.e. "wet" prints (shrinkage) or too much tension (over-drawing) on the adhesive film due to excessive braking of the unwinding roller.
- Wrinkles are often caused by distorted adhesive film, poorly aligned rollers or excessive roller pressure.

Liquid and spray adhesives

- FOAM-X[®]NEW light material sheets are increasingly laminated with pre-printed posters on one or both sides. Aqueous emulsions of polyvinyl acetate, so-called PVA adhesives have proved particularly suitable for this type of work.
- Removable and permanent adhesives in spray cans are good alternatives for small or non-critical one-off mounting jobs.

Printing

Screen printing

- The liners of FOAM-X[®]NEW sheets can be printed to high resolution and edge definition with inks formulated for paper. Inks containing high levels of solvent should be avoided and care must be taken to avoid distortion if water-based inks are used.

Direct digital printing

The surface of FOAM-X[®]NEW is increasingly chosen as a substrate for direct digital printing by the piezo-inkjet process. This technology together with suitable UV-curing inks gives interesting effects. For some applications, the thin and delicate ink layer may have to be protected by a film laminate or topcoat of clear scratch and UV-resistant lacquer.

Storage

- FOAM-X[®] NEW lightweight boards must be stored under the same conditions as paper.
- To achieve the equilibrium of moisture:
 - Storage boards vertically with enough space between each board for circulation of air.
 - Storage boards horizontally, face down the concave surface; avoid direct sunlight.