

Processing directives

RÖBER PMMA Struktur

Properties

RÖBER PMMA Struktur-acrylic-sheets are light- and weather-resistant, easy to process and show low weight, high impact strength and high light-transmission at good light-diffusion as well as a good heat-resistance (service temperature max. 85°C).

RÖBER PMMA Struktur-sheets are normal flammable (B2 according to DIN 4102).

Please observe the applicable regulations, like building regulations.

Acrylic-sheets are a thermoplastic, which expands at heating and shrinks at cooling. Please observe the expansion of the material at processing. The specific weight of 1.19 g/cm³ allows an easy and light sub-construction. During installation into frames, the linear thermal expansion up to 0.7 mm per meter needs to be observed.

Processing

RÖBER PMMA Struktur-sheets are to saw, drill, mill and grind like wood or metal with sharp appropriate tools. Ensure high cutting speed at little feed speed and secure a good heat and chip removal.

Post processing

Machining or thermal heating of **RÖBER PMMA Struktur**-sheets can cause internal stresses into the material.

Solvents, contained in adhesives, lacquers or silicones can cause stress-cracking.

We recommend checking the compatibility of these products before use.

Cleaning and care

RÖBER PMMA Struktur-sheets are easy to maintain. For cleaning warm water and mild soap-solution is recommended. Do not use abrasive agents. At large amounts of dust a treatment with antistatic agent is recommended!

Thickness tolerance

Sheets above 4.0 mm thickness +/- 6%; sheets below 4.0 mm thickness +/- 10%.

Linear expansion

$$\frac{\text{Length} \times 8 \times \text{Temp. difference}}{100.000}$$

Expansion and shrink noises are possible, do not use sound increasing materials.

We recommend permanently elastic, solvent and plasticizer free silicone rubber.

Best experiences were made with rubber profiles compatible for acrylics.

Installation-sizes

As maximum installation-size following recommendation is given:

6.0 mm: at wind-load of max. 750 Nm/m², four-side surrounded, max. 2000 x 750 mm

8.0 mm: at wind-load of max. 750 Nm/m², four-side surrounded, max. 2000 x 1000 mm

This is just a recommendation, depending on different framework constructions.

The sheets must be tested in the constructions.

Heat transition

K - 4,5 kcal/m² h °C at thickness of 5 mm (just like silica glass)

Sound insulation

RÖBER PMMA Struktur-sheets show a medium sound-insulation, depending on sheet thickness around 26-28 dba.

Processing instructions

Sawing with circular saw

High speed steel (HSS) saw-blade, diameter 150-300 mm; blade-thickness 1,5-3,0 mm;

Tooth-pitch 2,0-6,0 mm, 2,5 mm for sheet-thickness 3,0 mm; tooth-shape hollow-ground, mutual bevelled tooth-face.

Sawing with band-saw

Tool width 5,0-10,0 mm; blade-thickness 0,5-1,0 mm; tooth-pitch 2,0-4,0 mm; tooth-shape: skewed teeth; optimum cut-speed: 20 m/sec.

Advise: To achieve clean cutting edges it is recommended to use a circular saw.

Drilling

Drills: twist-drills, sharp ground, point angel: 60° up to 90°; rotational speed: 1000 up to 1500 rpm; lubrication molykote or drilling-emulsion 1:10; cooling: water or drilling-emulsion; make sure to cool the drilling hole to avoid cracks.

Milling

Cutter: Face-, cylindrical- or finger-mill, hard metal, cutting-speed appr. 200-300/min;

cooling: compressed air; feed-rate: 5,8 cm/sec.

Polishing

Belt: Presanding-grit 60-150; surface grinding-grit 150-300; fine grinding (wet)-grit 400;

belt-speed appr. 500 rpm.