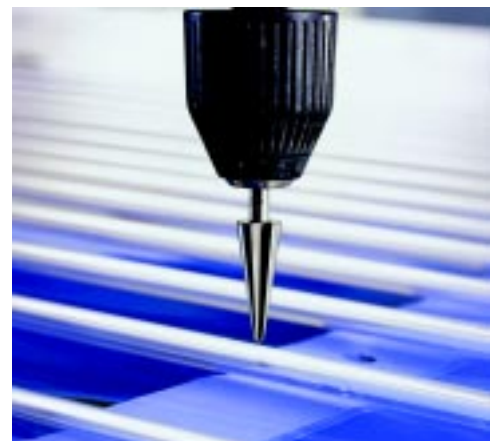


*Instructions for
Installation of*
PLEXIGLAS RESIST®
PLEXIGLAS HEATSTOP®
Corrugated Sheets



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Foreword

In addition to the present brochure, there are other guidelines for workshop practice concerning the use of our products.

Separate leaflets are also available on the properties and applications of our products, which can be obtained on request from authorized distributors of PLEXIGLAS®.

When selecting and using our products, you are advised to observe

- the regional building codes and emission laws
- the applicable standards, e.g. DIN 1055;
- the warranty provisions according to VOB (contracting rules for award of public works contracts) or BGB (Civil Code)
- the guidelines of the employers' liability insurance association
- and others

PLEXIGLAS® corrugated sheets are extruded from **impact-modified** acrylic (polymethyl methacrylate, PMMA).

As PLEXIGLAS **RESIST**®¹⁾ corrugated sheets they are crystal-clear as well as clear or brown and textured, **more break-resistant** than sheets made from conventional acrylic, and are **guaranteed to be hail-resistant**.

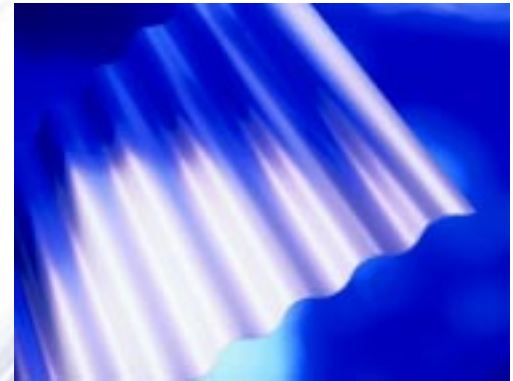
When the sun beats down, it stays **pleasantly light and cool** under roofs glazed with white translucent PLEXIGLAS **HEATSTOP**®²⁾ corrugated sheets, thanks to the special IR-(infrared) reflecting surface coating.

PLEXIGLAS® corrugated sheets are supplied in three profiles, 76/18, 130/30 and 177/51 (= length of corrugation / clear height in mm). The latter are often installed in conjunction with corrugated sheets made of fiber-reinforced cement.

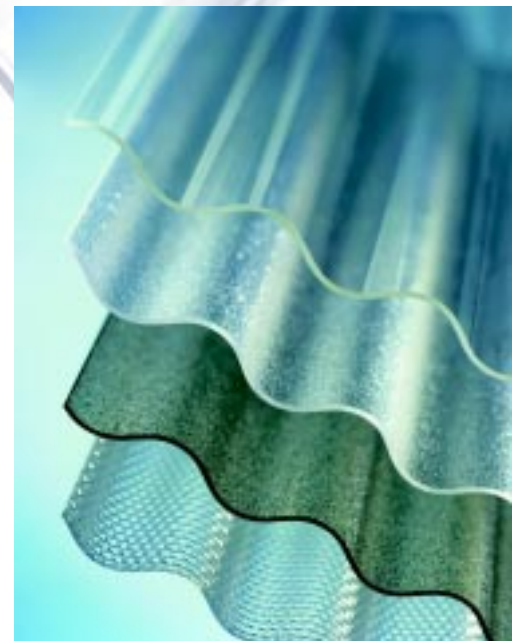
PLEXIGLAS® corrugated sheets are extremely resistant to weathering and ageing, do not become yellow or brittle and retain their smooth surface, which prevents dirt from adhering. These properties make them ideally suited for

- patio roofs,
- carports,
- pergolas,
- windscreens,
- roofing of factory units, etc.

The durability of PLEXIGLAS® corrugated sheets is covered by a 10-year guarantee.



The "Cool" Sheet:
PLEXIGLAS HEATSTOP®²⁾



The "Tough" Sheet:
PLEXIGLAS RESIST®¹⁾

¹⁾ European Patent EP 776 931

²⁾ European Patent EP 548 822

Corrugated sheets are typically installed so as to overlap. In order to determine the **correct quantity of sheets to be ordered** from the supplier, please bear in mind the following: the useful width (b) is less than the sheet width (B). This is due to the complete or half overlap (s) of the lateral crest of corrugation. The same applies to the horizontal overlap (h) of longer roofs (Figs. 1 + 2).

It should be borne in mind that **the individual sheet to be installed must not measure more than 4000 mm in length**. Corrugated sheet lengths of 4000 mm to 7000 mm are **storage sizes** for cutting to size.

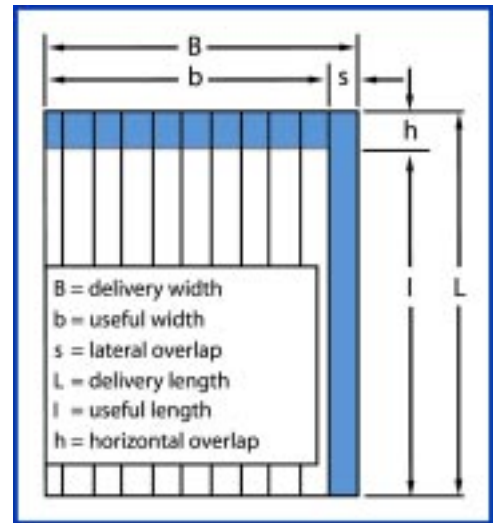
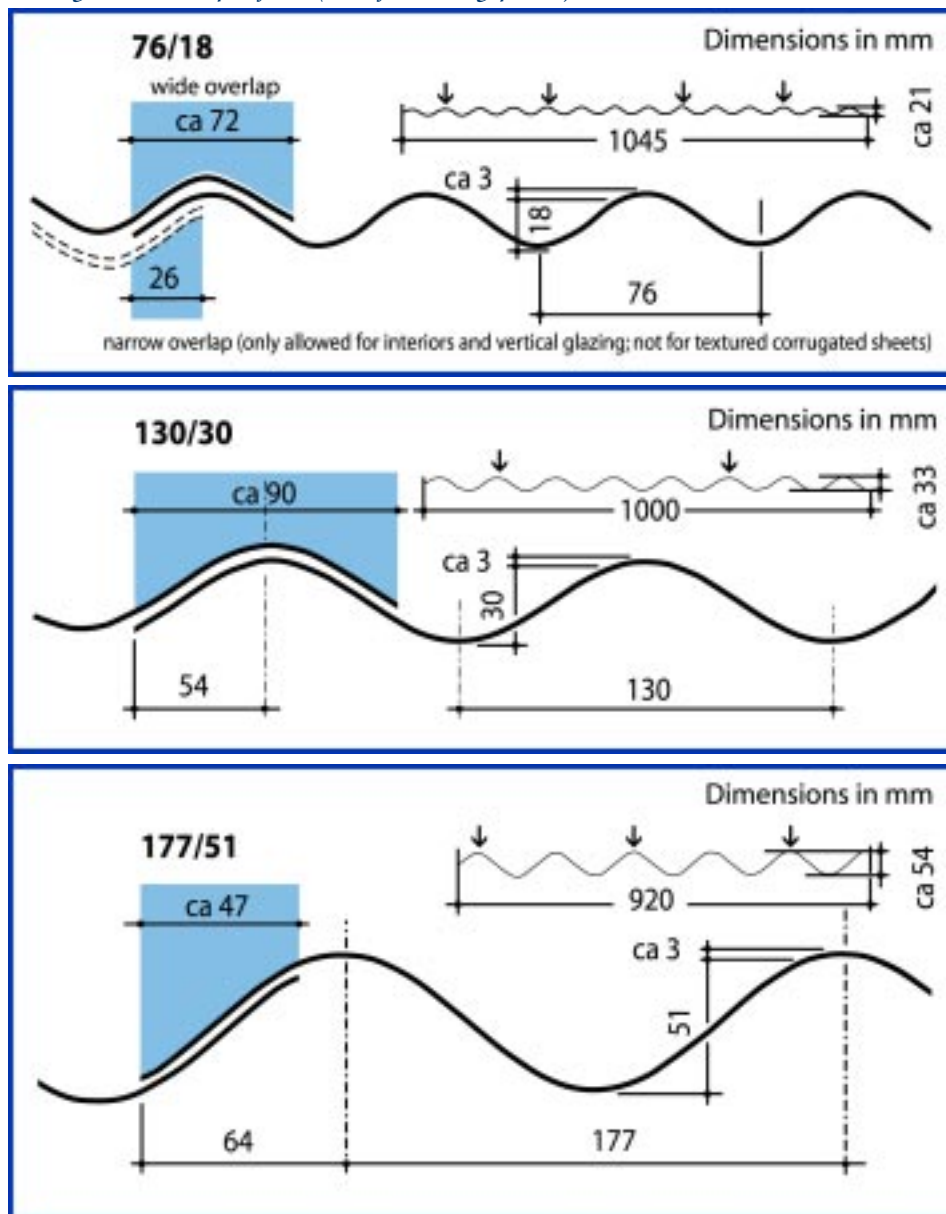


Fig. 1: Overlap of corrugated sheets

Fig. 2: Cross-sections of PLEXIGLAS RESIST® corrugated sheet profiles (↓ = fastening point)



	PLEXIGLAS® Corrugated Sheet Profile		
	76/18	130/30	177/51
3.1 Properties			
Sheet width B (mm)	1045	1000	920
Delivery length L (mm; acc. to current sales range)	2000 to 7000	2000 to 3300	2000 to 3300
Material thickness (mm)	approx. 3	approx. 3	approx. 3
Transmittance (%)			
RESIST® Clear OA001 Smooth	90	90	90
RESIST® Clear OA001 Honeycomb	81	81	81
RESIST® Clear OA001 C	88	–	–
RESIST® Brown 8A001 Honeycomb	55	–	–
RESIST® Brown 8A003 C	75	–	–
HEATSTOP® White WA005 (all grades UV-absorbing)	45	–	–
Modulus of elasticity (MPa)	2200	2200	2200
Max. service temperature without load (°C)	70	70	70
Coefficient of linear thermal expansion (mm/m °C)	0.08	0.08	0.08
Possible expansion due to heat and moisture (mm/m)	6	6	6
Fire rating	B2 (normally flammable) to DIN 4102		
3.2 Dimensions for Installation			
Minimum roof pitch	5° (= 9 cm/m)	5° (= 9 cm/m)	5° (= 9 cm/m)
Lateral overlap s (mm)	approx. 72	approx. 90	approx. 47
Horizontal overlap h (mm) at roof pitch of less than 17° (= less than 30 cm/m)	200	200	200
more than 17° (= more than 30 cm/m)	150	150	150
Horizontal overlap h (mm) for vertical wall	100	100	100
Fastening at crest of corrugation (on each purlin; ↓ in Fig. 2)	2+5+9+12	2+6	1+3+5
Type of PE SEALING CAP	small	large	large
Diameter of drill hole for PE SEALING CAP	10	12	12
Diameter of drill hole for special screw with calotte (mm)	13	13	13

4.1 Support Spacing

PLEXIGLAS® corrugated sheets are installed on statically supporting structures which are positioned **at right angles** to the direction of slope or water flow. These purlins (roof) or crossbars (wall) are to be mounted at **spacing (A)** corresponding to the snow load or wind pressure which applies to the location of the glazing (Fig.3).

4.2 Roof Pitch

PLEXIGLAS® corrugated sheets are to be installed at a **roof pitch of at least 5° (corresponding to 9 cm/m)**. The steeper the slope, the better dirt is washed off by the rain.

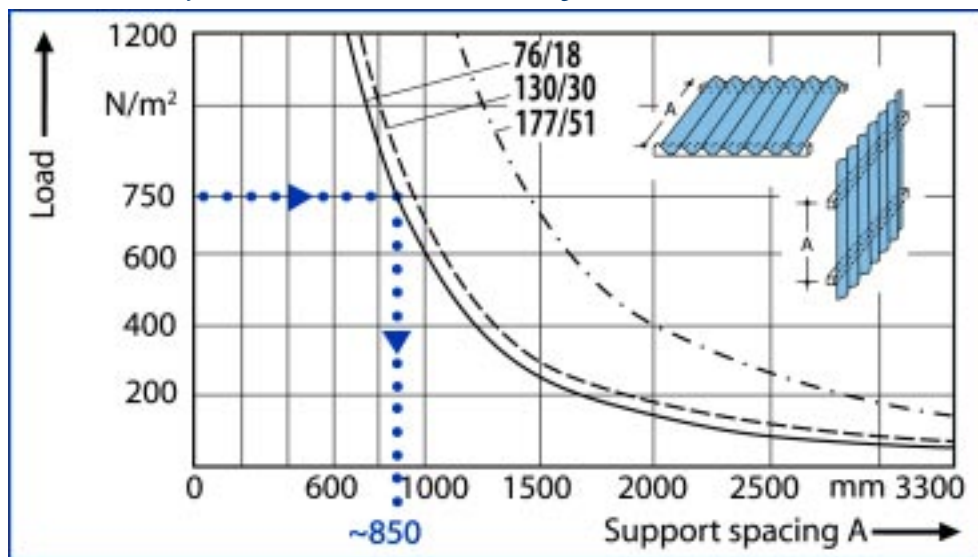
4.3 Avoiding Heat Buildup

The coating applied to the supporting structure must be allowed to dry thoroughly before the sheets are installed.

When installing PLEXIGLAS® corrugated sheets, it is recommended to provide the **upward-facing surfaces** of the structural members, e.g. the upper surface of the purlins, with a **light-colored or reflective** coating in order to avoid harmful heat buildup due to sunlight. This is best done by applying a coat of lightfast white emulsion paint.

Fig. 3: Support spacing for PLEXIGLAS® corrugated sheets

Example (•••••): A snow load of 750 N/m² calls for a support spacing of max. 850 mm for PLEXIGLAS® 76/18 corrugated sheet.



5 Installation

5.1 Rules for Installing Corrugated Sheets

Corrugated sheets are always installed so as to overlap, similarly to roof tiles. They should overlap horizontally against the main wind direction at the location and vertically from bottom (eaves) to top (ridge).

Corrugated sheets may only be walked over using boards capable of supporting a man's weight.

Surface-textured sheets ("Honeycomb," "C") are installed with the **textured side facing downwards**, PLEXIGLAS HEATSTOP® corrugated sheets are installed with the solar heat-reflecting, **matt surface coating facing upwards**.



5.2 Length of Corrugated Sheets

The heat expansion of acrylic and the usual pointwise fastening make it necessary to limit the sheet length. **The installed sheets may have a maximum length of 4000 mm each.**

For greater roof lengths, several individual sheets need to be installed one above the other, overlapping horizontally (Figs 1 and 2).

5.3 Compatibility

All sealing materials (never plasticized PVC!), fastenings, cleaning agents and other auxiliaries used for PLEXIGLAS® corrugated sheets must be compatible with acrylic.

5.4 Cleaning

Given adequate roof pitch, or vertical glazing, there is no need to clean the outside of the sheet; any **soilage is washed off by the rain**. Should cleaning nevertheless be required, rinse the sheet with a garden hose or wash with clear warm water to which some dishwashing liquid has been added. Do not use scouring agents.

6.1 Cutting to Size

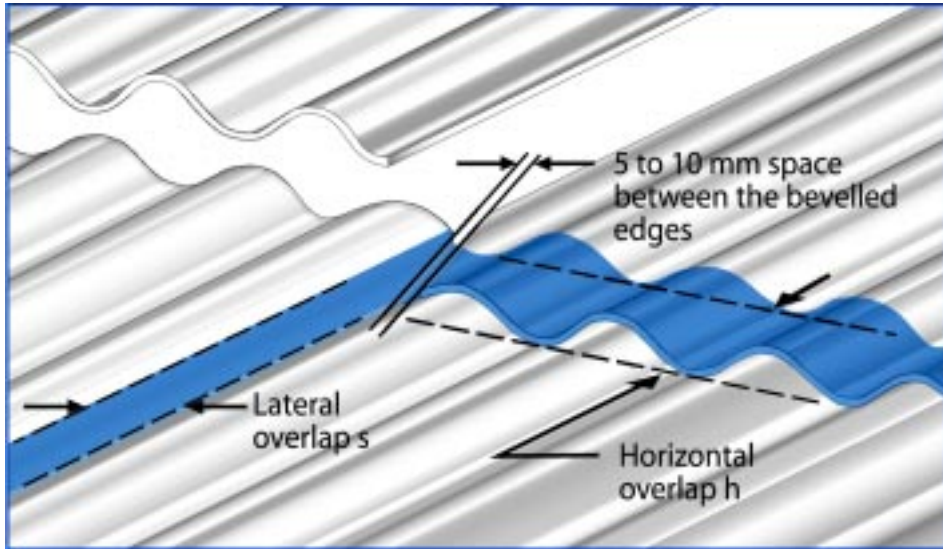
PLEXIGLAS® corrugated sheets are best cut to size using high-speed (hand-held) circular saws with **unset, multi-tooth carbide-tipped blades**.

The sheet should be clamped so as to avoid vibration, and a stop should be used to prevent the saw from jamming and, possibly, the sheet from tearing. **We advise against** cutting the corrugated sheet with **abrasive disks** to exclude damage.

6.2 Corner Cutting

Corner cutting is performed at those points where the sheets overlap both vertically and horizontally. To avoid a four-fold overlap at those points, the corners of the two center sheets are shortened so that they lie next to each other (Fig.4).

Fig. 4: Cut-out corner with 4-fold overlap of PLEXIGLAS® corrugated sheets



6.3 Drilling

Drilling should be performed using a conical drill (Fig. 5) that provides drill holes of 10, 12 and 13 mm in diameter.

Corrugated sheets which overlap horizontally are drilled together. The holes in the lower sheet may need to be drilled open a few more millimeters - after lifting up the topmost sheet - so that the two sheets can expand against each other.



Fig. 5: Conical drill for PLEXIGLAS® corrugated sheets

7 Fastening

7.1 Fastening Points

The corrugated sheets are fastened pointwise to the supporting structure. On roofs, fastening is always performed at the crest of the corrugation (see 3.2, Dimensions for Installation). In walls (vertical glazing), the sheets can also be fastened in the trough of the corrugation.

In view of the superior quality of PLEXIGLAS® corrugated sheets, resulting from the favorable combination of thickness and rigidity, no shims need to be placed beneath the crest of the corrugation (such as are required for thin or soft corrugated plastic sheets).

7.2 Fastening Elements

The most common way to fasten corrugated sheets is to insert a screw at the center of the upper side of the purlin. This is done using **special** commercially available **screws (6.5 mm Ø) for wood or metal** (in some cases self-tapping), complete with washer. In addition, a conventional aluminum **calotte** with elastic coating is placed beneath the head of the screw. This calotte, whose shape is adapted to the individual corrugated sheet profile, seals the drill hole below and evenly distributes the screw pressure. A cap is available to cover the head of the screw, offering weather protection and improving the general appearance (Fig. 6 a + b).

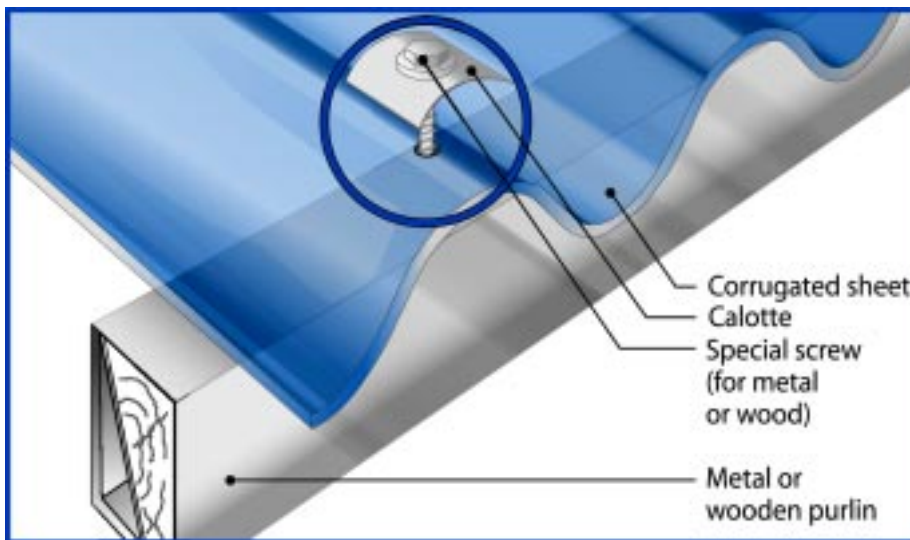


Fig. 6 a: Fastening of PLEXIGLAS® corrugated sheets with special screw and calotte

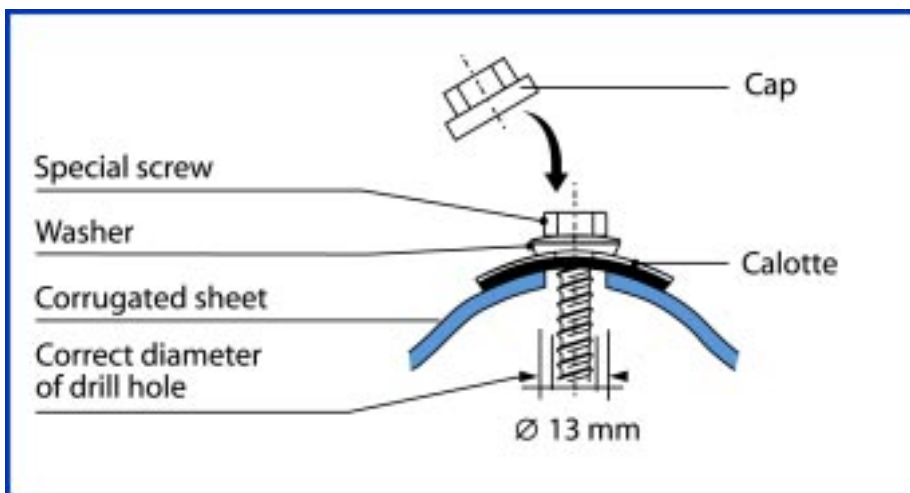


Fig. 6 b: Special screw and calotte (section)

7 Fastening (continued)

Other items suitable for fastening the corrugated sheets, particularly to tubular purlins, are commercially available **j-bolts** with a 6mm thread and a nut at the upper end, since these allow the plastic to move in an ideal manner. The condition is that they are used in conjunction with the original **PE SEALING CAPS** from Röhm, which are

- compatible with acrylic,
- seal the drill hole against water from the outside,
- distribute the bolt pressure and
- act as a spacer between the bolt and the edge of the drill hole (Fig. 7 a + b).

The gaskets available on the market for installing corrugated sheets made from other plastics, fiber-reinforced cement or metal can only be used for PLEXIGLAS® corrugated sheets if they meet the above requirements (e.g. **no gaskets made of plasticized PVC!**).

The screws and j-bolts should only be tightened until initial resistance is encountered.

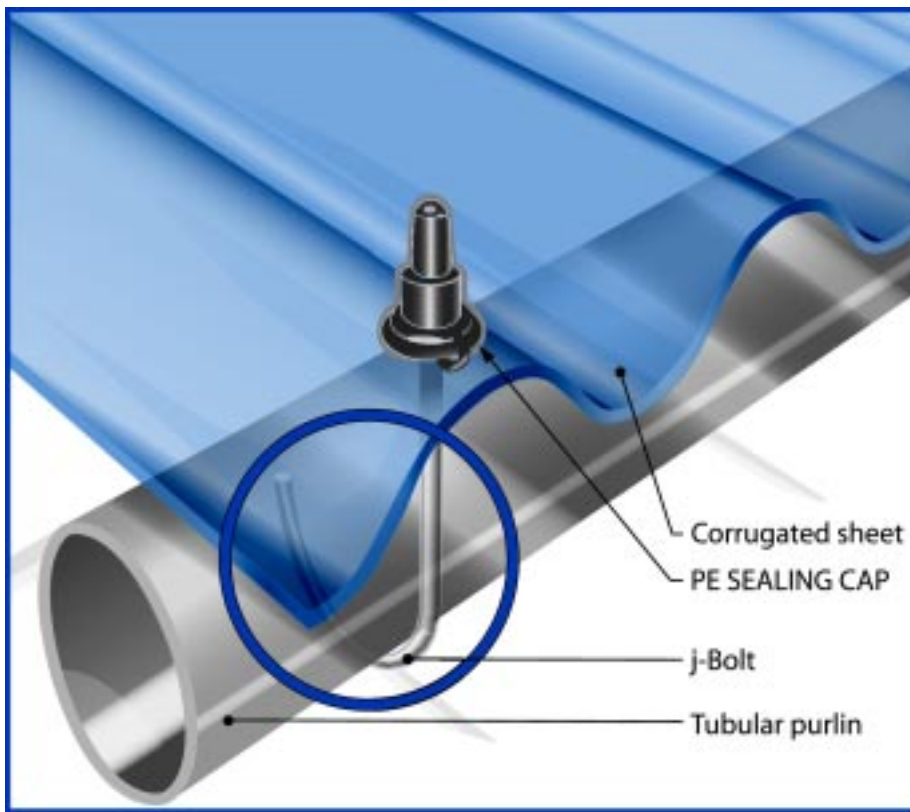


Fig. 7 a: Fastening PLEXIGLAS® corrugated sheets using j-bolt and PE SEALING CAP

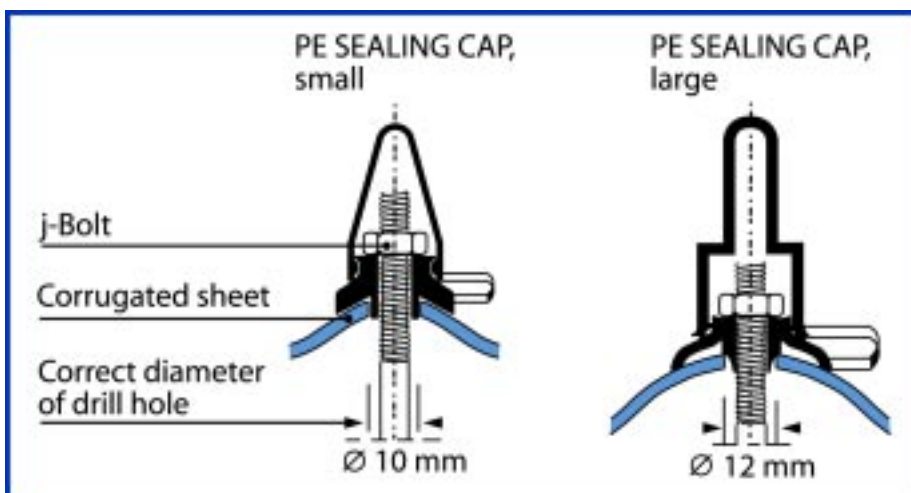
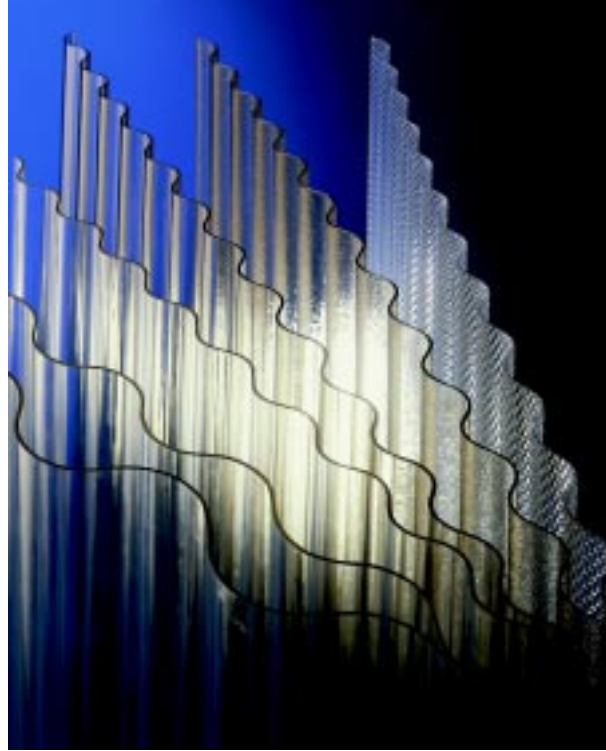


Fig. 7 b: PE SEALING CAPS (section)

8 Suppliers

<p>PLEXIGLAS® corrugated sheets as well as assembly accessories, like</p> <ul style="list-style-type: none">• special screws (for wood or metal) with cap,• aluminum calotte (acc. to corrugated sheet profile)• j-bolts,• ridge cover for sheet profile 76/18• gaskets made of PE foam• Röhm PE SEALING CAPS• conical drills	<p>Authorized distributors of PLEXIGLAS®</p>
<ul style="list-style-type: none">• Saws	<p>Hardware stores, DIY markets</p>



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® = registered trademark

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If you would like further information on our sales range and on installation, your local authorized distributor of PLEXIGLAS® will be pleased to advise you:

