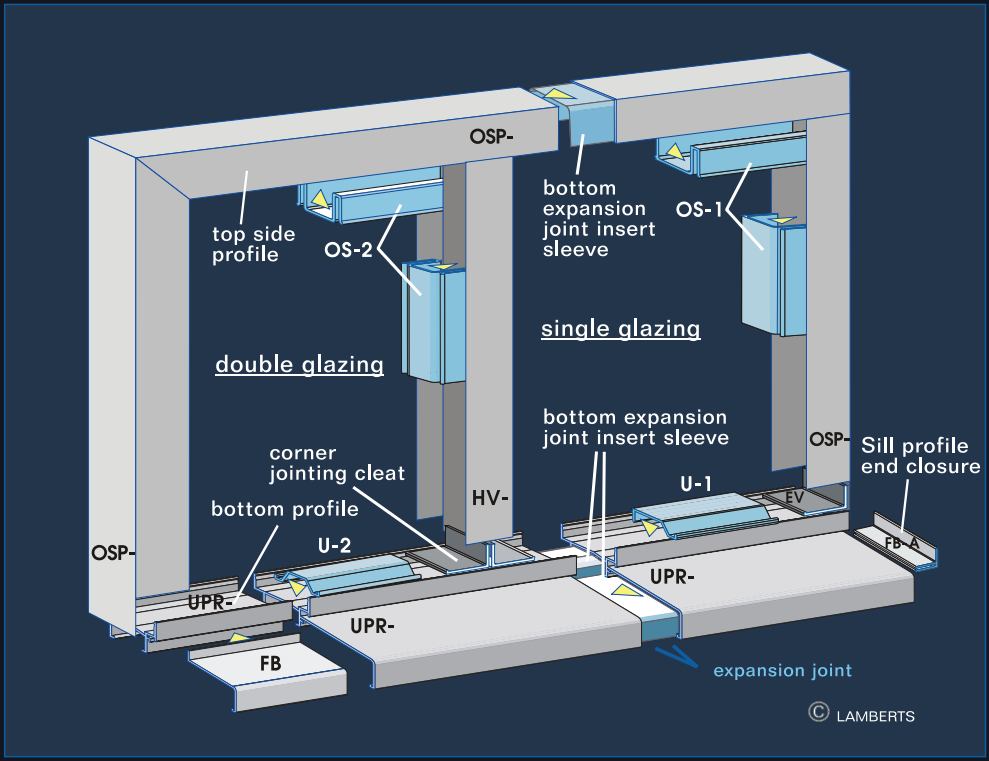
4.2 Installation of the Aluminium Frame

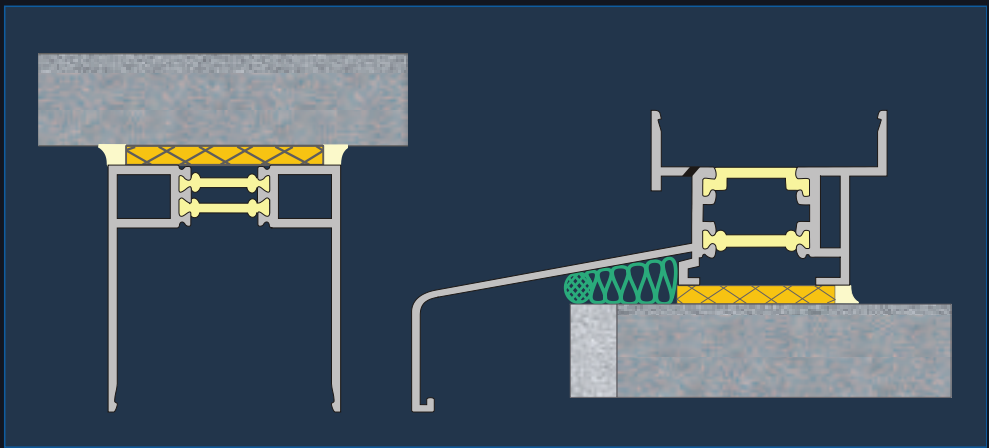


Selection of Frame Profiles

In principle, a distinction is made in terms of standards between the LINIT Series 60 (installation depth: 60 mm) and the LINIT Series83 (installation depth: 83 mm). The allocation of System 60 or 83 is based on the flange dimensions of the glass profiles:

For the LAMBERTS LINIT- Profiles P 23 - P 26 - P 33 - P 50 ALU-Series 60 + 60 W
For the LAMBERTS LINIT- Profiles P 23/60/7 - P 26/60/7 - P 33/60/7 ALU Series 83 + 83 W

4.3 Frame Fixing



Taking structural movements into consideration, the frame must be anchored in the structure using suitable fixing and grouting materials.
Once any uneven parts of the connection surfaces have been smoothened out, the frame must be connected correctly to the structure body. The frame must be able to absorb the loads imposed by the glazing, and transfer them to the structure. The securing elements must be reliable, durable, and free of rust, and account must be taken of static requirements.

Statically sufficient fixing points must be applied on each side, fitted via the completely aluminium part of the frame profile. Depending on installation requirements, the frame must be sealed to the building. The possibility of damage by building subsidence or changes in dimensions of the wall openings must also be carefully checked.

Under no circumstances may forces be transferred from the frame to the U-profiled glass!

Fixing media must not give rise to harmful interplay on the frame material, e.g. such as contact corrosion. Thus, aluminium and steel particularly must not come into contact with one another, but rather be permanently separated by suitable means, e.g. such as plastic plates or coatings. Aluminium frame connecting media may be in aluminium if these meet the static requirements.

Securing procedures are to be carried out in such way that the components can expand and contract unhindered as temperature changes.

In order to avoid long-term effects of precipitation water and/or condensation on the frame profiles, the bottom aluminium framing profile, if not already designed in this manner, is to be formed in such a way that, in extreme cases, drip water which may have collected can be drained away to the outside.

It is advisable for appropriate drainage arrangements to be provided in the frame profile, as a function of the individual web widths of the LINIT U-profiled glass types. The drainage apertures are to be provided with filters in order to prevent the penetration of dirt into the glazing.

Changes in length resulting from temperature fluctuations are to be taken into account when fitting connecting joints. Conecting joints are to be sealed in such way that water cannot penetrate, and draughts will be avoided.
To achieve this, expansion joint profiles and thrust elements should be fitted carefully onto the connecting joint covering. The profiles for the joint covering are pushed in, over, or under; the expansion joints are to be carefully sealed.

Selection and application of the fixing and grouting media must be undertaken professionally, in accordance with the relevant situation and conditions with respect to building regulations. Compliance is required with the instructions and recommendations of the fixing media and sealant manufacturers and other specialist companies.

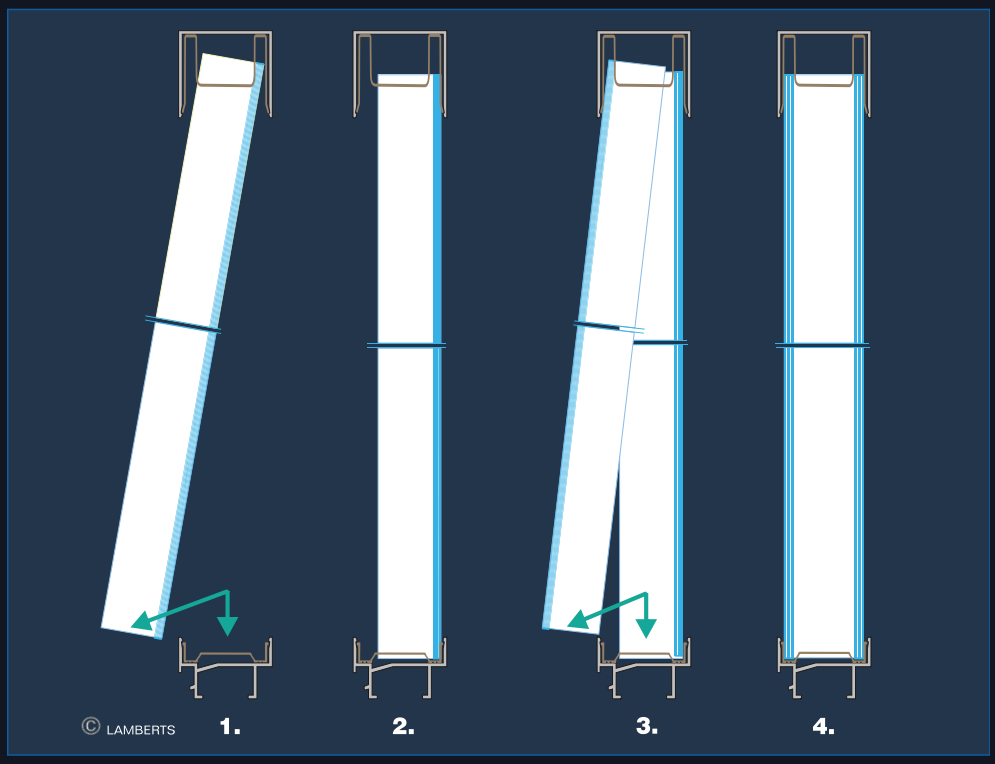
4.4 Assembling the glass channels

When handling LINIT channel glass, clean gloves should be used at all ti mes to avoid visible smears on the surface of the glass. When installing the glass, it must be ensured that dirt or damp neither is nor can be on the coated surface (internal side of the U profile).

For double-shell glazings, it must also be noted that pad profiles (shore A hard ness from 70 +20/-10) are set on the flange in order to avoid glass-glass contact and allow optimum strength transfer between the glass channels. Particular care must be taken to ensure that open glass joints are sealed immediately after ad justment of the glass channels.

The fixed aluminium profiles are provided with insert profiles or blocks to prevent direct contact between glass and aluminium. LINIT profile glass is then inserted into the surrounding aluminium profile:

Inserting LINIT U-Glass into the Aluminium Frame Profiles



1 Carefully introduce the LINIT U-profiled glass diagonally into the top framing profile OSP, and bring the glass into a vertical position
2 Slowly and carefully lay glass onto the plastic insert (inlay profile)
3.+4. Repeat the process with the second glass channel

Replacement of broken glass channels

In the event of glass breakage in the façade, the damaged pieces can be removed by applying this procedure in the reverse order, and replaced by new glass channels.

4.5 Sealing

Frame to the Base Structure Sealing

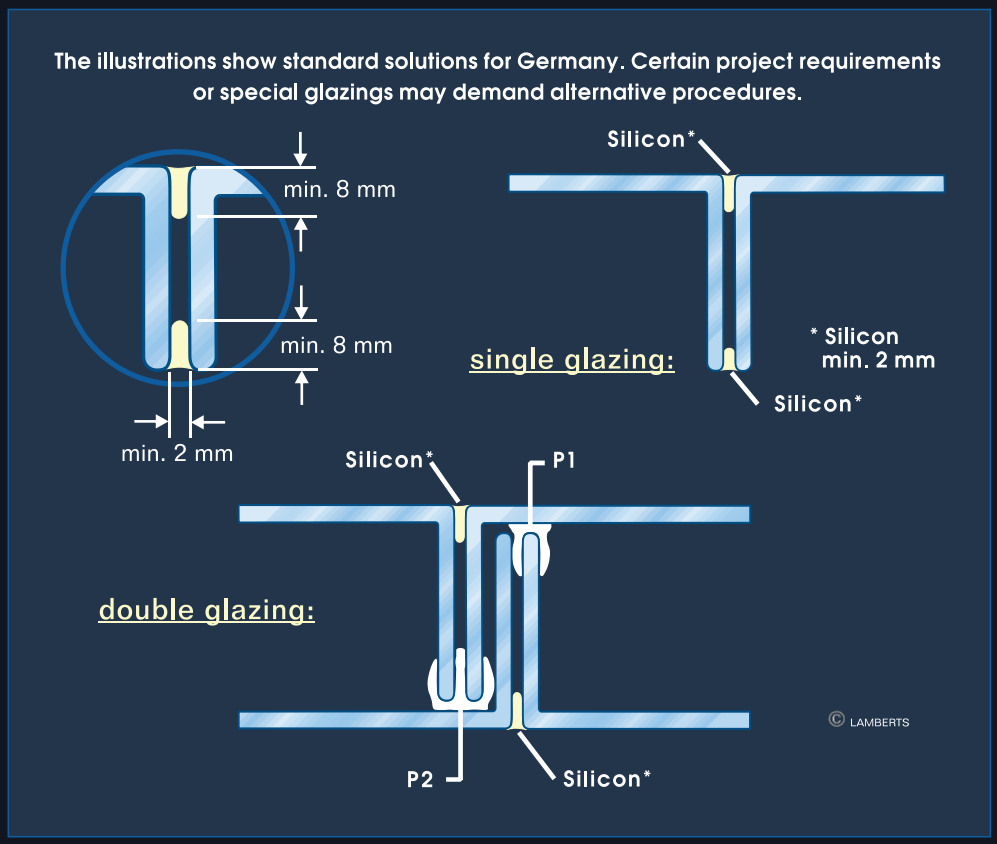
The joints between the structure and the aluminium framing profiles are to be applied in accordance with the relevant building regulations.

For application in Germany, in accordance with DIBt Berlin general building supervisory authorisation (AbZ) no. Z-70.4-44, please strictly observe that various authorised bending tensile strengths are applied depending on whether the shaped glass walls are sealed or not. According to DIBt Berlin, sealant category E sealants as per DIN 18545-2 are to be used for sealing joints. The absolute minimum dimensions are to be taken from AbZ attachment 3.

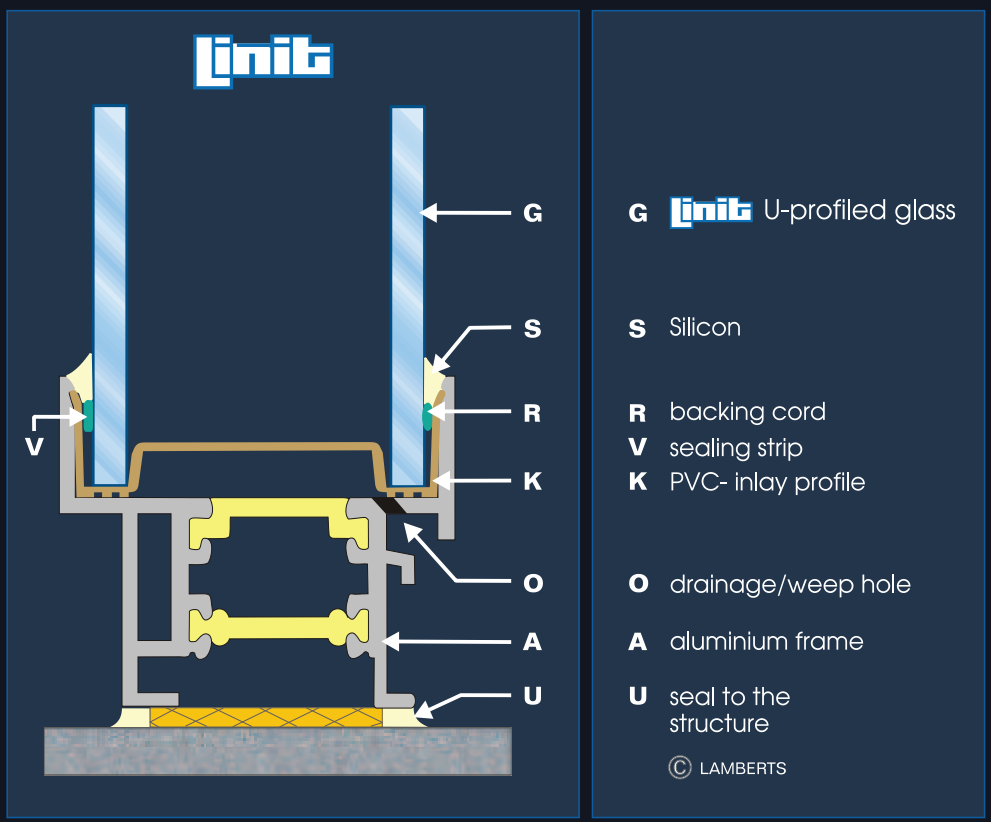
The following illustrations show standard solutions for Germany. Certain project requirements, specially in other climatic surroundings, or special glazings may require alternative procedures. In every case, the instructions of the sealant manufacturer must be observed. Possible negative interplay of sealants with glass or aluminium must be checked and eliminated.

Glazings must always be suitably sealed, such that harmful glass channels cannot fall down. This applies particularly to single-shell glazings. Under no circumstances should non-toughened glass be used for glazings with unsealed intermediate spaces.

Glass to Glass Sealing



Glass to Frame Sealing



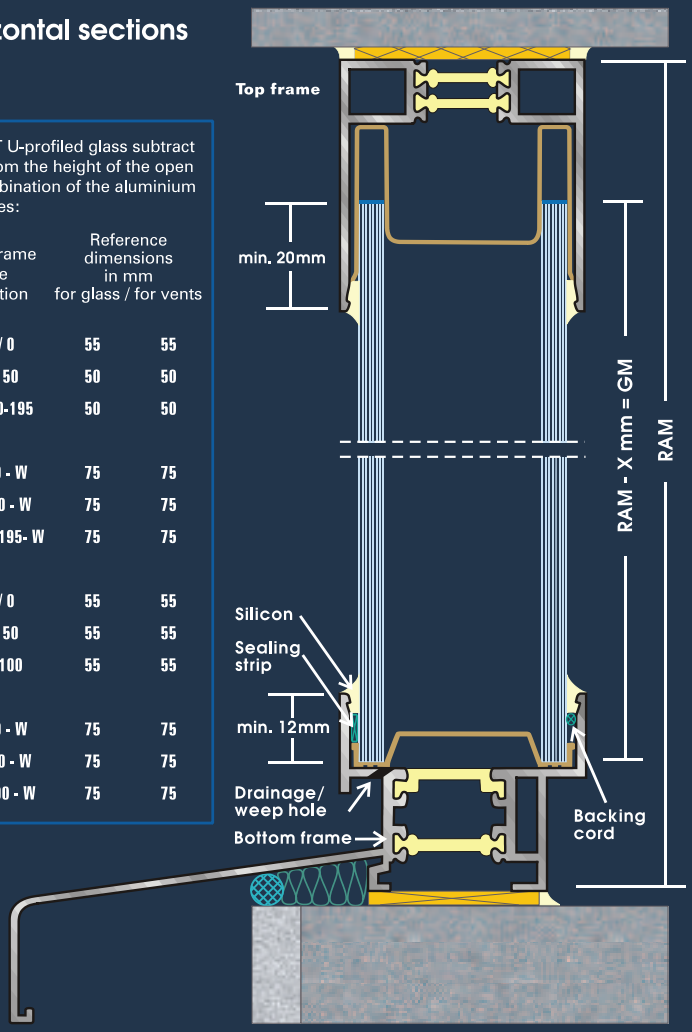
Use of sealants respectively in appropriate manner and dimensions!

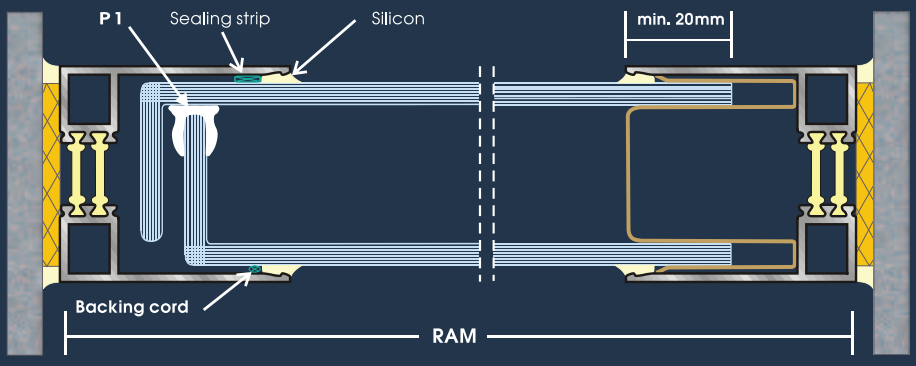
LAMBERTS

Vertical and horizontal sections (typical)

To get the final sizes of LINIT U-profiled glass subtract the following dimensions from the height of the open area, depending on the combination of the aluminium profiles:

Top frame Profile designation	Bottom frame Profile designation	Reference dimensions in mm for glass	for vents
OSP 60+ OSP 60 S	UPR 60 / 0	55	55
OSP 60+ OSP 60 S	UPR 60 / 50	50	50
OSP 60+ OSP 60 S	UPR 60 / 80-195	50	50
OSP 60 W	UPR 60 / 0 - W	75	75
OSP 60 W	UPR 60 / 50 - W	75	75
OSP 60 W	UPR 60 / 80-195- W	75	75
OSP 83	UPR 83 / 0	55	55
OSP 83	UPR 83 / 50	55	55
OSP 83	UPR 83 / 100	55	55
OSP 83 W	UPR 83 / 0 - W	75	75
OSP 83 W	UPR 83 / 50 - W	75	75
OSP 83 W	UPR 83 / 100 - W	75	75





U-profile glass must have a sufficient edge cover where the ends of the glass locate within the aluminium frame so that the stability of the glazing will be secured for the long term.
The minimum edge cover for the glass is:
For vertical installation: Bottom frame min. 12 mm/top frame min. 20 mm
For horizontal installation: Side frame min. 20 mm.
Special constructions or requirements of buildings can lead to other (higher) minimum edge cover!

Should it be necessary to cut individual glass tracks lengthways within a shaped glass wall, then the cut edges must be set against the wind load in continuous linear inlay profiles, as per AbZ no. Z-70.4-44, section 2.1.3.

4.7 LINIT Special Glazings

The principle applies to all special glazing that the manufacturer must be con sulted before the specific application is planned or put into effect. The relevant national and international construction regulations and have to be exactly observed in every instance of planning and implementation.

Forward-Standing Facades / Back-Ventilated Exterior Walls

According to DIN 18516 part 4, only toughened glass with heat soak test is to be used for forward-standing facades and back-ventilated exterior walls. The required thermal shock resistance compared to non-toughened U-glass (approx. 150 K for tempered LAMBERTS LINIT tough, compared to approx. 40 K in accordance with DIN EN 14179-1) is particularly important here, in order to avoid heat cracks in the glass.

Suction/Pressure Anchor Structures and Other Intermediate Supports

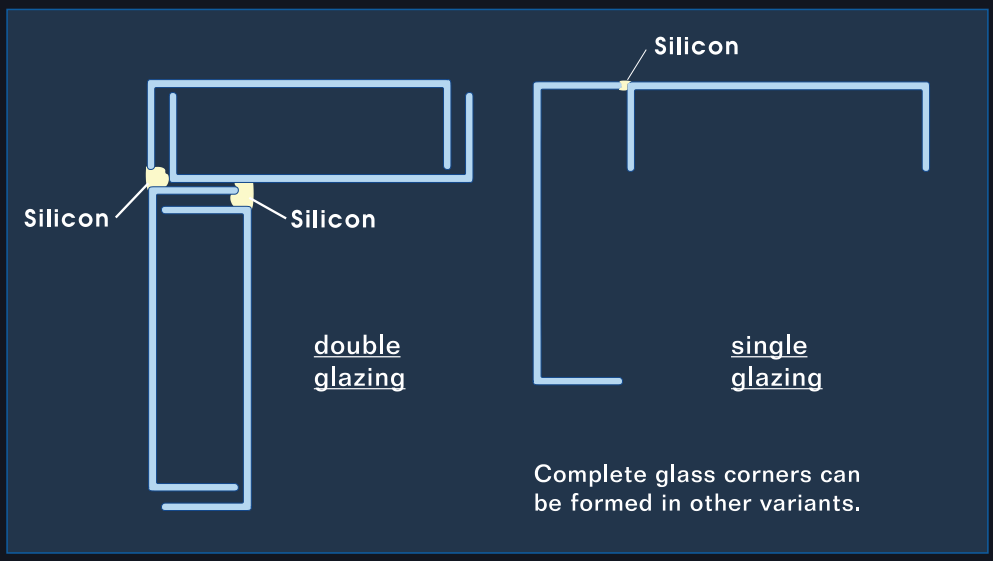
According to general building supervisory authorisation no. Z-70.4-44, any positive effects of intermediate supports – including so-called suction/pressure anchor structures – cannot be set statically in Germany. This means that the maximum lengths of glass achievable without these structures may not be increased by the use of this type of structures.
Furthermore, please be expressly informed that such structures exert spot stresses on the glass, which generally lead to breakages of the glass for non-toughened channel shaped glass. Therefore, such structures are unsuitable in conjunction with non-toughened glass.

Locking Structures

In accordance with AbZ no. Z-70.4-44, channel shaped glass must always be installed without wedging. Non-toughened glasses are not suitable for so-called locking structures, on which the individual shaped glasses are usually wedged in at the ends of the glass. Due to the expected increased spot stresses, glass breakage – if applicable in conjunction with additional thermal stresses - is to be expected. Should locking structures be architecturally desirable nonetheless, then testing should be carried out to determine whether the tempered LAMBERTS LINIT tough U-profiled glass is suitable for the individual case, with reference to building-regulation and project-specific requirements.

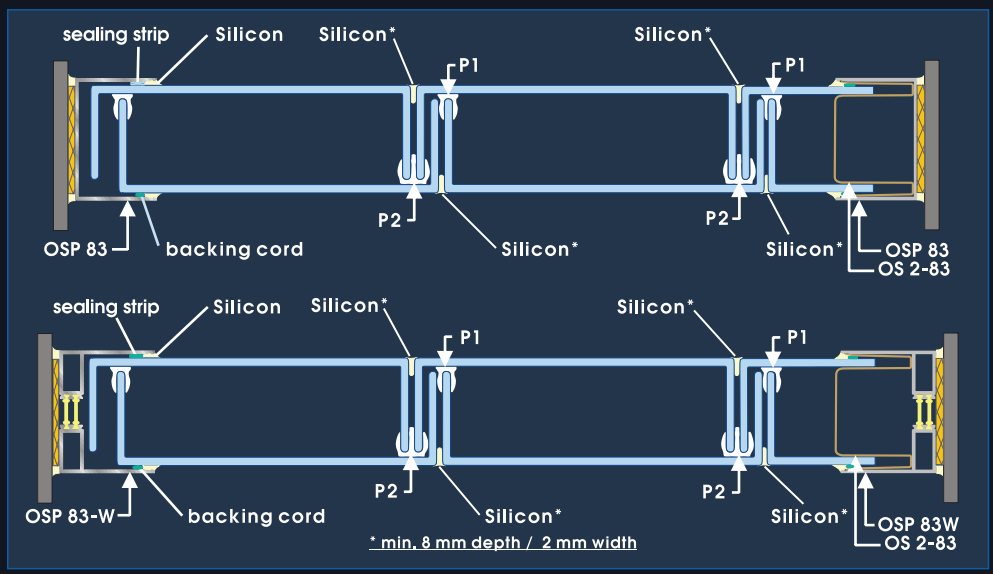
LAMBERTS LINIT

Complete Glass Corners



Complete glass corners can be designed in all lay types. For this special solution, no lengthways (so-called L profiles) but rather only complete "U" glass tracks are to be used. In accordance with the additional conditions of DIN 1055, T4, higher wind loads/stresses must be taken into account in corner and edge areas. This also requires structural measures.

Sports Hall Glazing



Test reports on safety against ball throwing are available from our sales personnel (in compliance with the DIN 18032 Part 3); maximum length installed 7000 mm! For tested LAMBERTS LINIT please see page 28 + 30 "Safety against ball throwing".