



Your Dreams, Our Challenge

Thermobel SCENA

Installation Instructions

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Ver. 1

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1 Introduction

Thermobel SCENA is a double-glazing with two opposite transparent spacers conceived to be installed as 2-side supported glazing i.e. without mullions. In this way it is possible to achieve an unprecedented transparency for a double-glazing, whilst guaranteeing thermal performances.

Thermobel SCENA must be installed in accordance with the national standards and regulations. Glazing setters must ensure to put in place all the procedures normally used to install traditional glazing, such as:

- Ensure that there is not stagnant water in the rebate in contact with the glass edge;
- Ensure that the setting blocks are used in order to avoid direct contact between the frame or any other hard material and the glazing. Setting blocks should be well dimensioned and positioned;
- Ensure that the height of the rebate and the mechanical edge cover are compliant with the national standards and regulations;
- Ensure that laminated glass panels are not in contact with organic solvents or water.

To comply with the transparency of the product, two adjacent panels should also be installed with a transparent or translucent joint. This is described in the following sections.

2 Façade application

The vertical joint between two Thermobel SCENA panels intended for use in façade must cope temperature variations, must ensure water-tightness, should be translucent if not transparent and must ensure independent replacement of panels. Therefore the joint is made of two parts (Figure 1):

- A core consisting of 2 bands of acrylic transparent tape of 2 mm thickness. Each band is attached to the glass edge. More specifically it is placed in the middle of the glazing thickness and running along the whole height of the panel. The width of the tape is determined according to the glazing thickness (Table 1);
- Two silicone seals (one internal and one external) to fill the gap between the acrylic tape and the plane of the inner and outer glass, respectively.

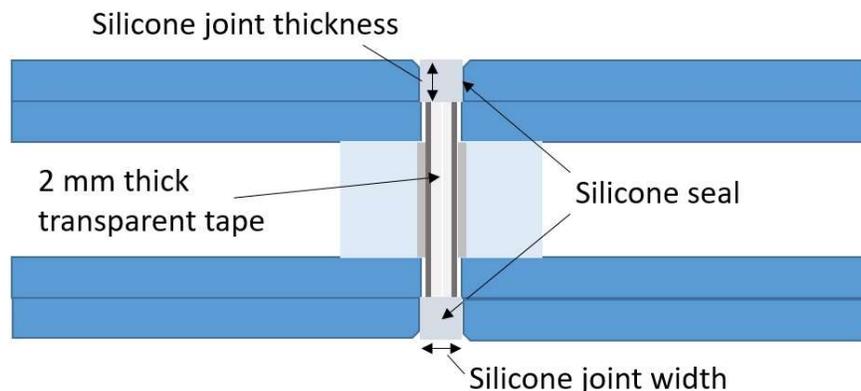


Figure 1: Panel-to-panel assembly for façade application.

In order to have a flat wall, the glazings should have the same thickness.

Acrylic tape application

The acrylic tape has the function of a continuous elastic transparent spacer between two glazing panels. The tape should be applied on each transparent side which will be in contact with another panel (i.e. the sides that are retained mechanically in an opaque frame do not have to be taped). The width of the tape should be smaller than the glazing thickness in order to allow an interior and exterior silicone seal ranging 6 - 8 mm. The tape is therefore centered in respect to the thickness. The suggested width of the tape related to the glazing thickness is shown in Table 1.

Ensure that the glass edge is clean, dry and free from impurity. Center the starting point of the tape in respect to the glazing thickness, attach it manually for 2/3 cm and then apply the tape along a straight line, preferably using the tape applicator. The tape applicator will ensure to apply the tape along a straight line, and to avoid bubbles. Once the tape is applied the glazing can be placed on the façade. Without removing the liner (to ensure future replacement of the panels independently with each other) move the adjacent glazings in close contact with each other in a way that the two adjacent tapes correspond along their width. Apply a pressure in order not to spot voids between the two adjacent tapes along the whole height of the panel.

AGC recommends the following acrylic tapes:

- [Tesa acx^{plus} 7058](#). Detailed installation instructions can be found [here](#);
- [Lohmann Duplocoll CPT 2000](#). Detailed installation instructions can be found [here](#).

Table 1: suggested acrylic tape width

| Glazing composition | Total glazing thickness (mm) | Acrylic tape width (mm) | Silicone joint thickness (mm) |
|---------------------|------------------------------|-------------------------|-------------------------------|
| 66.2/15/66.2 | 40 | 28 | 6 |
| 66.2/15/88.2 | 44 | 28 or 32 | 6 or 8 |
| 88.2/15/88.2 | 48 | 32 | 8 |
| 88.2/15/1010.2 | 52 | 40 | 6 |
| 1010.2/15/1010.2 | 56 | 40 | 8 |
| 1210.2/15/1210.2 | 60 | 44 | 8 |

Silicone seals

Seal the joint internally and externally with 6 – 8 mm thick silicone. The silicone must be well applied to ensure that no water penetration inside the building occurs. AGC suggests Dow Corning 791T. Alternatively, another silicone can be used as long as it complies with the following properties:

- Is translucent or transparent (unless the customer prefers otherwise);
- UV- resistant;
- PVB compatible;
- Acrylic tape compatible;
- Weatherproof.

The silicone application should be made only when the glazing are placed in their final position after having insured that potential tolerances can be accommodated with a beading or a filler.

Tolerances check

Each glazing is produced with ± 2 mm of tolerance. This means that for a façade comprising several panels the total tolerances must be taken into account. Designer are advised to take this into account by using beading profiles or fillers of the desired type to be used at the first and/or last glass edge.

Corner

It is not yet possible to have the transparency of Thermobel SCENA on a corner. Therefore for the corner solution AGC suggests two possible options:

- Off-set joint like with standard IGU installed without mullion. In this case the joint in correspondence of the corner will be made with an opaque spacer masked by serigraphy, whilst the opposite can be transparent;
- Have a mullion or a profile in the corner. This solution would have the advantage to cope with tolerances.

3 Glass fins

Glass fins may be necessary because of building regulations (i.e. in Belgium the maximum panel size without glass fins is 2.2 m), because the calculations require a 4-side support or also because a 4-side support would allow a thinner (and thereby lighter) glazing. Glass fins and the relative connection joints must be dimensioned and executed according to the local building regulations. All the materials (i.e. silicone) must be suitable for this application according to the local building regulations.

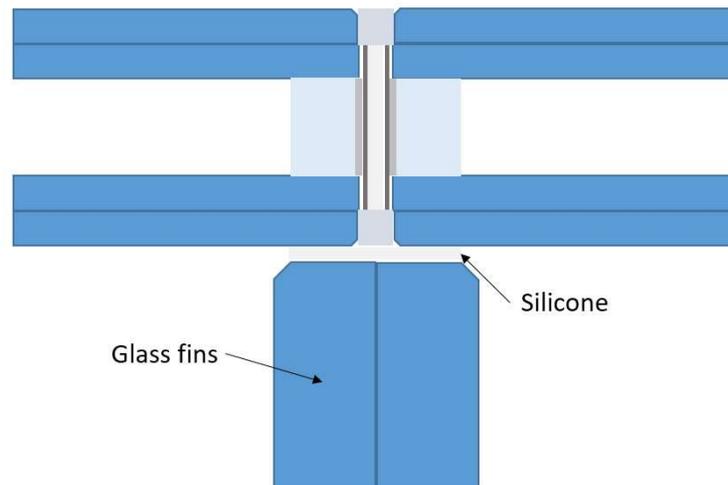


Figure 2: connection IGU to glass fins.

4 Interior application

Thermobel SCENA can be installed as interior partition. In this case the joint should cope with the tolerances, should be transparent and should ensure an easy and independent replacement of

the panels. The joint is made only of a 4 mm thick acrylic tape running along the whole height of the panel (Figure 3). The width of the tape is to be determined according to the glazing thickness (Table 2) and is such that the full edge of the glass is in contact with the tape with the exception of the chamfer (Figure 4). The side of the tape should be passivated in order to avoid that dirt and dust particle would stick on its side.

Acrylic tape application

The application of the acrylic tape should be perfectly executed in order to ensure seal between the panels and in order to avoid visual defects, such as bubbles.

Ensure that the glass edge is clean, dry and free from impurity. Position the tape centered along the glazing thickness as shown in Figure 4. Attach manually the tape for the first 2/3 cm and then apply the tape along a straight line. The tape applicator will ensure to apply the tape along a straight line, and to avoid bubbles. Once the tape is applied the glazing can be placed on the final position. The liner should be removed just before securing the panels one with each other. Apply as much pressure as possible in order to ensure a strong bond between the panels. The tape should be applied in a temperature range of 18°C and 35°C.

AGC recommends to use the following tape:

- Lohmann Duplocoll CPT 9640.

Coping with tolerances

One element should be foreseen at the beginning or the end of the wall to cope with tolerances. This can be a beading or a filler. Given that the panels are slid horizontally to connect with each other the space for this should be foreseen.

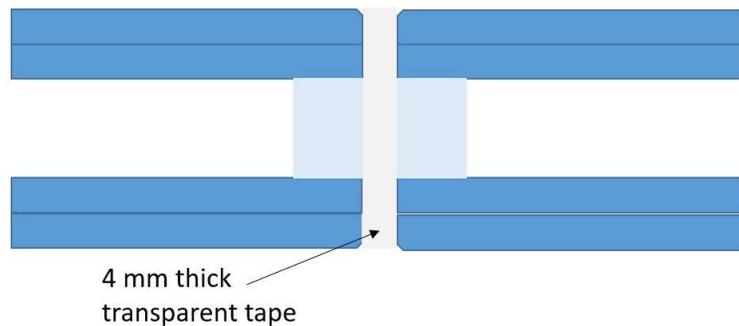


Figure 3: Panel-to-panel assembly for interior application.

| Glazing composition | Total glazing thickness (mm) | Acrylic tape width (mm) |
|---------------------|------------------------------|-------------------------|
| 44.2/15/44.2 | 32 | 29 |
| 44.2/15/66.2 | 36 | 33 |
| 66.2/15/66.2 | 40 | 37 |
| 66.2/15/88.2 | 44 | 41 |
| 88.2/15/88.2 | 48 | 45 |
| 88.2/15/1010.2 | 52 | 49 |
| 1010.2/15/1010.2 | 56 | 53 |
| 1210.2/15/1210.2 | 60 | 57 |

Table 2: tape width corresponding to a given glazing composition.

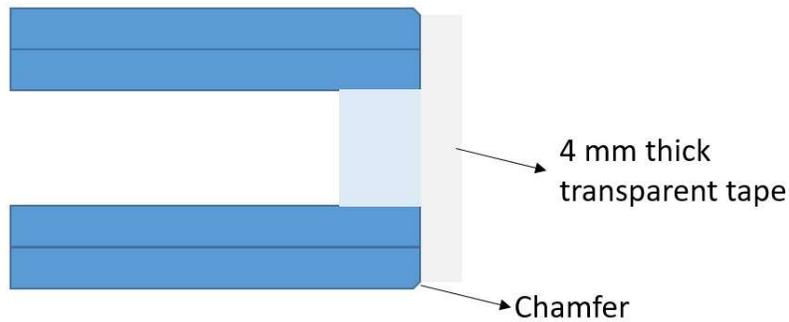


Figure 4: Positioning of the tape in respect to the chamfer.

Corner

The panel for interior application does not have an opaque tape on the side of the panel, allowing therefore a transparent corner. There are two options to have a transparent corner:

- Using a PMMA profile as a corner element connecting two perpendicular panels. The panels are connected to the PMMA profile by means of the 4 mm thick transparent tape (Figure 5). The width of the tape is to choose depending on the glazing thickness (see Table 2). The PMMA sizes will have to match the tape width used in the two perpendicular directions. The profile can be shaped in order to comply with all the angles ranging 0° to 105°.
- Using an off-set panel. The acrylic tape is applied to the standard panel side and attached to the offset of the unit with a 4 mm gap. The gap is then filled with translucent or transparent silicone (Figure 6). The width of the tape for the standard panel is chosen according to Table 2.

Figure 5: corner solution for interior application using a PMMA profile.

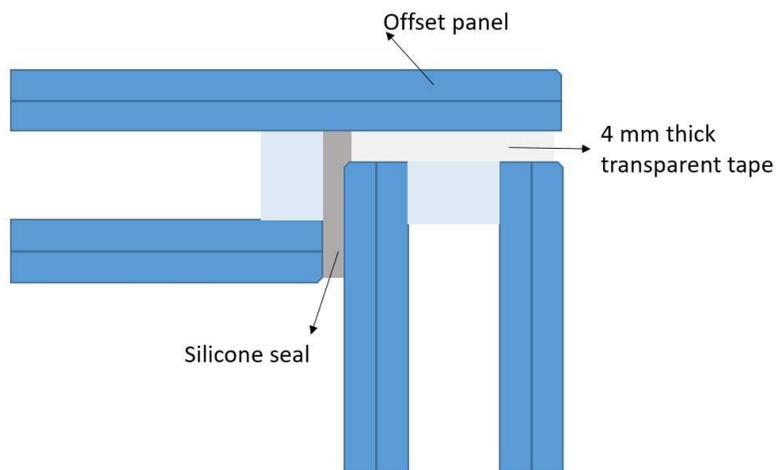


Figure 6: corner solution for interior application using an offset panel.

5 Panel replacement

Façade application

Cut the silicone joint along its middle aiming at intercepting the non-sticky contact surface between the two tapes. Perform the operation from both the interior and the exterior of the panel. Be careful in not intercepting the acrylic tape with the blade as it will stick on both sides to it. Once that full detachment of the adhesives (silicone and tapes) is ensured, the panel can be forced out of its place. Clean the joints thoroughly before re-installing the panel in the same way as it was built.

Interior application

Use a cutter in order to separate the acrylic tape along the two surfaces in contact with the glass. Once that the tape is detached it is possible to remove the panel. If in the re-installation there is not room to place the acrylic tape, then the joint can be done by only filling with silicone.