

## Dokument

### DO04.3.4.1TGI11e Technoform Glass Insulation GmbH user guidelines

#### **TGI-Spacer: User guidelines**

We recommend processing our TGI-Spacer to comply with the quality regulations of Mehrscheiben-Isolierglas e.V. The system descriptions are to be supplemented in agreement with the appropriate standard institutes. System tests are passed with the sealant materials polysulfide, polyurethane and silicone according to EN 1279-2 and -3. Tests according to EN 1279-6 regarding fogging have been performed for each shade of colour. Further the test according ISO 4892 UV-resistance is guaranteed. Test certificates can be provided at any time.

#### **Storage\***

TGI-Spacers and muntin bars must be stored in dry conditions and may never be subjected to moisture in order to prevent corrosion on the metal surface. Air moisture due to temperature differences (inside/outside) can furthermore cause condensation in the cavity of the spacer, which could lead to a pre-loading of the desiccant. Intense variations in the temperature and a low processing temperature have a negative influence on the processing properties. We recommend a storage temperature of at least 10°C.

#### **Handling\***

To prevent bending or deformation during handling, the TGI-Spacer may only be removed from the palette in a bundle and handled by two people. The packing film may only be removed after placing the bundle on the delivery table.

#### **Cutting\***

A suitable hard metal saw blade must be used to cut TGI-Spacers and muntin bars to length; this also minimises waste.

#### **Assembly of frames**

Straight connectors in steel and plastic and plastic corner connectors are matched to the geometries of TGI-Spacers. Care must be taken to ensure that butylisation in the corners is carried out in a manner that ensures impermeability (see butylising). The connectors are available from Technoform Glass Insulation GmbH, as well as from Kronenberg or Cera.

#### **Bending of frames\***

TGI-Spacers must be kept dry and free from grease and dust. The TGI<sup>®</sup>-Spacer can be bent in a cold state on all standard benders. Please make sure the spacer is at room temperature before use. Suitable machines and supplementary tooling should be obtained from machine manufacturers. An additional angle of approx. 10° to 12° should be set.

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#### Filling of desiccant\*

The TGI-Spacer can be filled automatically. The suitability of the drill to be used for preparation for desiccant filling must be checked. The hole has to be drilled completely through the wall of the spacer to ensure sufficient desiccant per frame. If frames of the TGI-Spacer are in width 12 mm and larger, two sides of the frame should be filled. In the case of widths smaller than 12 mm, the filling of all four sides is recommended. On black spacers, any residual desiccant dust will be visible and must be removed before the final sealing of the insulating glass pane.

#### Butylisation\*

TGI-Spacers can be butylised on manual and automatic butyl extruders. Because the bending on large TGI-Spacer frames is higher than on comparable aluminiumspacer frames, larger frames should be butylised manually. Prior to butylisation it must be ensured that sufficient area at the edge of the glass is de-coated to guarantee that the butylisation is in contact with the de-coated area of the glass even in the corner areas. Butylisation must be applied evenly on both sides and must be free from gaps in the corner areas. Butylisation thickness after pressing must be > 0.3 mm in the corner areas.

#### Gas-filling

Filling with gasfilling presses or subsequently through drill-holes.

#### Sealant materials

The adhesion of conventional sealing substances has been tested on our TGI-Spacer. Using the sealing substances polysulfide, polyurethane and silicone, a cohesive break was found after storage at 53° C and 100 % relative humidity over a period of 100 hours. Test results can be supplied on request. Further information on the processing of our TGI-Spacer with proprietary sealing materials can be obtained from the appropriate sealing material supplier.

#### Sealing process\*

Sealing can be performed by sealing machines or manual application. To ensure the gas impermeability of the edge system, the edge sealing has to consist of a minimum of 3 mm of a secondary sealing material. There should not be any air locked either in the material or on the mating surfaces.

#### Installing muntin bars\*

For the application of muntin bars it is possible to use conventional compressed air clips. If pressure is too high, there is a risk of a break in the plastic part of the spacer. Therefore, air pressure needs to be reduced. The tested air pressure ranges at a level of 3 bar. Connecting plugs which lie flat against the TGI-Spacer are still to be used as the cavity created when moulding is applied increases the risk of splitting.

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#### \*Differences to conventional aluminum spacers

Technical changes are subject to alteration. Application technology advice – in particular processing recommendations – is given to the best of our knowledge and does not indemnify the user from the suitability of this advice for the intended procedures and purposes. We accept no liability for advice in application technology. We accept no liability for the factual suitability and deployment of the spacers and muntin bars.