

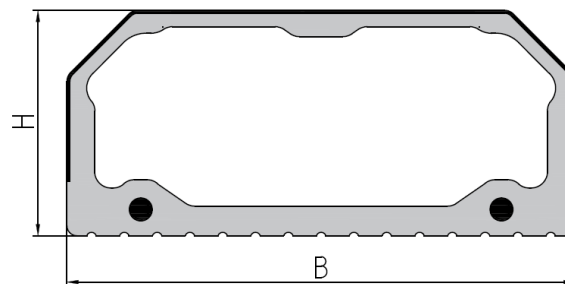
## THERMIX TX PRO

THERMIX TX PRO is a modern spacer profile consisting of a particular tecnopolymer stiffened with two highly resistant stainless wires. The bar is partially covered by a very thin stainless steel foil which helps the sealant adhesion and acts as a gas barrier.

The high-quality stainless steel coating, just 0.09 millimetres thick, makes it resistant and flexible.

THERMIX TX PRO can be cut to manufacture frames with plastic corner keys or bent using every bending machine available today on the market.

The spacers, which are tied into bundles of 11 bars, can be packed into cardboard boxes or into stillages.



### 1.0 Spacer properties

#### 1.1 Cross section and tolerances

Spacer	B +/- 0.15 [mm]	H +/- 0.15 [mm]
THERMIX TX PRO 8	7.50	6.85
THERMIX TX PRO 9	8.50	6.85
THERMIX TX PRO 10	9.50	6.85
THERMIX TX PRO 12	11.50	6.85
THERMIX TX PRO 13	12.50	6.85
THERMIX TX PRO 14	13.50	6.85
THERMIX TX PRO 15	14.50	6.85
THERMIX TX PRO 16	15.50	6.85
THERMIX TX PRO 18	17.50	6.85
THERMIX TX PRO 20	19.50	6.85
THERMIX TX PRO 22	21.50	6.85
THERMIX TX PRO 24	23.50	6.85

EN 1279-6 reference to table A.8

Ref. N°.	EN Ref.	Description/Specification	Internal test method
Further Spacer properties			
1.2	2.3 2.4	<b>Geometry/Shape</b> The spacer geometry is shown in the cross section picture page 1. On enquiry a specific drawing can be delivered.	Caliper
1.3	2.2	<b>Length and straightness</b> Containers: Standard length is 6,000 mm +/- 10 mm. Boxes: Standard length is 5,000 mm +/- 10 mm. Straightness deviation 15 mm/m at room temperature.	Steel ruler. Visual.
1.4	2.7	<b>Undesired openings</b> The spacer is tight as the backside is covered with a gastight foil. Plastic and foil are extruded together.	Process validation.
1.5	2.6	<b>Perforation. Se comments below **</b> Calibrated perforation holes measured with air flow meter for optimal performance.	Air flow meter.

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### 2.0 Spacer material

Ref. N°.	EN Ref.	Description/Specification	Internal test method
Further Spacer properties			
2.1		<b>Thermal properties/Material for calculations</b> Value according to the 2 box model is 0.31 W/mK for the second box. Basic material is Polypropylene.	Documented by IFT Rosenheim
2.2	2.5	<b>Surface</b> The surface is clean and do not undergo any treatment with chemicals. Colours: Black (simil RAL 9005), Light Grey (similar to RAL 7035), Dark Grey (similar to RAL 7040), White (similar to RAL 9016). On request: Grey (similar to RAL 7045), Light Brown (similar to RAL 8003), Dark Brown (similar to RAL 8016).	Visual test & Adhesion test.
2.3		<b>Tolerances of the plastic material</b> The wall thickness of the spacer is according to data sheet.	Caliper
2.4		<b>Lubrication</b> Not relevant.	Adhesion test.
2.5	2.8	<b>Volatile elements</b> Volatile elements are tested according to EN 1279-4 annex H. $M_v \leq 0.3 \%$ .	Weight loss test. $M_v$ measured

#### \*\* 1.5.1 Level of perforation

The ALU-PRO standard perforation will reduce the absorption of aqueous vapour to be app. 1.0 weight % over a period of 24 hours (16 mm cavity tested by Grace Davidson Europe) - relative to the spacer size. The perforation is targeted EN 1279-6 annex A – specified maximum preload  $H_2O \leq 3\%$ .

#### \*\* 1.5.2 Function of the perforation

The perforation holes are until a certain particle size able to detain dust from the desiccant. This point is particular related to the performance of the bending machine and to the desiccant quality. An incorrect adjustment of the bending tool can cause damage to the perforation.

### 3.0 Quality aspects

#### 3.1 Quality management

ALU-PRO is certified according to UNI EN ISO 9001.

#### 3.2 Tests of the product

Processes and routines are established to secure the quality of the delivered material. During production the spacers are continuously monitored through systematic and random checks. Data will be available for a period of 5 years.

#### 3.3 Quality agreement

ALU-PRO fulfil the requirements of EN 1279-6 annex A

### 4.0 Customer focus

#### 4.1 Warranty

THERMIX TX PRO profiles are covered by a 10 year product warranty. The warranty covers free exchange of spacers in case of a defect. The spacers must have been stored, installed and used according to present norms and technical standards. Special solutions and usage that are not standardized will need prior approval in writing from ALU-PRO in order to be covered. Related to temperature standardized condition for IG is  $-30^\circ$  to  $70^\circ\text{C}$ .

#### 4.2 Storage and use

To secure the performance of the spacers, the stock conditions must be acceptable. Broken packaging, humidity and variation in temperature will have an effect on the spacer in general. Make sure the spacer is conditioned at room temperature before use. Preferred conditions will be a room temperature 15 -  $25^\circ\text{C}$  and humidity RH of minimum 45%.  
Avoid having an environment with a high concentration of dust.  
General handling and attention according to safety data sheet for the spacer.  
Use gloves when handling the spacer/frames  
It is recommended to check out and control all the specific points above.



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### 4.3 Adhesion check

When preparing samples for adhesion test make sure the spacer backside is covered and in full contact with the sealant (no air bubbles). When pulling the samples make sure to support the spacer fully inside to avoid deformation. If the spacer deforms the adhesion test will be affected. Written procedure can be delivered up on request. Curing time according to instruction from sealant manufacturer.

### 4.4 Pressure

Deformation by pressure such as wind load and weight load by horizontal installation.

### 4.5 System performance

The user (here the IG producer) must secure the whole system consisting of spacer, connector/corner key, bending machine, desiccant, butyl and sealant works well together in the chosen setup. Focus on compatibility, adhesion, dust and corner quality. From ALU-PRO it's recommended to fill all four sides of the frame with desiccant in case of spacer in widths of less than 12 mm. After handling and transport of the frames, it's important to check if the connector/corner keys are still in the correct position, if not there is a significant risk for desiccant dust inside the IG unit. Foam behind the connector/corner can be used to avoid such problems.

### 4.6. Cleaning the plastic surface

If for some reason the plastic surface is defiled by dust from other materials it can be cleaned again by the use of water or air. Dust can easily be removed with antistatic loaded compressed air or a moist cloth. Do not use any chemicals before a compatibility check.

### 4.7 UV stability

The plastic used is an organic material with UV stabilizer in order to minimize the ageing effect caused by sun light. The material is tested for 3,000 hours according to EN ISO 4892-1 & EN 4892-2 method A, cycle 1. Evaluation is done according to grey scale index.

Seguire le indicazioni della scheda di sicurezza per l'utilizzo e la movimentazione.  
Si raccomanda di controllare questi aspetti.