Bystronic glass

Because we care

TPS®–THERMO PLASTIC SPACER

THE ORIGINAL FROM THE INVENTOR. DURABLE. AESTHETIC. PROVEN SINCE 1994.

The best solution for insulating glass production

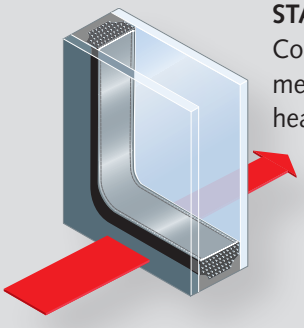
TPS®–THERMO PLASTIC SPACER
A SUSTAINABLE SOLUTION THAT HAS REPEATEDLY PROVEN ITSELF.

TPS® – Thermo Plastic Spacer is the premium insulating glass of the warm edge generation

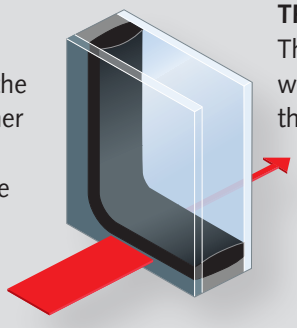
WHAT IS TPS® AND THE WARM EDGE?

The term „Warm Edge“ refers to a thermally-improved edge seal of an insulating glass unit. Materials that transfer significantly less thermal heat to the outside are used in place of the conventionally-used materials such as aluminium or steel. This leads to an increase in energy efficiency and to a reduction in heating costs. Furthermore, TPS® reduces condensation.

Since 1994, we have accrued experience in warm edge technology. Bystronic glass is an industry leader as the inventor of TPS® production. So you can rely upon production of the future, placing your trust in this original product as well as our extensive experience.



STANDARD
Conventional insulating glass with metal spacer. The profile transfers the heat or the cold respectively to either the inside or outside, which consequently does not provide an ideal thermal insulation.



TPS®
The organic polyisobutylene spacer without metal insert provides an ideal thermal insulation and, subsequently, reduces heating costs.

SPACER PRODUCTION IS INTEGRATED NOWADAYS

Production is greatly simplified thanks to the direct application of thermoplastic material onto the glass. The spacer width can be varied during production for each insulating glass unit in the process cycle. Separate production processes are no longer needed for sawing, bending, connecting, desiccant filling and butyl-coating. This saves both time and money:

- Storage of different spacer profiles and connectors eliminated
- Suitable spacer is readily available
- Clean production: No offcut, no dirt, no waste
- Fabrication of the entire production mix is now possible on a single line
- Splitting orders into standards and specials is no longer necessary

BEST U-VALUES – UNBEATABLE ENERGY EFFICIENCY.

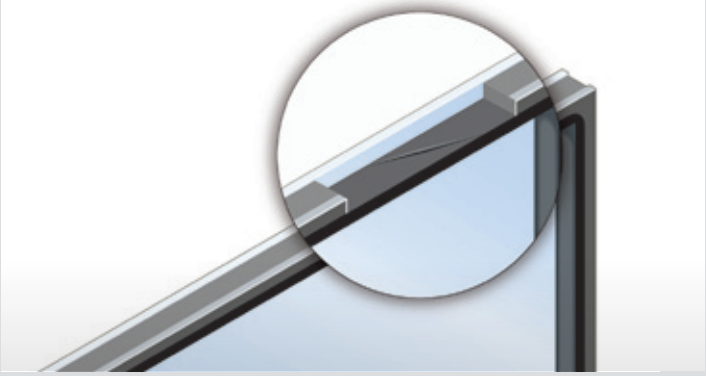
Excellent thermal insulation – Confirmed by ift Rosenheim

The U-value of a window using TPS® is reduced by up to 12 % compared to a conventional window with an aluminium edge seal. Furthermore, the linear heat transfer coefficient of the edge zone is decreased by over 60 %.

Consequently, the highest standards in thermal insulation are met. As heating costs are reduced, subsequently so is condensation.

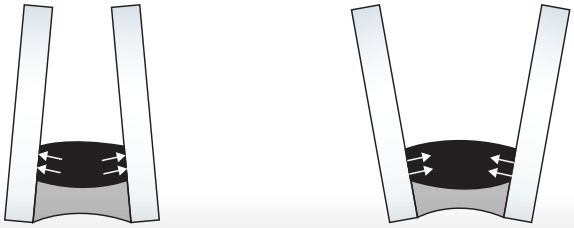
PERFECT PRIMARY SEAL

The patented bevel joint ensures a perfect primary sealing of thermoplastic spacer, even on the joint.



IDEAL PERFORMANCE, EVEN WHEN SUBJECTED TO EXTREME EXTERNAL LOADS

All movements are mirrored by 35 times more sealing material and 50 % lower boundary surface between the glass and the spacer. Consequently, the edge seal always remains flexible under extreme external load. Therefore, it provides an ideal sealing barrier against penetrating moisture and ensures durable functionality.



AESTHETIC AND INDIVIDUALLY ADJUSTABLE

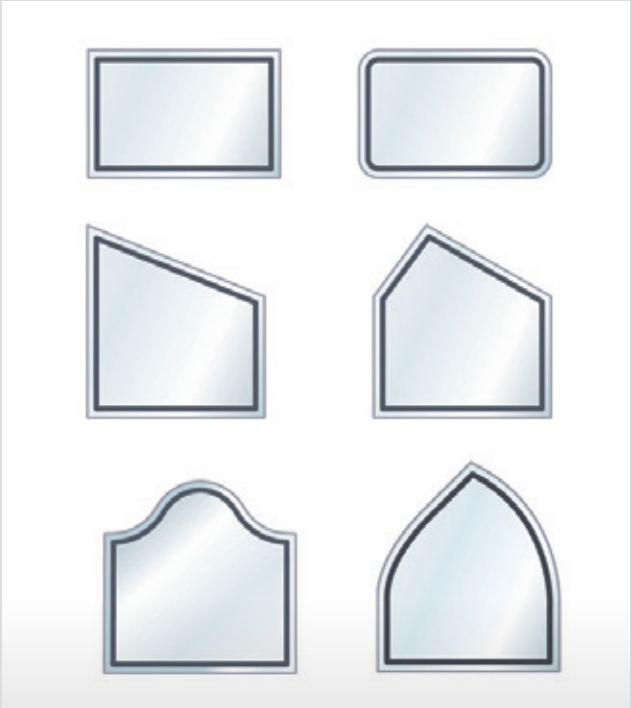
You can now address the individual wishes of your customers and position the seal where desired. For instance in an almost invisible position in the corner. The application and seamless sealing of the TPS® spacer is then performed in a single step. **The advantage:** The gas-tight bevel joint that has been proven repeatedly does not require any thermal-mechanical reworking. Irrespective of radii, small or large spaces between the lites, this seal always works and is the distinguishing feature of the TPS® edge seal.

TPS®–THERMO PLASTIC SPACER
ENDLESSLY DIVERSE.

The only limitation is your imagination. (Almost) everything is possible with TPS®.

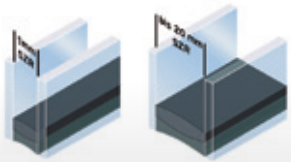
Previously, the individualisation of insulating glass units was only possible with a great deal of effort. With TPS®, you can now manage that in ongoing production without any problems whatsoever.

The different rectangular or shaped formats are produced in succession in ongoing operation without any loss of time.



VARIABLE SPACE BETWEEN THE LITES

- From 1 mm and up to 20 mm for the individual design of the structure of insulating glass units

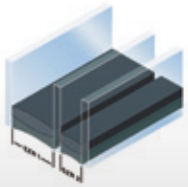


CUTOUTS

- Fully automatic primary sealing of cutouts

TRIPLE INSULATING GLASS

- Variable space widths between the lites can be combined as desired
- Congruent TPS® edge seal, no offset



CAST RESIN NOISE INSULATION / FIRE-RESISTING GLASS

- With prepared filling gap
- Simple and inexpensive to manufacture

SECURE YOURSELF A PIECE OF THE FUTURE.

TPS® – Quick, easy, secure.

The TPS® production line is the most modern and flexible solution for insulating glass manufacturing. It differs from conventional production systems thanks to the direct application of the thermoplastic spacer onto the glass plate.
Separate production processes are no longer necessary for bending, sawing, connecting, filling and butyl-coating of spacers. Logistics are minimised and the organisation within the factory is simplified:

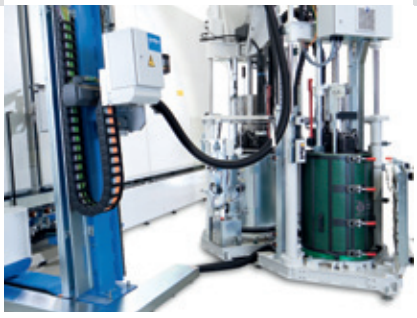
- Interruption-free operation
- No storage area needed for storing different profile types and sizes
- No laborious desiccant handling
- No delay in production through missing or incorrect spacers
- No offcut, no dirt, no waste
- Production mix manufactured on a single line
- Handling solutions for quick stacking available

DIRECT APPLICATION

Direct application of thermoplastic spacer onto the glass plate. The spacer width can be changed as desired during operation without any loss of time.

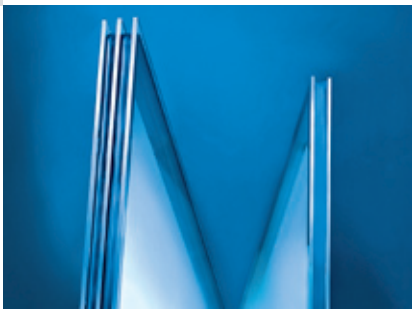
PERMANENT OPERATION

The dual-drum pump system enables a completely interruption-free operation. The material drum change takes place during production.



EXACT PRODUCTION

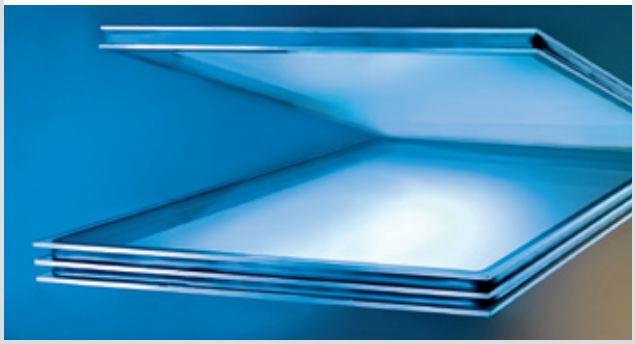
Automatic equalisation of glass tolerances for TPS® insulating glass unit production in exactly the required package strength.



TPS®–THERMO PLASTIC SPACER
ADDED VALUE FOR ALL.

The use of TPS® provides significant advantages for all parties

INSULATING GLASS PRODUCERS



By using TPS®, you are easily updating your production methods, in the form of a completely new system or by modifying your existing production line.

- Entirely interruption-free operation thanks to the dual-drum pump system and the material drum change taking place during production
- No production interruption during spacer width change or in the event of asymmetrically structured triple I.G. units
- Separate production processes are not necessary for bending, sawing, connecting, filling and spacer butyl-coating.
- No storage area needed for storing different profile types and sizes
- No laborious desiccant handling
- No production delays due to missing or incorrect spacers
- The most sustainable technology for manufacturing I.G. units thanks to unbeatable energy efficiency
- 4-sided stepped I.G. unit manufacturing possible
- Double and triple I.G. unit production possibility
- Large size manufacturing that measures up to 9 m in length possible
- Alternating spaces possible between the lites
- Gas-filling on request
- Continuous process according to data specification

WINDOW AND FACADE CONSTRUCTORS

TPS® provides the absolute best in terms of energy efficiency. Allow yourself to be inspired by the completely new opportunities that are made possible by TPS® technology.

- 12 % lower U-value compared to conventional aluminium spacers
- 60 % reduction of linear heat transfer coefficient of the edge zone
- Seal positioning in accordance with customer wishes e.g. almost invisible in the corner
- Rectangular and shaped formats or free shapes possible
- The seamless air-tight TPS® insulating glass boasts 35x more sealant than conventional insulating glasses. That ensures reliable sealing, specifically at the glass corners where there is a particular risk of leaks
- High quality in the event of structural glass, it adapts to the sealant on the structure of the glass surface
- UV-stable, gas-tight edge seal with suitable silicone sealing possible
- More uniform temperature distribution on the glass surface
- High level thermal insulation
- Drastically reduced condensation formation
- Savings in terms of energy costs
- Reduced carbon emissions
- Less draughty living rooms
- Cosier and a more pleasant living environment

ARCHITECTS AND DEVELOPERS

You have the ideas and TPS® supplies the solution. Do not limit your design freedom with technical restrictions.

- Almost limitless design prospects in terms of window shapes and sizes
- The frame colour reflection in the edge seal makes the space between the lites almost invisible
- TPS® can be combined with all insulating glass functions, e.g. sound insulation, fire protection and sash bars
- Absolutely air-tight joint and closed edge seal providing utmost gas-tightness and best insulation values
- Ideal sealing barrier against penetrating moisture
- Best U-values
- Savings in terms of heating costs
- Contribution to climate protection thanks to CO_2 reduction
- Reduced condensation and consequently lower risk of mould formation

OWNERS AND USERS

For many owners, building their own house is an investment for life. Safety, durability and budget are important factors when making a decision. However, the aesthetics and design opportunities are also of great importance.

- Prevention of energy loss as thermal bridges do not occur at the edge of the window
- Increase in the service life, even under extreme external load, through the use of permanently elastic sealant
- No cold window edge zones, less draught
- The condensation on the inside of the glass is reduced to a minimum. Furthermore, this prevents health-harming mould from forming.
- With TPS®, a limitless window shape diversity is extremely easy to implement
- Best U-values
- Savings in terms of heating costs
- Contribution to climate protection thanks to CO_2 reduction
- More living comfort and cosiness

Bystronic glass

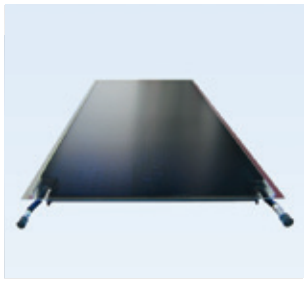
Because we care

TPS®–THERMO PLASTIC SPACER
VERSATILE AND RELIABLE.








TPS® FULFILLS THE MOST IMPORTANT REQUIREMENT PROFILES WORLDWIDE

CEN Europe:	EN 1279, Part 1-6	**Italy:**	UNI 10593
Germany:	DIN 1286/1, DIN 1286/2	**North America:**	ASTM E2190
France:	NF P 78-451, NF P 78-452, Avis Technique	**USA:**	ASTM E 773, ASTM E 774, HIGS
Finland:	SFS 4704	**Canada:**	CAN 2-12.8-M76
Netherlands:	NEN 3567	**Japan:**	JIS R 3209
Norway:	NS 3212		

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