

Warm edge for energy efficient windows and façades

Engineered in Switzerland

www.swisspacer.com

SWISSPACER

The edge of tomorrow.



SWISSPACER

for your perfect windows

Turning Torso, Malmö (S)
Architect: Santiago Calatrava
Photo: Emporis GmbH

Lower heating costs thanks to better thermal insulation

SWISSPACER's warm edge spacer bars determine the distance between the panes of the insulating glass. Warm edge works at the edge of the glass, providing thermal insulation and ensuring that heat is not lost to the outside in the winter and heat can't get in during the summer.

Windows fitted with SWISSPACER retain their insulating effect in the long term and save considerable energy costs. With the aid of a barrier foil that is impermeable to water vapour and gas, the gas filling is maintained throughout the service life of the window in the area between the panes, so water vapour cannot get in. The glass unit retains its thermally insulating function permanently and contributes to the long term energy efficiency of the building.

Why windows with SWISSPACER

- SWISSPACER is the easiest, most cost-effective way of increasing the energy efficiency of a window. According to ift guidelines WA-17/1 and WA 08/3, SWISSPACER is the leading warm edge spacer on the market.
- SWISSPACER creates a cosy and healthy room climate, as the glass remains warm at the edges, preventing the build-up of condensation. Condensation is not only unattractive, it also facilitates the growth of mould and bacteria. This can cause breathing difficulties or exacerbate existing health problems.
- SWISSPACER offers the widest selection of colours and widths for architectural solutions – whether it's spacer bars in the same colour as the profile or in a contrasting colour: SWISSPACER caters to its customers' individual needs.
- SWISSPACER TRIPLE is the ideal spacer bar for triple glazing. It provides optimum energy efficiency, looks great and keeps the total weight of the insulating glass low.
- SWISSPACER has extra-wide spacer bars that offer enough space in the area between the panes for integrated blind systems.
- SWISSPACER has established itself worldwide, as most innovative insulating glass unit manufacturers fabricate with SWISSPACER.

SWISSPACER products

SWISSPACER ULTIMATE

- ULTIMATE is the leading warm edge on the market. In official tests conducted by ift Rosenheim, it achieved the best results for thermal conductivity out of all leading warm edge spacer bars.
- These results are documented in the official data sheets of the Federal Flat Glass Association Warm Edge working group (Bundesverband Flachglas Arbeitskreis Warme Kante).

SWISSPACER ADVANCE

- SWISSPACER ADVANCE is the benchmark for mid-range spacer bars.
- For applications where costs are a factor, this spacer bar offers the best possible performance.

SWISSPACER TRIPLE

- SWISSPACER TRIPLE was specifically developed for triple glazing. The centre pane is held in place by the groove.
- Thinner panes can be used in the middle of the triple glazing, significantly reducing the overall weight of the glass.
- Thanks to SWISSPACER TRIPLE, only two butyl seals are required for the insulating glass unit. No wavy butyl line along the centre pane, and maximum energy efficiency as well as reduced risk of gas loss and moisture penetration.

EXTRA-WIDE SPACER BARS

- SWISSPACER spacer bars are available in widths of up to 36mm.
- SWISSPACER can therefore also be used for units with larger air gaps, such as insulating glass for leaf-enclosing infill or integrated blinds.
- With wide spacer bars, you can offer your clients multiple solutions – all with excellent energy efficiency and aesthetics

GEORGIAN BARS

- SWISSPACER Georgian bars are made of the same highly-insulating plastic as SWISSPACER spacer bars. This prevents a cold bridge in the insulating glass and maintains the window's high energy efficiency.
- A lot of window fabricators underestimate the effect of metal spacer bars in the insulating glass unit. An otherwise standard flat-rate mark-up of the U-value (according to EN 14351-1 by up to 0.3 W/m²K) is no longer necessary when using SWISSPACER Georgian bars.
- The impact of SWISSPACER Georgian bars on the U-value of the window is low. Our energy-saving program CALUWIN will help you make these differences clear and convince your customers.



Passive House: efficient – comfortable – sustainable



Photograph: Kristen Pelou

Passive House (Passivhaus) is a building standard that is energy efficient and environmentally friendly at the same time. It's a concept that is creating pioneering projects for building industry.

In the light of constantly rising energy costs, more and more building owners are choosing to build to Passive House standard. Thanks to the increased thermal insulation of the floor, walls, windows and roof, energy losses are reduced to a minimum.

For windows and façades to achieve the Passive House standard, they need profiles and insulating glass units with high levels of energy efficiency. The edge of the glass is the weak point of a building envelope in terms of energy leakage. For this reason, a particularly thermally efficient warm edge is crucial. Most Passive House window and façade builders rely on SWISSPACER.

According to the Passive House Institute, Darmstadt (Germany), over 75% of all certificates for Passive House windows and almost 100% of certificates for Passive House façades were achieved using SWISSPACER.

CALUWIN – the energy saving calculator

This free calculation program for architects and specifiers, as well as planners and consultants, makes it easy to calculate energy savings in windows.

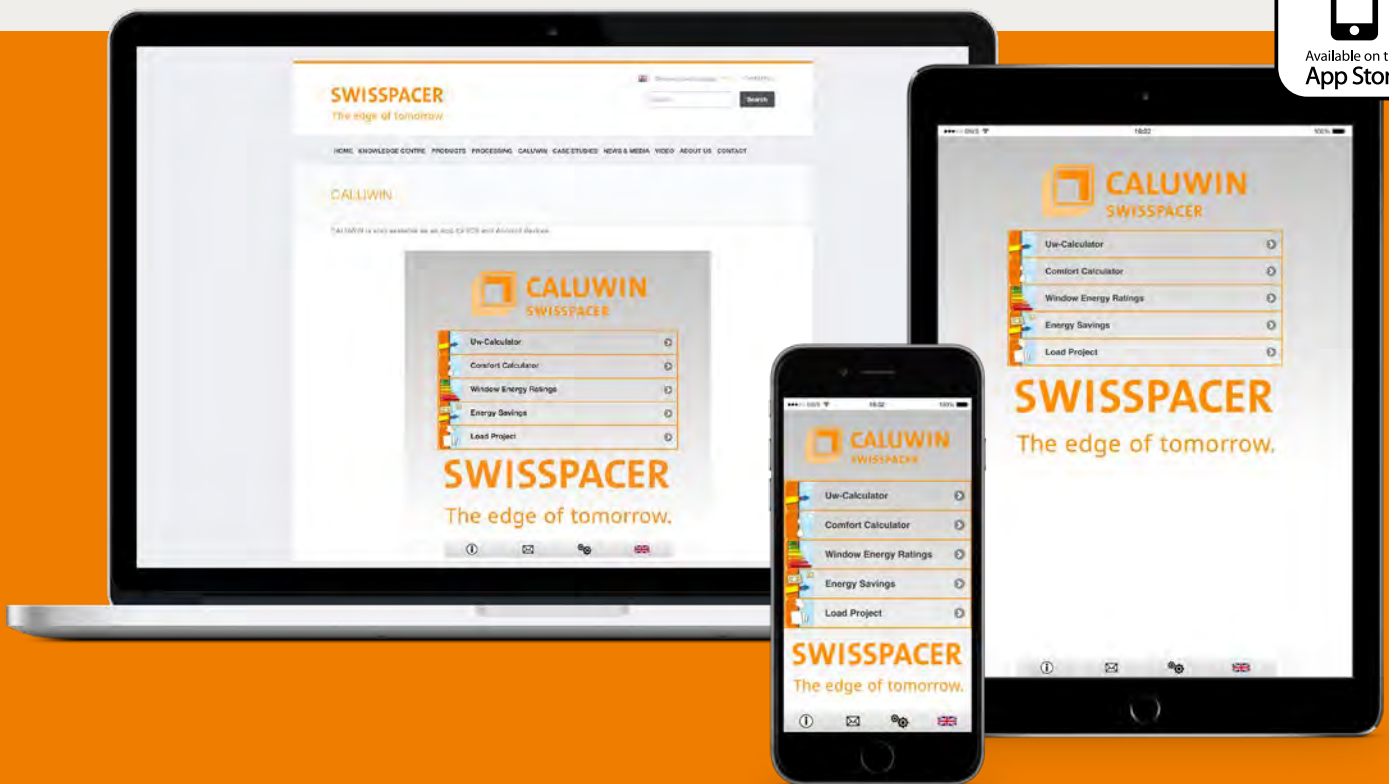
The tool can be used to calculate the U_w -value for almost all window designs easily and accurately.

CALUWIN even shows if it is likely condensation will form at the edge of the glass or if there is a risk of mould formation. It also features different climate situations.

Window designs can be calculated quickly and accurately, as the technical data from numerous brand name manufacturers of window profiles and insulating glass units is built into CALUWIN. Potential savings in terms of heating costs and the reduction of CO₂ emissions can also be visualised.

The tool is certified by ift Rosenheim as compliant with WA-05/2 guidelines. It can be used to calculate different international window energy ratings, such as BFRC (UK) and Passive House efficiency classes (international).

CALUWIN is available as an App for iOS and Android devices. An online version is available at www.caluwin.com.



CALUWIN
SWISSPACER



SWISSPACER is a key component of energy saving windows and façades

Architects

Window Fabricators

Sealed Unit Makers

Torre Cristal, Madrid (ES)
Architect: Pelli Clarke Pelli
Architects / Ortiz León Arquitectos
Photo: Glassolutions La Veneciana

Why you should use SWISSPACER for windows and façades

SWISSPACER is the leading warm edge spacer solution on the market. It offers exceptional comfort in the home and creates additional scope for aesthetic design.

According to a scientific study, in a non-insulated detached house, around 18% of heat is lost through the windows.

SWISSPACER is a simple and cost-effective component that helps improve the energy efficiency of windows and façades.

SWISSPACER ULTIMATE provides the best insulation, as demonstrated by official measurements taken by ift Rosenheim for the Warm Edge working group of the Federal Flat Glass Association.

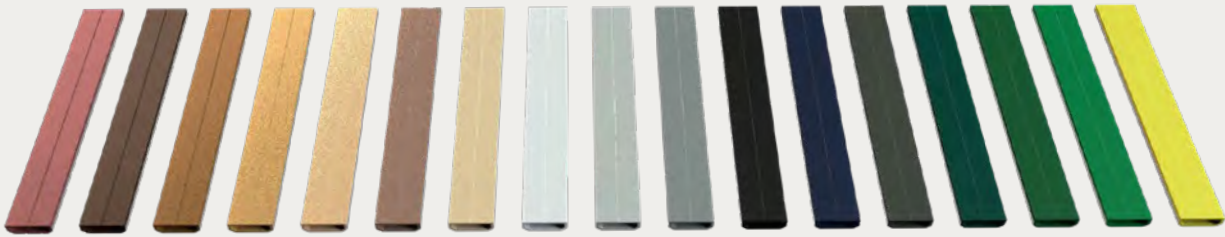
SWISSPACER spacer bars are impermeable to gas and water vapour. Well made units of insulating glass with built-in SWISSPACER spacers save energy throughout the whole service life of the windows and façades.

SWISSPACER TRIPLE, the spacer bar for triple glazing, looks great while providing excellent energy efficiency. SWISSPACER TRIPLE holds the centre pane in a special groove, so a second spacer bar is no longer required. The spacer frames are connected and 100% parallel. The butyl lines commonly visible in the centre pane when using triple glazing are no longer an issue. Thinner panes can be used in the middle of the triple glazing, significantly reducing the overall weight of the glass.

Extra wide SWISSPACER spacers up to 36mm offer additional scope for creative design solutions, such as for integration of slat systems for shading and light deflection, without sacrificing thermal insulation.

Colour and surface finish offer attractive design options

Even small details can play a big role. Whether you prefer a spacer bar in the same colour as the window profile or a contrasting colour, SWISSPACER has 17 colours to choose from – the largest selection of warm edge spacer bars in the market. On request, we will be happy to produce other colours.



Aesthetics

SWISSPACER spacer bars have a matt, velvety surface with no metallic reflections in direct sunlight and no annoying perforations.



30 St Mary Axe, London (UK)
Architect: Foster and Partners
Photo: Emporis GmbH



With SWISSPACER, you will increase the value of your windows and save your customers heating costs

Architects

Window Fabricators

Sealed Unit Makers

Optimising the U_w -value with SWISSPACER

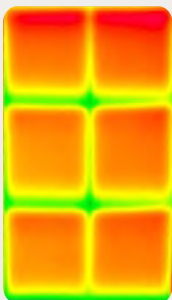
With warm edge from SWISSPACER, you can improve the U_w -value of your windows far more cost-effectively and efficiently than with the frame profile or insulating glass. SWISSPACER is the first warm edge to be awarded the Passive House certificate and energy efficiency class A/A+ (certified Passive House Institute, Darmstadt, DE). With SWISSPACER, you will be ready for the energy regulations in the building codes of tomorrow, today.

Why you should use SWISSPACER in your windows

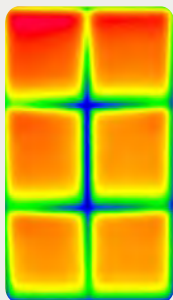
- SWISSPACER helps keep the temperatures inside at the edge of the glass warm in winter and cool in summer.
- The higher temperatures at the edge of the glass prevent the buildup of condensation. This reduces the risk of the growth of mould and bacteria and creates a healthy, pleasant living atmosphere.

Consistent quality with SWISSPACER

- Every SWISSPACER has a barrier foil that is impermeable to water vapour and gas that ensures that the gas filling in the insulating glass unit stays inside and prevents water vapour from penetrating the unit.
- SWISSPACER TRIPLE has been specially designed for triple glazing. Where previously two spacer bars were used, now only one is enough. SWISSPACER TRIPLE fixes the centre pane of glass in a special groove and holds it in place. The result is a visually perfect appearance, as the spacer bars are connected and are 100% parallel. The butyl lines commonly visible in the centre pane when using triple glazing are no longer an issue. Thinner panes can be used in the middle of the triple glazing, significantly reducing the overall weight of the unit.



with SWISSPACER



without SWISSPACER

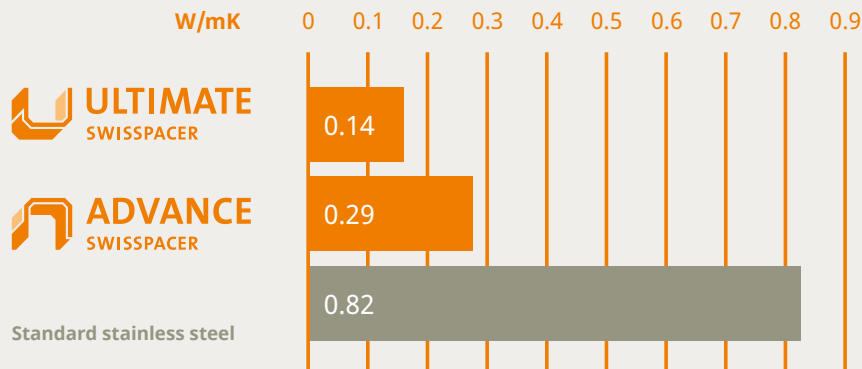


with SWISSPACER



without SWISSPACER

Thermal conductivity in comparison



SWISSPACER ULTIMATE is a leading warm edge on the market according to ift guidelines WA-17/1 and WA-08/3.

SWISSPACER ADVANCE is our most cost-effective warm edge with excellent performance.

SWISSPACER
inside
www.swisspacer.com

Use the label

The SWISSPACER inside label is there to help your customers buy energy efficient windows. It confirms building owners have made the right decision, purchasing a particularly energy-efficient spacer bar for long-lasting insulating performance.

Window manufacturers and fitters can get the stickers free of charge from SWISSPACER: info@swisspacer.com

Simply the best energy-efficiency for all applications

Architects

Window Fabricators

Sealed Unit Makers



The most important function of a warm edge is its low thermal conductivity and good insulation. In winter, it stops heat from flying out of the window via the edge of the glass and in summer, it prevents heat from getting into the cool living space.

Why you should use SWISSPACER

- SWISSPACER does not require a big investment to use in making sealed units. It can be cut and processed by hand with corner keys or using existing bending machines.
- High-performance welding machines with very short cycle times are available for industrial production.
- When manufacturing insulating glass units, SWISSPACER spacer bars can be quickly and perfectly positioned on the panes of glass. This saves time and guarantees optimum quality.
- SWISSPACER spacer bars are impermeable to gas and water vapour. Well-made units of insulating glass with SWISSPACER save energy during the whole service life of the windows and façades.
- SWISSPACER is established all around the world – most innovative insulating glass manufacturers use SWISSPACER.

SWISSPACER – also for highly-automated processes

You can work SWISSPACER spacers into shape immediately by sawing and connecting them with corner keys. No new machinery is required. If you want to reduce cycle times and process costs, you can upgrade to automatic bending machines or highly-efficient sawing and welding machines. Corner keyed and welded frames are perfectly shaped in the corners. Straight butted corners at a 90° angle produce an elegant and sophisticated finish. If you are interested, we would be happy to advise you and put you in touch with our machinery partners.



Welded corner



Manual corner



Bent corner

Architects

Window Fabricators

Sealed Unit Makers

How to create visual highlights

Perfectly coordinate the colour of the spacer bar with the window frame. With SWISSPACER, you will get a matt, velvety surface with no annoying metallic reflections in direct sunlight.

Standard colours

TITANIUM GREY
RAL 9023

BLACK
RAL 9005

WHITE
RAL 9016

DARK BROWN
RAL 8014

LIGHT BROWN
RAL 8003

LIGHT GREY
RAL 7035

Special colours

BROWN BEIGE
RAL 1011

PASTEL YELLOW
RAL 1034

GRASS GREEN
RAL 6010

SAPPHIRE BLUE
RAL 5003

SULPHUR YELLOW
RAL 1016

YELLOW GREEN
RAL 6018

OPAL GREEN
RAL 6026

BROWN GREEN
RAL 7013

BEIGE
RAL 1001


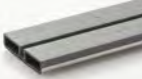











LIGHT IVORY
RAL 1015

RED BROWN
RAL 8012

Other colours
available upon
request

Product overview

Spacer bars & accessories


	SWISSPACER ADVANCE 08, 10, 11, 12, 14, 15, 16, 18, 20, 22, 24, 27mm, 1/2"	17 colours
	SWISSPACER TRIPLE 12/12, 16/16, 18/18mm	17 colours
	90° corner key for TRIPLE 12/12, 16/16, 18/18mm	Black, grey
	Gas corner key without hole 10, 12, 14, 16, 18, 20mm, 1/2"	17 colours
	Plug for gas corner key Standard size	17 colours
	Linear connector 08, 10, 11, 12, 14, 15, 16, 18, 20, 22, 24mm, 1/2"	Grey
	Plug for sleeve Standard size	Black, grey, white
	SWISSPACER ULTIMATE 08, 10, 11, 12, 14, 15, 16, 18, 20, 22, 24, 27, 32, 36mm, 1/2"	17 colours
	90° corner key 08, 10, 11, 12, 14, 15, 16, 18, 20, 22, 24, 27, 32, 36mm, 1/2"	Black, grey
	Flexible corner key 12, 14, 15, 16, 18, 20, 22, 24mm	17 colours
	Gas corner key with hole 10, 12, 14, 16, 18, 20mm, 1/2"	17 colours
	Pre-butylated 90° corner key 12, 14, 16, 18, 20mm	Black, grey
	Sleeve Standard size	Black, grey, white


Georgian bars & accessories


	Georgian bar 08*20, 24, 30mm 10*20, 24, 30mm 12*18, 20, 24, 30mm 14*24, 30mm 16*18mm	17 colours
	End plug 08*20, 24, 30mm 10*20, 24, 30mm 12*18, 20, 24, 30mm 14*24, 30mm 16*18mm	Black, grey, transparent
	Cross 08*20, 24, 30mm 10*20, 24, 30mm 12*18, 20, 24, 30mm 14*24, 30mm 16*18mm	Black, grey, white, light brown, dark brown
	T-connector 08*20, 24, 30mm 10*20, 24, 30mm 12*18, 20, 24, 30mm 14*24, 30mm 16*18mm	Transparent


SWISSPACER – Thermal performance in different window constructions

Spacer bar system	Double glazing 				Triple glazing 			
	Aluminium	Stainless steel	ADVANCE	ULTIMATE	Aluminium	Stainless steel	ADVANCE	ULTIMATE

WOODEN WINDOWS								
Frame value: $U_f =$ glass value: $U_g =$ 	1.4 W/m ² K 1.1 W/m ² K				1.3 W/m ² K 0.7 W/m ² K			
Psi value [W/mK]	0.082	0.053	0.039	0.031	0.089	0.054	0.037	0.029
Window, U_w 1 pane [W/m ² K]	1.40	1.32	1.29	1.27	1.10	1.02	0.97	0.95
Window, U_w 2 panes [W/m ² K]	1.52	1.41	1.36	1.33	1.26	1.13	1.07	1.04
Min. surface temperature* [°C]	4.1	7.3	8.9	9.7	6.0	9.6	11.2	12.1

PVC WINDOWS								
Frame value: $U_f =$ glass value: $U_g =$ 	1.2 W/m ² K 1.1 W/m ² K				1.2 W/m ² K 0.7 W/m ² K			
Psi value [W/mK]	0.076	0.051	0.039	0.032	0.078	0.050	0.037	0.030
Window, U_w 1 pane [W/m ² K]	1.32	1.26	1.23	1.21	1.05	0.98	0.95	0.93
Window, U_w 2 panes [W/m ² K]	1.42	1.33	1.28	1.26	1.19	1.08	1.04	1.01
Min. surface temperature* [°C]	5.3	8.3	9.7	10.4	6.7	9.9	11.3	12.0

WOOD-ALUMINIUM WINDOWS								
Frame value: $U_f =$ glass value: $U_g =$ 	1.4 W/m ² K 1.1 W/m ² K				1.4 W/m ² K 0.7 W/m ² K			
Psi value [W/mK]	0.094	0.059	0.042	0.032	0.100	0.060	0.040	0.030
Window, U_w 1 pane [W/m ² K]	1.43	1.34	1.30	1.28	1.17	1.08	1.03	1.000
Window, U_w 2 panes [W/m ² K]	1.57	1.44	1.38	1.34	1.35	1.21	1.13	1.100
Min. surface temperature* [°C]	2.2	6.1	7.9	8.8	4.4	8.6	10.5	11.3

ALUMINIUM WINDOWS								
Frame value: $U_f =$ glass value: $U_g =$ 	1.6 W/m ² K 1.1 W/m ² K				1.6 W/m ² K 0.7 W/m ² K			
Psi value [W/mK]	0.110	0.068	0.047	0.036	0.120	0.064	0.042	0.031
Window, U_w 1 pane [W/m ² K]	1.54	1.44	1.39	1.36	1.30	1.17	1.12	1.09
Window, U_w 2 panes [W/m ² K]	1.72	1.56	1.49	1.45	1.53	1.32	1.25	1.21
Min. surface temperature* [°C]	4.7	8.4	10.0	10.8	6.8	10.6	12.2	12.9

Geometry	Wood	PVC	Wood-Aluminium	Aluminium
Total surface area (1,23 x 1,48 m) A_w in m ²	1.82	1.82	1.82	1.82
Frame width b_f in mm:	110	117	120	130
Surface area of the frame A_f in m ² (1 pane / 2 panes)	0.548/0.686	0.579/0.725	0.593/0.742	0.637/0.796
Length of glass edge l_g in m (1 pane / 2 panes)	4.540/6.840	4.484/6.742	4.460/6.700	4.380/6.560

The equivalent thermal conductivity was calculated according to the ift WA-17/1 guidelines.

The representative Psi values were calculated under the framework conditions defined in the ift WA-08/2 guidelines.

Psi value: linear heat transmission at the edge of the glass [W/mK] according to EN ISO 10077-2:2012-06

* in line with the framework conditions of DIN 4108-3

External temperature: T_a : -10°C
Interior temperature: T_i : +20°C

SWISSPACER sample box



Energy efficiency you can touch

Order our sample box and get your hands on the warm edge. The samples will give you an idea of the stability, structure, look and surface quality of our spacer bars. The box includes six spacer bars, in different widths and colours, as well as a table showing the sizes and colours.

Sample boxes are available in different languages. Ask us at info@swisspacer.com

SWISSPACER References



Prince George Airport, British Columbia, Canada,
Photograph: mcfarlaneGreen / Steve McFarlane
Architect: mcfarlaneGreen Architecture + Design Incorporated



Hotel Mikołajki, Mikołajki Poland,
Photograph: Bartosz Makowski
Architect: PK Studio, Sopot



SWISSPACER – the company

SWISSPACER operates all over the world and has been the technology and market leader in several countries for over 20 years. The company was founded in 1998 and is part of the Saint-Gobain Group. The products stand out thanks to their excellent functional properties. They provide increased energy efficiency, contribute to greater comfort in the home and impress with their aesthetics. The company's headquarters with production, R&D and administrative offices are located in Switzerland. There are further production sites in Germany and Poland. With warehouses in Germany, Poland, Great Britain and China, we guarantee particularly efficient logistics and optimum coverage for our customers.

About Saint-Gobain

Saint-Gobain is the world's leading provider for the home and business markets. The company develops, produces and markets a wide range of construction materials. The main focus is on developing innovative products and solutions that make a particular contribution to energy savings and environmental protection and increase the quality of life. To that end, Saint-Gobain works closely with prestigious universities and scientific institutions. Saint-Gobain was founded in France in 1665 and is one of the top 100 industrial companies in the world. The corporation employs over 170,000 people and operates in 67 countries.

SWISSPACER
Vetrotech Saint-Gobain (International) AG
Zweigniederlassung Kreuzlingen
Sonnenwiesenstrasse 15
8280 Kreuzlingen, Switzerland

T +41 (0)71 686 57 57

info@swisspacer.com
www.swisspacer.com

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