

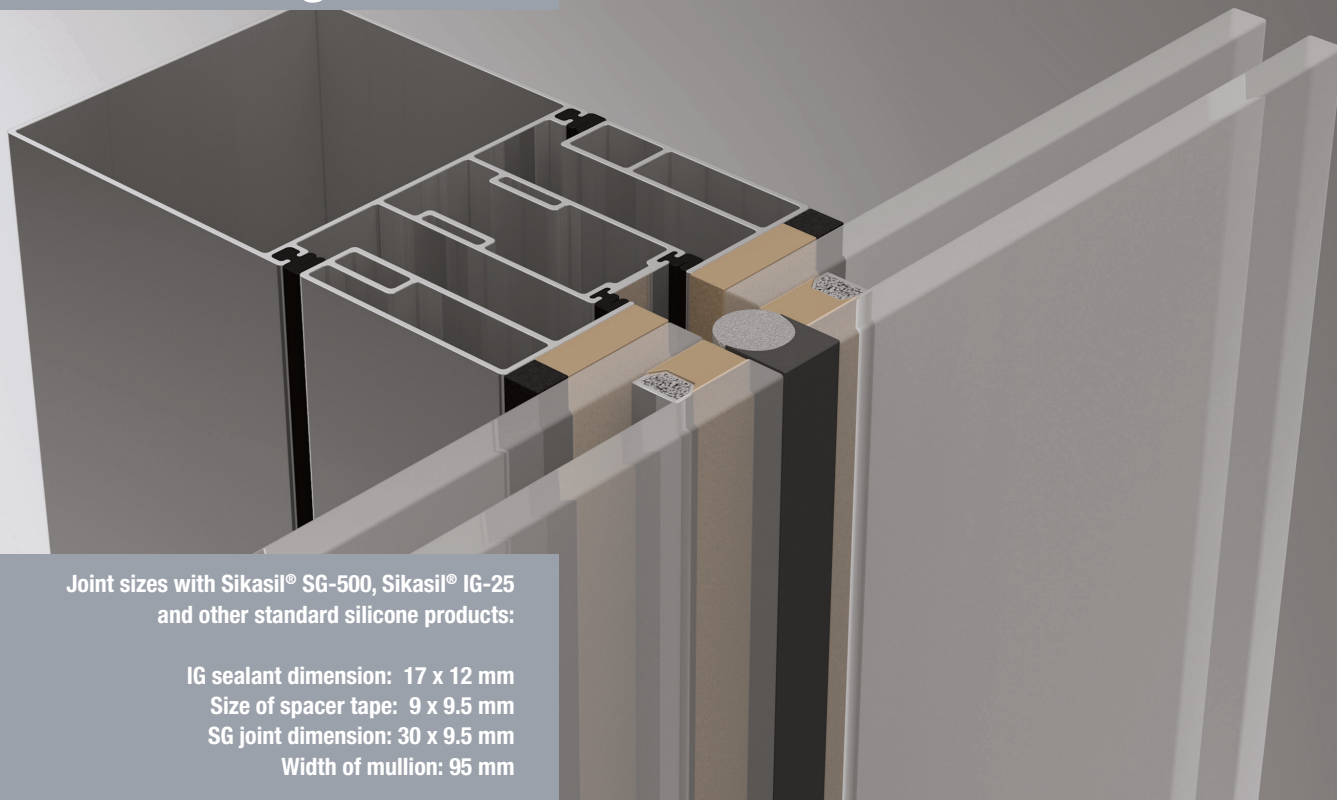
Sikasil® SG-550

Sikasil® IG-25 HM Plus

**Sika FFI Solutions:**  
High-Strength Structural Glazing –  
Two New Stars are Born



# Traditional Design



Joint sizes with Sikasil® SG-500, Sikasil® IG-25 and other standard silicone products:

IG sealant dimension: 17 x 12 mm  
Size of spacer tape: 9 x 9.5 mm  
SG joint dimension: 30 x 9.5 mm  
Width of mullion: 95 mm

## Sikasil® SG-550 and Sikasil® IG-25 HM Plus Highest Design Strength – Smallest Joints

Traditionally, silicone strength in structural glazing was set at 20 psi (0.14 N/mm<sup>2</sup>); that is, until 2006, when Sikasil® SG-20 was introduced, with an ETAG rating of 25 psi (0.17 N/mm<sup>2</sup>).

Today, Sika is proud to introduce two new, innovative products with a mechanical strength that, again, outperforms all previous insulating glass and structural glazing silicone adhesives -- Sikasil® IG-25 HM Plus and Sikasil® SG-550. In fact, in the latest ETA approvals issued in November 2011, the Sikasil® IG-25 HM Plus insulating glass secondary edge seal was evaluated at 28 psi (0.19 N/mm<sup>2</sup>). The structural glazing adhesive, Sikasil® SG-550, was rated at an unparalleled 29 psi (0.20 N/mm<sup>2</sup>). With almost 90% elongation at break, Sikasil® SG-550 is ideal to accommodate high movement in structural glazing modules.

See graphs on page 3 for comparisons to the standard silicone products currently available on the market.

### Material Consumption Savings:

The higher mechanical strength of these two new adhesives translates into lower material consumption. For a project, for instance, with a wind-load of 5 kPa and glass dimensions of 1.6 x 3.5 m, savings are calculated as follows:

- SG joint: 60%
- IG joint: 23%
- Spacer tape: 55%
- Aluminium: ~8%

*For more detail and size information, see the drawings above.*

### Let The Sunshine In...

The latest trends in architecture have resulted in lighter, more transparent designs. In airport and other large building construction, for instance, hall façades featuring lightweight aluminium construction and wide-spanning glass roofs translate into lower lighting and heating costs as natural sunlight is put to use. In the design detail above, the aluminium frame has been reduced by 25% to create a larger glass surface and increase solar heat gain.

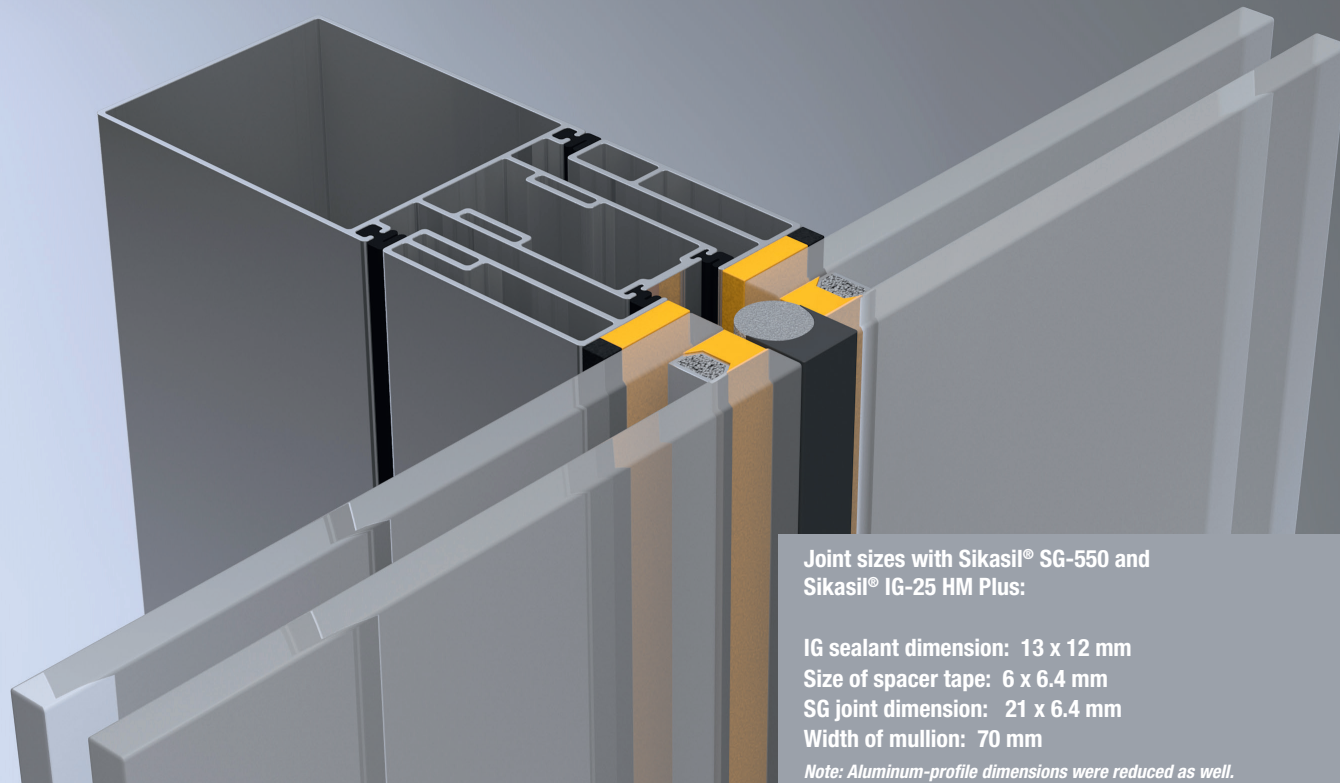
### Sikasil® IG-25 HM Plus

- Two-part silicone secondary edge-seal, for air- and argon-filled IG units in SG facades;
- Outstanding processing properties (metering and tooling);
- Extremely high mechanical strength:  
Tensile strength: 1.4 N/mm<sup>2</sup>  
Design tensile strength  $\sigma_{dyn}$ : 0.19 N/mm<sup>2</sup>  
Design shear strength  $\tau_{stat}$ : 0.011 N/mm<sup>2</sup>
- Excellent weathering/UV-resistance;
- Complies with ETAG 002 and EN13022; ETA-approved (ETA 11/0391) and CE-marked (Black and Grey).

### Sikasil® SG-550

- Two-part structural glazing silicone adhesive;
- Good processing properties on hydraulic pump systems, e.g. Reinhard Technik Ecostar 250, Lisec TAL 50, TAL 60, TSI Mastermix XL and XS, DOPAG VISCO-MIX H200; pneumatic pumps, however, are not suitable;
- Extremely high mechanical strength:  
Tensile strength: 1.6 N/mm<sup>2</sup>  
Design tensile strength  $\sigma_{dyn}$ : 0.20 N/mm<sup>2</sup>  
Design shear strength  $\tau_{stat}$ : 0.013 N/mm<sup>2</sup>
- Excellent weathering/UV-resistance;
- Complies with ASTM C1184, ASTM C920, class 12.5, ETAG 002 and EN15434; ETA-approved (ETA 11/0392) and CE-marked.





Joint sizes with Sikasil® SG-550 and Sikasil® IG-25 HM Plus:

IG sealant dimension: 13 x 12 mm

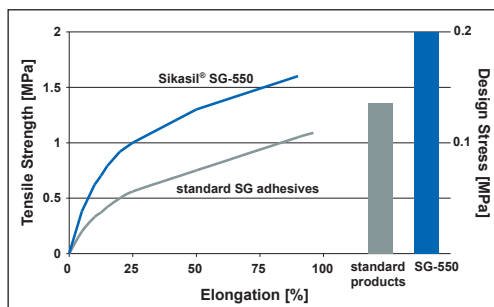
Size of spacer tape: 6 x 6.4 mm

SG joint dimension: 21 x 6.4 mm

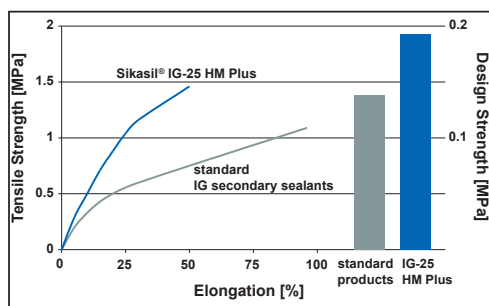
Width of mullion: 70 mm

*Note: Aluminum-profile dimensions were reduced as well.*

## Sikasil® IG-25 HM Plus Lowest Argon Loss Rates



Comparison of stress-strain curve and design strength of Sikasil® SG-550 against standard SG adhesives



Comparison of stress-strain curve and design strength of Sikasil® IG-25 HM Plus against standard IG products

Until recently, the choice to use inert gas-filled insulating glass units was based on a leap of faith. Today, with the arrival of Sikasil® IG-25 HM Plus, architects and façade designers everywhere are assured of long-term gas retention, helping to create the highest performing curtain walls and window systems.

With the development of this high-modulus, IG secondary edge-seal silicone, glass panes in IG units can now be held tightly together, and movement in the butyl layer -- caused by temperature and pressure changes -- minimized. The result is a leak-proof, butyl primary seal.

In tests complying with the European IG standard EN 1279-3, the best test units using Sikasil® IG-25 HM Plus were shown to leak argon at a rate of as low as 0.3% per year; the maximum limit in the standard is set at 1% per year.

### Energy savings ... over more than 30 years

An argon loss-rate of an average of 0.5% per year, as achieved in the European IG tests, results in 30 year-old IG units with an 80% argon-gas content, assuming a 95% fill-rate at production.

After 30 years, the energy transfer coefficient of the IG unit ( $U_0$  value) has increased by less than 0.1 W/m²K.

Over the service-life of the glass façade, the energy performance of the argon-filled insulating glass units will have remained almost unchanged.

That's sustainability!

# Sika Worldwide



With the help of approximately 14,000 employees, and subsidiaries in more than 77 countries, Sika supplies the specialty chemicals market world-wide. It is a leader in processing the materials used in sealing, bonding, damping, reinforcing and load-bearing-structures' protection in construction (buildings and infrastructure construction). Sika supplies a complete line of high-quality concrete admixtures, specialty mortars, sealants and adhesives, damping and reinforcing materials, structural strengthening systems, industrial flooring and membranes.

Additionally, it supplies the manufacturing sector with sealing, bonding and damping products for vehicle, ship, building-components, equipment, solar- and wind-power equipment manufacturers.

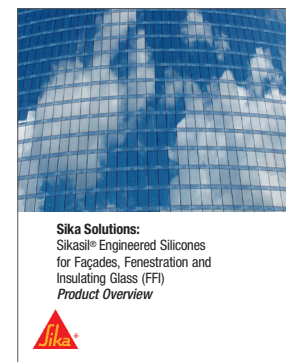
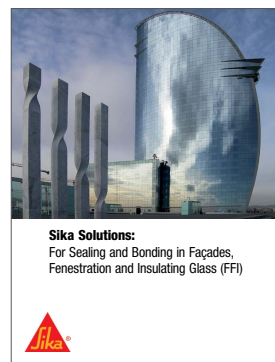
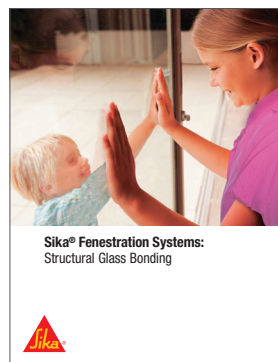
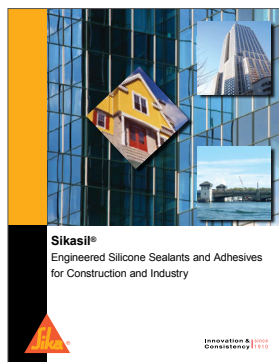
## Sika North America Plant Locations

Montreal, Quebec  
Edmonton, Alberta  
Lyndhurst, New Jersey  
Lakewood, New Jersey  
Marion, Ohio  
Grandview, Missouri

## North American Silicone Competence Centre

995 Towbin Avenue  
Lakewood, NJ 08701

*Also available:*



The information and, in particular, the recommendations relating to the application and end-use of Sika products, are given in good faith based on Sika's current knowledge and experience of the products when properly stored, handled and applied under normal conditions, within their shelf life. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any recommendations, or from any other advice offered. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users should always refer to the most recent issue of the Product Data Sheet for the product concerned, copies of which will be supplied on request or can be accessed in the Internet under [www.sika.ca](http://www.sika.ca).

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