



INDUSTRY

Sika® FENESTRATION SYSTEMS:
STRUCTURAL GLASS BONDING

BUILDING TRUST



FAÇADES FENESTRATION INSULATING GLASS

THE BONDING ADVANTAGE

- Thermal Insulation -- improved by up to 20 %
- Light Infiltration -- increased by up to 30 %
- Dynamic Loads -- approved wind-loads increased by up to 10 %
- Production Costs -- reduced by up to 10 %
- Service Costs -- reduced by up to 90 %
- Customer Complaints -- reduced by up to 90 %

THE BONDED WINDOW – A HIGH-TECH SOLUTION

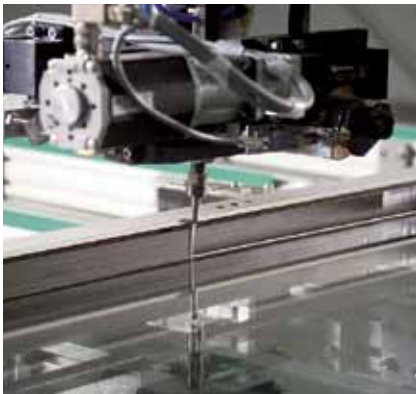
A key component of any building's appearance and systems is its envelope. In recognition of this, and in the quest to build increasingly energy- and resource-efficient structures, architects and builders around the world have turned to the façades and windows industries for innovative and economical solutions for maximizing the building envelope's overall efficiency.

The fenestration, façades and insulating glass industries have responded by developing technologies to build ever larger glass-wall areas and envelopes that supplement lighting and ventilation systems. Glass has evolved from a non-structural outer covering to a reinforcing element. The resulting increased complexities of the window market have necessitated a greater collaboration between window designers, manufacturers, and bonding experts.

Sika has contributed to this evolution, every step of the way. 30 years of working with and supplying the vehicle and façade markets -- and several million successfully bonded windows -- is a testament to our experience, knowledge and expertise in this field.

Turning Torso, Malmö, Sweden

AUTOMATION LEVELS IN WINDOW-BONDING



FULLY AUTOMATED

- Automated sash-frame in-feed and out-feed
- Automated marriage of sash-frame and IG unit
- Automated application of adhesive with 1-part or 2-part pump and mixing system



SEMI AUTOMATED

- Manual or automated sash-frame and IG unit in-feed and out-feed
- Automated application of adhesive with 1-part or 2-part pump and mixing system



MANUAL

- Manual marriage of sash-frame and IG unit
- Manual application of 1-part and 2-part adhesive with gun or pump and mixing system

Sika – THE FULL-RANGE SUPPLIER

Sika strives to provide the right product solution for each individual application. As adhesive requirements differ from customer to customer and project to project, Sika focuses on forging a close partnership with each customer from the onset of each new project. This way, Sika is involved when the adhesive joints are designed, the adhesives are selected, and, finally, when the application process is established and fine-tuned. Sika adhesives are available in 300 ml Cartridges, 600 ml Sausages, 23 L Pails and 200 L Drums to accommodate any production automation level.

Our core technologies are based on polyurethanes, SB polymers, silicones, acrylates and hot-melt adhesives.

Sika® ADHESIVES -- FOR WOOD WINDOWS



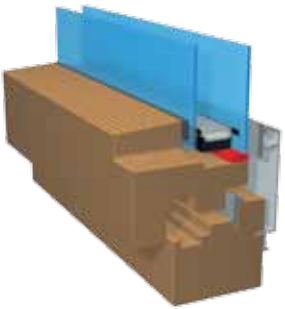
Source: Walch, Austria



INTERIOR OVERLAP BONDING

- Offers greatest potential for frame-material savings
- Allows for maximum glass area
- Improves thermal insulation
- Reduces production costs

Product	Technology	Characteristics
Sikasil® WT-485	2 part Silicone, UV-resistant	High curing speed for automated application
Sikasil® WT-480	2 part Silicone, UV-resistant	High modulus; long mixer Open Time
Sikasil® WT-470	2 part Silicone, UV-resistant	Highly flexible; medium curing speed
SikaFast® 5000 series	2 part Acrylate, UV-resistant	Extremely high modulus; extremely fast-curing



GLASS-EDGE BONDING

- Improves thermal insulation
- Maximizes glazing speed with almost no changes in production process

Product	Technology	Characteristics
Sikasil® WT-485	2 part Silicone, UV-resistant	High curing speed for automated application
Sikasil® WT-480	2 part Silicone, UV-resistant	High modulus; long mixer Open Time
Sikasil® WT-470	2 part Silicone, UV-resistant	Highly flexible; medium curing speed
Sikasil® WT-40	1 part Silicone, UV-resistant	Easy-to-apply
Sika® Glazing Tape Prefix	Acrylic adhesive tape, UV-resistant	Fixes glass immediately



STEPPED INSULATING GLASS

- Offers greatest potential for frame-material savings
- Allows for maximum glass area
- Improves thermal insulation

Product	Technology	Characteristics
Sikasil® WT-485	2 part Silicone, UV-resistant	High curing speed for automated application
Sikasil® WT-480	2 part Silicone, UV-resistant	High modulus; long mixer Open Time
Sikasil® WT-470	2 part Silicone, UV-resistant	Highly flexible; medium curing speed
Sikasil® WT-40	1 part Silicone, UV-resistant	Easy-to-apply
Sika® Glazing Tape Prefix	Acrylic adhesive tape, UV-resistant	Fixes glass immediately

Sika® ADHESIVES -- FOR PVC WINDOWS



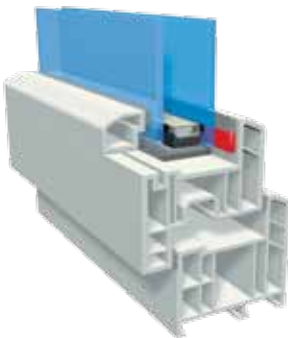
Source: Internorm, Austria



GLASS-EDGE BONDING

- Improves thermal insulation
- Maximizes glazing speed with almost no changes in production process

Product	Technology	Characteristics
Sikasil® WT-485	2 part Silicone, UV-resistant	High curing speed for automated application
Sikasil® WT-480	2 part Silicone, UV-resistant	High modulus; long mixer Open Time
Sikasil® WT-470	2 part Silicone, UV-resistant	Highly flexible; medium curing speed



EXTERIOR OVERLAP BONDING

- Facilitates entire window bonding process
- Reduces service costs
- Reduces complaint rates
- Increases product portfolio flexibility

Product	Technology	Characteristics
Sikasil® WT-485	2 part Silicone, UV-resistant	High curing speed for automated application
Sikasil® WT-480	2 part Silicone, UV-resistant	High modulus; long mixer Open Time
Sikasil® WT-470	2 part Silicone, UV-resistant	Highly flexible; medium curing speed



REBATE BONDING

- Improves thermal insulation
- Maximizes glazing speed with almost no changes in production process

Product	Technology	Characteristics
Sikasil® WT-485	2 part Silicone, UV-resistant	High curing speed for automated application
Sikasil® WT-480	2 part Silicone, UV-resistant	High modulus; long mixer Open Time
Sikasil® WT-470	2 part Silicone, UV-resistant	Highly flexible; medium curing speed



Source: Internorm, Austria



INTERIOR OVERLAP BONDING

- Offers greatest potential for frame-material savings
- Maximizes glass area
- Improves thermal insulation
- Reduces production costs

Product	Technology	Characteristics
Sikasil® WT-485	2 part Silicone, UV-resistant	High curing speed for automated application
Sikasil® WT-480	2 part Silicone, UV-resistant	High modulus; long mixer Open Time
Sikasil® WT-470	2 part Silicone, UV-resistant	Highly flexible; medium curing speed
Sika® Glazing Tape Prefix	Acrylic adhesive tape, UV-resistant	Fixes glass immediately



STEPPED INSULATING GLASS

- Offers greatest potential for frame-material savings
- Maximizes glass area
- Improves thermal insulation

Product	Technology	Characteristics
Sikasil® WT-485	2 part Silicone, UV-resistant	High curing speed for automated application
Sikasil® WT-480	2 part Silicone, UV-resistant	High modulus; long mixer Open Time
Sikasil® WT-470	2 part Silicone, UV-resistant	Highly flexible; medium curing speed
Sikasil® WT-40	1 part Silicone, UV-resistant	Easy-to-apply
Sika® Glazing Tape Prefix	Acrylic adhesive tape, UV-resistant	Fixes glass immediately

Important: Availability of products may vary. Consult your local Technical Sales Representative.

Sika® ADHESIVES -- FOR ALUMINIUM WINDOWS



Source: Internorm, Austria



INTERIOR OVERLAP BONDING

- Greatest potential for frame-material savings
- Reduces or eliminates need for thermal break material
- Improves thermal insulation
- Maximizes glass area
- Reduces production costs

Product	Technology	Characteristics
Sikasil® WT-485	2 part Silicone, UV-resistant	High curing speed for automated application
Sikasil® WT-480	2 part Silicone, UV-resistant	High modulus; long mixer Open Time
Sikasil® WT-470	2 part Silicone, UV-resistant	Highly flexible; medium curing speed
Sika® Glazing Tape Prefix	Acrylic adhesive tape, UV-resistant	Fixes glass immediately



INTERIOR GLASS-EDGE BONDING

- Frame-material savings
- Reduces or eliminates need for thermal break material
- Maximizes glass area
- Improves thermal insulation
- Maximizes glazing speed with almost no changes in production process
- Reduces production costs

Product	Technology	Characteristics
Sikasil® WT-485	2 part Silicone, UV-resistant	High curing speed for automated application
Sikasil® WT-480	2 part Silicone, UV-resistant	High modulus; long mixer Open Time
Sikasil® WT-470	2 part Silicone, UV-resistant	Highly flexible; medium curing speed
Sika® Glazing Tape Prefix	Acrylic adhesive tape, UV-resistant	Fixes glass immediately



Source: Baumgartner, Switzerland



EXTERIOR GLASS-EDGE BONDING

- Frame-material savings
- Maximizes glass area
- Improves thermal insulation
- Maximizes glazing speed with almost no changes in production process
- Reduces production costs

Product	Technology	Characteristics
Sikasil® WT-485	2 part Silicone, UV-resistant	High curing speed for automated application
Sikasil® WT-480	2 part Silicone, UV-resistant	High modulus; long mixer Open Time
Sikasil® WT-470	2 part Silicone, UV-resistant	Highly flexible; medium curing speed
Sikasil® WT-40	1 part Silicone, UV-resistant	Easy-to-apply
Sika® Glazing Tape Prefix	Acrylic adhesive tape, UV-resistant	Fixes glass immediately



STEPPED INSULATING GLASS

- Frame-material savings
- Maximizes glass area
- Offers excellent thermal insulation
- Reduces production costs

Product	Technology	Characteristics
Sikasil® WT-485	2 part Silicone, UV-resistant	High curing speed for automated application
Sikasil® WT-480	2 part Silicone, UV-resistant	High modulus; long mixer Open Time
Sikasil® WT-470	2 part Silicone, UV-resistant	Highly flexible; medium curing speed
Sikasil® WT-40	1 part Silicone, UV-resistant	Easy-to-apply
Sika® Glazing Tape Prefix	Acrylic adhesive tape, UV-resistant	Fixes glass immediately

Important: Availability of products may vary. Consult your local Technical Sales Representative.

WE PERFORM – YOU BENEFIT

Service	Benefit
Technical Advice	<ul style="list-style-type: none">▪ Analysis of your current window systems to determine if they are suitable for bonding manufacturing processes▪ Advice on the steps needed to transform your products and manufacturing processes to accommodate bonding
Product and Manufacturing Design Support	<ul style="list-style-type: none">▪ Prototype development support▪ Prototype testing support for whole system compatibility, adhesion, and functionality
Application Technology Advice and Selection Support	<ul style="list-style-type: none">▪ Advice relative to application technology selection▪ Development support relative to bonding technology systems and equipment engineering▪ Design support relative to equipment application procedures
Applicator Training and Support	<ul style="list-style-type: none">▪ Assistance in the preparation of operation manuals for bonding and/or repair glazing in conformity with ISO▪ Operator training support
External approvals	<ul style="list-style-type: none">▪ Preparation of "best practices" samples

OUR CORE COMPETENCES

Sika is a technology leader in fenestration; we offer our customers "best practices" solutions for bonding, sealing, damping and reinforcing.

Sika's window engineers support window manufacturers by developing customizable solutions for fabricating partially- and fully-bonded windows, for use in every type of construction. Our application engineers focus on the smooth integration of bonding technologies in our customers' window fabrication processes.

SIKA'S BONDING TECHNOLOGIES FOR WINDOW FABRICATION

OUR FENESTRATION COMPETENCE CENTRES

Research and development has always taken pride of place at Sika. At our Fenestration Competence Centres in Switzerland and the USA, R & D comes with an added benefit: individualized project service and support – Sika's response to the increasingly complex world of fenestration technologies.

We recognize that, while the demand for innovative sealants and adhesives for window construction is rising, so, too, the need for technical support for project planning and execution. At our Fenestration Competence Centres, in addition to developing new products and processing technologies and adapting and testing existing bonding methods for window applications, we harness our experience to enhance the quality of our technical services.

GLOBAL PRESENCE – LOCAL SUPPORT

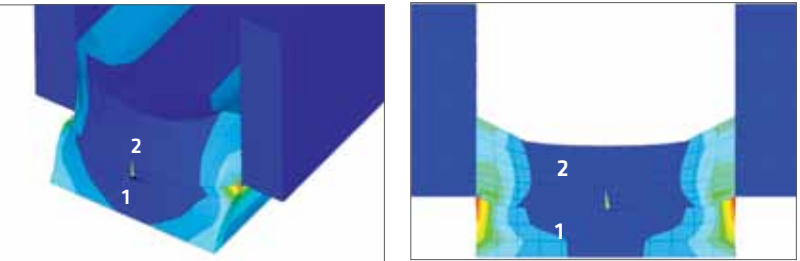
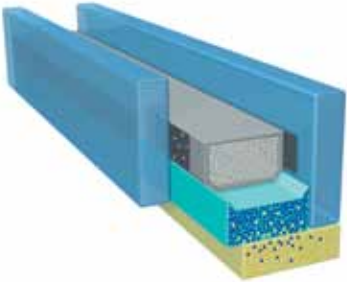
In conjunction with our regional Technical Services Centres, the experts in our Fenestration Competence Centres attend to the needs of window manufacturers on all continents, supporting them from the planning stages right through to execution. Supporting the interdisciplinary cooperation between the various glass- and profile-manufacturing partners is a basic tenet of our fenestration business philosophy.



Sika's Systems Engineering supports the optimization of the adhesive application by patented test methods. Above image shows an infrared camera measuring the adhesive's reaction temperature.

In windows with rebate and glass-edge bonding, the IG secondary sealant is in direct contact with the window adhesive. Therefore, the adhesive must be compatible with the edge sealant.

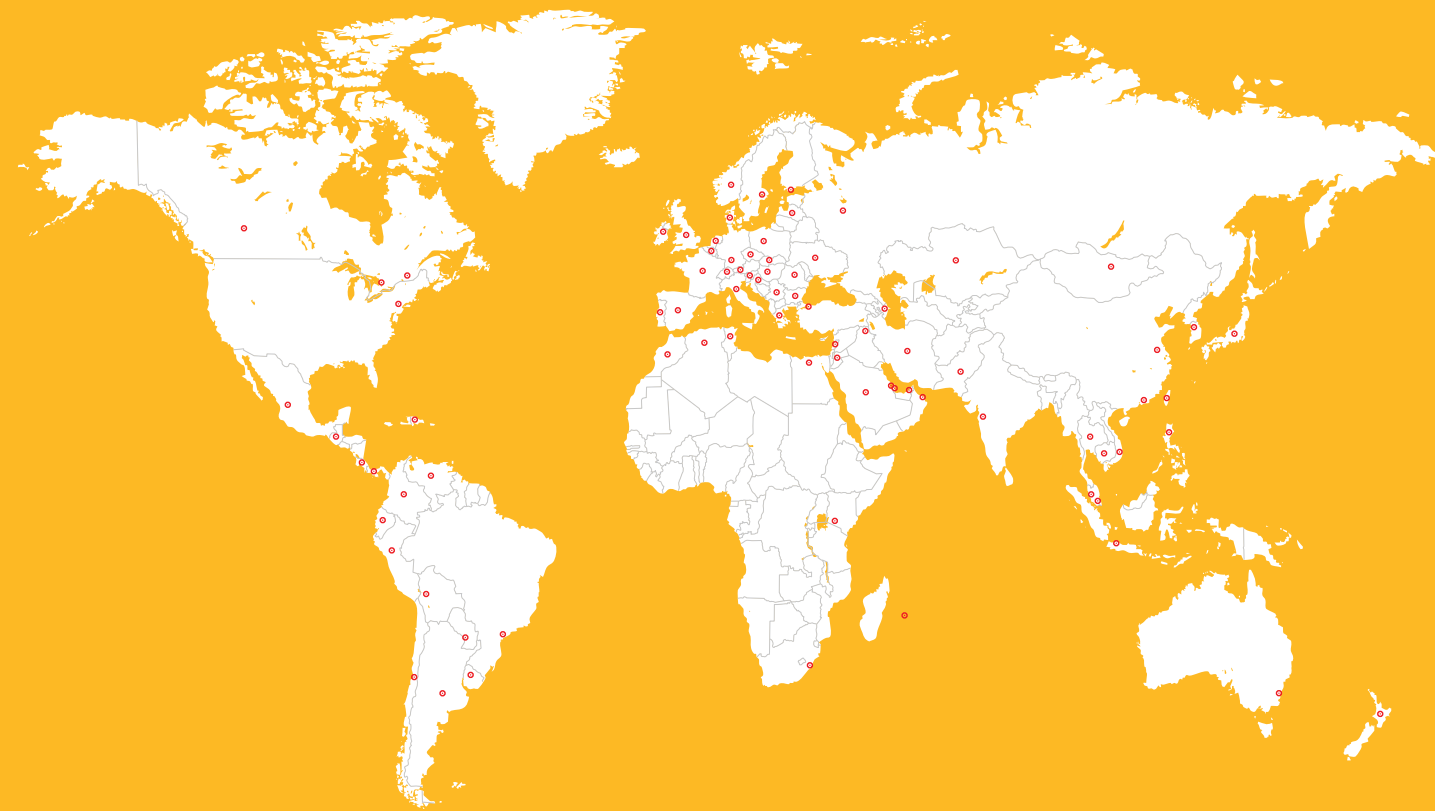
Sika's sealants and adhesive systems are tested and approved to overcome compatibility issues. For more information about the compatibility of our systems, visit: www.sika.com/SES.



REBATE BONDING
1 Window adhesive
2 Insulating glass secondary sealant

Finite element calculations show the critical points in a construction. The window construction is optimized by selecting the best adhesive and designing the most efficient joint geometry.

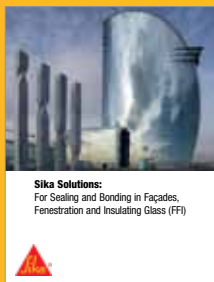
SIKA WORLDWIDE



With the help of over 15,000 employees, and subsidiaries in 80 countries, Sika supplies the specialty chemicals market world-wide. It is a leader in processing the materials used in sealing, bonding, damping, reinforcing and protecting load-bearing structures in edifice 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, Sika supplies the manufacturing sector with sealing, bonding and damping products for vehicle, ship, building-components, equipment, and solar- and wind-power equipment manufacturers.

Also available:



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

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.

SIKA CANADA INC.

Head Office
601, avenue Delmar
Pointe-Claire, Quebec
H9R 4A9

Other locations

Toronto
Edmonton
Vancouver

1-800-933-SIKA
www.sika.ca

An ISO 9001 certified company
Pointe-Claire: ISO 14001 certified EMS

BUILDING TRUST

