KÖDISPACE 4SG

The High Performance Warm Edge System

H.B. Fuller | KÖMMERLING

FOR LONG TERM ENERGY EFFICIENCY

As concerns about the health of our planet rise, there is an increased focus on energy efficiency. According to the U.S. Green Building Council, buildings consume a huge amount of the world's energy. Warm edge spacers play a huge role in terms of energy savings. They have lower thermal conductivity than conventional aluminium spacers resulting in a significant resistance against thermal bridging around the border and reduction in the cooling of the insulating glass edge.

With H.B. Fuller | KÖMMERLING's KÖDISPACE 4SG you get a top of the range warm edge system. Our unique reactive thermoplastic spacer system has very low thermal conductivity and performs at the highest level, compared to other warm edge systems. KÖDISPACE 4SG is the premier solution for both commercial and residential applications, allowing for unparalleled flexible design freedom. It accommodates multiple shapes, jumbo units and cold bent units. Additionally, it's a more visually appealing insulating glass option, using the most advanced window glass sealant solution, so you can be confident that you're including only the most long-lasting, beautiful, and energy-efficient windows in your designs.

Our warm edge system has an organic composition and can be produced with environmentally-friendly raw materials. It is also completely metal-free. The increased energy efficiency of the system contributes to the reduction of CO_2 emissions, lower heat loss leads to lower heating costs, reduction of CO_2 emissions and a reduction in the environmental impact.

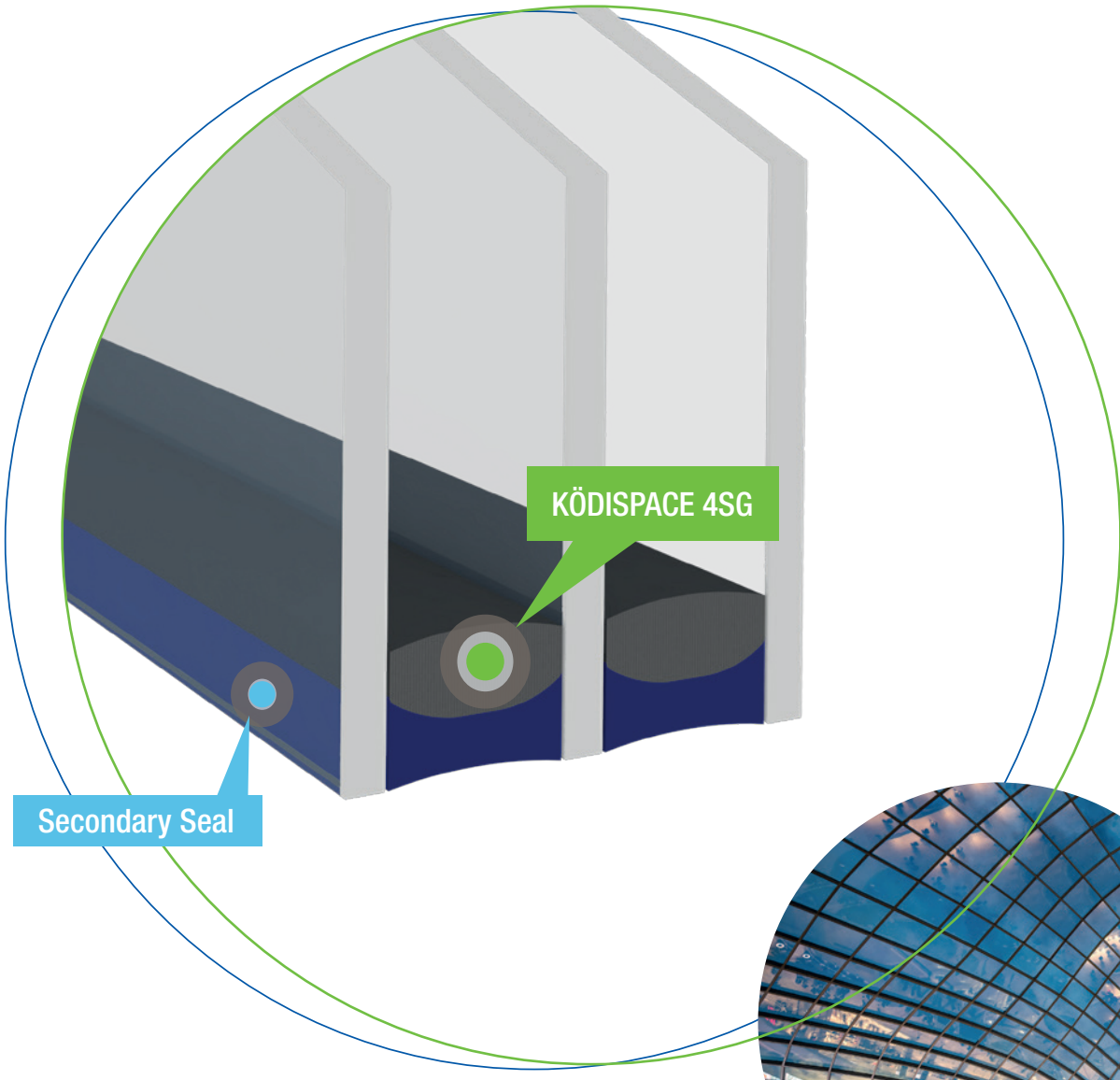
Curious? Join us and discover the world of KÖDISPACE 4SG.

HIGH PERFORMANCE WARM EDGE SYSTEM

KÖDISPACE 4SG is a butyl based, reactive thermoplastic warm edge system with integrated desiccant. It completely replaces the conventional edge sealing system with spacer, desiccant and primary sealant, optimally assuming the functions of both the spacer profile and the sealant while eliminating the metal thermal bridge.

Our high performance warm edge system demonstrates permanent gas-tightness and best thermal values. Beside providing maximum energy efficiency, the flexible thermoplastic spacer offers unlimited creative freedom and a unique aesthetic.

KÖDISAPCE 4SG for universal applications of insulating glass in the construction industry and transport sectors and specifically designed for structural glazing façades - H.B. Fuller | KÖMMERLING offers the right solution for every application.



Specific product properties

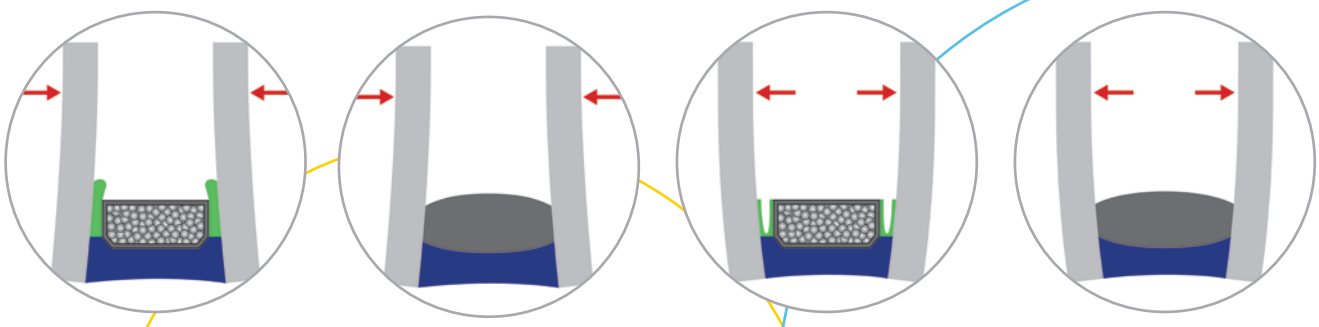
- Outstanding Psi values
- Chemical bond to glass
- Excellent gas retention

QUALITY & LONGEVITY

THE RESILIENT SYSTEM

The main stress in the sealing of box spacer profiles is on the butyl applied to both sides. Expansion and contraction of the insulating glass caused by climatic stress leads to enormous strain in the butyl. This permanent stress caused by compression and elongation of the primary seal, can cause seal failure over time. However, the edge bond with KÖDISPACE 4SG remains elastic which results in considerably less stress on the bond and hence greater longevity.

- Excellent compensation of climatic stress
- Optimal sealing barrier against gas loss and penetrating moisture
- Absolutely tight joint due to CNC application
- No primary sealant corner and joint adjustments required



CREATIVE FREEDOM & LIMITLESS DESIGN POSSIBILITIES

THE INVISIBLE SYSTEM

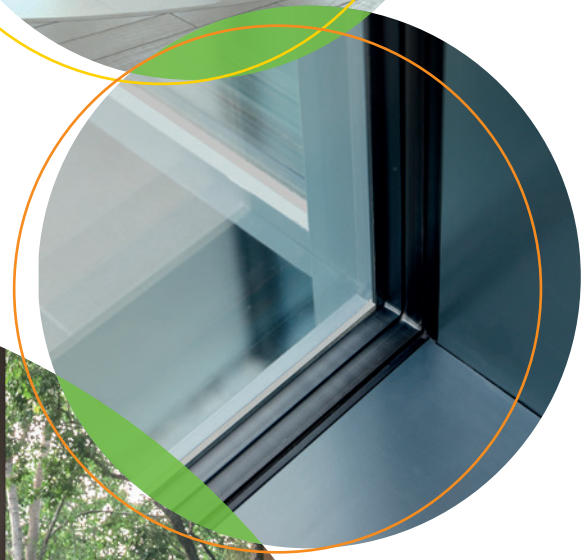
Conventional metal spacers can affect the visual appearance with their shiny and perforated surfaces. Matt black KÖDISPACE 4SG reflects the color of the window frame and therefore renders the space between the panes virtually invisible, resulting in a visually larger glass surface.

THE VARIED SYSTEM

KÖDISPACE 4SG offers flexible creative options with consistently high quality including large and curved insulating glass. The reflection of the frame color negates the need for various spacer colors.

THE PRECISE SYSTEM

Exact spacer positioning is impossible by hand with triple glazing and conventional profile systems. Misalignment will detract from the visual appearance of the insulating glass. The fully automatic application of KÖDISPACE 4SG helps triple glazing achieve the greatest precision, leading to visually flawless results.



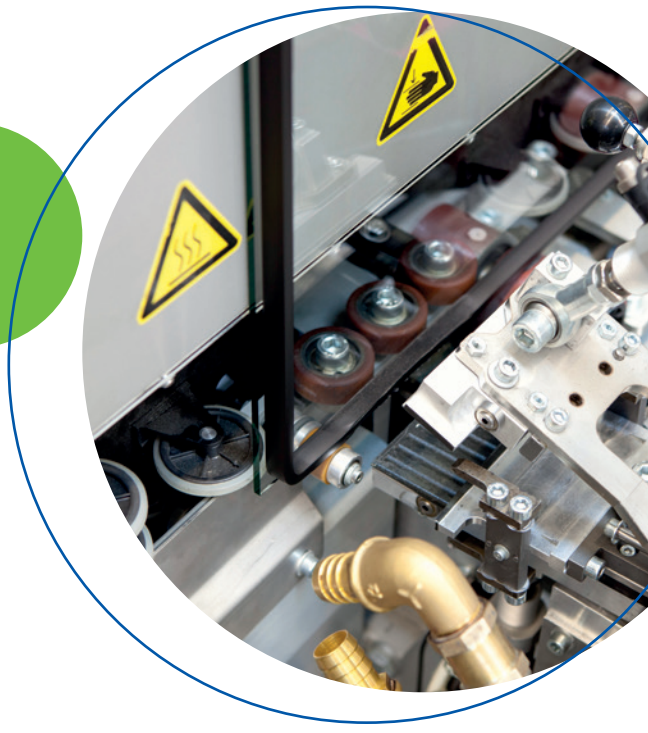
MAXIMUM LIVING COMFORT & SUSTAINABILITY

THE LONG TERM ENERGY EFFICIENT SYSTEM WITH ADDED VALUE

KÖDISPACE 4SG offers top-class Psi values. This means minimal heat loss along the linear thermal bridge at the glass edge and thus maximum improvement of the U_w values for windows and U_{cw} values for façades.

The outstanding performance of KÖDISPACE 4SG has been tested and awarded as a Certified Passive House Component.

- Metal-free material with very low thermal conductivity
- Lower heat loss
- Saves heating costs
- Minimization of condensation
- Lowering the health risks caused by mold spores
- Higher living comfort and coziness
- Contributes to CO_2-reduction



ADVANTAGES FOR THE PRODUCTION OF INSULATING GLASS

FLEXIBILITY & EFFICIENCY

KÖDISPACE 4SG replaces three production components, enabling huge potential savings in material procurement and internal logistics, thus minimizing factors that can threaten smooth production workflows. But the greatest advantages are provided by the direct application of material from the drum for work preparation and production.

With the KÖDISPACE 4SG thermoplastic spacer - currently the only reactive system available - you will have more precise spacer placement, reduced labor costs due to the highly automated application process, and an greatly extended service life.

Material procurement & internal logistics

- Complete elimination of the storage spaces, warehouse management and procurement effort required for profiles in various colors and widths, accessories such as corner brackets, straight connectors and driers
- No offcuts, no waste
- All pane interspace widths from 1 mm to 20 mm extrudable from one drum

Work preparation & production

- Standard or special formats in various sizes and shapes produced on one production line
- Enables precise production of customer specifications
- Simplified capacity planning for machines and personnel
- Complete elimination of the activities required for offline frame production (cutting of spacers, bending into frames, filling with desiccant, applying butyl and transporting to the line)
- Interruption-free production of double or triple insulating glass units in all spacer widths
- No sorting of frames before the installation and/or sorting of finished panes
- No primary skips possible
- No delays caused by incorrectly produced or missing frames
- No profile change and line interruption as with foam spacers
- No production interruptions, even if the drum is changed, hence no rejects
- Complete elimination of the drier treatment, hence no soiling of the inner space with desiccant dust

FOR STATE OF THE ART FAÇADE CONSTRUCTIONS

LIMITLESS DESIGN POSSIBILITIES MEET HIGHEST ENERGY EFFICIENCY

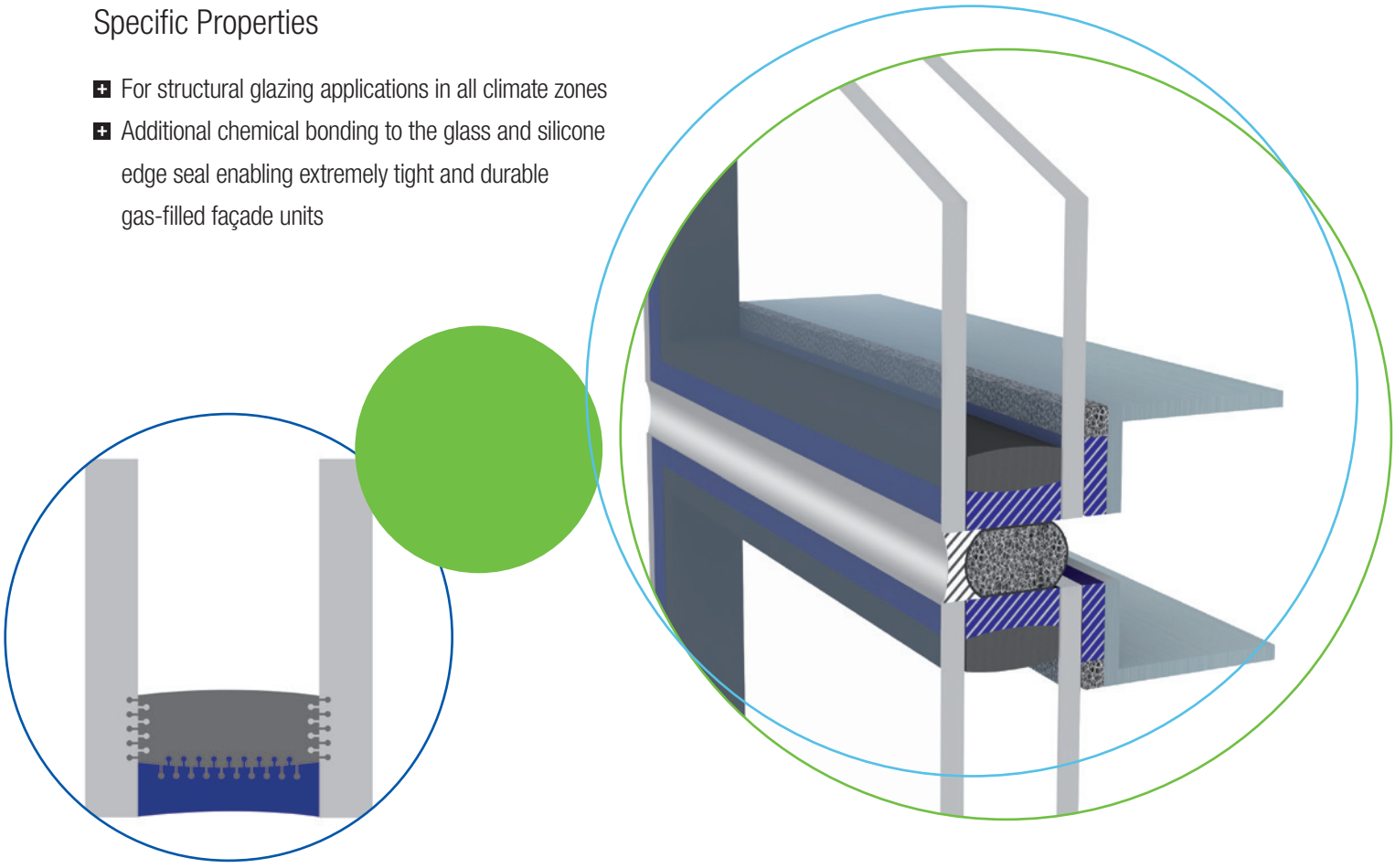
Glass façades have decisively influenced modern architecture and formed our cityscapes for decades, but also modern architecture places extreme demands on the long-term energy efficiency and gas-tightness of insulating glass units. Structurally glazed façades can no longer do without inert gas filling and warm edge performance. The quality requirements for the edge seal`s tightness are particularly demanding with gas-filled, silicone-sealed panes.

KÖDISPACE 4SG was developed specifically as a reactive thermoplastic warm edge system for structural glazing, and thus meets the strict constituent requirements better than the great majority of other systems. Physical forces on the one hand lead to quick initial adhesion, while the additional, unique chemical bonding to glass and silicone ensures outstanding long-term stability on the other. These attributes make KÖDISPACE 4SG an extremely robust and durable warm edge system that is perfectly suited for structural glazing applications in all climate zones.

In addition KÖDISPACE 4SG compensates for all potential deformations in the edge seal through the flexibility of the material. The warm edge system therefore guarantees permanent gas tightness also under most demanding conditions, even in cold-bended insulating glass units.

Specific Properties

- For structural glazing applications in all climate zones
- Additional chemical bonding to the glass and silicone edge seal enabling extremely tight and durable gas-filled façade units



The additional chemical bond built between KÖDISPACE 4SG, silicone edge seal and glass, offers substantial benefits.

- Stable edge seal by bonding individual components on a molecular level
- Robust against glazing errors
- Extended service temperature from -40 °C to +90 °C
- Certified as per EN1279 parts 2 & 3

KÖDISPACE 4SG is an extremely robust and resilient thermoplastic warm edge system for multi pane glazing, which is ideally suited for use in structural glazing façades.

The additional chemical bonding to glass and silicone edge sealant creates extremely tight and durable gas-filled glass façades.

ENVIRONMENTAL CONSIDERATIONS

H.B. Fuller actively manages the environmental impact of our operations, people, and products. We monitor our environmental footprint and continually innovate for improved sustainability in our products and manufacturing practices. We also collaborate with customers to create adhesive and sealant solutions that allow them to meet their sustainability goals. Our products help customers save energy, reduce waste, and enable recycling and re-use.

Sustainable business practices are not only good for our environment, they also help our company grow responsibly, positioning H.B. Fuller for long-term success and making a difference for our customers, employees, and the planet.

- H.B. Fuller is fully committed to the Sustainable Development Goals of the United Nations
- Optimized internal processes with a clear focus on our environmental responsibilities
- Accreditation to ISO 9001, ISO 14001, ISO 45001 and ISO 50001

WE ARE YOUR RELIABLE PARTNER

The demands placed on the mechanical performance and life cycle properties of our products require a dedicated team delivering a diverse and comprehensive range of technical services to our partners across all of our application ranges.

At H.B. Fuller | KÖMMERLING our passion for customer partnerships is best demonstrated by our commitment to technical support for both product understanding and application process assistance utilizing our extensive, long term understanding of material behavior and properties added to first class facilities at our research and development centers. Our support does not stop there, we are renowned for the part we play in improving and perfecting process and application technology on-site with our partners.

From analyzing and improving the performance of existing materials, developing materials for new applications or delivering world class training H.B. Fuller | KÖMMERLING is recognized as a global market leader.

Competence
&
Service

Our Service Portfolio

- Adhesion tests
- Material stress tests
- Compatibility tests
- Life cycle testing
- Modulus and Finite Element Analysis
- Market leading laboratory facilities
- On-site process assistance
- In house training
- Quality assurance programs

TECHNICAL CENTER OF EXCELLENCE

Our Technical Center of Excellence shows H.B. Fuller's commitment to the window and insulating glass industry. Here our customers can generate IG units for testing, try new processing conditions and simulate different systems for comparison – all without taking up valuable time on their own manufacturing lines. It also can be used as a training center to help customers better understand the capabilities of a line and how to use our products. We created this collaborative space to enable our technical and commercial teams to work alongside our customers testing new ideas and evaluating new products while demonstrating our world class capabilities.

For more information about our company, visit **www.hbfuller.com** or **www.koe-chemie.de**
or mail us at **4sg.koe@hbfuller.com**

Join the Conversation | **www.hbfuller.com/connect**

IMPORTANT: It is the user's responsibility to test and determine the suitability of a product for the user's intended use. Any product samples provided for testing are provided in accordance with standard limited warranties as stated on our technical data sheets.

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