



System Solutions for Window Bonding



H.B. Fuller



KÖMMERLING



The Future of Window Design

The demands placed on today's windows are high! They need to be energy-efficient, visually appealing, flexible in shape and size, as well as burglary resistant. In addition quick and easy installation is also required. H.B. Fuller | KÖMMERLING provides system solutions that simplify working with a wide range of window types. We are helping manufacturers create long-lasting, energy-efficient and beautiful windows for any design or application to make their customers happy.

As traditionally used in the automotive industry, the special advantages of direct glazing are nowadays also exploited in window bonding. This means that the insulating glass is bonded into the window sash, which leads to significant improvements in the window's static properties. This allows for thinner frames, lower weight, larger glass panes and unusual window shapes. With Ködiglaze, H.B. Fuller | KÖMMERLING has developed a special product range for this innovative technology. With a comprehensive overall concept, we offer insulating glass and bonding technologies from a single source.

Be on the safe side with our system solutions for window bonding.

THE FUTURE OF WINDOW DESIGN

Bonding the insulating glass into the window frame, the so called Direct Glazing, delivers many compelling advantages for window manufacturers and building owners. Mechanical properties of the window are improved, helping reinforce the frames and enabling larger glass surfaces for greater natural light transmission. Direct Glazing makes windows more reliable and primarily brings much greater protection against break-ins.

Window manufacturer benefit from less or no steel reinforcements in the frame and time-consuming blocking can be eliminated.

BENEFITS OF WINDOW BONDING

DESIGN

- + New design possibilities
- + Slimmer profiles
- + Larger glass surfaces

ADDED VALUE

- + Improved anti-burglar protection
- + Improved U value
- + Reduced maintenance
- + More light entering the building

ADDED VALUE

- + Less or no steel
- + Fewer or no setting blocks
- + Reduced assembly time
- + Lower service costs
- + Automated production process



Learn more about
Direct Glazing



WINDOW BONDING VARIANTS

PRODUCT OVERVIEW

Direct glazing can be realised with all types of window frame material from wood and plastic to aluminium. Depending on the profile system different bonding positions are possible either overlap, rebate and glass edge.

With Ködiglaze, H.B. Fuller | KÖMMERLING has developed a special product range for this innovative technology. Our Ködiglaze adhesives are characterised by very good weathering performance and temperature resistance as well as by an optimized relation between stability and flow behaviour. They also offer excellent creep resistance and are compatible with our insulating glass sealants.

Specific Properties

Ködiglaze P

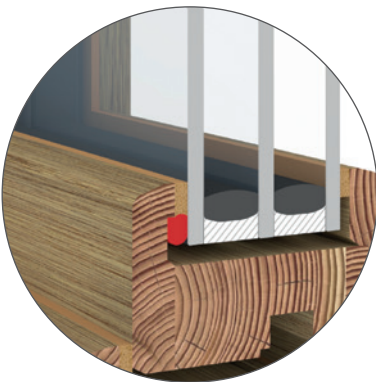
1- and 2-component polyurethane adhesive

- Formulation and properties adapted to insulating glass secondary sealants
- Can be processed either as 1- or 2-component system

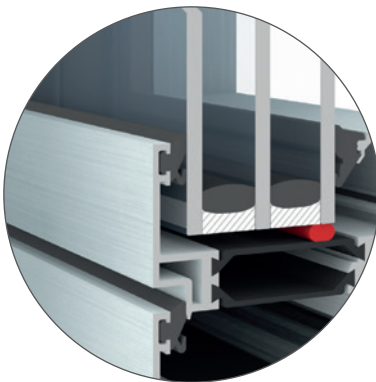
Ködiglaze SDG

1- and 2-component silicone adhesive

- Optimum pot life / curing ratio
- High stability and elasticity
- Can be processed either as 1- or 2-component system



Example: Overlap Bonding



Example: Glass Edge Bonding



Example: Rebate Bonding

System Combinations

Frame Material	Bonding Positions		
	Glass Edge	Overlap	Rebate
PVC	Ködiglaze SDG	Ködiglaze SDG	Ködiglaze P
Wood	Ködiglaze SDG	Ködiglaze SDG	Ködiglaze P
Wood + Aluminium	—	Ködiglaze SDG	Ködiglaze P
Aluminium	Ködiglaze SDG	Ködiglaze SDG	Ködiglaze P

Please contact our project team to find your best solution and individual combination.



ANTI-BURGLAR GLAZING

BE ON THE SAFE SIDE WITH H.B. FULLER | KÖMMERLING

In addition to energy efficiency, security is a critical issue when it comes to windows and doors. A break-in symbolises a traumatic intrusion into our safe space which not only disrupts our need to be secure but overshadows our sense of freedom.

Direct Glazing greatly increases protection against break-ins for windows and doors. The glass and frame merge into a single cohesive unit. With our Ködiglaze range the circumferential glass connection, required by DIN EN 1627, for burglar-resistant glazing is achieved (resistance class RC-2 or RC-3).

Specific Properties

Ködiglaze P

1- and 2-component polyurethane adhesive

- ✚ Test certificates available
- ✚ Formulation and properties specially adapted to insulating glass secondary sealants
- ✚ Available as 1- or 2-component system

GD 116

2-component polysulfide sealant

- ✚ Very good adhesion to glass and metal surfaces
- ✚ Available in 345 ml mixing cartridges

KÖDIGLAZE P

Ködiglaze P is a polyurethane based adhesive developed especially for the bonding of insulating glass units into window sashes. Due to its formulation, which is adapted to insulating glass sealants, and its mechanical properties, Ködiglaze P is suited optimally for application in rebate bonding. Ködiglaze P can be applied either as one- or two-component system. Ködiglaze P is especially suitable for use as bonding material for the production of anti-intruder windows and doors compliant with resistance classes RC-2 and RC-3.



Specific Product Properties

- ✚ Formulation and properties specially adapted to secondary sealants
- ✚ Very good weathering and temperature resistance
- ✚ Optimum relation between stability and flow behaviour
- ✚ Excellent creep resistance

Packaging Units

Ködiglaze P

- Component A: 230 kg drum
- Component B: 25,6 kg hobbock

Ködiglaze P 1-component

- 600 ml sachet

Processing

In two-component processing, the adhesive is mixed by means of mixing and dosing equipment and is applied either manually or automatically. The one-component version can be applied by hand processing guns.



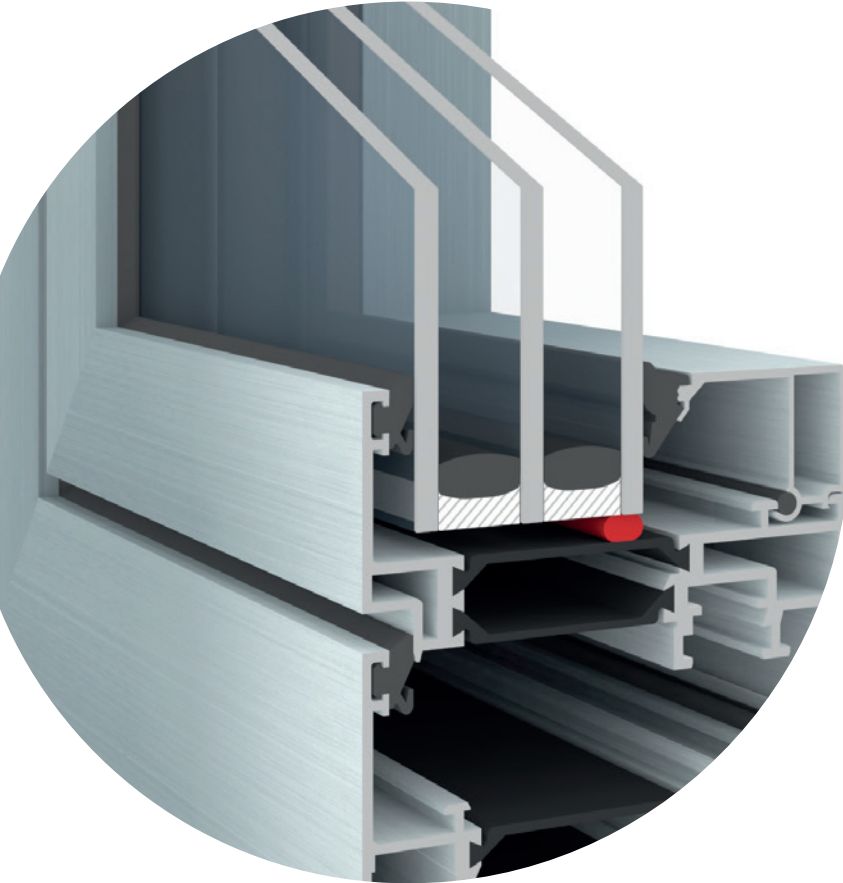
Technical Data

	Ködiglaze P	Testing methods
Base	2-component polyurethane adhesive	
Colour	Grey	
Density (mix)	1,19 g/cm ³	DIN 53479
Mix ratio	10 : 1 by volume 10 : 1,15 by weight	
Pot life	20 min	at +23 °C
Hardness Shore A	48	DIN 53505/ISO 868
Tensile strength	2,0 N/mm ²	DIN 53504/ISO 527
Elongation at break	450 %	DIN 53504/ISO 527
Tear resistance	9 N/mm	DIN 53515/ISO 34

Please note: The data provided above is only intended as general information. The properties and performance characteristics listed are approximate values; they are not part of the product specification. As processing and application conditions are beyond our influence and control, and due to the multitude of different materials, we recommend that you always perform sufficiently thorough tests of your own. No liability for concrete application results can therefore be derived from the data and information provided in the table above. As part of our sales terms and conditions, we only provide a warranty for the consistently high quality of our products.

KÖDIGLAZE SDG

The Ködiglaze SDG range consists of silicone adhesives developed specifically for the bonding of insulating glass units into window sashes. Their processing and curing parameters are optimally adapted to automatic processing.



Specific Product Properties

- ✚ Optimized pot life/curing ratio
- ✚ Optimum relation between stability and flow behaviour
- ✚ Very good UV, weathering and temperature resistance
- ✚ High strength and elasticity
- ✚ Very good creep resistance

Processing

Ködiglaze SDG is applied with an automated adhesive dispensing unit. With Ködiglaze SDG 1C, a 1-component silicone adhesive is also available for prototype manufacturing and repairs (further information upon request).

Packaging Units

Ködiglaze SDG 10

- Component A: 260 kg drum
- Component B: 26 kg hobbock

Ködiglaze SDG 30

- Component A: 260 kg drum
- Component B: 26 kg hobbock
490 ml side-by-side cartridge

Ködiglaze SDG 1C

- 600 ml sachet



Technical Data

	Ködiglaze SDG 10	Ködiglaze SDG 30	Ködiglaze SDG 1C	Testing methods
Base	2-component silicone rubber	2-component silicone rubber	1-component silicone rubber	
Colour	Black	Black	Black	
Density (mix)	1,37 g/cm ³	1,37 g/cm ³	1,39 g/cm ³	DIN 53479
Mix ratio	10 : 1 by weight	10 : 1 by weight	–	
Pot life	10 min	30 min	7 min*	at +23 °C
Handling time	after 30 minutes	after 120 minutes	–	at +23 °C
Hardness Shore A	48	46	40	DIN 53505/ISO 868
Tensile Strength	2,0 N/mm ²	2,1 N/mm ²	1,2 N/mm ²	DIN 53504/ISO 527
Elongation at break	210 %	230 %	180 %	DIN 53504/ISO 527
Tear resistance	7 N/mm	8 N/mm	–	ASTM D 624/ISO 34

* Skin formation time

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COMPLEMENTARY PRODUCTS

GLAZING SILICONE

Ködisil N

1-component silicone sealant

- ✚ For glazing applications, connecting joints and general expansion joints
- ✚ Good weathering, ageing and temperature resistance from -40 °C to +160 °C
- ✚ Neutral curing
- ✚ Antifungal
- ✚ Fulfills the requirements of DIN 18545, part 2, group E
- ✚ Compliant with EN 15651

PRIMERS AND CLEANERS

KÖMMERLING primers and cleaners for pre-treatment prior to window bonding are matched optimally to the various types of bonds. Due to the great diversity of frame materials and combinations, consultation with our project team is essential.



WE ARE YOUR RELIABLE PARTNER

With the Ködiglaze product range, H.B. Fuller | KÖMMERLING not only offers complete direct glazing solutions with guaranteed compatibility, but also provides step-by-step consultation, conception and implementation support – irrespective of whether the application purpose is manual production with low batch numbers or the installation of a complete industrial production line.

With our competent advice on product selection, processes and quality assurance we enable you to apply adhesive technology safely. We consider ourselves a system provider, offering not only high-quality products, but also additional consulting and support services tailored to you and your needs throughout the entire duration of your project.

Bespoke customer service is crucial for us - which includes on-site support. Whether you need help with the selection of the right adhesives for a project, with integration into your production process or with quality and production control - we are your reliable partner!

Our Service Portfolio

- ✚ Adhesion & compatibility tests
- ✚ Material stress tests
- ✚ Life cycle testing
- ✚ Market leading laboratory facilities
- ✚ On-site process assistance
- ✚ In house training
- ✚ Quality assurance programs



Competence
&
Service



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 solutions that allow them to meet their sustainability goals. Our products help customers save energy, reduce waste, and enable recycling and reuse.

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 customers, employees, and the planet.

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



For more information about our company, visit www.hbfuller.com or www.koe-chemie.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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