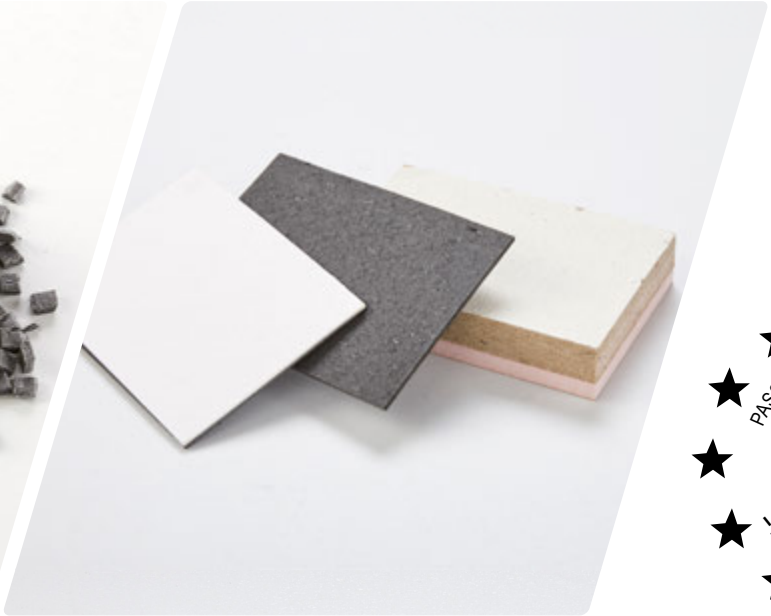
ROLF*KUHN*GMBH

member of svt group



PASSIVE FIRE PROTECTION

'MADE IN GERMANY'

Fire Protection Materials

For the processing industry as well as for the glazing and door industry

Preventive Industrial Fire Protection in Perfection

Rolf Kuhn GmbH, which was one of the first companies worldwide to employ intumescent materials for preventive passive structural fire protection, is a leading supplier of fire protection materials for the processing industry.

When it comes to fire protection accessories for the glazing and door industry, you will always find the right solution within the wide range of products. Special emphasis is placed on innovation at Rolf Kuhn GmbH. New materials from the research and development department are tested and certified in various testing facilities, e. g. the furnaces of the independent test and technology centre. This guarantees both the excellent quality of the products and their safety. Technical passive structural fire protection is clearly a matter of the heart here, and the team is aware of its great responsibility. This care and foresight are the guarantee for the sustainability of the fire protection materials. This applies to the intumescent and energy-absorbing products as well as to the fire protection boards, mastics and sealants and the company's internationally tested pipe, cable and combined penetration seals.

Rolf Kuhn GmbH has been part of svt Group of Companies since 2018. The svt Group of Companies is one of the leading manufacturers of fire protection products and systems in Europe and is a provider of comprehensive services in passive structural fire protection and restoration management. FLAMMADUR®, FLAMRO®, FLEXILODICE®, Firebreather™, GEAQUELLO®, KERAFIX®, PYRO-SAFE® and ROKU®, which are sold nationally and internationally in over 60 countries, are part of the brand portfolio. The group of companies employs more than 900 employees in over 40 branches and has six production sites with their own fire testing facilities.

Further information about the svt Group of Companies can be found at www.svt-global.com

Further information about Rolf Kuhn GmbH can be found at www.kuhn-brandschutz.com

Contents

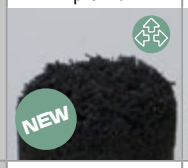
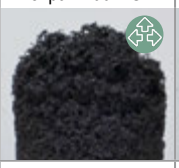
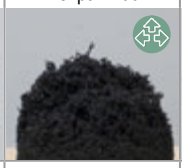
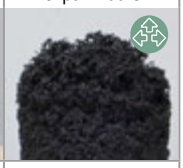
Icons:

In case of fire, the material foams up in one direction.

In case of fire, the material has a cooling effect.

In case of fire, the material foams up in three dimensions.

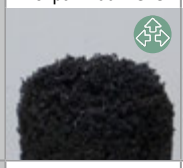
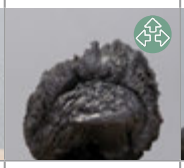
Reactive Materials

	Graphite based					
	KERAFIX® FLEXpremium H	ROKU® Strip	KERAFIX® Flexpan 200 NG-A	KERAFIX® Flextrem 100	KERAFIX® Flexpan 200	KERAFIX® Flexpan 200 SP
Expanded volume						
Verification	ETA-18/0538	ETA-10/0117	ETA-15/0719	ETA-17/0958	ETA-12/0152	ETA-12/0152
Building material classification	E according to DIN EN 13501-1	E according to DIN EN 13501-1	E according to DIN EN 13501-1	E according to DIN EN 13501-1	E according to DIN EN 13501-1	E according to DIN EN 13501-1
Gross density [kg/m³]	approx. 1,300	approx. 1,200	approx. 1,270	approx. 1,320	approx. 1,100	approx. 1,250
Area density [kg/m²]	approx. 1.95 [1]	approx. 1.80 [1]	approx. 1.88 [1]	approx. 1.98 [1]	approx. 1.65 [1]	approx. 1.95 [1]
Start expansion temperature [°C]	from approx. 175	from approx. 190	from approx. 180	from approx. 200	from approx. 170	from approx. 220
Expansion rate	approx. 25 times (550 °C; 30 min; with load) [4]	approx. 24 times (550 °C; 30 min; with load) [4]	approx. 30 times (450 °C; 30 min; without load)	approx. 44 times (450 °C; 30 min; without load)	approx. 23 times (450 °C; 30 min; without load)	approx. 18 times (450 °C; 30 min; without load)
Foam body [2]	Cohesive, very firm	Cohesive, firm	Cohesive, firm	Voluminous, very loose	Cohesive, loose	Cohesive, loose
Pressure [3] [N/mm²]	min. 0.93 max. 1.69	min. 0.80 max. 1.50	min. 0.40 max. 1.30	min. 0.65 max. 2.00	min. 0.30 max. 1.20	min. 0.25 max. 0.95
Thermal conductivity [W/mK]	0.303	0.403	0.247	0.770	0.423	–
Standard thickness [mm]	1.5 & 2	1.5 & 2	1.5 & 2	1.5 & 2	1.5 & 2	1.5 & 2
Insensitive to frost, UV, moisture [5]	✓	✓	✓	✓	–	–
Resistant to ageing	✓	✓	✓	✓	✓	✓

[1] For small standard thickness
[2] Expanded without load
[3] At 300 °C; 120 sec. *(method 4; the measurement conditions are different in part)*
[4] Load = 5 g/cm²
[5] For outdoor use, please contact us, we will be happy to advise you.

In case of fire, reactive materials foam up and increase their volume, for example, in order to seal structural openings or joints and prevent the spread of fire. Depending on the application, flexible reactive materials with an early start of the reaction or a stable pressurised foam body, for example, are required. Rolf Kuhn GmbH offers the appropriate foaming material for your construction.

We will be happy to advise you!

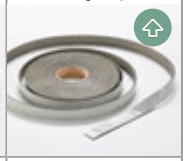
	Graphite based			Phosphate based	Silicon based
	KERAFIX® Flexpan 200 NG-G	KERAFIX® Flexting 100	KERAFIX® Flexpress 100	KERAFIX® FXL 200	Palusol® [6]
Expanded volume					
Verification	ETA-15/0719	–	ETA-17/0959	ETA-17/0960	ETA-15/0345
Building material classification	E according to DIN EN 13501-1	B2 according to DIN 4102-1	E according to DIN EN 13501-1	E according to DIN EN 13501-1	A2-s1, d0 according to DIN EN 13501-1
Gross density [kg/m³]	approx. 1,250	approx. 1,300	approx. 1,220	approx. 1,340	approx. 1,600
Area density [kg/m²]	approx. 1.88 [1]	approx. 1.95 [1]	approx. 1.83 [1]	approx. 1.34 [1]	approx. 3.00 (type 100) [1] approx. 5.80 (type 104) [1]
Start expansion temperature [°C]	from approx. 200	from approx. 200	from approx. 140	from approx. 200	from approx. 100
Expansion rate	approx. 21 times (450 °C; 30 min; without load)	approx. 16 times (450 °C; 30 min; without load)	approx. 28 times (450 °C; 30 min; without load)	approx. 37 times (400 °C; 30 min; without load)	approx. 7 times (550 °C; 10 min; with load) [4]
Foam body [2]	Cohesive, loose	Loose	Cohesive, voluminous	Cohesive, honeycomb	Solid, ceramicised
Pressure [3] [N/mm²]	min. 0.30 max. 1.00	min. 0.40 max. 1.10	min. 0.55 max. 1.20	Pressureless	min. 0.95 max. 1.60
Thermal conductivity [W/mK]	0.294	–	0.452	0.349	–
Standard thickness [mm]	1.5 & 2	1.5 & 2	1.5 & 2	1 & 2	1.9 & 3.6
Insensitive to frost, UV, moisture [5]	✓	✓	–	–	–
Resistant to ageing	✓	✓	✓	✓	✓

[1] For small standard thickness
[2] Expanded without load
[3] At 300 °C; 120 sec. *(method 4; the measurement conditions are different in part)*
[4] Load = 5 g/cm²
[5] For outdoor use, please contact us, we will be happy to advise you.
[6] Palusol® is a registered trademark of BASF SE. For outdoor use, please contact us, we will be happy to advise you.

Insulation materials are compressible, flexible materials which can be used in gaps or as a glazing tape for fire protection glazing, for example. The materials have insulating properties and are heat-resistant.

Insulation Materials

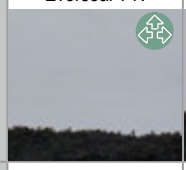
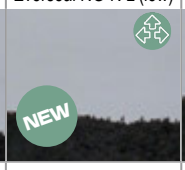
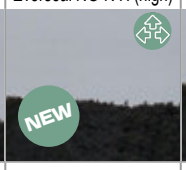
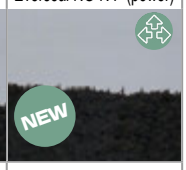
	Alkaline earth/silicon based		
Product	KERAFIX® 2000 classic	KERAFIX® 2000 premium	KERAFIX® 2000 Mat
			
Verification	P-3074/3439-MPA BS	P-3074/3439-MPA BS	–
Building material classification	B2 according to DIN 4102-1 E according to DIN EN 13501-1	B2 according to DIN 4102-1 E according to DIN EN 13501-1	Material of construction material class A1 (non-combustible) according to 4102-1
Gross density [kg/m³]	approx. 250	approx. 250	approx. 128
Temperature stability [°C]	1,200	1,200	1,200
Melting point [°C]	from approx. 1,330	from approx. 1,330	from approx. 1,330
Tensile strength [N/mm²]	from approx. 0.35	from approx. 0.35	approx. 0.07
Colour	White, black	White	White
Thermal conductivity [W/mK]	0.10	0.10	–
Plasticiser-free	✓	✓	✓
Standard thickness [mm]	1 to 10 (white) 2 to 6 (black)	2 to 6	13, 25, 38 & 50
Design variants	• Self-adhesive • Not self-adhesive	• With inner self-adhesive tape for quick and simple installation	–

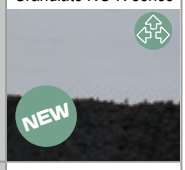
	Vermiculite	Graphite based
Product	KERAFIX® Flexlit	KERAFIX® Foaming Paper N
		
Verification	ETA -17/0815	Z-19.11-1506
Building material classification	E according to DIN EN 13501-1	B2 according to DIN 4102-1
Gross density [kg/m³]	approx. 670	approx. 320
Start expansion temperature [°C]	from approx. 350	from approx. 190
Expansion rate	2 to 5.5 times (400 °C; 30 min; with load) [3]	10 to 17 times (450 °C; 30 min; with load) [3]
Foam body [1]	Fibrous	Cohesive
Pressure [2] [N/mm²]	≥ 0.1	min. 0.25 max. 0.65
Thermal conductivity [W/mK]	0.057	–
Plasticiser-free	✓	✓
Standard thickness [mm]	1.5 & 5	1, 2, 2.5 & 4
Design variants	• Self-adhesive • Not self-adhesive	• Self-adhesive • Not self-adhesive

[1] Expanded without load
[2] At 300 °C; 120 sec. *(method 4; the measurement conditions are different in part)*
[3] Load 5 g/cm²

The profiles of the KERAFIX® Everseal series are flexible fire protection seals with a proportion based on expandable graphite. The expandable graphite proportion foams up in case of fire and increases its volume to seal fire doors or structural openings and prevent the spread of fire, for example. KERAFIX® Granulat NG-N series is used as the starting material for injection moulded parts that expand in case of fire.

Profiles & Granulates

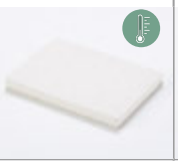
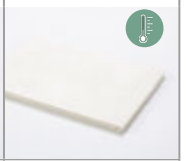
	Graphite based			
	KERAFIX® Everseal T N	KERAFIX® Everseal NG-N L (low)	KERAFIX® Everseal NG-N H (high)	KERAFIX® Everseal NG-N P (power)
Expanded volume				
Verification	Z-19.11-2068	ETA-17/0978	ETA-17/0978	ETA-17/0978
Building material classification	E according to DIN EN 13501-1	E according to DIN EN 13501-1	E according to DIN EN 13501-1	E according to DIN EN 13501-1
Gross density [kg/m³]	approx. 980	approx. 940	approx. 905	approx. 960
Start expansion temperature [°C]	from approx. 180	from approx. 175	from approx. 175	from approx. 175
Expansion rate	approx. 4.5 times (450 °C; 30 min; without load)	approx. 12 times (450 °C; 30 min; without load)	approx. 16 times (450 °C; 30 min; without load)	approx. 20 times (450 °C; 30 min; without load)
Foam body [1]	Cohesive, loose	Cohesive, firm	Cohesive, firm	Cohesive, firm
Pressure [2] [N/mm²]	Negligible	approx. 0.45	approx. 0.65	approx. 0.75
Thermal conductivity [W/mK]	0.166	0.255	–	–
Design variants	• T CN: Coextruded variant based on TPE with a non-foaming component	• NG-CN L: Coextruded variant based on foaming graphite with a non-foaming component (e. g. TPE based)	• NG-CN H: Coextruded variant based on foaming graphite with a non-foaming component (e. g. TPE based)	• NG-CN P: Coextruded variant based on foaming graphite with a non-foaming component (e. g. TPE based)

	Graphite based
	KERAFIX® Granulate NG-N series
Expanded volume	
Verification	ETA-17/0978
Building material classification	E according to DIN EN 13501-1
Material structure	Granulate
Grain size [mm]	approx. 4
Start expansion temperature [°C]	from approx. 175
Expansion rate	from approx. 12 to approx. 20
Pressure [N/mm²]	from approx. 0.45 to approx. 0.75
Predrying [°C]	4 h at 50 °C
Design variants	• NG-N L (low) • NG-N H (high) • NG-N P (power)

[1] Expanded without load
[2] At 300 °C; 120 sec. *(method 4; the measurement conditions are different in part)*

Fire protection boards are non-combustible or flame-retardant boards which are used as surface insulation in a wide variety of structural component designs.They are able to absorb crystalline moisture and release it as water vapour in the event of fire. As a result of this effect, the adjacent structural components are cooled down for a certain amount of time so that the component structure is maintained during the fire.

Fire Protection Boards & Glazing Blocks

Product	GKB boards	GKF boards	ROKU® V2	ROKU® V8	ROKU® Sil	ROKU® S 1100
						
Verification	–	–	–	–	P-BRA-5135006	–
Building material classification	A2-s1, d0 according to DIN EN 13501-1	A2-s1, d0 according to DIN EN 13501-1	A2-s1, d0 according to DIN EN 13501-1	A1 according to DIN EN 13501-1	A1 according to DIN 4102-1	A1 according to DIN 4102-1
Base	Plasterboard	Plasterboard	Plasterboard	Gypsum fibre board	MOC	Calcium silicate
Gross density [kg/m³]	approx. 700	approx. 800	approx. 980	approx. 1,250	approx. 1,070	approx. 1,100
Thermal conductivity [W/mK]	0.250	0.250	0.270	0.280 [1)]	–	0.150
pH value	7	7	6 to 8	7	8 to 12	9 to 11
Compressive strength [N/mm²]	≥ 4.7	≥ 4.7	8 to 10	–	–	≥ 9.1
Dimensions [mm]	2,500 x 1,250	2,500 x 1,250 / 2,500 x 625	2,500 x 1,250 / 2,500 x 1,200	Width 1,270 Length 1,200 to 3,030	2,440 x 1,220	2,440 x 1,220
Standard thickness [mm]	9.5 & 12.5	12.5, 15 & 18 / 20 & 25	8, 9.5, 12.5 & 15	10 to 50	3 to 25	6, 9, 12, 15, 20 & 25

[1)] DIN 12664: 2001-05

Glazing blocks are flat board cuts that are used in fire protection glazing to maintain the dimension and angle of the component. To do this, the blocks are wedged beneath the glass panes at two diagonally opposite corners in the window structure. Fire protection glazing blocks are heat-resistant and dimensionally stable.

	ROKU® Therm	ROKU® Fil PL 1200
Product		
Verification	Z-56,426-1016	P-3906/4429-MPA BS
Building material classification	A2-s1, d0 according to DIN EN 13501-1	B1 according to DIN 4102-1
Base	Mineral plate	Wollastonite
Gross density [kg/m³]	approx. 330	approx. 950
Thermal conductivity [W/mK]	0.064	0.120
pH value	6.8 to 8.5	8 to 10
Compressive strength [N/mm²]	–	–
Dimensions [mm]	2,000 to 2,600	1,000 x 1,000
Standard thickness [mm]	10 to 40	1, 2, 3, 4, 5, 6, 8 & 10

	Flammi 12
Product	
Verification	–
Building material classification	E according to DIN EN 13501-1
Material structure	Hard material
Gross density [kg/m³]	approx. 1,000
Temperature resistance [°C]	1,100
Impregnation [g/m²]	40 to 80
Standard length [mm]	80
Standard width [mm]	8 to 40
Standard thickness [mm]	3, 4 & 5

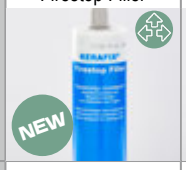
At first glance, adhesives differ in their low to high viscosity. In passive fire protection, properties such as the heat resistance and cooling effect, are paramount. After hardening, silicate-based adhesives achieve a termal stability of up to +800 °C and have a cooling effect in case of fire. Polyurethane-based adhesives have good adhesion properties and high resistance to weathering influences.

Adhesives

	ROKU® adhesive T-NV, T-MV, T-HV	ROKU® PUR adhesive 1-K-1013
Product		
Verification	P-3104/2193-MPA BS	–
Building material classification	A1 according to DIN 4102-1	–
Base	Aqueous sodium silicate solution	1-K polyurethane
Viscosity [mPa·s]	2,750 (T-NV) 3,000 (T-MV) 25,000 (T-HV)	approx. 8,000
Solvent-free	✓	✓
Gross density [kg/m³]	approx. 1,600	approx. 1,130
Start expansion temperature [°C]	from approx. 160	–
pH value	11.4 to 12	–
Delivery form	15 kg Container	10 kg Container

Mastics and sealants for passive fire protection are flame-retardant or foaming single-component sealants for indoor and outdoor use, for example. The materials are elastic and are used in expansion and structural joints, fire protection glazing and doors, pipe and cable penetrations, among other things.

Mastics & Sealants

Product	KERAFIX® Firestop Filler	ROKU® 1000 Fire Protection Putty	ROKU® AC Fire Protection Putty
			
Verification	ETA-19/0495	Z-19.11-1193	–
Building material classification	E according to DIN EN 13501-1	B2 according to DIN 4102-1	B2 according to DIN 4102-1
Gross density [kg/m³]	approx. 1,300	approx. 1,250	approx. 1,600
Start expansion temperature [°C]	from approx. 140	from approx. 190	from approx. 200
Expansion rate	approx. 20 times (550 °C; 30 min; with load)	approx. 8 times (550 °C; 30 min; with load) [3]	approx. 2 times (400 °C; 30 min; without load)
Foam body [1]	Cohesive, firm	Cohesive, firm	Solid, ceramicised
Pressure [2] [N/mm²]	min. 1.00 max. 1.90	min. 0.30 max. 0.65	–
pH value	8.0 to 8.8	6.5 to 7	7.9 to 8.3
Delivery form	310 ml Cartridge	310 ml Cartridge	310 ml Cartridge

Product	KERAFIX® Fire Protection Silicone
	
Verification	–
Building material classification	E according to DIN EN 15651
Gross density [kg/m³]	approx. 1,000 (transparent) approx. 1,200 (coloured)
Shore hardness [Shore A]	approx. 20 (transparent) approx. 25 (coloured)
Elongation at break [%]	approx. 550
Tensile strength [N/mm²]	approx. 1.5
Operating temperature range [°C]	-40 to +150
Colours	White, black and transparent
pH value	–
Delivery form	310 ml Cartridge

[1] Expanded without load
[2] At 300 °C; 120 sec. *(method 4; the measurement conditions are different in part)*
[3] Load = 5 g/cm²

Our Machinery

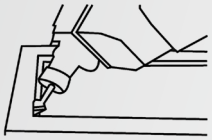
State-of-the-art machinery enables us to provide tailor-made solutions of the highest quality.
We support you every step of the way – from consultation to implementation of your special solution.

Using flexible, coordinated machinery, we are constantly working on creating tailor-made products of the highest quality while strictly adhering to the specifications.

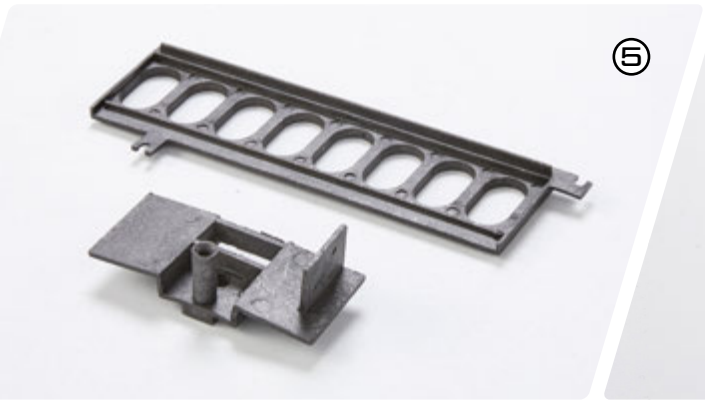
The latest technology that's making the difference:

- CNC machining centre
- High pressure water jet cutting machine
- Board dividing saws
- Four-side planers
- Grinding machine
- Surface cleaning machine
- Glue application machine

Saw, drill & milled parts at every angle



Processing of arched parts



1. Punched/moulded parts

Punched and moulded parts are made from foaming materials or board materials depending on the area of application.

2. Components

Finished components for fire protection structures can be manufactured from various fire protection materials depending on the requirement, for example, fire protection boards.

3. Lock case insulation

For lock case insulation, we provide suitable foaming lock case insulation.

4. Door closers

ROKU® and KERAFIX® solutions for internal door closers (e. g. Dorma ITS 96 system, GEZE Boxer or ECO Multigenius) are created upon customer request.

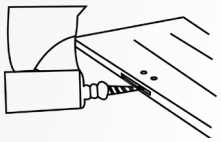
5. Injection moulded parts

Granulate solutions for the production of injection moulded parts that expand in case of fire.

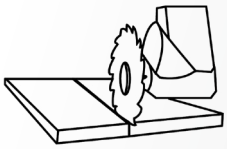
6. Sandwich elements

The combination of the properties of different products can be implemented in sandwich elements. The advantages of an insulation material can therefore be combined with the properties of a foaming material, for example.

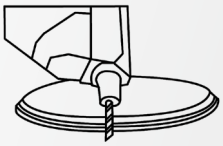
Development of special components and solutions



Precise cutting to individual board dimensions (up to 110 mm high)

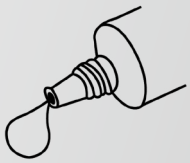


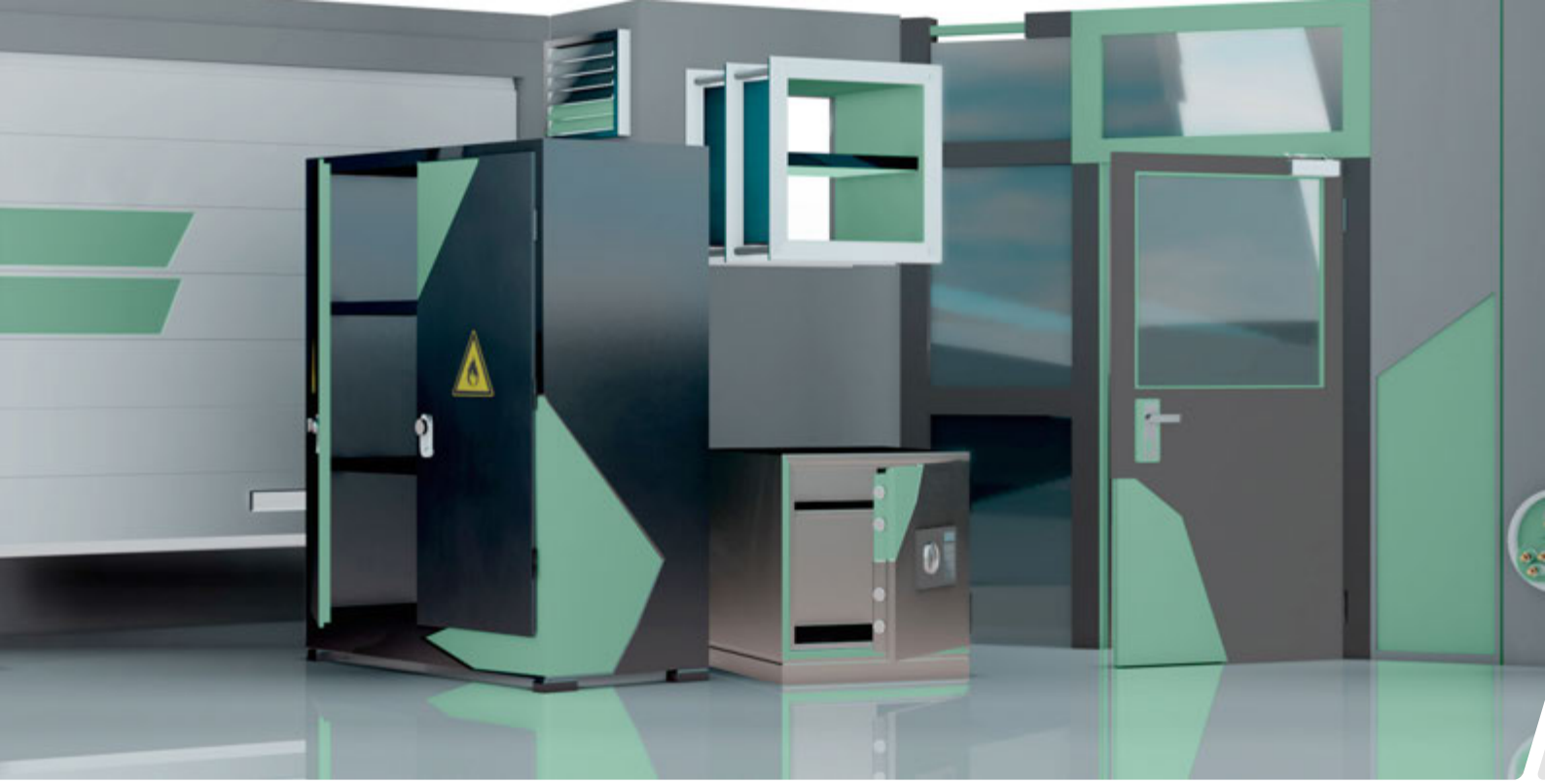
Edge processing



Processing of all commercially available board and sandwich materials

Gluing of all board materials with the help of a glue application machine

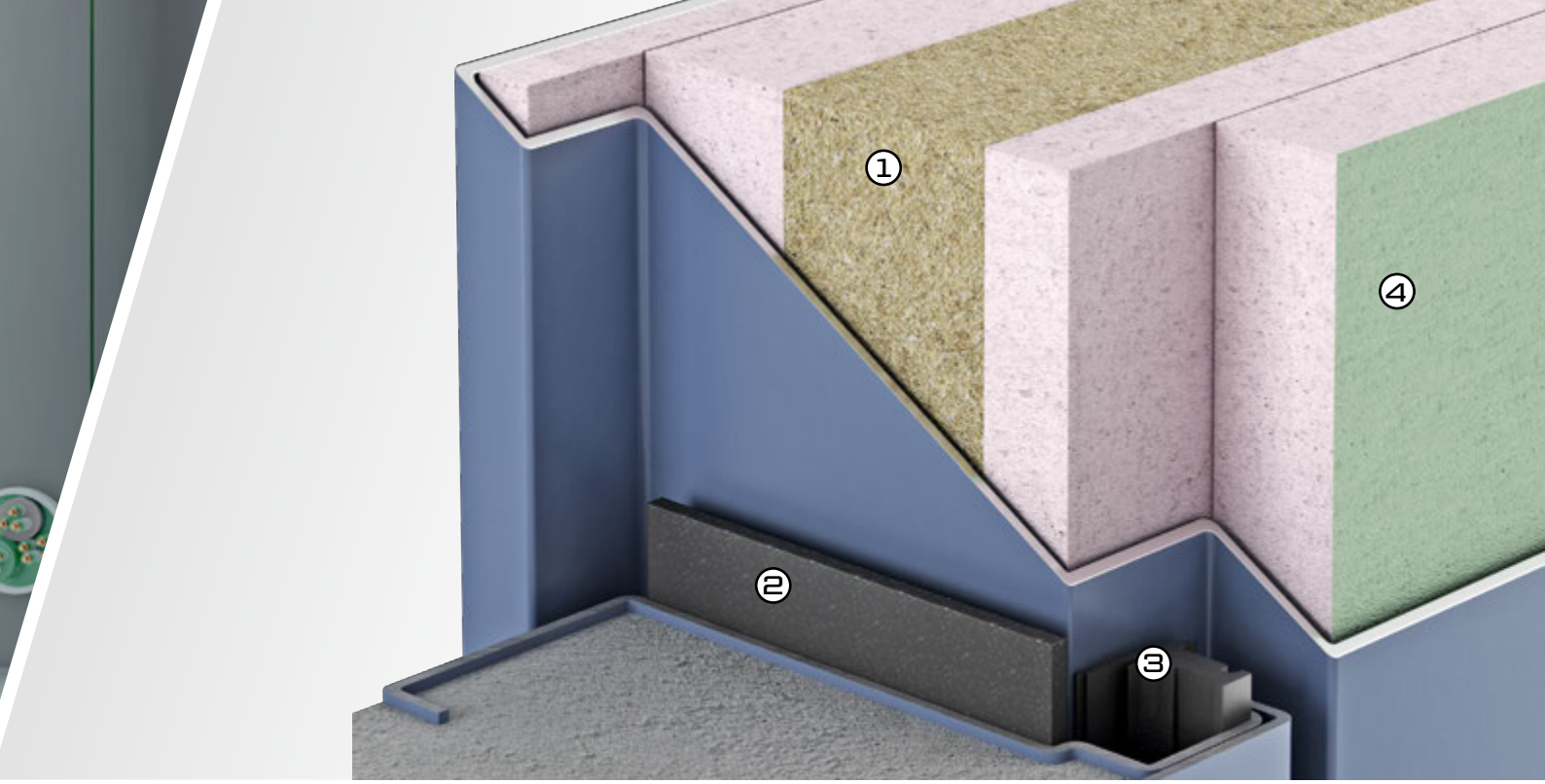




Areas of Use

The materials in this brochure can be used in the following structures:

- Fire protection doors made of wood, steel or aluminium
- Fire protection glazing
- Special door application areas such as lock cases
- Façades
- Partition wall and ceiling structures
- Double floors
- Safety cabinets
- Control cabinets
- Safes
- Inspection openings
- Gap solutions
- Structural joints
- Penetration seals
- Gas stop valves
- Pneumatic drives
- Industrial equipment
- Lithium-ion batteries
- Shipbuilding



Fire Door Installation Example

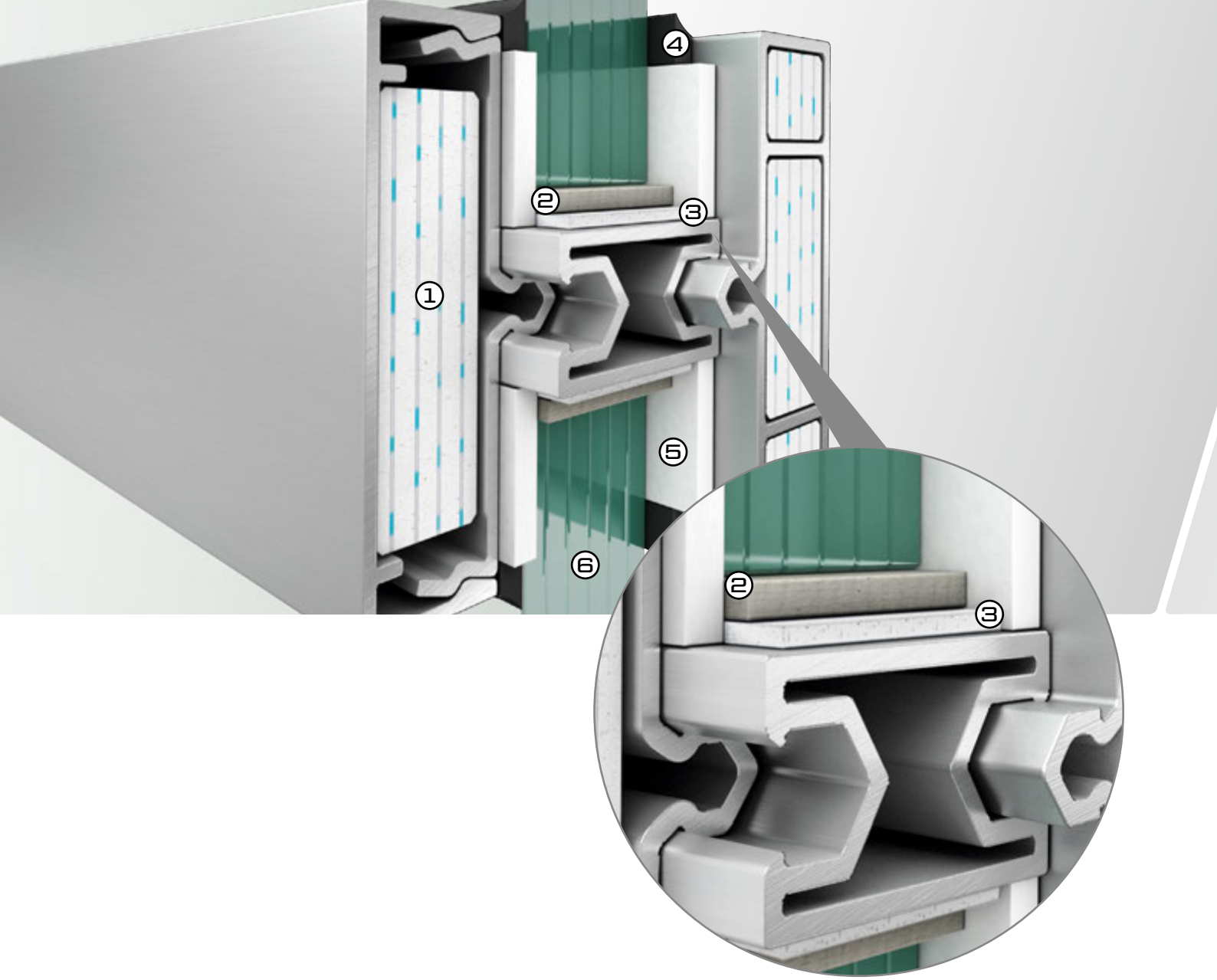
1. Fire protection boards as insulation material e. g. ROKU® Therm

2. Intumescent material e. g. KERAFIX® Flexpan 200 NG-A

3. Intumescent seal e. g. KERAFIX® Everseal NG-N L

4. Fire protection boards as cooling insulators e. g. ROKU® V2 plasterboard

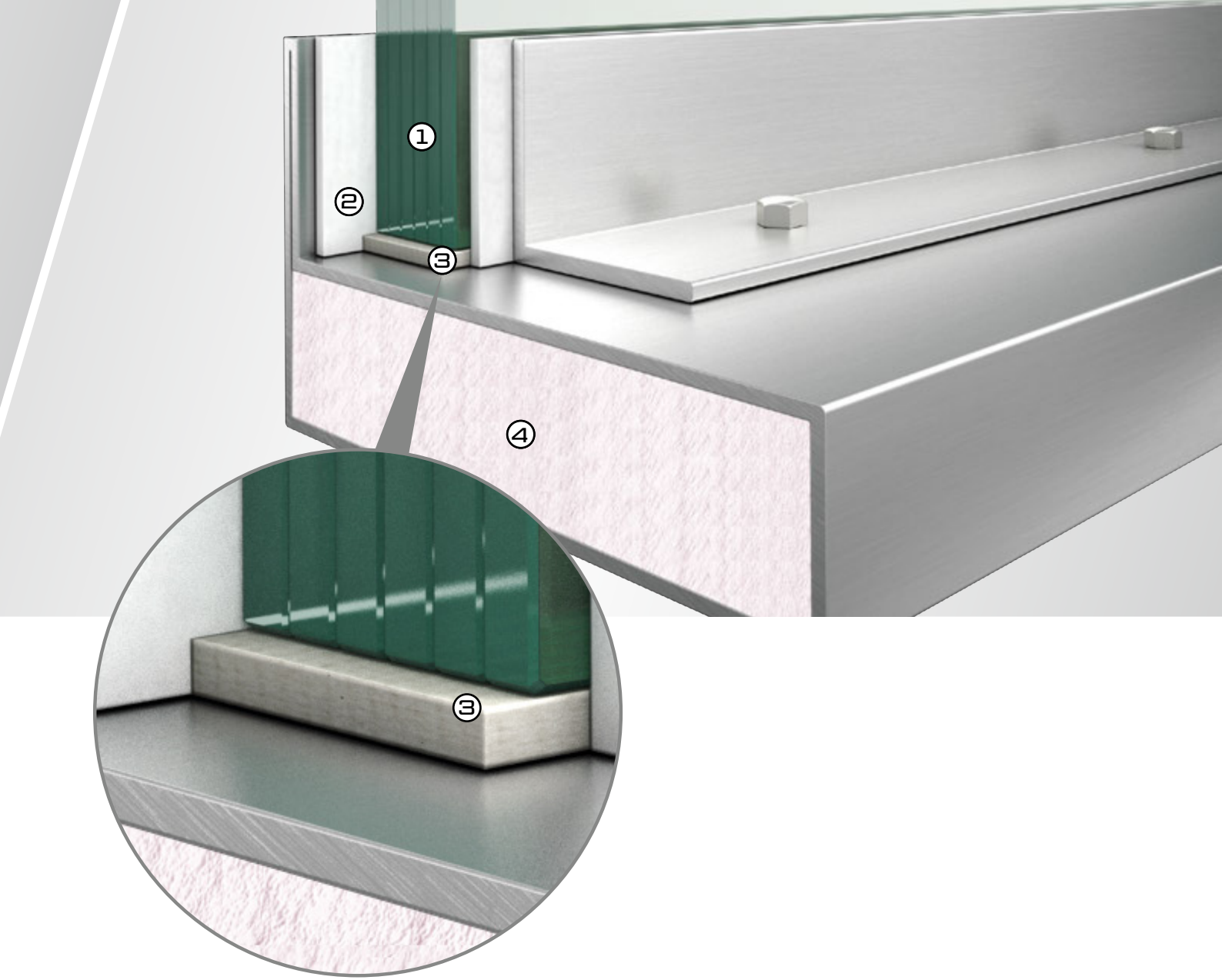
All figures represent schematic structures. A functional guarantee can only be proven with a corresponding fire protection test.



EI 90 Fire Protection Glazing with Aluminium Support

Application example

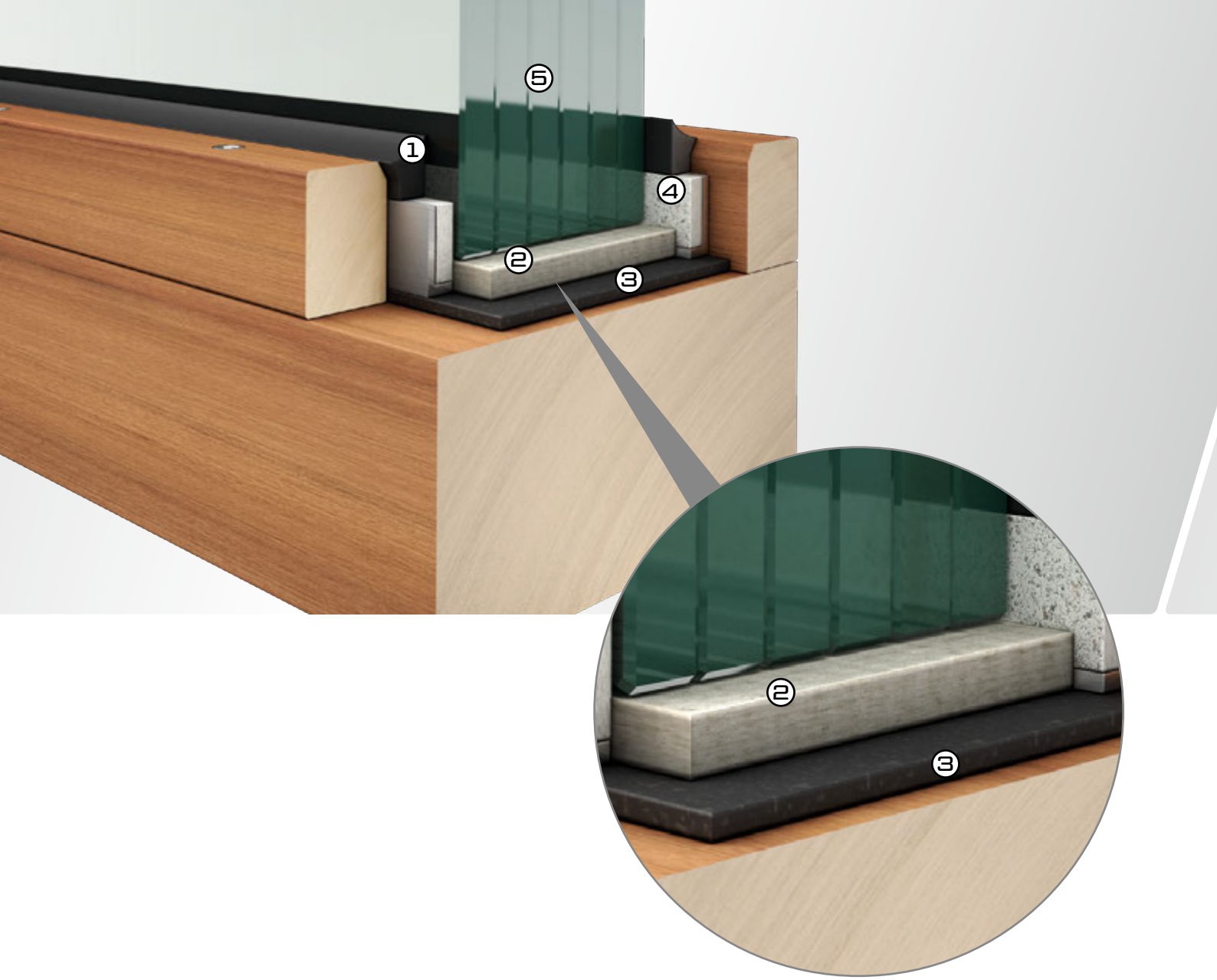
1. Fire protection boards as cooling insulators e. g. KERAFIX® Coolmax
2. Fire protection glazing blocks e. g. Flammi 12
3. Intumescent material e. g. KERAFIX® FXL 200
4. Fire protection silicone e. g. KERAFIX® Fire Protection Silicone, alternative intumescent seal e. g. KERAFIX® Everseal NG-N L
5. Fire protection glazing tape e. g. KERAFIX® 2000
6. Glass



EI 60 Fire Protection Glazing with Steel Support

Application example

1. Glass
2. Fire protection glazing tape e. g. KERAFIX® 2000
3. Fire protection glazing blocks e. g. Flammi 12
4. Fire protection boards as cooling insulators e. g. ROKU® V2 plasterboard



EI 90 Fire Protection Glazing with Wooden Support

Application example

1. Fire protection silicone e. g. KERAFIX® Fire protection silicone, alternative intumescent seal e. g. KERAFIX® Everseal NG-N P

2. Fire protection glazing blocks e. g. Flammi 12

3. Intumescent material e. g. KERAFIX® Flexpan 200 NG-A

4. Fire protection glazing tape e. g. KERAFIX® Flexlit

5. Glass

EI 30 Fire Protection Glazing with Wooden Support

Application example

1. Fire protection glazing tape e. g. KERAFIX® 2000
2. Fire protection glazing blocks e. g. Flammi 12
3. Intumescent material e. g. KERAFIX® Flexpress 100
4. Fire protection silicone e. g. KERAFIX® Fire Protection Silicone, alternative intumescent seal e. g. KERAFIX® Everseal T N
5. Glass

Design Variants

1. T variant

The T variant consists of an airtight foil coating made of aluminium foil. The material is therefore protected from weathering influences. Since the foil is very thin, the material does not lose its flexibility. The variant is available with or without self-adhesive tape.

- Airtight seal
- Protection from weathering influences
- Foil is very thin
- The flexibility of the material is retained

2. PT variant

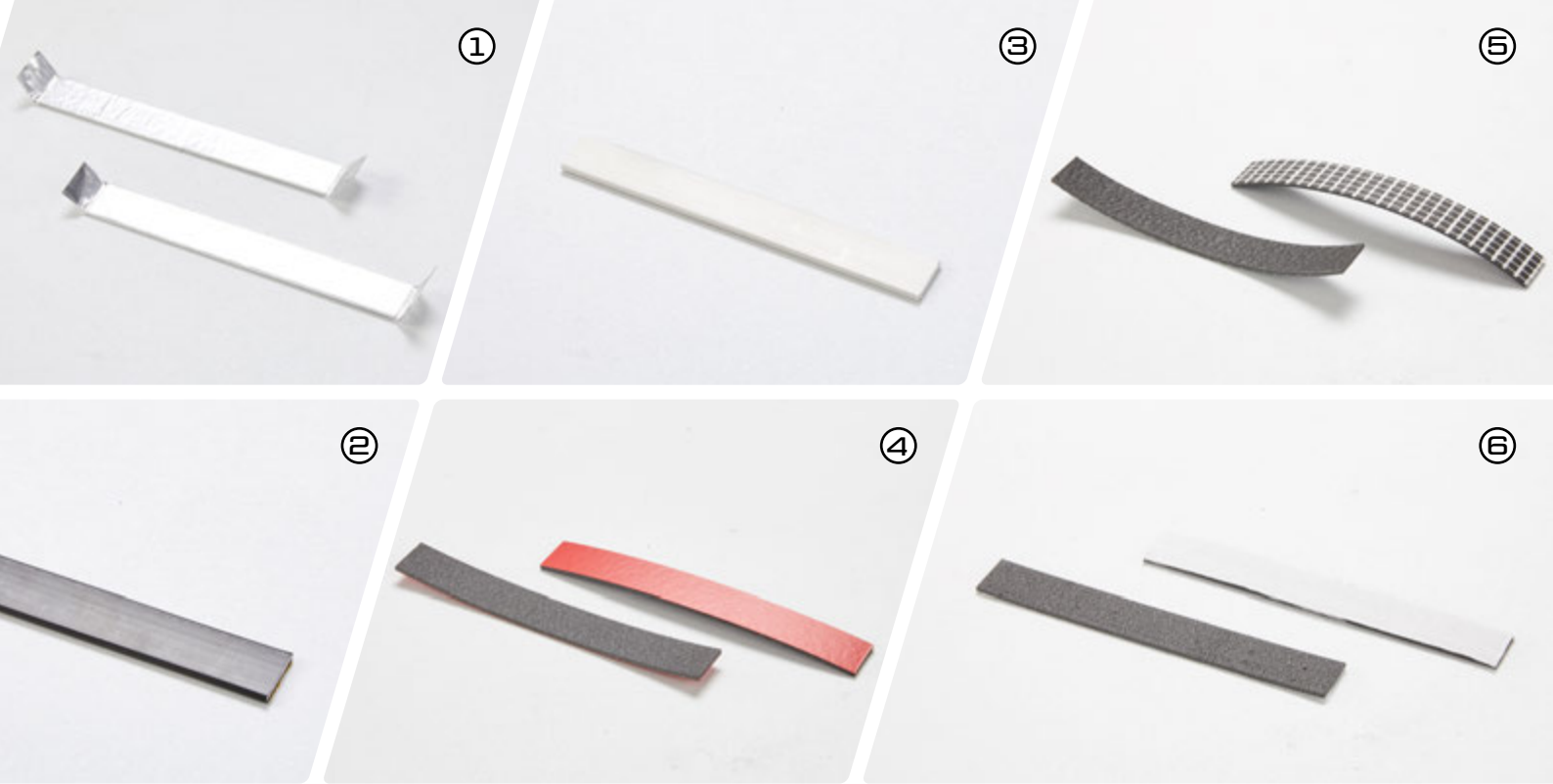
The PT variant consists of an airtight foil coating made of aluminium foil, which is also inserted into a plastic profile. The material is protected from weathering influences and the rigidity of the material is reinforced by the coating. The PT variant is available with or without self-adhesive tape and is also PVC-free.

- Airtight seal
- Protection from weathering influences
- The stability of the material is increased
- Also available PVC-free

3. E variant

In the E variant, the material is fully coated with a PVC plastic profile. The material is protected from weathering influences and the rigidity of the material is reinforced by the rigid coating. Variant E is available with or without self-adhesive tape and in different colours.

- Airtight seal
- Protection from weathering influences
- The stability of the material is increased
- Available in various colours



4. DF variant

In the DF variant, the material is provided with a thin, coloured PVC cover foil, which is used for visual effect. The DF variant is available with or without self-adhesive tape.

- Single-sided protection of the material from weathering influences
- PVC cover film is very thin
- Available in various colours

5. GG variant

In the GG variant, the reactive material is provided with a glass mesh.
The mesh is used to maintain the dimensional stability of the material in case of fire and prevents the material from contracting. The GG variant is available with or without self-adhesive tape.

- Dimensionally stable in case of fire
- No contracting of the material

6. GW variant

In the GW variant, the reactive material is provided with a temperature-resistant fabric tape. This gives the material insulating properties and improves its mechanical resistance. The GW variant is available with or without self-adhesive tape.

- Additional insulating property
- Improved mechanical resistance
- Temperature resistance of the fabric tape

FAQ

What construction material classes are there?

German construction regulations	Building material classification DIN EN 13501-1	Building material classification DIN 4102-1
Non-combustible without flammable building material content	A1	A1
Non-combustible without flammable building material content	A2 – s1, d0	A2
Flame retardant	B, C – s1, d0 A2, B, C – s2, d0 A2, B, C – s3, d0 A2, B, C – s1, d1 A2, B, C – s1, d2 A2, B, C – s3, d2	B1
Normal flammability	E	B2
Highly flammable	F	B3

Why does Rolf Kuhn GmbH offer such a variety of foaming materials?
Foaming materials have special characteristics that can vary greatly from material to material. We put every material through its paces, compare test results and functional properties, and thus create a comprehensive product range that has a specialised solution for every performance requirement.

What differences are there in the material structure?
The reactive materials are manufactured as strips or rolls. Rolls generally make faster installation processes possible. Rigid strips, however, are necessary for insertion into profiles, for example.

What does the start of the reaction indicate?
The start of the reaction indicates the temperature at which a material foams. With some materials, the foaming process starts at 100 °C, with others only at 220 °C.

How does the foaming behaviour differ?
The foaming behaviour of the material differs mainly in the foaming height and the expansion pressure.
The foaming height can be between 2 and 70 times the original material thickness. The different foaming pressures of the materials have a serious effect on the structural component, as some materials also re-foam at higher temperatures and thus deformations of the component can be compensated for in case of fire.

When should a stable or porous foam body be used?
Most of the time, a stable, firm foam body is sought-after, which is also seen as a quality feature. For many structures with very limited space, however, a porous, loose foam body may be the better choice, as this also achieves an optimal seal and is not forced out of the structure opening.

What is foaming pressure?
The foaming pressure that acts during the reaction is a temperature-dependent physical property that characterises the various materials. Depending on the application, it can make sense to prefer materials with a low foaming pressure – in other cases, a component solution can only be implemented with a high foaming pressure.

What does intumescent mean?
The adjective “intumescent” means a body increasing in size by expanding.

How does a material based on graphite, phosphate or silicate differ?
The materials differ in their chemical composition. Graphite based materials consist of crystal layers of natural graphite flakes with sulphur or nitrogen compounds. When exposed to temperature, the graphite layers are suddenly driven apart and the particles are expanded to several hundred times their original volume. Phosphate-based materials form a solid surface layer of phosphorus compounds when exposed to high temperatures. Materials based on silicate form a hard, ceramic protective layer when exposed to high temperatures and release previously bound water, which leads to the effect of a significant cooling of the neighbouring materials.

What must be considered when using reactive materials?
The three factors of substrate, adhesive technology and material must be optimally coordinated. Optimal mounting of reactive materials is of critical importance – both for function in case of fire and for the durability of the connection. Do you have any further questions about the choice of adhesive, surface treatment or processing? Then contact us, we will be happy to advise you.

What is an insulator?
Fire protection boards with a cooling effect are called insulators. So-called insulators are used in surface application or in fire protection profiles made of steel or aluminium, for example.

Note
The information in this publication is based on our current knowledge and experience. This does not exempt the applicator from carrying out their own tests and trials due to the wide range of possible influences during processing and use of our product. A guarantee of certain properties or the suitability of the product for a specific application cannot be derived from our information. All descriptions, drawings, photographs, data, ratios, weights etc. contained herein are subject to change without notice and do not represent the contractually agreed quality of the product. Any industrial property rights as well as existing laws and regulations must be observed by the recipient of our product on their own responsibility.

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