Building products from HANNO

Joint sealing 2016

HANNO provides products for sealing construction joints. Whether for windows, light construction or for sealing face joints: With high efficiency and long life, the well-known and high-quality joint sealing products from HANNO always ensure optimum sealing action.

HANNO
Sealing and insulating Systems

Hanno works

Tradition combined with technical innovative strength

This comprehensive booklet from our Building sales segment provides an overview of our products; detailed information and technical specifications can be found on our websites. We have to thank you, our customers, for more than 120 years of this company's existence in the market and we hope to serve you as your reliable partner also in future.

It all started with the production of felt, then was expanded to include the manufacture of polyurethane soft foams and self-adhesive solutions and today emphasizes the image of HANNO in the focal competence areas of impregnated joint sealing tapes (Hannoband® – The Original) and insulating, hydrophobic or conducting artificial soft foams for sealing, attenuating, insulating for versatile applications in many industries and markets.

Global supplies and company branches in Austria, Switzerland, Russia and the United States complement our partnerships with distributors and OEM customers around the globe. The Hanno® brand unites the firm name and the product; it also firmly embraces other brands.

A strong team in application engineering and in-house research & development assists our sales departments with innovations and product variants. Important products and innovations are protected by numerous patents and utility models, both national and international. Our new, modern headquarters on "Hanno-Ring" in Laatzen are a hub of optimized processes where we have our world in a nutshell. We are committed to Germany as our focus of production and to HANNO products "made in Germany".

For you as customers, we want to be a committed partner with a competitive price/performance ratio for modern, high-quality products with value added for your own applications. Our compliance and quality management systems are in line with latest requirements. Together with you, we hope for success and a successful partnership with reliable continuity at the core. We prove that also by appointing a new managing director in time who, to be sure, is an offspring of the HANNO-VITO Group, so that the transfer of know-how is secured and customers, employees and partners can rely on a smooth transfer in the succession of Hans J. Hoffmann, for many years our managing director, at the beginning of 2016.

Your managing directors,

Hans-J. Hoffmann

Günter Krohn

HANNO
Sealing and insulating Systems

B. Braun Melsungen AG, Melsungen

Het Strijkijzer, The Hague

Volkswagen Commercial Vehicles, Hanover

Well-known builders throughout the world rely on products from HANNO

Whether for sealing face elements of buildings or the professional sealing of window connection joints: The proverbial high quality of Hannoband® is unimpaired even after many years.

Numerous major projects, e.g. the construction of the new factory of B. Braun Melsungen AG in Melsungen, the forum of the Provinzial Insurance Company in Düsseldorf, the Het Strijkijzer high-rise in The Hague or the refurbishment of the production building of Volkswagen Commercial Vehicles in Hanover, were completed successfully with Hannoband® products.

The new energy awareness of the population and the desire for long-lived products, plus new legislation are reasons why the number of private builders who use Hanno® products for sealing building joints is rising constantly.

Provinzial Insurance Company, Düsseldorf

Basis of planning for architects

HANNO is at your side already when you start planning a new project: Consultation in preparation for it, training of your personnel and constant contact throughout all building phases are matters of course for us. To this end, HANNO offers technical information about all products and the 3-Layer Joint Sealing System developed by HANNO.
In addition, HANNO provides – via the CAD manager of Heinze – detail drawings for building joints and connections free of charge. From a large variety of window connections in different types of masonry to thermal insulation systems and entrance door and balcony/porch door connections, architects and planners can find the appropriate recommendation according to the generally approved rules of technology.

Besides, numerous different tender specifications for the HANNO products are available through the Heinze AT manager.

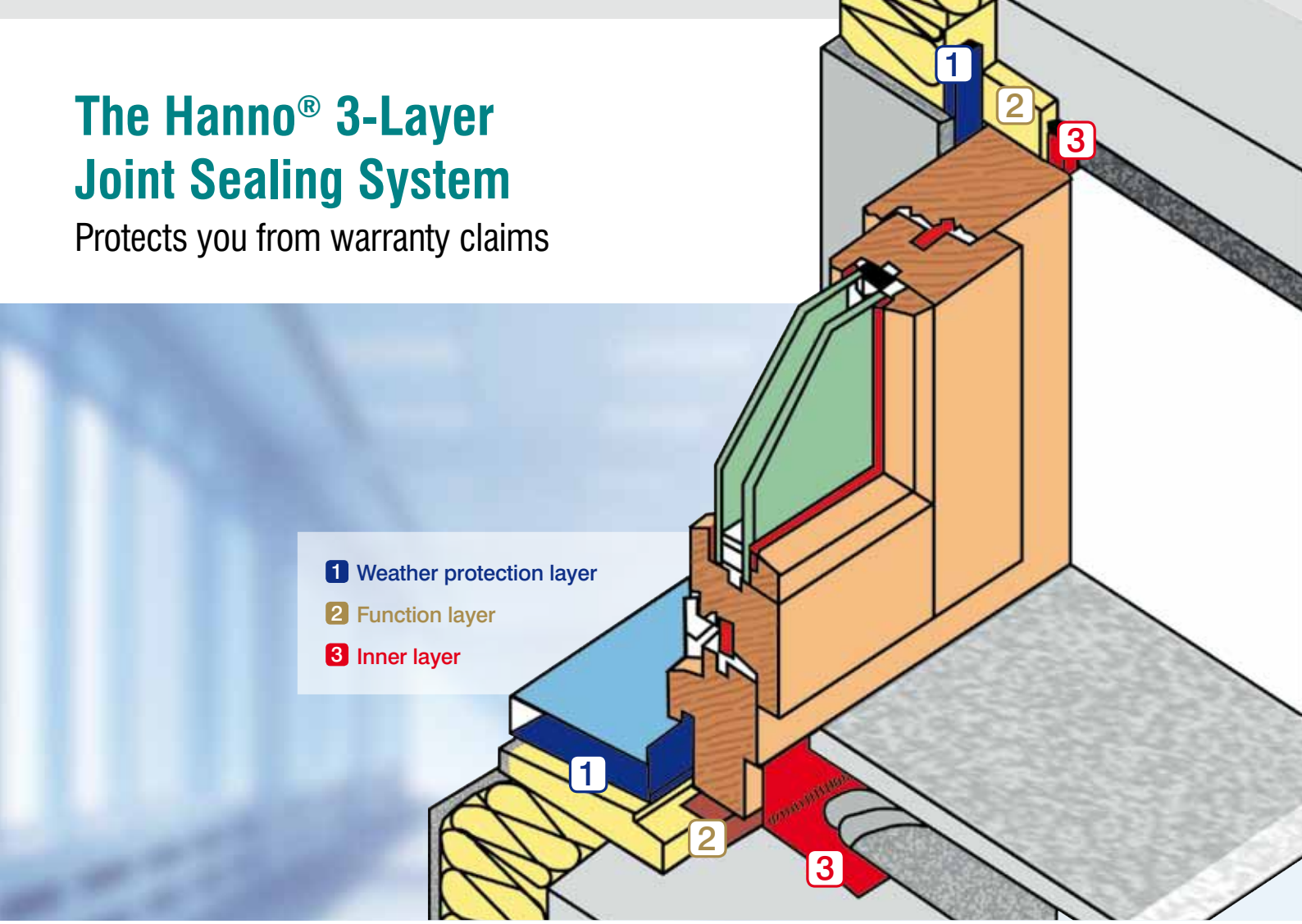
The related link to the CAD details and the tender specifications is conveniently placed alongside the respective product on our homepage *www.hanno.com*

On request, the texts for bidding invitations and CAD details will be provided by the HANNO construction application technology also in English.

HANNO
Sealing and insulating Systems

The Hanno® 3-Layer Joint Sealing System

Protects you from warranty claims



What does the new German Energieeinsparverordnung (Energy Saving Ordinance – EnEV) postulate for windows?

"Buildings shall be constructed in such a way that the heat-transferring outer surface, including the joints, is permanently impermeable to air, sealed according to the approved rules of engineering"*. In this context, reference is made to the DIN 4108-7 norm, which contains related planning and execution examples.

What is th e purpose of impermeability to air?

Moisture is produced in living and working rooms and tends to enter the outside air. This process should not occur through the window connection joint but through a controlled exchange of air. If humid air enters the joint, condensing water damages the connection and reduces the heat insulation. Therefore, connection joints must be provide sufficient sealing and be made properly and professionally.

What is the state of the art?

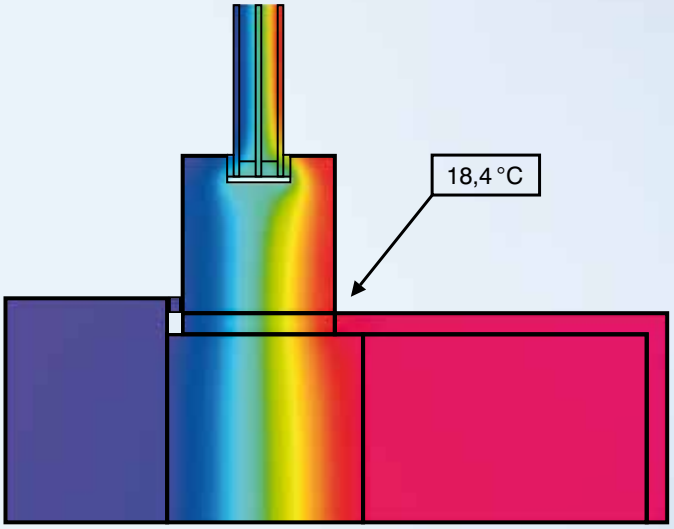
The state of the art is published in the Bundesanzeiger (Federal law gazette). Representatives of research and engineering practice define technically feasible rules. Examples of such rules are VOB, RAL and DIN norms, which have so far been accepted as the basis on which all work should be performed. By adopting the Energieeinsparverordnung (Energy Saving Ordinance – EnEV), the government made the latest rules law.

The requirements of the Energy Saving Ordinance – EnEV – are underpinned by a number of regulations, standards and directives compliance with which is obligatory if the required reliable seal is to be obtained for many years applying the rules of good engineering.

The designer of the window connection joint should attach particular importance to avoiding heat bridges. The principle that the seal must be tighter inside than outside has been accepted for many years. In essence, the planner defines that the seal should have a sealing effect in several steps (3 layers) as a consequence of which a vapour pressure gradient is established. When the temperature condition is of the reverse type, the variability of the diffusion behaviour of the inner seal is of advantage.

HANNO
Sealing and insulating Systems

* Source: EnEV 2014 § 6



Two-dimensional temperature field with indication of the lowest temperature at the body shell connection.

The effect

The interaction of the different sealing layers helps eliminate moisture entered through imperfections in the joint or moisture entrapped in the construction phase by diffusion to the outside. Expensive repairs of defects caused by moisture and the loss in value of the building are avoided in this way.

With the carefully matched products of the Hanno® 3-Layer Joint Sealing System, you meet all requirements of the EnEV (Energy Saving regulation) in all layers of the joint. The MPA BAU HANNOVER has certified the Hanno® 3-Layer Joint Sealing Systems.

You obtain

- Resistance to driving rain > 600 Pa
- Air-tightness and diffusion behaviour acc. to DIN 4108
- Effectine noise insulation in the system up to 61 dB
- Thermal insulation on passive house level

Guaranteed – for years!

The BBS Institut Wolfenbüttel has proved to passive house capability of the Hanno® 3-Layer Joint Sealing System.

BBS INSTITUT

In the first part of the test, the joint was examined for the presence of heat bridges. With an elaborate test design Prof. Dr.-Ing. Hans-Peter Leimer then examined the 3 Layer Joint Sealing System for permeability to air when new and under conditions of constant temperature-related changes of length and constant changes of the shape of window profiles after movement cycles.
As a result, the versions of the 3-Layer Joint Sealing System marketed by HANNO scored outstanding results.

The Hanno® 3-Layer Joint Sealing System

- Temperaturfaktor f_{Rsi} 0,92 bis 0,96
- hohe Luftdichtigkeit
- sehr gute Wärmedämmung

HANNO
Sealing and insulating Systems

Hanno® Joint Sealing Tapes

High efficiency and extremely long life

Hanno® Joint Sealing Tapes make an essential contribution to protect and maintain the value of modern as well as of historical buildings. Financial and natural resources are saved and the energy balance of the production process and the building is optimized. Hanno® Joint Sealing Tapes are part of any face plan. They are reliable and safe construction elements.

Hannoband® meets all requirements on the sealing of joints. The tapes are safe and long-lasting. The MPA-Hannover, a testing institute for materials and production equipment, confirms over 15 years of weather resistance for Hanno® Joint Sealing Tapes and their resistance to ultraviolet radiation and extreme driving rain. Besides these tapes are open to diffusion and adapt to high temperature differences. Their long-term elasticity compensates movements of building components due to temperature as well as tolerances of building and material. Hanno® Joint Sealing Tapes are made without CFC, halogens, formaldehyde, heavy metal containing substances or solvents.

Hannoband® complies with the GEV directives for very low-emission products.

Hannoband® is immediately ready for use. Depending on the weather, it can be installed in one go and protects from moisture both from outside and from inside.

Hannoband® – the original!

- very low emission
- > 15 years ***tested*** resistance to weather
- sustainable and safe – guaranteed!

HANNO
Sealing and insulating Systems

Hannoband® keeps the weather out

The right protection of buildings from wind and rain

Typical applications of Hannoband®-BG1/BG1-M, BG2 and HBD

	BG1/BG1-M	BG2	HBD
Window construction			
Joint sealing according to DIN 18542:2009 BG1	■		
Joint sealing according to DIN 18542:2009 BG2		■	
Connection joints sealed against driving rain for different rabbets > 600 Pa	■	■	
Connection joints sealed against driving rain for different rabbets > 300 Pa	■	■	■
Connections with joint permeability a_n < 1.0 m³/[h m (daPa)$^{2/3}$]	■	■	■
Connections with joint permeability a_n < 0.1 m³/[h m (daPa)$^{2/3}$] with joint nominal compression	■		
Thermal separation/heat insulation	■	■	■
Sound insulation requirements according to the guideline for installation (RAL)	■	■	
Profile couplings/backfilling/battening	■	■	■
Front face construction			
Joint sealing according to DIN 18542:2009	■	■	
Contraction joints in panel system buildings	■		
Thermal insulation composite system	■	■	
Brick facing	■		
Prefabricated concrete parts	■		
Natural stone facing	■		
Base for cast-in-place concrete/concrete parts	■	■	■
Element building			
Joint sealing according to DIN 18542:2009	■	■	
Sealing in timber houses/log houses/ half-timbered houses	■	■	
Thermal insulation in element building	■	■	■
Noise insulation walls	■		
Insulation walls	■	■	
Winter gardens	■	■	

	BG1/BG1-M	BG2	HBD
Interior finishing			
Light partition walls/dry construction connections	■	■	■
Wind-tight connections in steep roof	■		
Isolation of double floors	■	■	■
Lightweight metal structures			
Lightweight metal structures according to IFBS Guideline BG1 based in DIN 18542:2009	■		
Lightweight metal structures according to IFBS Guideline BG2 based on DIN 18542:2009		■	
Connection joints resistant to driving rain > 600 Pa	■	■	
Connection joints resistant to driving rain > 300 Pa	■	■	■
Connections with joint permeability a_n < 1.0 m³/[h m (daPa)$^{2/3}$]	■	■	■
Connections with joint permeability a_n < 0.1 m³/[h m (daPa)$^{2/3}$] with joint nominal compression	■		
Steep roof/flat roof			
Solar panels	■	■	■
Roof windows	■	■	■
Flat roof connections	■		
Chimney connections	■		
Sheet metal roofing/welted standing seams	■		
Connection of row of windows/domes	■		
Pantile sealing	■	■	■
Roof penetrations	■	■	
Ridge/verge/valley/dormer	■	■	■
Gable/masonry connections	■	■	

Do you have a special application or want to ask questions?
Call us at tel.: +49 5102 70000

Hannoband®-BG1

High performance in building

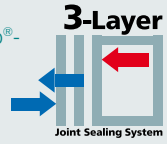
Hannoband®-BG1
For directly weather-exposed joints in facade and window construction. Anyone favouring construction joints with long-term perfect sealing will go for Hannoband®-BG1. After an outdoor weathering test MPA Hannover confirmed that Hannoband® performed clearly better than the requirements of DIN 18542:2009 even after 15 years in the joint.

Hannoband®-BG1 XL
Hannoband®-BG1 is also available as Hannoband®-BG1 XL in longer reels. This reduces scrap and makes installation faster.

Hannoband®-BG1-M
Hannoband®-BG1-M, patented Hannoband membrane technology, is available particularly for sophisticated wider joints.

- For heavy-duty primary and cross joints
- All relevant test certificates are available
- Resistant to long-term weathering
- Full test acc. to DIN 18542:2009, stress group 1
- Building materials class B1 DIN 4102
- High heat insulation
- Resistant to driving rain ≥ 600 Pa
- Extraordinary sound insulation
- Temperature stability from -30 °C to +100 °C, briefly to max. +130 °C
- Open to diffusion
- Tolerates painting

Hannoband®-BG1 is a component in the Hanno®-3-Layer Joint Sealing System for the production of joints in accordance with RAL and EnEV.



Test certificates

MPA BAU HANNOVER – Material Testing Institute for the building industry Hannover
- Test according to DIN 18542:2009, stress group 1
- External supervision contract
- Determination of thermal conductivity
- General building inspectorate tests (BG1-M)
- Building materials class B1 DIN 4102 (BG1-M)

ift Rosenheim
- Proof of joint noise insulation

Eurofins Product Testing A/S
- Emission measurements

GEV – Association for the Control of Emissions in Products for Flooring Installation, Adhesives and Building Materials e.V.
- EMICODE® EC1 PLUS certification

Additional test certificates for Hannoband®-BG1

European Organisation for Technical approvals
- European Technical Approval ETA 06/0083 (CE certificate)

Kiwa N.V., NL-2280 AB Rijswijk
- Komo product certificate

Socotec
- NFP85-570 and NFP85-571 certification

DIBT, Deutsches Institut für Bautechnik, Berlin
- General Building Supervision certification
- Building materials class B1 acc. to DIN 4102

ATI, Architectural Testing, Inc., York, Pennsylvania
- Miami Dade hurricane test acc. to ASTM E284, 330, 331

MPA-Hannover – Material Testing Institute for Materials and Manufacturing Engineering
- Assessment after realistic outdoor exposure for a period of over 15 years

order designation	for joint depth* in mm	for joint width in mm
10/1,5–2,5	10	1,5–2,5
15/1,5–2,5	15	
20/1,5–2,5	20	
10/2–4	10	2–4
15/2–4	15	
20/2–4	20	
10/3–7	10	3–7
15/3–7	15	
20/3–7	20	
10/5–10	10	5–10
15/5–10	15	
20/5–10	20	
30/5–10	30	
15/7–12	15	7–12
20/7–12	20	
30/7–12	30	
20/8–15	20	8–15
25/8–15	25	
30/8–15	30	
20/10–18	20	10–18
25/10–18	25	
30/10–18	30	
25/8–18	25	8–18
25/12–25	25	12–25
35/20–35	35	20–35

Joint widths 8–18, 12–25 and 20–35 are available as Hannoband®-BG1-M with functional membranes integrated in the tape. Please also see the test certificates for Hannoband®-BG1-M.

Cut the outer adhesive film open with the knife.

Cut off the first 1–2 cm of overcompressed tape.

Apply Hannoband®-BG1 to the window frame.

Place the tape ends together exactly by applying light pressure.

*If the joint flanks do not run parallel to each other, the tape thickness is to be selected which is appropriate for the widest part of the joint. A perfect functioning requires that the recommended joint widths are to be exactly adhered to. The maximum/minimum joint widths include the movements of the structural member. The tape width (joint depth) is not to be less than the tested minimum dimensions.

HANNO
Sealing and insulating Systems

Hannoband®-BSB BG1

The fire protection tape

This special fire protection tape is flame retardant according to DIN 4102 and is available up to fire rating EI 120. Including for directly weather exposed joints, fire protection joints and partitions in the indoor area as well as for fire protection window and for joints between masonry parts to ensure the required fire resistance rating.

- Joint sealing tape with special acrylate dispersion impregnation especially for fire protection (patent pending)
- Stress group BG1 DIN 18542:2009
- For driving rain protected expansion and connection joints in window construction ≥ 600 Pa
- Joint permeability, $a_n \leq 1{,}0\ m^3/(h \cdot m \cdot (daPa)^{2/3})$
- s_d value ≤ 0.5 m
- Colour: light gray

Test certificates

- DIN EN 1366-4 fire rating up to 120 minutes when laid double between masonry and masonry (see test report)
- DIN EN 1366-4 fire rating up to 60 minutes when laid double between masonry and wooden frame (see test report)
- **Block frame system test, 59 mm wide:** 12 mm joint filled with Hannoband®-BSB BG1 fire protection tape 20/7-12. Remaining joint filled with Hanno®-fire protection foam. Fire resistance: 36 minutes
- **Block frame system test, 60 mm wide:** 12 mm joint filled with twice Hannoband®-BSB BG1 fire protection tape 15/7-12. Fire resistance: 35 minutes
- Building materials class B1 low flame spread acc. to DIN 4102

Eurofins Product Testing A/S

- Emission measurements

GEV – Association for the Control of Emissions in Products for Flooring Installation, Adhesives and Building Materials e.V.

- EMICODE® EC1PLUS certification

order designation	for joint depth* in mm	for joint width in mm
15/5–10	15	5–10
20/5–10	20	
30/5–10	30	
15/7–12	15	7–12
20/7–12	20	
30/7–12	30	
20/8–15	20	8–15
25/8–15	25	
30/8–15	30	
25/10–18	25	10–18
30/10–18	30	
35/15–25	35	15–25
40/15–25	40	

Additional dimensions upon request

*If the joint flanks do not run parallel to each other, the tape thickness is to be selected which is appropriate for the widest part of the joint. A perfect functioning requires that the recommended joint widths are to be exactly adhered to. The maximum/minimum joint widths include the movements of the structural member. The tape width (joint depth) is not to be less than the tested minimum dimensions.

Hannoband®-BG2

For outdoor application with little weather exposure

Hannoband®-BG2 is the first choice for concealed window connections: Reliably avoids warranty claims also for connections in timber construction, prefabricated construction, framework construction, concrete construction and heat insulating composite systems.

Hannoband®-BG2 XL

Hannoband®-BG2 is also available as Hannoband®-BG2 XL in longer reels. This reduces scrap and makes installation faster.

- Weather-resistant
- Temperature stability from -30 °C to +100 °C, briefly to max. +130 °C
- Full test acc. to DIN 18542:2009, stress group 2
- Open to diffusion
- Thermal conductivity $\lambda = 0.0396$ W/(m·K)

Test certificates

MPA BAU HANNOVER – Material Testing Institute for the building industry Hannover

- Test acc. to DIN 18542:2009, stress class BG 2
- Voluntary test of the resistance to driving rain ≥ 300 Pa (up to 600 Pa are realistic)
- DIN EN 13501 class E
- Measurement of thermal conductivity

MPA-Hannover – Material Testing Institute for Materials and Manufacturing Engineering

- Assessment after practice-oriented outdoor weathering for a period of 15 years

Eurofins Product Testing A/S

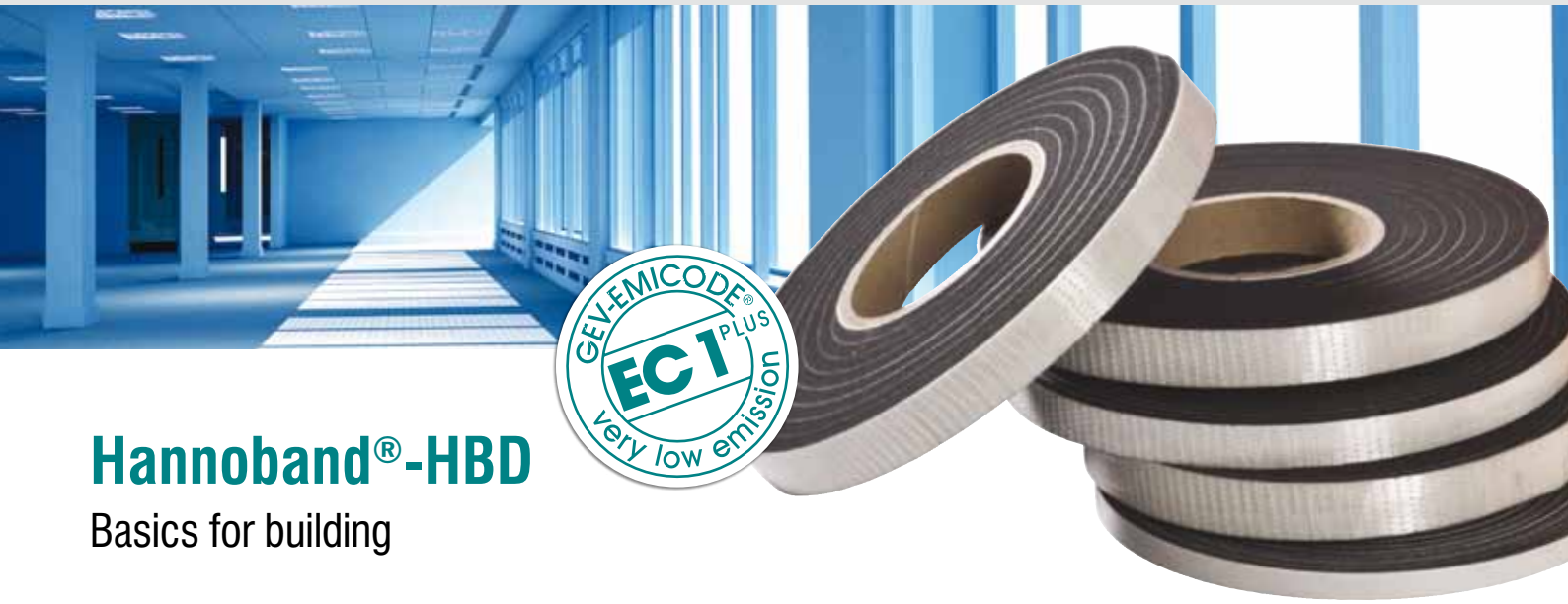
- Emission measurements

GEV – Association for the Control of Emissions in Products for Flooring Installation, Adhesives and Building Materials e.V.

- EMICODE® EC1PLUS certification

order designation	for joint depth* in mm	for joint width in mm
8/1,5–2,5	8	1,5–2,5
10/1,5–2,5	10	
15/1,5–2,5	15	
20/1,5–2,5	20	
10/2–4	10	2–4
15/2–4	15	
20/2–4	20	
15/3–7	15	3–7
20/3–7	20	
15/5–9	15	5–9
20/5–9	20	
30/5–9	30	
15/7–12	15	7–12
20/7–12	20	
30/7–12	30	
20/8–15	20	8–15
25/8–15	25	
30/8–15	30	
25/10–18	25	10–18
30/10–18	30	

HANNO
Sealing and insulating Systems



Hannoband®-HBD

Basics for building

Resistant to driving rain and to weathering. This versatile tape can be used, for example, in connection joints, heat sealing between window frame and masonry, for backfilling, profile couplings and for bent tile sealing.

Hannoband®-HBD XL
Hannoband®-HBD is also available as Hannoband®-HBD XL in longer reels. This reduces scrap and makes installation faster.

- Resistant to driving rain acc. to EN 1027 ≥ 300 Pa
- No primer, can also be used on moist, uneven base
- Weather-resistant
- open to diffusion
- Free of halogens, formaldehyde, asbestos, heavy metals
- No hazardous waste
- DIN EN 13501 class E
- Thermal conductivity $\lambda = 0{,}0396$ W/(m·K)

Test certificates

MPA BAU HANNOVER – Material Testing Institute for the building industry Hannover
- Resistance to driving rain EN 1027
- DIN EN 13501 class E
- Measurement of thermal conductivity

Eurofins Product Testing A/S
- Emission measurements

GEV – Association for the Control of Emissions in Products for Flooring Installation, Adhesives and Building Materials e.V.
- EMICODE® EC1PLUS certification

order designation	for joint depth* in mm	for joint width in mm
10/1,5–2,5	10	1,5–2,5
15/1,5–2,5	15	
20/1,5–2,5	20	
10/2–4	10	2–4
15/2–4	15	
20/2–4	20	
10/3–5	10	3–5
15/3–5	15	
20/3–5	20	
15/5–7	15	5–7
20/5–7	20	
30/5–7	30	
15/7–10	15	7–10
20/7–10	20	
30/7–10	30	
20/8–12	20	8–12
25/8–12	25	
30/8–12	30	

*If the joint flanks do not run parallel to each other, the tape thickness is to be selected which is appropriate for the widest part of the joint. A perfect functioning requires that the recommended joint widths are to be exactly adhered to. The maximum/minimum joint widths include the movements of the structural member. The tape width (joint depth) is not to be less than the tested minimum dimensions.

HANNO Sealing and insulating Systems

Hanno®-Multifunctional Tapes

Patented functional membrane technology guarantees moisture passage

The „all-in-one“ multifunctional tapes are the product of choice especially for the fast and reliable sealing of window joints. The polyurethane soft foam recovers in the joint and thereby seals the window joint permanently. Relative movements of building elements are compensated even after many years. The patented HANNO membrane technology in these innovative products is responsible for the high barrier action of these tapes.

Besides, Hanno®-Multifunctional Tapes are excellent for heat insulation and comply with all requirements of the new energy saving legislation. The very good sound insulation properties of the tapes complement the high quality level of these products.

There is a fitting Hanno®-Multifunctional Tape for practically any application.

- Saves time and money
- Can be installed during any weather
- Easy handling
- Only one or two products, depending on the window connection
- No flank failure due to movement of parts
- All-year drying of the connection joint
- Meets all requirements of the EnEV for installation in windows
- Complies with the requirements of VOB/DIN 18355
- Protects the connection joint from inside and outside stress according to RAL
- High thermal insulation
- High sound insulation

To protect you from warranty claims

MPA BAU HANNOVER – Material Testing Institute for the building industry Hannover

- General building inspectorate tests acc. to DIN 4102 B1 non-inflammable Hannoband®-3E BG1 DIN EN 13501 class E Hannoband®-3E/3E IDA/3E ECO
- Proof of resistance to driving rain according to EN 1027
- Proof of air impermeability according to EN 1026
- Determination of the resistance to water vapour diffusion (proved for Hannoband®-3E moisture adaptation)
- Determination of thermal conductivity
- Certification acc. to DIN 18542:2009 BG1 and BGR Hannoband®-3E BG1 BG2 and BGR Hannoband®-3E/3E IDA/3E ECO

ift Rosenheim

- Measurement of the joint sound reduction index
- Building element test: Tests of joint properties of a sealing system between a window and the body in new state and after simulated short-term stress situations (Hannoband®-3E)

Eurofins Product Testing A/S

- Measurement of emissions

GEV – Association for the Control of Emissions in Products for Flooring Installation, Adhesives and Building Materials e.V.

- EMICODE® EC1^{PLUS} certification

Hannoband®-3E BG1

The moisture-adapting multifunctional tape for connection joints in window installation

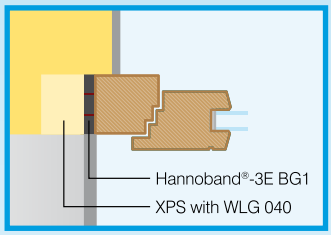
At least two integrated functional membranes make this tape an outstanding performer for dry connection joints. The membranes create a barrier effect on the side with the diffusion stress.

Through MPA BAU HANNOVER, HANNO obtained proof that the new high-performance membranes adapt to moisture. Hannoband®-3E is more diffusion proof on the moist side than on the dry side. This causes moisture to be carried out of the joint. This principle works in the typical winter situation as defined by RAL, i.e., „tighter inside than outside“ and also during the reverse diffusion in the warm season. This ensures a drying effect throughout the year.

- Meets the requirements of the installation guideline issued by RAL Gütegemeinschaften Fenster und Haustüren e.V.
- Convincing performance for dry connection joints
- Building materials class B1 in accordance with DIN 4102
- Resistance to driving rain EN1027 > 1050 Pa
- Air-tight $a_n \leq 0.1$ m³/(h·m·(daPa)$^{2/3}$)
- Weighted joint sound insulation value $R_{ST,W}$ 58 dB (not plastered over)

Passive house construction

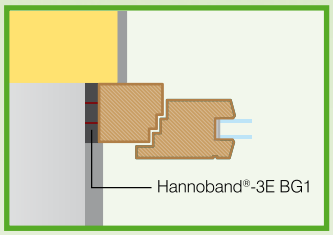
Hannoband®-3E BG1 has been tested by the BBS Institute for thermal suitability in passive house construction and airtight installation. With an a_n value almost zero, the air-tightness we attain is very distinctly better than the requirements in DIN 4108-2. This also applies to the installed state, as the successful system test undertaken by ift Rosenheim shows. Hannoband®-3E BG1 is permanently weather-resistant and therefore offers maximum reliability.



- Resistance to driving rain of 1,050 Pa
- Air-tight $a_n < 0.1$ m³/(h·m·(daPa)$^{2/3}$)
- Documented sound insulation of 58 dB of the joint, no plaster
- Permanently weather-resistant
- Optimum moisture management by moisture adaptive functional membrane
- DIN 18542:2009 BG1 and BGR

Traditional new building constructions

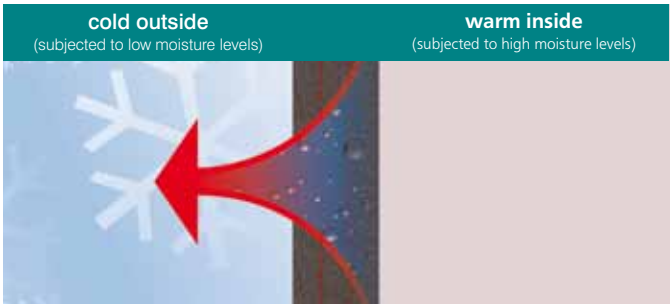
Hannoband®-3E BG1 meets and even exceeds all requirements which DIN 4108-2, EnEV or the RAL Guidelines for Installation make on a multi-function tape. You are always on the safe side with Hannoband®-3E BG1.

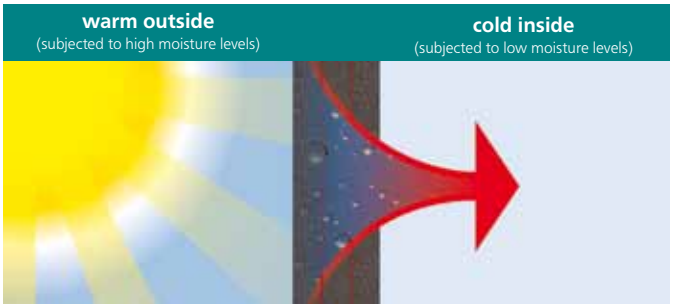


- Resistance to driving rain >600 Pa (corresponds to BG1 DIN 18542:2009)
- Air-tight $a_n < 0.1$ m³/(h·m·(daPa)$^{2/3}$) (corresponds to BGR acc. to DIN 18542:2009!)
- DIN EN 13501 class E (corresponds to BG2 acc. to DIN 18542:2009)
- Optimum moisture management by moisture adaptive functional membrane

Passive house application	Order number	Joint width in mm
	4–9	3–9
	6–15	4–15
	10–20	7–20
	15–30	10–30

Application in new building construction	Order number	Joint width in mm
	4–9	3–10
	6–15	4–18
	10–20	7–24
	15–30	10–36



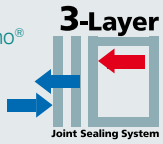


Building component tested by
ift Rosenheim new and after stress

DIN 18542:2009 BG1 and BGR
certified by MPA BAU HANNOVER

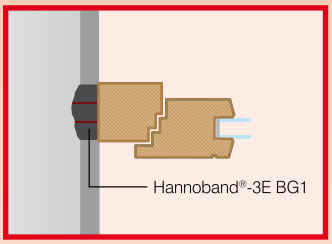
order designation	tape-width in mm	window-construction depth in mm	reel-length in m	box content in reels/in m
56/4–9	56	60	11,7	5 58,5
56/6–15	56	60	9,4	5 47,0
56/10–20	56	60	7,0	5 35,0
56/15–30	56	60	4,7	5 23,5
64/4–9	64	70	11,7	4 46,8
64/6–15	64	70	9,4	4 37,6
64/10–20	64	70	7,0	4 28,0
64/15–30	64	70	4,7	4 18,8
74/4–9	74	80	11,7	4 46,8
74/6–15	74	80	9,4	4 37,6
74/10–20	74	80	7,0	4 28,0
74/15–30	74	80	4,7	4 18,8
84/4–9	84	90	11,7	3 35,1
84/6–15	84	90	9,4	3 28,2
84/10–20	84	90	7,0	3 21,0
84/15–30	84	90	4,7	3 14,1
94/4–9	94	100	11,7	3 35,1
94/6–15	94	100	9,4	3 28,2
94/10–20	94	100	7,0	3 21,0
94/15–30	94	100	4,7	3 14,1

Hannoband®-3E BG1 is a component in the Hanno® 3-Layer Joint Sealing System for the production of joints in accordance with RAL and EnEV.



Rehabilitation (hidden installation)

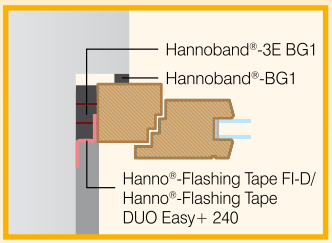
In rehabilitation projects, the air tightness according to DIN 4108-2 is required to be $a_n < 0.1$. This is possible with Hannoband®-3E BG1.



- Resistance to driving rain >300 Pa
- Air-tight $a_n < 0.1$ m³/(h·m·(daPa)$^{2/3}$)
- Optimum moisture management by moisture adaptive functional membrane

Thermal insulation

Hannoband®-3E BG1 has even been tested according to DIN EN 13501 class E in fully expanded state and therefore can be used for thermal and sound insulation without restriction.



- DIN EN 13501 class E
- Noise-insulating
- Heat-insulating

Application in rehabilitation projects	Order number	Joint width in mm
	4–9	3–12
	6–15	4–21
	10–20	7–28
	15–30	10–42

Thermal insulation application	Order number	Joint width in mm
	4–9	3–15
	6–15	4–25
	10–20	7–33
	15–30	10–50

Hannoband®-3E

The multifunction tape for window connection joints not directly exposed to weather

Due to the integrated functional membranes, the tape acts as a barrier on the side exposed to diffusion. MPA BAU HANNOVER established that the new Hanno® heavy-duty membranes are moisture-adaptive. Moisture is carried out of the joint. This ensures a dry joint all the year round.

- DIN EN 13501 class E
- Resistance to driving rain EN1027 > 1050 Pa
- Airtight $a_n \leq 0.1$ m³/(h·m·(daPa)$^{2/3}$)
- Weighted joint sound insulation value $R_{ST,W}$ 58 dB (not plastered over)

Building component tested by ift Rosenheim new and after stress

DIN 18542:2009 BG2 and BGR certified by MPA BAU HANNOVER

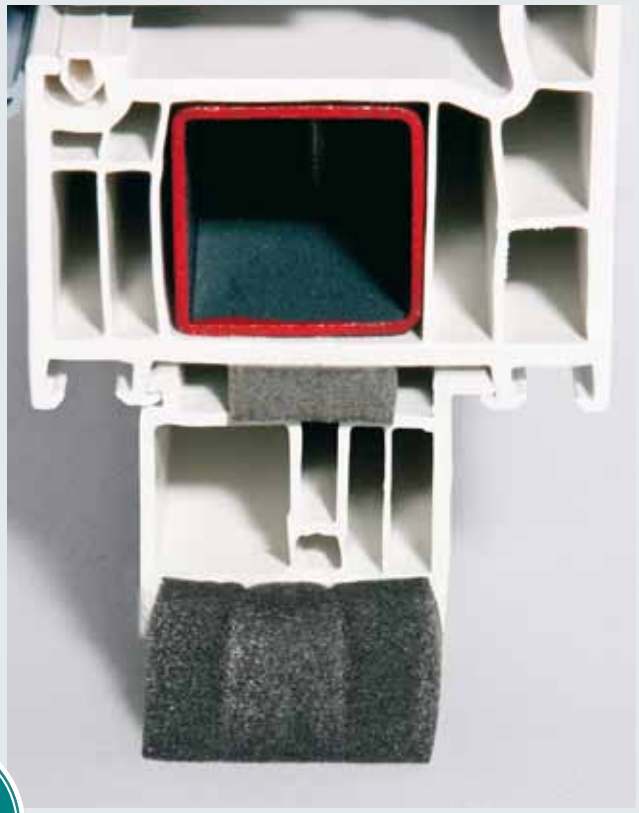
order designation	tape-width in mm	window-construction depth in mm	joint-width in mm	reel-length in m	box content in reels/in m	
56/4–9	56	60	4–9	9.4	5	47.0
56/6–15	56	60	6–15	7.0	5	35.0
56/10–20	56	60	10–20	4.7	5	23.5
56/15–30	56	60	15–30	4.7	5	23.5
64/4–9	64	70	4–9	9.4	4	37.6
64/6–15	64	70	6–15	7.0	4	28.0
64/10–20	64	70	10–20	4.7	4	18.8
64/15–30	64	70	15–30	4.7	4	18.8
74/4–9	74	80	4–9	9.4	4	37.6
74/6–15	74	80	6–15	7.0	4	28.0
74/10–20	74	80	10–20	4.7	4	18.8
74/15–30	74	80	15–30	4.7	4	18.8
84/4–9	84	90	4–9	9.4	3	28.2
84/6–15	84	90	6–15	7.0	3	21.0
84/10–20	84	90	10–20	4.7	3	14.1
84/15–30	84	90	15–30	4.7	3	14.1
94/4–9	94	100	4–9	9.4	3	28.2
94/6–15	94	100	6–15	7.0	3	21.0
94/10–20	94	100	10–20	4.7	3	14.1
94/15–30	94	100	15–30	4.7	3	14.1

Hannoband®-3E UA

Specifically window bottom connections

Suitable for all common connection profiles and typical widths.

order designation	tape-width in mm	window-construction depth in mm	joint-width in mm	reel-length in m	box content in reels/in m	
30/4–9	30	30	4–9	9,4	10	94.0
30/6–15	30	30	6–15	7,0	10	70.0
30/10–20	30	30	10–20	4,7	10	47.0
30/15–30	30	30	15–30	4,7	10	47.0
35/4–9	35	35	4–9	9,4	8	75.2
35/6–15	35	35	6–15	7,0	8	56.0
35/10–20	35	35	10–20	4,7	8	37.6
35/15–30	35	35	15–30	4,7	8	37.6
40/4–9	40	40	4–9	9,4	7	65.8
40/6–15	40	40	6–15	7,0	7	49.0
40/10–20	40	40	10–20	4,7	7	32.9
40/15–30	40	40	15–30	4,7	7	32.9



DIN 18542:2009 certified BG2 | BGR

GEV-EMICODE EC 1 PLUS very low emission

HANNO Sealing and insulating Systems

Hannoband®-3E IDA

The multifunction tape for window connection joints according to the principle „inside tighter than outside“

Hannoband®-3E IDA is a multifunctional sealing tape for window joints. The combination of impregnated foam materials and functional membranes ensures sealing according to the principle “inside tighter than outside“.

In addition to protection from driving rain and providing an air-tight seal, this multi-function tape provides efficient sound and heat insulation. Due to the excellent elastic recovery, movements of building components are compensated even after many years, which reliably avoids a joint flank failure in the window joint.

- Substantial saving of time and money
- Inside tighter than outside
- DIN EN 13501 class E
- **Resistance to driving rain in accordance with EN1027 > 1050 Pa**
- Airtight in accordance with DIN 18542:2009 BGR $a_n \leq 0.1\ m^3/(h \cdot m \cdot (daPa)^{2/3})$
- **Weighted joint sound insulation value $R_{ST,W}$ 57 dB** (not plastered over)
- Installation independent of weather (frost/rain)
- No flank failure when components move
- Thermal conductivity $\lambda = 0{,}0428\ W/(m \cdot K)$

DIN 18542:2009 BG2 and BGR certified by MPA BAU HANNOVER

Hannoband®-3E IDA is a component in the Hanno® 3-Layer Joint Sealing System for the production of joints in accordance with RAL and EnEV

3-Layer Joint Sealing System

Hannoband®-3E ECO

Basics for building: The multi-function tape with one membrane

Best price-performance ratio: Hannoband®-3E ECO is the tested, powerful alternative to joint sealing tapes with side face impregnation.

- Resistant to driving rain according to EN1027 up to 600 Pa
- DIN 18542:2009 BG2 and BGR certified by MPA BAU HANNOVER

Available sizes of Hannoband®-3E IDA and 3E ECO

order designation	tape-width in mm	window-construction depth in mm	joint-width in mm	reellength in m		box content in reels/in m		
				IDA	ECO		IDA	ECO
56/4–9	56	60	4–9	11,7	14,1	5	58,5	70,5
56/6–15	56	60	6–15	9,4	11,7	5	47,0	58,5
56/10–20	56	60	10–20	7,0	9,4	5	35,0	47,0
56/15–30	56	60	15–30	4,7	7,0	5	23,5	35,0
64/4–9	64	70	4–9	11,7	14,1	4	46,8	56,4
64/6–15	64	70	6–15	9,4	11,7	4	37,6	46,8
64/10–20	64	70	10–20	7,0	9,4	4	28,0	37,6
64/15–30	64	70	15–30	4,7	7,0	4	18,8	28,0
74/4–9	74	80	4–9	11,7	14,1	4	46,8	56,4
74/6–15	74	80	6–15	9,4	11,7	4	37,6	46,8
74/ 10–20	74	80	10–20	7,0	9,4	4	28,0	37,6
74/ 15–30	74	80	15–30	4,7	7,0	4	18,8	28,0
84/4–9	84	90	4–9	11,7	14,1	3	35,1	42,3
84/6–15	84	90	6–15	9,4	11,7	3	28,2	35,1
84/ 10–20	84	90	10–20	7,0	9,4	3	21,0	28,2
84/ 15–30	84	90	15–30	4,7	7,0	3	14,1	21,0

Hanno®-Flashing Tapes

The bottleneck in window installation is still the interface between the masonry and the window, i.e., the window connection joint. If the seal is poor, valuable energy will be lost. Besides, damage due to moisture or even mould growth is possible. This can cause expensive and costly repairs. Moist room air is transported from the warm to the cold side. Whereas, in the cold season, the rooms in a building are mostly warmer than the outside air, in summer, the temperature in many rooms is lower than the outdoor temperature. This is normally the case, for example, when a building is air-conditioned.

HANNO supplies high-quality flashing tapes with vapour pressure gradient for installation in windows.

For reliable sealing, we recommend Hanno®-3E Foil Adhesive MS or Hanno®-Sealing Adhesive F.

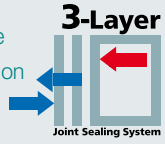
Hanno®-Sealing Adhesive F

- Solvent-free
- High adhesive force, no stringing
- Water-based and waterproof when cured
- Gluing and sealing in one go

Hanno®-3E Foil Adhesive MS

- Resistant to rain after a short time
- Applicable to building noise base
- Good cold compatibility
- also for sealing joints in building construction

Hanno®-Flashing Tapes are components of the Hanno®-3E joint sealing system for the production of joints in accordance with RAL and EnEV



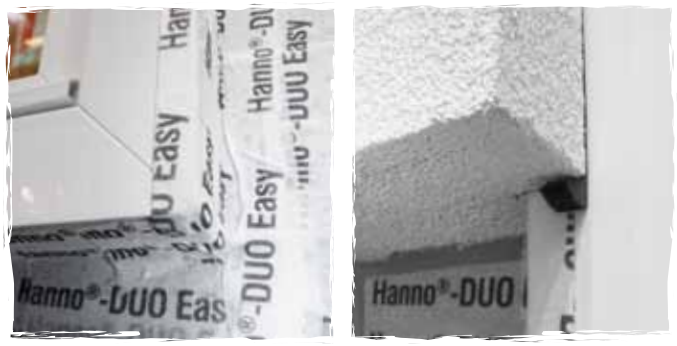
HANNO
Sealing and insulating Systems

Hanno®-Flashing Tape DUO Easy 240

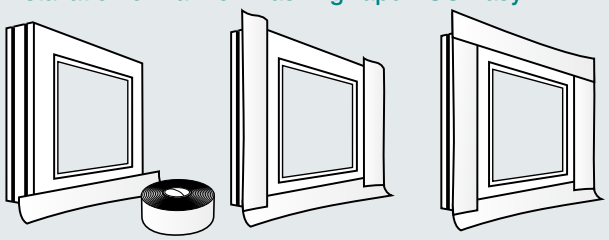
one side self-adhesive over the full area – for inner *and* outer sealing

Hanno®-Flashing Tape DUO Easy 240 was designed primarily for curtain window elements of the type often found in low-energy construction. Hanno®-Flashing Tape DUO Easy+ 240 has an additional adhesive strip on the opposite side and therefore replaces conventional flashing tapes for many applications in building.
The flashing tapes are moisture variable, which makes them suitable for application inside and outside. The s_d value of both tapes is between $0.48 < s_d < 12.0$ m. The high level of insensitivity to driving rain of > 1,050 Pa prevents the ingress of moisture on the side exposed to weather. Inside, the important air-tightness of $a_n \leq 0.1$ is obtained. The flashing tapes can also be used during the cold season at temperatures as low as -10 °C.*

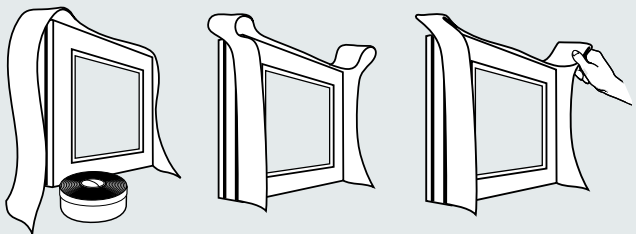
- Variable moisture – optimum moisture management in the joint: s_d value $0.48 \leq s_d \leq 12.0$ m
- Resilient for optimum installation
- Installation without additional film adhesive
- Outstanding resistance to driving rain >1050 Pa and air-tightness $a_n \leq 0.1$ m³/(h·m·(daPa)$^{2/3}$)
- Can be plastered/rendered over
- All adhesive layers covered by slit film
- Temperature compatibility -40 °C to +80 °C
- Processing temperature -10 °C* to +30 °C



Installation of Hanno®-Flashing Tape DUO Easy



Installation of Hanno®-Flashing Tape DUO Easy+



* Make sure that no parting plane (e.g., moisture, ice or hoar frost) is present on the gluing surface and prevents the contact of the adhesive with the surface.

Hanno®-Flashing Tapes are available in the following dimensions:

Type		Width in mm	Reel length in m		Reels per carton
FI-D, FA-D	FI Easy, FA Easy	50	30	25	8
FI-D, FA-D, DUO	FI Easy, FA Easy	75	30	25	5
FI-D, FA-D, DUO	FI Easy, FA Easy	100	30	25	4
FI-D, FA-D, DUO	FI Easy, FA Easy	150	30	25	2
FI-D, FA-D	FI Easy, FA Easy	200	30	25	2
FI-D, FA-D	FI Easy, FA Easy	250	30	25	1
FI-D, FA-D	FI Easy, FA Easy	300	30	25	1
DUO Easy 240, DUO Easy 180		75	25		5
DUO Easy 240, DUO Easy 180		100	25		4
DUO Easy 240, DUO Easy 180		150	25		2
DUO Easy 240, DUO Easy 180		200	25		2

Hanno®-Flashing Tape DUO Easy 180

Full-surface adhesive flashing tape for inside and outside connections

- Installation without additional film adhesive
- Variable moisture – optimum moisture management in the joint: s_d value 0.48 ≤ s_d ≤ 12.0 m
- Outstanding resistance to driving rain > 600 Pa and air-tightness a_n ≤ 0.1 m³/(h·m·(daPa)$^{2/3}$)
- Can be plastered/rendered over
- all adhesive layers covered by slit film
- 3 months resistance to ultraviolet radiation
- Hanno®-Flashing Tape DUO Easy+ 180 has an extra 23 mm wide adhesive strip on the fleece side for connection to window trims

Hanno®-Flashing Tape FI Easy

Full-surface adhesive flashing tape for inside connection

- Installation without additional film adhesive
- Air-tight a_n ≤ 0.1 m³/(h·m·(daPa)$^{2/3}$) and diffusion-inhibiting: s_d value approx. 20 m
- slit film
- Can be plastered/rendered over
- Hanno®-Flashing Tape FI Easy has an extra 23 mm wide adhesive strip on the fleece side for connection to window trims

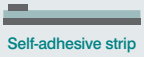
Hanno®-Flashing Tape FA Easy

Full-surface adhesive flashing tape for outside connection

- Installation without additional film adhesive
- Fleece combination open to vapor diffusion
- For driving rain tight connections ≥ 600 Pa
- Watertight acc. to DIN EN 13984 W1
- 3 months resistance to ultraviolet radiation
- slit film
- Can be plastered/rendered over

HANNO
Sealing and insulating Systems

DUO Easy 180, FI Easy and FA Easy:
Also available as "+" version with additional self-adhesive strip on alternating sides.

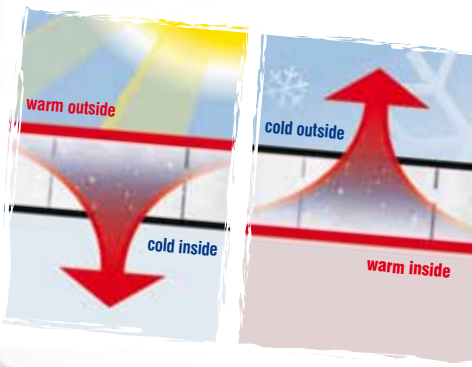


Self-adhesive strip

Hanno®-Flashing Tape DUO

The flashing tape for the outdoor *and* indoor window joint

- Self-adhesive strip with film cover for quick installation on the window frame
- Can be plastered/rendered and painted over on both sides
- s_d value 0.2 m ≤ s_d ≤ 12.0 m (moisture-variable)
- For driving rain resistant and air-tight connections of ≥ 600 Pa, a_n ≤ 1.0 $m^3/(h \cdot m \cdot (daPa)^{2/3})$
- RAL-compliant
- For new and refurbished buildings



Combination of PET fleece and PA film with variable s_d value

Hanno®-Flashing Tape FI-D

Resilient flashing tape specifically for inner connection of the window joint

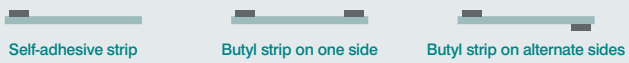
- Stretchable, air-tight combination of film and fleece
- Air-tight a_n ≤ 0.1 $m^3/(h \cdot m \cdot (daPa)^{2/3})$ and diffusion-inhibiting s_d value approx. 55 m
- Tape stretches to systematically compensate movements of building components
- Tests of the pull-off strength of renderings by MPA BAU HANNOVER, can be rendered/painted over on both sides
- Self-adhesive strip with film cover for quick installation on the window frame
- Universally suitable for new and renovated buildings

Hanno®-Flashing Tape FA-D

Resilient flashing tape specifically for outer connection of the window joint

- Stretchable fleece combination open to steam diffusion
- Tape stretches to systematically compensate movements of building components
- Self-adhesive strip with film cover for quick installation on the window frame
- Tests of the pull-off strength of renderings by MPA BAU HANNOVER, can be rendered/painted over on both sides
- For driving rain tight connections ≥ 600 Pa
- Watertight acc. to DIN EN 13984 W1
- 3 months resistance to ultraviolet radiation
- Universally suitable for new and renovated buildings

DUO, FI-D and FA-D:
Also available with additional self-adhesive strip or butyl strip on one side or both sides.



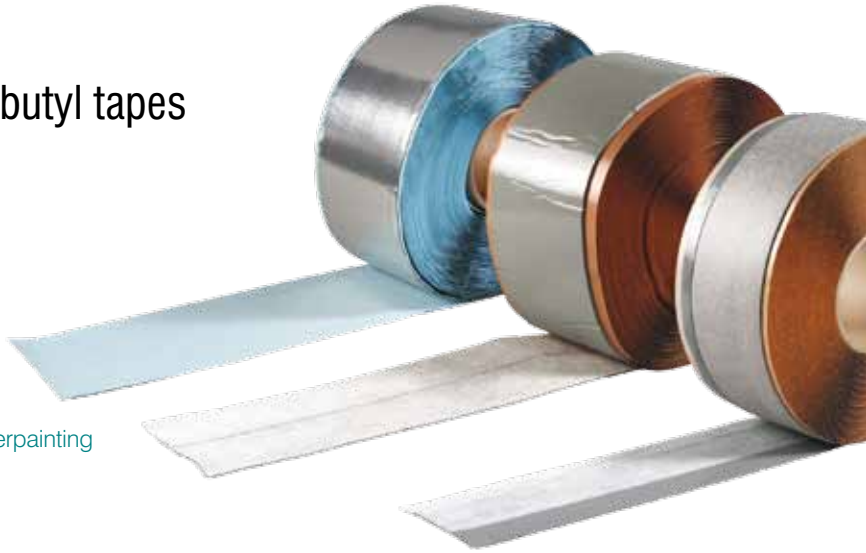
Hanno®-Flashing Tape FA-EX Easy

Full-surface adhesive flashing tape with PU skin as protection from stagnant water for outside connection

- Installation without additional film adhesive
- PU skin makes product tight against stagnant water
- Air-tight $a_n \leq 0.1$ $m^3/(h \cdot m \cdot (daPa)^{2/3})$
- For driving rain tight connections > 1050Pa
- Open to diffusion
- Universally suitable for new and renovated buildings
- High adhesive power of the fastening strip on all kinds of window frame and different masonry bases

Hanno®-Flashing Tape FIB

Fleece-bonded or aluminium-coated butyl tapes



- **Hanno-Flashing Tape FIB-2S** (fleece coated)
  2-sided adhesive for side window joints
- **Hanno-Flashing Tape FIB-1S** (fleece coated)
  1-sided adhesive for lower window joints
- **Hanno-Flashing Tape FIB-1S alu** (aluminium-coated)
  1-sided adhesive repair tape, versatile applications
- stable volume, airtight, diffusion-inhibiting
- fleece laminated products suitable for overplastering and overpainting
- free of solvents and bitumen
- resistant to ageing, weathering, UV
- non-corroding

Hanno®-Flashing Tape EPDM

For resilient sealing outdoors

- Temperature-resistant
- Lasting outdoor seal
- High elasticity
- Bitumen-resistant
- Tearproof, elastic
- in 0.75 mm thickness for out-of-soil-contact installation
- available in 1.2 mm thickness for installation in contact with soil

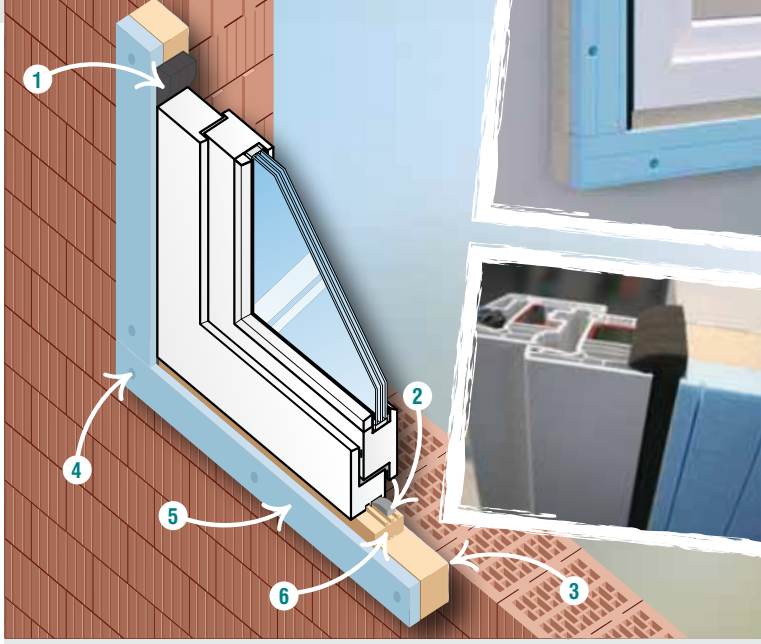
HANNO
Sealing and insulating Systems

Hanno®-Front Wall Installation System

For installation of windows on the insulation level

The profiles for the installation of windows on the insulation level are made of recycled material. They optimize the thermal bridge and are of high strength. Easy and fast to work, the profiles can be cut into length on site. Long life and insensitiveness to moisture makes the profiles ideal for professional and lasting window installation.

ift ROSENHEIM system-tested



1 Hannoband®-3E BG1
2 Hannoband®-BG1
3 System adhesive
4 Distance fastening screws
5 Hanno®-Front Wall Installation Frame and Angles
6 Hanno®-Adapter Profile

ift-tested to MO-01/1

Component tests for ascertaining the joint properties of a sealing and fastening system between window and building structure – obtained from the test report - in new condition and after simulated short term stresses.

- Air-tight $a_n \leq 0{,}1\ m^3/(h \cdot m \cdot (daPa)^{2/3})$
- Resistance to driving rain up to 600 Pa

High load-bearing capacity of the tested system proven by realistic values

Optimum force transmission into the structure.

- Load-bearing capacity of the window mounting in the installation frame 14-002798-PR02 (PB-K26-09-de-01)
- Load-bearing capacity of the bonded joint to the building structure before and after artificial aging 14-002798-PR01 (PB-K01-09-de-01)

Special load-bearing capacities

Separate testing of approved systems in case of extraordinary load-bearings

Optimization of secondary sound channels

Noise test to study the effects of the building structure connection on sound insulation of the window according to test report

Certified safety against burglary

Retardant against burglary up to class RC2 complying to DIN EN 1627-1630 test report 45-22/16

Optimization of the thermal bridge in front wall installations

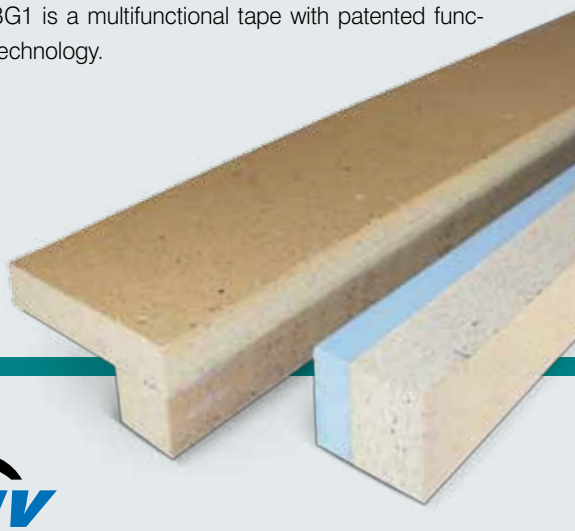
Improvement of the length related thermal transmittance by optimized installation position as described in the HANNO Passive House Study.

Approved basic building material

The basic material of the Hanno®-Front Wall Installation System is supervised and frequently tested by DiBt.

System component Hannoband®-3E BG1 reliably tested and approved

Hannoband®-3E BG1 is a multifunctional tape with patented functional membrane technology.








Hanno®-Tect

Systematic noise control for comfortable room acoustics

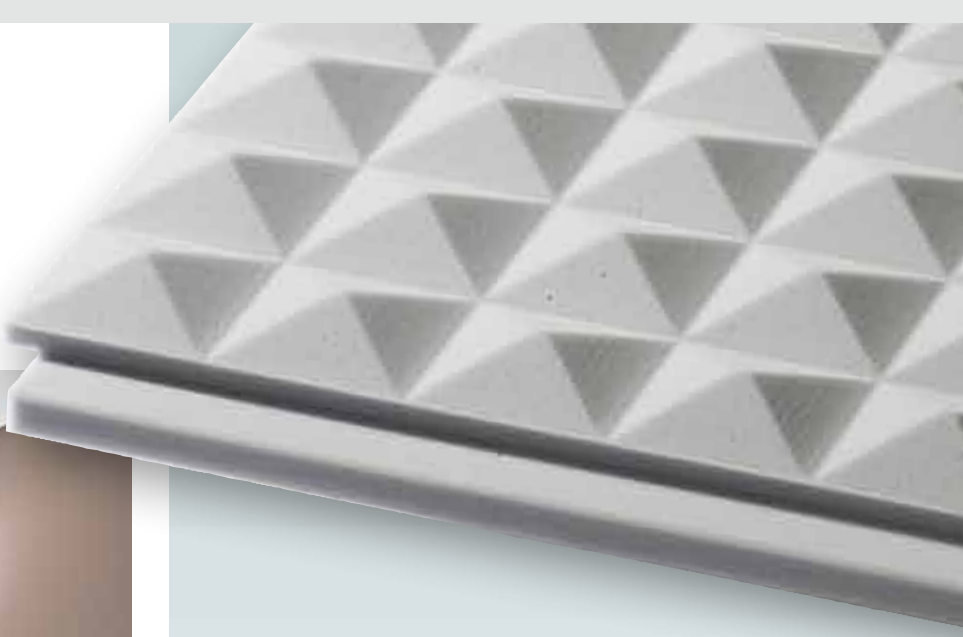
Fabric-covered Hanno®-Tect Panels improve room acoustics (Deutscher Ärzte Verlag)

Comfortable room acoustics is a realistic target. Excellent results can be obtained with Hanno® sound insulation materials. Hanno®-Tect Panels have high efficiency and can be installed quickly and easily, including retrofitting.

Hanno®-Tect Structure Boards and Hanno®-Tect Absorber Boards deaden sound, for example, in buildings, open-plan offices, industry and production halls, banks and insurance buildings, sound studios, schools and kindergartens, houses, boats and music rooms.

Available on request are special surface designs or special types as well as absorbers of polyurethane foam and other chemical foams. Also available are acoustic inserts with coloured glazing for metal, wood or expanded metal ceilings of non-standard dimensions and several thicknesses.

For installation, we recommend Hanno®-Assembly Adhesive TK.

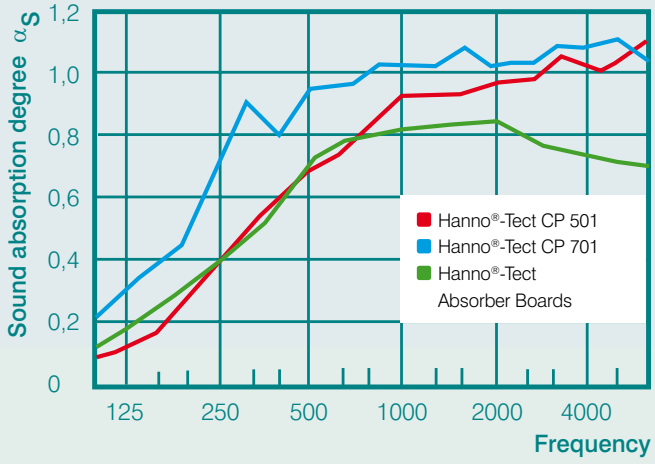


Hanno®-Tect Structure Boards

CP 501 and CP 701 not only substantially reduce acoustic noise inside rooms but also provide a visually attractive structure of the ceiling. The panels can be glued directly to a smooth base. Use our Hanno®-TK installation adhesive. Installation is facilitated by key and slot.

Hanno®-Tect Absorber Boards

These sound absorption panels can be installed easily and variably using commercially available parts for fixing below ceilings in buildings. Often, sound absorption panels cannot be glued to walls or ceilings for technical or physical reasons. This is where the suspended system is of great advantage.



HANNO
Sealing and insulating Systems

Contains high quality Basotect® foam from BASF We create chemistry

®=Basotect is a registered trademark of BASF SE

Hanno®-Shutter Box Insulation

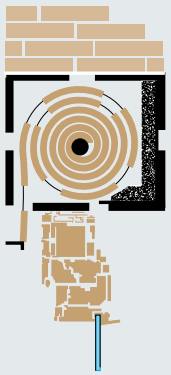
Noise and heat insulation

The shutter box insulation consists of a combination of an absorption layer and open-cell melamine resin foam Hanno®-Tect with 5 or 10 kg/m² heavy-duty bending film.

The foam layer provides outstanding airborne sound absorption and heat insulation due to the low thermal conductivity of < 0.035 W/mK. The soft, bending heavy-duty film stabilizes the shutter box and increases its area weight. This reduces the sound permeability. Easy of installation of the panels with self-adhesive film adds to the positive image of the product.

- no heat loss due to heat bridges
- improved sound damping and thermal insulation in the roller blind housing
- the installation can be carried out in the factory or in the mounted roller blind housing later
- easy to install thanks to the self-adhesive foil

- **Temperature stability:**
  -40 °C to +85 °C
- **Thermal conductivity:**
  < 0.035 W/mK (10 °C, d=50mm)
- **Sound insulation value:**
  ca. 40 dB
- **Building material class:**
  B2 acc. to DIN 4102



Hanno®-Protecto *pf*

Sound deadening material for window sills and housings

The Protecto *pf* product group consists of heavy-duty layers for sound deadening of housings and capsule surfaces. The brands Protecto *pf* 810 and Protecto *pf* 820 stand for bitumen-impregnated wool felt boards with a self-adhesive layer on the reverse side. The Protecto *pf* 830 grade is a heavy-duty layer of an elastomer-bitumen mixture, also with a self-adhesive layer on the reverse.

These materials have a stabilizing, stiffening and weight-increasing effect on all metals and plastics. Because of this, they have a sound-deadening effect. This means: Solid-borne sound is not propagated. On the other hand, sound transmission, i.e., airborne-sound propagation, is successfully prevented.

Protecto *pf* has excellent adhesive power and high flexibility. This makes the product versatile and suitable for many applications.

For example, Protecto *pf* is used with:

- garage doors
- face building units
- steel furniture
- window sills
- bath tubs and kitchen sinks
- lift cages
- air-conditioning machines
- domestic appliances
- machine casings
- Car manufacturing

HANNO
Sealing and insulating Systems

Research and development

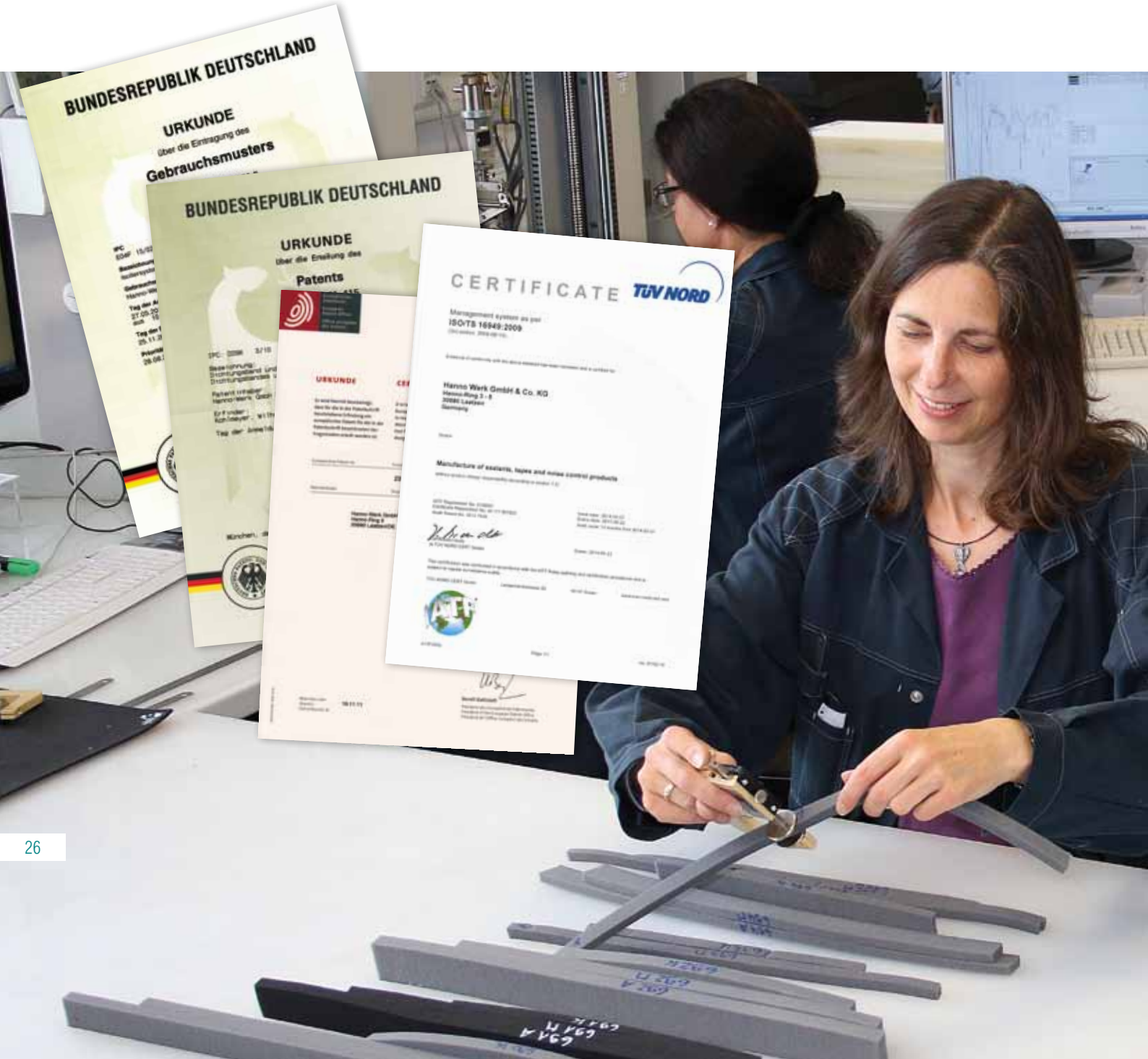
High standards ensure constant quality

HANNO is ISO/TS 16949 certified. DIN EN ISO 9001 is integrated in this quality management system. It also comprises environmental policies. The process oriented approach and the identification with clearly defined procedures helps avoid mistakes and raises the cost-benefit awareness.

The high quality standards ensure constant high quality in the manufacture of our products.

In-house research & development translate requirements of our customers in technical solutions and develop innovative products of high efficiency. Additional safety is provided by external test certificates from independent testing institutions.

BBS INSTITUT · FSK Fachverband Schaumkunststoffe und Polyurethane e.V. · ift ROSENHEIM · MPA BAU HANNOVER · MPA HANNOVER · PIV · TÜV NORD · VFF Verband Fenster + Fassade



HANNO will not leave you stranded

Before project kick-off
Before a project starts, HANNO will discuss with you the optimum and sustainable sealing of all construction joints. Whether concrete elements, face building units, window or door joints need sealing, whether in timber structures or in roofs: the application technicians of HANNO will be glad to be available to you. Together with you, HANNO develops the best product concept for your building project.

During construction
Our application technicians will certainly not leave you stranded and offer an optimum solution should you run into problems during the actual construction work.

Training courses
HANNO runs extensive training courses on construction joint sealing. In these courses, your technicians are made familiar with the latest techniques, processing guidelines and products.
Participation in these courses also helps our customers avoid warranty claims and enables them always to provide state-of-the-art services.

HANNO
Sealing and insulating Systems

Terminology

Building physics fundamentals

Many of our products are described by technical data concerning physical requirements relating to construction which are of great importance to the sealing of joints. Following below are brief explanations of such terms:

Permanent or long-term air permeability

To ensure long-term/permanent air permeability, sealing products should have an a_n value of less than 0.1 across the complete joint. This requirement is not equivalent to 100% air impermeability but it makes high requirements on the impermeability of the joint. If we compare the value with the sealing of windows, it is distinctly better than the value specified for the best sealed window class 4 according to DIN EN 12207. Besides, all Hanno® products for indoor sealing perform substantially better than this and thus provide even more safety.

It is extremely important that this level is maintained even if the connection joint expands or contracts. These movements can be within the range of 5 mm. The ability of compensating movements of only about 2 mm is no longer sufficient for modern requirements.

Diffusion behaviour

It is important for a seal to ensure a well-balanced diffusion behaviour between the different layers of the seal. This also means that the principle „inside tighter to diffusion than outside“ should be obeyed. This can be achieved in the conventional manner by providing a layer with higher resistance to diffusion inside or by products with varying moisture whose diffusion behaviour adapts to the available stress. The outside seal should be open to diffusion; products inhibiting diffusion may prevent the escape of moisture. The s_d level of the outside seal should be < 0.5 m. It should be higher on the inside. It is important that the inside diffusion behaviour of the seal follows that of the surrounding masonry. Consequently, an extremely high s_d value is not always best because it differs too widely from typical masonry materials. HANNO permanently adapts the sealing to the respective requirements of the masonry and in this way ensures optimum diffusion behaviour. If temperature conditions are reverse, the diffusion behaviour of the inside seal should be variable.

Condensing water resistance

Where diffusion occurs or moisture has entered the building, it is possible that condensing water forms at or enters the joint seal, which in most cases is not a problem because small amounts can be eliminated by diffusion. However, because sealing products are exposed to condensing water during this process, they should absolutely be tested for resistance to condensing water. For multifunctional tapes, this is part of the certification according to DIN 18542:2009 stress group R. Hanno® products cope with this stress and are tested accordingly.

Resistance to driving rain

The specifications of all our products invariably specify the tested value of resistance to driving rain. The specified values are taken from valid test certificates.

But what is the meaning of 300 Pa, 600 Pa or even 1050 Pa?

These values, as also the air-tightness, are based on the norm DIN EN 12207 for windows and doors. The requirements for windows are defined in DIN EN 12208. Tender specifications, in most cases, refer to windows of class 7 in buildings up to 20 m height and class 9 for buildings up to 100 m high. Class 7 requires driving rain tightness of 300 Pa, class 9 of 600 Pa. For safety's sake, DIN 18542:2009 recommends driving rain resistance of over 600 Pa for joints directly exposed to weather.

Certain HANNO products are also tested to 1,050 Pa as required by DIN EN 12208.

Heat protection/passive house capability

Heat protection and the requirements on heat bridges in connection joints are becoming an ever more important aspect in joint sealing. To assess thermal insulation, we specify the λ (heat conductivity) value for all products of relevance to insulation, from which the U value of the joint can be determined.

The foam materials used by HANNO in the market have very low thermal conductivity and therefore have good heat insulation properties. This can also be seen from the fact that the products of the Hanno® 3-Layer Joint Sealing System have passive house capability and in a first examination by Prof. Dr.-Ing. H.P. Leimer of the BBS Institut in Wolfenbüttel met the relevant requirements of the ift guideline WA 15-2.

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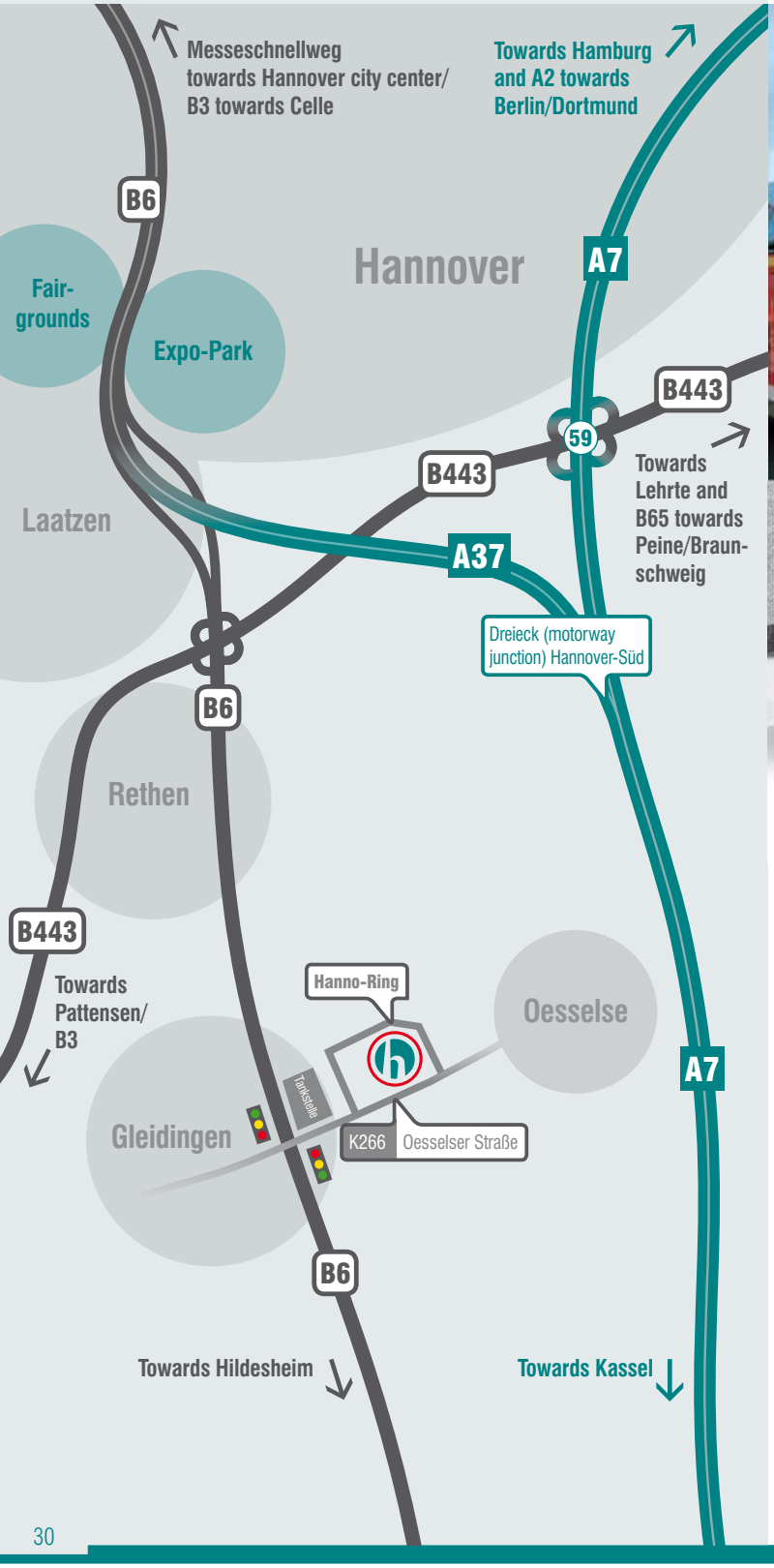
In addition, our trade partners in Germany and throughout the world are available to you. A current overview is available at: www.hanno.com

HANNO
Sealing and insulating Systems

How to find us

Here is how you find us:



HANNO Industry

Solutions in technical sound insulation and industrial seals

The Industry Division Industrie provides solutions in technical sound insulation, room acoustics, industrial insulation and sealing, for conductive packaging and, a novelty, solutions in floor sealing for cable leadthroughs in computer centres.

Tailor-made sealants against moisture, air, dust, heat or sound are manufactured. Their application areas include the automotive industry, rail vehicles and machine building as well as medical devices, domestic appliances, heating, ventilation and air-conditioning equipment, heat pumps or wind power systems. Problem solutions are in focus here. Punched parts, cuts, contour cuts and surface linings as well as hydrophobing solutions are developed for customer applications.

Request a copy of the Industry booklet.

HANNO
Sealing and insulating Systems

HANNO international

Distributors and sales partners throughout the world

HANNO Austria
www.hanno.at

Hanno Werk GmbH & Co. KG, Austria, with offices in Himberg near Vienna, is a producer of sealing compounds and adhesives and an approved PU foam supplier with many years of formulation competence.

HANNO Switzerland
www.hanno.ch

HANNO Russia
www.hanno.ru

HANNO VITO Corp. USA
www.hanno-vito.com

HANNO

a member of the HANNO-VITO GROUP

HANNO is part of the HANNO-VITO group, privately held independent midsize companies HANNO Germany, HANNO Austria und VITO Irmen Germany, all with international activities.

The different productions and product ranges of these firms take their core competencies from impregnation and sound insulation, self-adhesive technology and extrusion to polyurethane and sealing compound manufacturing to the market. The possibilities of systematic cooperation and use of synergies can be offered to the customers' benefit.

Details are available at www.hanno.at and www.vito-irmen.de, Group information at www.hanno-vito.de

HANNO Sealing and insulating Systems

HANNO the difference inbetween.

VITO® Self-adhesive products

HANNO the difference inbetween.

Sustainability

As a medium-size company with global activities we meet a comprehensive set of compliance and Corporate Social Responsibility (CSR) rules. We believe that avoiding waste and disposal as well as the sparing consumption of energy and all kinds of resources is our deep commitment and motivation of action. The safe handling of our substances and materials helps maintain the health of our employees and the environment.
In the development of new products and processes and the improvement of products already on the selling range, we focus on sustainability and environmental protection and do not flinch from high R&D input and testing for energy efficient products with a sustainable impact. Many of our tested products are certified to the EMICODE directives "EC1^{PLUS}"and therefore are considered to be of "very low emission". In this way, our customers can be assured that these products are free of harmful substances in the room air. For building certifications according to LEED and DGNB, we issue manufacturer's declarations to you. Our studies in the passive house suitability of certain energy efficient products attract a great deal of attention. Life cycle assessments are available for certain individual product areas or input materials from our raw material suppliers or as co-owner of the PDR Society for the recycling of PU cans and this life cycle assessment. We submit to strict test criteria and self-undertakings of well-known institutes. We want to continue our holistic approach to sustainability. This refers to applications with a proven record of many years as well as to new, modern products oriented on the aspects of the "Lifestyle of Health and Sustainability" (LOHAS) for a sustainable lifestyle combined with affinity for technology and quality consciousness.

Our Compliance Management includes a suitably structured quality management system based on ISO TS 16949 and DIN ISO 9001 with a Quality Management Officer and also an environment management system and the ÖKOPROFIT (Ecological Project for Integrated Environment Technology) certification on the basis of ISO 14001 and EMAS principles. In addition to that, it also comprises energy management (ISO 50001 – certification not applicable to HANNO) and safety at work (no OSHAS18001 certification) and is monitored by a Compliance Officer.

Many years of the existence of Corporate Guidelines and Employee Guidelines demonstrate our self-undertakings and combine with our socially approved principles (securing the long-term existence of the company, sustainability in strategic and operative business, definition of internal indicators for sustainable company management, guidance by values and compliance with rules as well as the implementation of the basic principles of sustainable company management: solidarity, transparency, risk management) with the aim of integrating social matters and environment matters in our work and in the interaction with all stakeholders on a voluntary basis.

Securing the viability of the company and of our products „made in Germany" are high values for our employees, shareholders and customers. We are also committed to the fundamental values and principles of the UN Global Compact, similar to ISO 26000, which we document as employer by being a member of the textile and clothing industry with the published "Code of Conduct" as well as membership in the Fachverband Schaumkunststoffe (FSK) with the "Compliance und Rules of Conduct of the Polyurethane and Foam Plastic industry" and also advertize as our commitment on our websites.

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HANNO
Sealing and insulating Systems

HANNO is ISO/TS 16949
and ISO 9001 certified

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