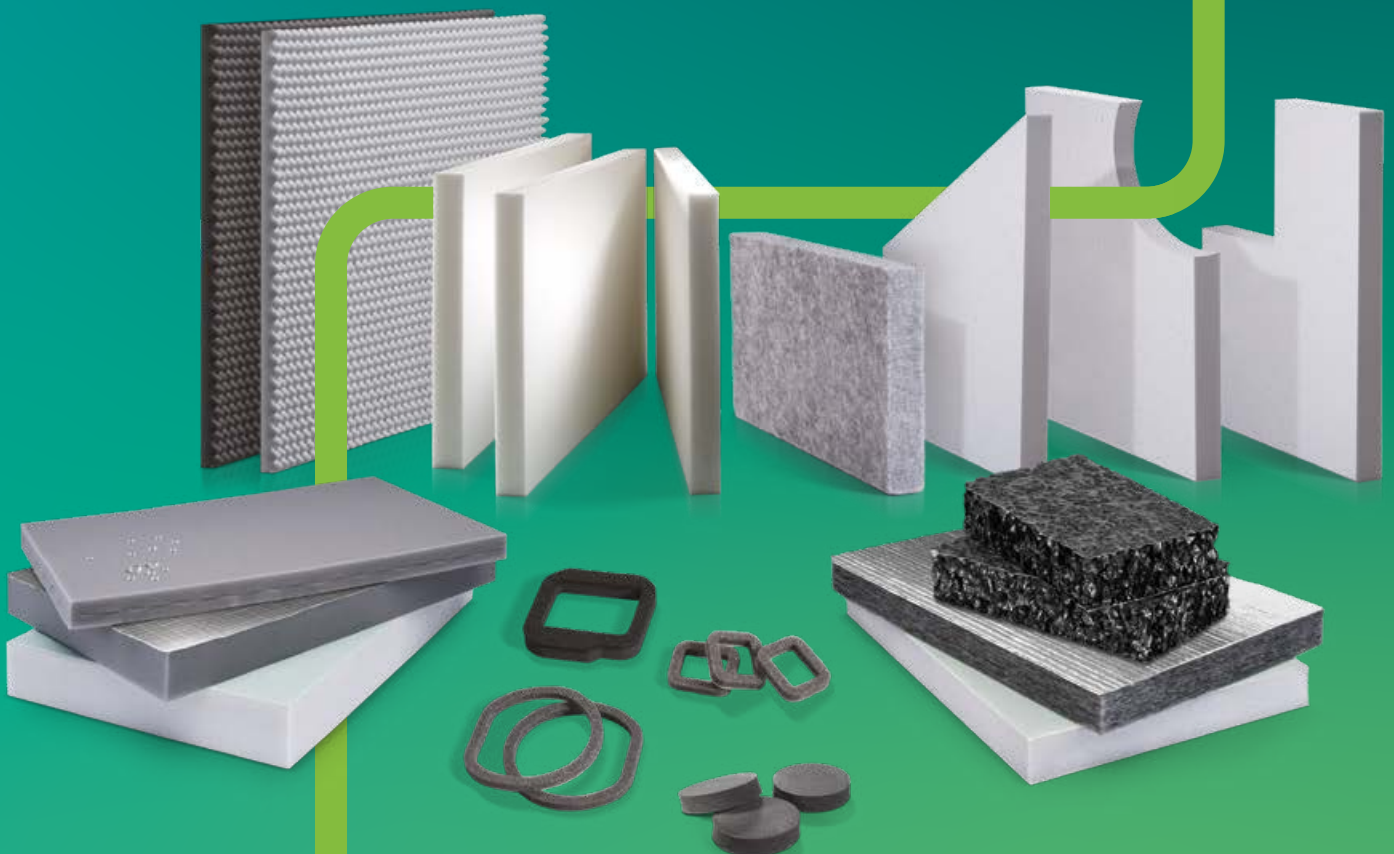


Innovative Technical Acoustics

HANNO products for
industrial sound, thermal
and vibration insulation



Silence, at last!



„I see something, which you don't see.“

Invisible and yet indispensable – HANNO's sealing insulation systems are true hidden talents.

HANNO Products for Industrial Applications



For many decades, Hanno has been developing and producing sound insulation, sealants and sealing tapes for use in industry, building construction, drywall construction and many other areas.

Highly effective products for sound insulation and sound absorption

Industrial noise is increasingly generated. Noisy machines and production processes are often unavoidable. Sound insulation and soundproofing ensure that the negative consequences of noise do not occur or do not occur as strongly: Sound cannot spread unhindered, and the acoustics are adapted to human demands. Many requirements already result from the standards and the health regulations of the employers' trade associations (BG).

HANNO offers many individual products for sound protection and sound insulation for different requirements and applications.

Quality and reliability

Our self-image includes not only reliable, punctual delivery but also compliance with the highest quality production standards. To ensure this, we maintain our own Research & Development Department with its own laboratories and test facilities. Here, we run regular checks and search for new, innovative sealing and insulating materials. The guiding principles for development are the constantly changing requirements from the market and the expectations of our customers. The result: Best possible individual solutions.

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What is sound protection?

We are constantly surrounded by sources of noise: Machines in production plants, driving noises from cars, lorries and rail vehicles, even in offices there is often no peace and quiet. Noise disturbs concentration, distracts us and even endangers our health at high levels. That is why sound insulation is so important.

There are numerous sound insulation measures to keep noise levels low. They always aim to reduce the transmission of sound from a source to a receiver (often in accordance with legal requirements). It starts with ("Mickey Mouse") earmuffs and extends to the enclosure of loud production equipment.

HANNO offers materials and sound insulation systems that absorb (dampen) or insulate sound or support sound decoupling. There are differences between designed and retrofit sound insulation: Designed sound insulation measures are already developed in the planning stage and installed during construction. Retrofit sound insulation improves the situation of existing structures.

What is sound insulation?

Sound insulation restricts the transmission of sound between two sound-conducting bodies. This is done in buildings, for example, by acoustically separating ceiling components to reduce impact sound. This acoustic decoupling is most impressive in sound studios.

The same principle applies for vehicle parts and machines when – for example, by using a suitable insulating material – the noise generated by a moving component does not pass through to another component. Depending on the specific application, structure-borne sound insulating materials or materials that insulate airborne sound may be considered.

What is sound absorption or sound dampening?

If insulation alone does not sufficiently reduce noise, sound absorption (sound dampening) comes into play. Special materials absorb the sound energy and convert it into heat. To do this, highly porous surfaces are used which do not reflect the sound (as is the case with very smooth, so-called sound-reflecting surfaces), but absorb it. Such sound absorption measures influence the room acoustics. Here, the planners look at ceilings, walls, floors and even objects (furniture) to determine the optimum interaction of sound-reflecting and sound-absorbing surfaces for this space – from offices, to meeting rooms – right up to concert halls.

Differentiation between structure-borne sound and airborne sound

Sound travels as mechanical waves – through air or solid bodies. In the air, this happens at around 340 metres per second. The human ear can perceive airborne sound (above a certain sound pressure level) at frequencies of between 20 and 20 000 Hertz. If the sound pressure is above 100 dB(B), most



HANNO comprises not only the company headquarters in Laatzen near Hanover (see picture) but also other international locations in Switzerland and the United States.

people experience it as pain. Structure-borne sound, on the other hand, penetrates solid bodies, for example through vibrations in buildings, vehicles and machines.

The propagation of sound in solids depends on their density and the sound frequency. Humans perceive structure-borne sound as vibration at very low frequencies. It becomes audible when the solid-borne sound is transmitted to the air and becomes airborne sound.

Product requirements for sound protection and sound insulation

Insulating or absorbing (damping): That is the core task. Often the products have to fulfill additional properties. These requirements can be:

- Thermal insulation
- Cold insulation
- Fire resistance
- Temperature resistance
- Durable elasticity
- Resistance to ageing
- Resistance to hydrolysis
- Good foam recovery properties
- Hydrophobic and oleophobic properties
- Fiber-free
- UV resistance
- Low density
- Hygienically clean

The application range is just as broad. Listed are some typical applications – and where you can find the right HANNO solution:

- Automotive industry (see page 8)
- Rail vehicles (see page 10)
- Machinery construction (see page 12)
- Household appliances (see page 12)
- Energy technology (see page 14)
- Air-conditioning units and ventilation systems (see page 14)
- Room acoustics (see page 16)
- Medical technology (see page 18)
- Packaging, storage and transport (see page 19)

You can find even more information and technical data at www.hanno.com.



Quiet thanks to HANNO: Ventilation units run more quietly with the right sound insulation



Product Overview

Product category		Products	Features/characteristics	See page
Polyurethane (PU) foam	Polyether	HW 30 sfl	With coating also available as Protecto 20/Pruvtec (PU skin), Protecto 50 (polyester viscose fleece), Protecto 51 (PP fleece), Protecto 60 (aluminium foil), other foam densities on request	24 – 25
		HW 36 B2	Optimised fire behaviour (B2, UL94), with PU skin also available as Protecto 20 B2	24 – 25
		HW 37 dbl	DBL 5450.10, fogging according to DIN 75201 < 1 mg and emissions according to VDA278	24 – 25
		HW 30 TS	Very high quality foam for sealing applications, low-emission	24 – 25
	Poly-ester	HW 7 sfl	Good UV resistance	24 – 25
		HW 40 S	Very high-quality foam for sealing applications, low fogging, soft elastic	24 – 25
	Filter foam	PPI 20, PPI 45, PPI 60	Filter foams with 20 – 60 pores per inch	24 – 25
Combination element	PU foam and heavy layer	Protecto plus 55, plus 65 and plus 75	Structure-borne sound insulation and airborne sound absorption in one product, raw foam HW 30 sfl with bitumen-impregnated wool felt board pf 810 (plus 55), pf 820 with dimpled foam (plus 65) and pf 820 smooth foam (plus 75), various thicknesses available	22
		Protecto plus 85	Structure-borne sound absorption and airborne sound absorption in one article, raw foam HW 30 sfl with bitumen foil (pf 830), various thicknesses available	22
Impregnated foam		BG1 and HBD Premium	Precompressed sealing tape for connection and movement joints between different building components, driving rain proof and flame retardant acc. to DIN 4102-1 B1 (BG1) and EN 13501-1 class E (HBD)	26 – 27
		EL 1	Permanently electrostatically conductive < 10 ⁵ Ohm	26 – 27
		Redusoft DI 80 and DI 150	Densities 80 kg/m ³ and 150 kg/m ³ , permanently elastic, sealing (depending on compression rate), breathable, very good fire behaviour	26 – 27
		Redusoft DI 150 FR	Permanently elastic, sealing (depending on compression rate), breathable, excellent fire behaviour (EN 45545*)	26 – 27
Heavy layer	Bitumen	Protecto pf 810 and pf 820	Bitumen impregnated wool felt cardboards with 1 kg/m ² or 2 kg/m ² surface weight	23
		Protecto pf 830 and pf 840	Bitumen foil with 5 kg/m ² or 10 kg/m ² surface weight	23
	Bitumen free	HL 2 PEVA	Bitumen-free heavy layer with 2 kg/m ² , 4 kg/m ² (HL 4 PEVA), and 8 kg/m ² (HL 8 PEVA) surface weight	23
		HL 2 PEVA AL	Bitumen-free heavy layer with 2 kg/m ² , 4 kg/m ² (HL 4 PEVA AL) and 8 kg/m ² (HL 8 PEVA AL) surface weight, additionally laminated with aluminum foil (EN 45545-2, HL3)	23
Polyethylene (PE) foam	Cross-linked	PE 33 P/PE 33 C PE 37 C PE 60 P**	Customized material selection possible at any time	28
		PE 27 P	With at least 30 % recycled content	28
		PE 16 P HF	Halogen-free, excellent flame resistance (laminated with AL up to HL3, EN 45545-2), 16 kg/m ² density	28
	Non-cross-linked	PE 25 N FR PE 25 N UV	Very good acoustic properties, good fire behaviour (EN 45545*), available as UV-resistant version (PE 25 N UV)	28
Melamine resin foam	hydroph./oleophobic adjustable	Tect	Very good fire behaviour, very high temperature resistance, available as AL 18 and AL 18 tp (aluminium coating), Tect-V (surface made of polyester viscose fleece), Tect-PU (PU skin), hydrophobic and oleophobic adjustable	20 – 21
		Tect-UF	Ultra-flexible melamine foam, very good fire behaviour, very high temperature resistance, available as AL 18, hydrophobic and oleophobic adjustable	20 – 21
		Tect-F-free	Like Tect, but hydrophobic without added PFAS (not oleophobic!)	20 – 21
Cellular rubber	Synth. rubber	EPDM-L, EPDM-i**	Can be used with acids/alkalis in usual concentrations, water vapour up to 100 °C, seawater, alcohol, ozone, silicone oil, etc.	30
		Zellkautschuk ZG V	Flame retardant, highly elastic, high water vapour diffusion resistance, very low thermal conductivity	30
		Zellkautschuk ZG N	Closed-cell, soft elastic cellular rubber based on chloroprene rubber	30
Fleece	PET fleece	Fiber 20–30	Good fire behaviour*, laminated with aluminum foil, hydrophobic and oleophobic	29

[See page](#)



	Automotive industry	Rail vehicles	Machinery, equipment, apparatus engineering	HVAC and renewable energy	Room acoustics	Medical technology	Packaging storage and transport
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	8	10	12	14	16	18	19

Automotive Industry

Experience Silence

HANNO advantages:

- Quiet driving experience
- Rattle and splash protection protects sensitive components
- Noise damping increases safety and concentration
- Convincing acoustics for greater enjoyment of music while driving

HANNO offers many highly effective solutions significantly reducing structure-borne noise in passenger and commercial vehicles.



Many years of experience ensure the highest level of know-how

Sound insulation and soundproofing play a major role in vehicles to ensure pleasant, stress-free journeys. HANNO's solutions reduce the noise inside the vehicle, reduce the sound emission to the outside, reduce the penetration of structure-borne noise and – for some the most important function – optimise the acoustics for multimedia technology.

Close cooperation with leading vehicle manufacturers leads to tailor-made solutions for the complex challenges in the automotive industry:

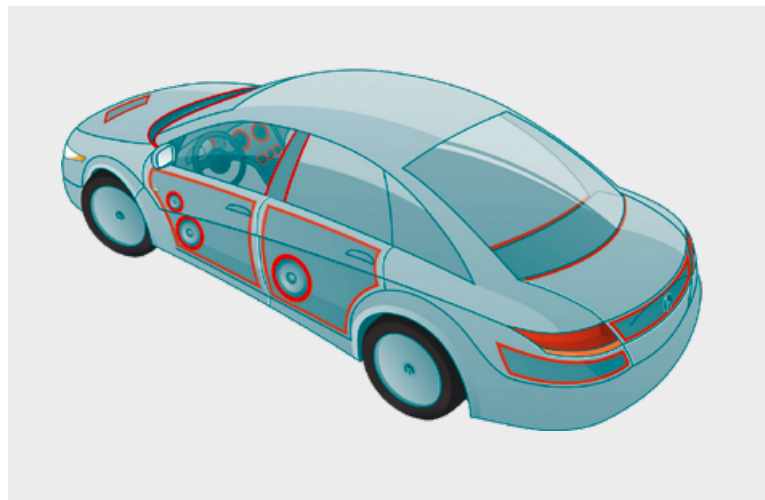
- Rattle protection
- Sealing against splash water
- Sealing against unwanted air drafts
- Damping of vibrations
- Acoustic measures

HANNO also offers the right sealing and damping solutions for commercial vehicles – from garbage trucks to motorhomes, buses and construction machinery.

HANNO products for the automotive industry

We particularly recommend these products for soundproofing, sealing and thermal insulation in motor vehicles:

- Hanno®-HW 30 sfl (page 24)
- Hanno®-HW 37 dbl (page 24)
- Hanno®-Redusoft (page 26)
- Hannoband®-BG1 and HBD Premium (page 26)



Everything from a single source: Hanno products for door insulation, parcel shelf, loudspeakers, radiator grille, dashboard, bulkhead and pillars



Hanno®-HW 30 sfl and HW 37 dbl



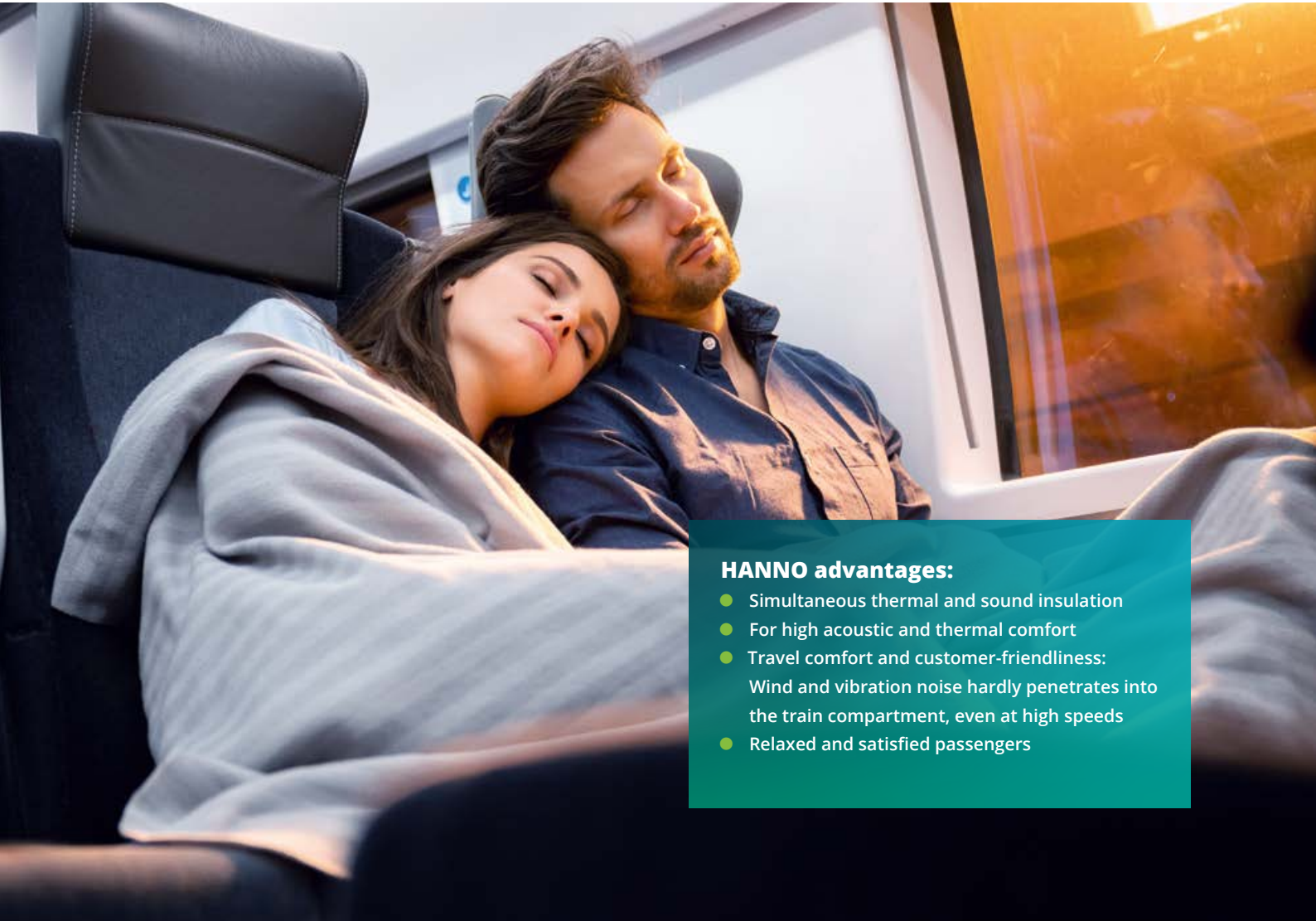
Hanno®-Redusoft



Hannoband®-BG1 and Hannoband®-HBD Premium

Rail Vehicles

Relaxed Travelling on Long and Short Journeys



HANNO advantages:

- Simultaneous thermal and sound insulation
- For high acoustic and thermal comfort
- Travel comfort and customer-friendliness:
Wind and vibration noise hardly penetrates into the train compartment, even at high speeds
- Relaxed and satisfied passengers

Highly effective sound, thermal and vibration damping ensures quietness in rail vehicles – and thus relaxed passengers.



No rattling, no shaking, no clattering, no droning

In earlier times, constant vibrating or loud travelling noises made train travel a burden. Due to the increasing travel speeds, the demands on noise protection have even increased. Nevertheless, today perfect sound and vibration damping insulation and sealing materials are available for a quiet train journey.

HANNO products for rail vehicles

Pleasant rail travel thanks to HANNO: Our sound-absorbing and sound-insulating products keep noise in rail vehicles low. For safety and to comply with the special requirements of fire protection, these products are flame retardant.

We particularly recommend the following products for soundproofing, sealing and thermal insulation in rail vehicles:

The very lightweight products **Hanno®-Tect** and **Hanno®-Fiber** are convincing in terms of fire protection: The materials have an exceptionally low flammability.

Acoustic seals from the **Hanno®-Redusoft** product range are particularly durable and remain permanently elastic for years even when compressed.

- **Hanno®-Tect products (page 20)**
- **Hanno®-Heavy Layers (page 23)**
- **Hanno®-Redusoft DI 150 FR (page 27)**
- **Hanno®-PE products (page 28)**
- **Hanno®-Fiber (page 29)**



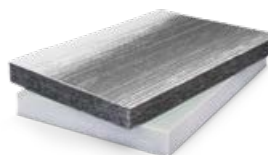
Hanno®-Tect products



Hanno®-PE products



Hanno®-Heavy Layers



Hanno®-Fiber



Hanno®-Redusoft DI150 FR



HANNO manufactures die-cut foam parts for noise protection and thermal insulation in trains and trams.

Machinery and Appliances

Very Quiet – Thanks to HANNO

HANNO advantages:

- Low-noise equipment with suitable sound insulation improves health and well-being
- Protection against excessive noise pollution in factories
- Comfort and relaxation in your own home

With sound absorption materials from HANNO, machines and appliances run much more quietly.



Mechanical engineering

HANNO specialists help to avoid sound bridges as early as the development phase. Particularly where different types of components and materials are joined, sound often reaches the surface. HANNO products decouple this sound effectively and help to avoid rattling noises.

Too much noise can be largely avoided by machine encapsulation – for reduced airborne sound and a more pleasant working environment.

Special foams – e. g. insensitive to acids or resistant to lubricating oils – enable reliable sealing even under demanding loads. HANNO dampens:

- CNC machining centres
- Punching, cutting, milling and turning machines
- Transport systems
- Compressors, blowers
- Server and switch cabinets

Household appliances

HANNO offers the complete product range for quietness in the household: The vacuum cleaner runs pleasantly quietly, escaping air is effectively freed from particles by HANNO foams. Even coffee machines can be insulated to prevent them from making too much noise. HANNO makes it quieter:

- Coffee machines
- Washing machines and tumble dryers
- Dishwasher
- Extractor hoods
- Vacuum cleaners

For machines and appliances we especially recommend the following products:

→ **Hanno®-Protecto products (page 22, 23)**



HANNO products decouple components and thus prevent structure-borne noise from being transmitted. As a result, machines and appliances run much more quietly.



Hanno®-Protecto products

HVAC and Renewable Energies

For a Peaceful Climate



HANNO advantages:

- Sound insulation allows dense construction
- Flexibility in urban and building planning
- Increased quality of living
- Air purification from dust

Silent ventilation and dust-free air –
HANNO products are effectively used in
air conditioning, heating and ventilation
systems. This creates a feel-good
atmosphere without disturbing noise.



Renewable energies

Wind turbines, heating pumps, generators and aggregates are potential sources of noise. Provided with sound-absorbing material, this disturbing noise can be effectively reduced. In many cases, there are also thermal insulation requirements.

In HVAC equipment

Well sound-insulated air-conditioning units and ventilation systems perform their daily service almost unnoticed. Even with fans, where airborne noise cannot be avoided, quieter operation is possible with suitable insulation materials. HANNO products minimise airborne sound and insulate the transmission of structure-borne sound.

For particularly challenging applications, our HANNO acoustic team develops and tests custom-made products.

Hanno®-PE 25 N FR and **N UV** are ideally suited for acoustic applications in outdoor, damp and wet areas, while **Hanno®-Filter-Foams** keep dust out of the air. Materials from the **Hanno®-Protecto series** dampen occurring noise to a high degree.

- **Hanno®-PE 25 N FR** and **N UV** (page 28)
- **Hanno®-Filter-Foam** (page 24)
- **Hanno®-Protecto products** (page 22, 23)



HANNO standard materials are suitable for low noise construction of wind turbines, power generators or heating systems.



Hanno®-PE 25 N FR and N UV



Hanno®-Filter-Foam



Hanno®-Protecto products

Room Acoustics

Nothing Gets Past HANNO!



HANNO advantages:

- Targeted improvement of room acoustics
- Unblemished sound experience
- Undisturbed communication and understanding

HANNO offers high-performance solutions for a wide range of room-acoustic requirements in workplaces, production facilities, offices, sound studios, concert halls and schools.



Foams for rooms

Cinema or theatre acoustics for your work spaces? Even noises at room volume (from 55 dB (A)) disturb many people; at 65–75 dB (A), like the noise level of a vacuum cleaner, stress quickly develops.

However, the requirements for acoustics differ greatly from place to place: Offices, concert halls and sound studios need completely different solutions for floors, walls, ceilings and the building construction and acoustic materials installed there. Correctly dimensioned and installed, sound-absorbing surfaces ensure reduced sound levels. This minimises reverberation times and thus promotes speech comprehension. In many cases, room acoustics can also be improved retroactively.

Optimised room acoustics can reduce stress and thus ensure – at the workplace – more efficient and healthier work, as well as better decision making.

For effective sound insulation in industrial halls, offices, sound studios, schools, etc., we suggest our proven **Hanno®-Tect-Panels** as baffle absorbers. These are characterised by a high degree of efficiency and can be installed quickly and easily, even as retrofit.

→ **Hanno®-Tect baffle absorbers (page 20)**



Hanno®-Tect baffle absorbers



✓ Hanno®-Tect panels covered with printed fabric to improve room acoustics

✓ Hanno®-Tect baffle absorbers can be suspended from the ceiling



Medical Technology

Hygienic, Low-emission, Safe, Quiet



HANNO products are used in many medical applications, such as ECGs, ventilators, autoclaves, patient supports, positioning aids and moulded pads.

Patients recover faster when they have peace and quiet. During quieter times (e. g. at night) we perceive noises that are being masked during the day. HANNO products ensure the highest possible noise reduction so that patients can rest and recover.

Medical devices emit sounds in different frequencies depending on their design. Sound insulation must therefore be precisely matched to achieve the greatest possible effect. HANNO offers an extensive range of suitable sound insulation made of acoustic foams, which convert the sound waves into heat after penetrating the absorbers and dissipate them. This way, the volume is reduced and the overall noise level is significantly lowered.

HANNO products help with:

- Suppression of vibrations by increasing the weight of the unit enclosure and decoupling it from the environment
- Airborne sound insulation in all frequency ranges

We particularly recommend:

- **Hanno®-Protecto products (page 22, 23)**
- **Hanno®-Cellular Rubber (page 30)**
- **Hanno®-PE products (page 28)**



Hanno®-Protecto products



Hanno®-Cellular Rubber



Hanno®-PE products

Packaging, Transport and Electronics

Always Arrives Safely With HANNO!

Packaging protection from HANNO

Technical devices, porcelain, glass – there are many products which need special protection during transit. Hanno®-PU foams are used for effective transport protection. The pressure-resistant and shock-absorbing foams help sensitive goods reach their destination safely. With their high resilience and flexibility, they enable goods to be cushioned with a perfect fit.

All Hanno®-PU-Foams are also available self-adhering and can be ordered as cut-to-size and die-cut parts.

→ **Hanno®-Composite-Foam (page 24)**

Reliable ESD transport protection for sensitive electronic components

Filigree electronic components must be particularly well protected during transport. Electrostatic discharges pose a high risk: These can easily cause damage to the sensitive technology. The soft-elastic versions with cushioning properties provide effective protection against electrostatic discharges and mechanical stress.

→ **Hanno®-EL 1 (page 27)**



Hanno®-EL 1 absorbs shocks during transport – and ensures that sensitive electronic components do not become charged.



Hanno®-Composite-Foam



Hanno®-EL 1

Melamine Resin Foam

Versatile Sound and Thermal Insulation

Lightweight, sound-absorbing and thermally insulating – Hanno®-Tect is versatile with its properties. The exceptionally low flammability also ensures a high level of fire safety.

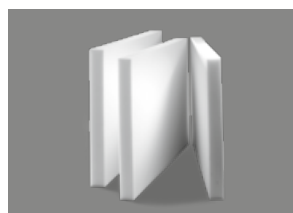
Hanno®-Tect is available in many product variants, for example as Tect-AL with additionally laminated aluminium foil. Or as Tect-o-phob being oleophobic and hydrophobic. New: Hanno®-Tect-F-free. Reliably sound-absorbing and hydrophobic, without added PFAS.

Hanno®-Tect suspension panels provide sound insulation, for example in buildings, open-plan offices, industrial and factory halls, banks and insurance companies, sound studios, schools and kindergartens, residential homes, boats and music rooms.

Typical applications

- Refrigeration and air conditioning
- Rail vehicles
- Room acoustics
- Medical technology

* Detailed information on fire behaviour can be found in our technical data sheets: www.hanno.com/en/products/technical-data-sheets-installation-instructions



Further product information:

Technical data, installation instructions and info
(<https://www.hanno.com/en/products/melaminharz-schaum>)

Product overview

Available as block/sheet material

Name	Density approx. (kg/m³)	Colour	Features and characteristics
Tect	9	light grey/white	Completely open-celled, permanently temperature-resistant up to 150 °C
Tect Dark	8.5	anthracite	Like Tect, in anthracite
Tect-AL	9	light grey	Completely open-celled, laminated with aluminium foil
Tect-AL tp	9	light grey	Completely open-celled, permanently temperature-resistant up to 150 °C, laminated with an aluminium foil
Tect-UF	7	grey	Completely open-celled, permanently temperature-resistant up to 150 °C
Tect-V	9	light grey/black	Largely open-celled, laminated with a fleece surface
Tect-PU	9	light grey/black	Largely open-celled, coated with a PU skin
Tect-UF AL	7	grey	Completely open-celled, temperature-resistant, laminated with an alu foil
Tect-G+-phob	10	light grey	Completely open-celled, hydrophobic, oleophobic
Tect-G+-phob AL	10	light grey	Completely open-celled, hydrophobic, oleophobic, laminated with an aluminium foil
Tect-G+-phob PU	10	grey/black	Completely open-celled, hydrophobic, oleophobic, laminated with a polyurethane foil
Tect-F-free	10	hellgrau	Completely open-celled, hydrophobic without PFAS, permanently temperature-resistant up to 150 °C
Tect-F-free AL	10	hellgrau	Completely open-celled, hydrophobic without PFAS, permanently temperature-resistant up to 150 °C, laminated with an aluminium foil
Tect-o-phob (UF)	8	grey	Completely open-celled, hydrophobic, perm. temp.-resistant up to 150 °C
Tect-o-phob AL (UF)	8	light grey	Completely open-celled, hydrophobic, oleophobic, laminated with an aluminium foil
Tect-o-phob dry (UF)	8	grey	Completely open-celled, hydrophobic, perm. temp.-resistant up to 150 °C, nubbed structure enables improved moisture transport
Tect-o-phob PU (UF)	8	grey/black	Completely open-celled, hydrophobic, oleophobic, laminated with a polyurethane foil



Without added PFAS

The new Hanno®-Tect-F-free is reliably sound-absorbing and hydrophobic, without added PFAS.



Fewer unwanted substances.
More future, built into the material.

Combination Element

Well Combined!

Highly effective combination of heavy layer and foam

In all areas of application where structure-borne and airborne sound together become a problem, the use of a combination element provides excellent results in terms of both sound insulation and sound absorption.

Enclosure and capsule surfaces are successfully soundproofed and airborne sound propagation is prevented.

Properties

- Cardboards or foils of 1 – 10 kg/m³
- Reinforced with added weight
- Good adhesion even for overhead bonding (preliminary testing required)
- Dampens structure-borne sound
- Also available bitumen-free



Product overview

Name	Density approx. (kg/m ³ or kg/m ²)	Colour	Features and characteristics
Protecto plus 55	11 mm: ~ 1.3 21 mm: ~ 1.6 31 mm: ~ 2.0	anthracite	Combination elements made of bitumen board and highly absorbent soft foam. The reverse side is coated with an acrylic adhesive.
Protecto plus 65	~ 2.5	anthracite	Combination element made of bitumen board and dimpled foam layer. The reverse side is coated with an acrylic adhesive.
Protecto plus 75	~ 2.3 – 3 (depending on thickness)	Foam: anthracite Surface: black	Combination elements made of bitumen board and highly absorbent soft foam with additional surface skinning. The reverse side is coated with an acrylic adhesive.
Protecto plus 85	~ 6 (depending on thickness)	Foam: anthracite Surface: black	Sound insulation element made of a heavy foil layer and PU-skinned absorption layer for demanding noise control. The reverse side is coated with an acrylic adhesive.
Protecto plus 105	12 mm: ~ 2.3 22 mm: ~ 2.6 32 mm: ~ 3	Bitumen board: black- Foam: anthracite Surface: aluminium	The sound attenuation element is a combination element made of bitumen board and a largely open-cell polyurethane foam, the surface of which is laminated with a layer of aluminum.



Further product information:

Technical data, installation instructions and info
(<https://www.hanno.com/en/products/kombinationselement>)

Heavy Layer

Completely Sound Deadening!

Soundproofing and sound insulation for housing and capsule surfaces

Heavy layers from HANNO have a stabilizing, stiffening and weight-increasing effect on all metals and plastics. On the one hand, this results in a sound-deadening effect that reduces structure-borne sound radiation and, on the other hand, increased airborne sound insulation due to the additional mass introduced. Airborne sound propagation is successfully prevented.

HANNO offers heavy layers with surface weights of up to 10 kg/m², which are characterized by flexibility - even at low temperatures.

Particularly recommended: Our bitumen-free heavy layers, which as AL variants meet the highest fire protection requirements (HL3, EN 45545).

Properties

- Surface weights up to 10 kg/m²
- Stiffening and weight-increasing
- Good adhesion even with overhead bonding (preliminary tests required)
- Structure-borne sound absorbing
- Airborne sound-absorbing
- bitumen-free variants
- Fire protection requirements up to HL3 can be met



Product overview

Name	Density approx. (kg/m ²)	Colour	Features and characteristics
Protecto pf 810	1	black	A heavy layer for structure-borne sound absorption and airborne sound insulation
Protecto pf 820	2	black	A heavy layer for structure-borne sound absorption and airborne sound insulation
Protecto pf 830	5	black	A flexible heavy layer for structure-borne sound absorption and airborne sound insulation
Protecto pf 840	10	black	A very heavy, flexible heavy layer for structure-borne sound absorption and airborne sound insulation
HL 2 PEVA	2	grey	A flexible, bitumen-free elastic heavy foil for structure-borne sound absorption and airborne sound insulation
HL 4 PEVA	4	grey	
HL 8 PEVA	8	grey	
HL 2 PEVA AL	2	grey	HL 2 PEVA, laminated with aluminum foil
HL 4 PEVA AL	4	grey	HL 4 PEVA, laminated with aluminum foil
HL 8 PEVA AL	8	grey	HL 8 PEVA, zusätzlich kaschiert mit einer Aluminiumfolie



Further product information:

Technical data, installation instructions and info
(<https://www.hanno.com/en/products/schwerschicht>)

Polyurethan (PU) Foam

Flexible and Durable

Flexible and durable:

Polyurethane (PU) polyether foam

Polyether-based polyurethane is a versatile material known for its excellent elasticity and resistance to moisture. Made from polyether polyols, it offers a range of benefits that make it ideal for dynamic and humid environments.

Polyether polyurethane is particularly suitable for applications requiring high elasticity and resistance to moisture. Discover the benefits of this flexible and durable material and how it can improve your projects.

Robust and versatile:

Polyurethan (PU) polyester foam

Polyester-based polyurethane is a high-performance material known for its exceptional strength and durability. It is made from polyester polyols and offers a variety of benefits that make it ideal for demanding industrial applications.

Polyester polyurethane is suitable for industrial applications requiring high mechanical strength and chemical resistance. Discover the benefits of this versatile material and how it can improve your projects.

Typical applications

- Automotive
- Mechanical engineering
- Equipment and apparatus engineering

Hanno®-HW 30 TS

Sealing foam made of polyether, with high closed cell content. Low-emission, hydrolysis-resistant, halogen-free and self-extinguishing.



Properties

- Elastic
- Good cushioning and resilience
- Hydrolysis resistant
- Moderate UV resistance



Further product information:

Technical data, installation instructions and info ([https://www.hanno.com/en/products/polyurethan-\(pu\)-polyether-schaum](https://www.hanno.com/en/products/polyurethan-(pu)-polyether-schaum))

Product overview

Name	Density approx. (kg/m³)	Colour	Features and characteristics
Polyether foams			
HW 26	15	white	Largely open-cell polyether-based polyurethane foam
HW 30 sfl	25,5	anthracite	With coating also available as Protecto 20/Pruvtec (PU skin), Protecto 50 (Pyron fleece), Protecto 51 (PP fleece), Protecto 60 (aluminium foil), other foam densities on request
HW 30 TS	33	anthracite	Very high-quality foam for sealing applications, low-emission
HW 32	23	grey	Very good compression set
HW 34	30	grey, white	Open-celled foam, improved firmness and cushioning properties
HW 36 B2	33	anthracite	Optimised fire behaviour (B2, UL94), with PU skin also available as Protecto 20 B2
HW 37 dbl	28	anthracite	DBL 5450.10, fogging according to DIN 75201 < 1 mg
Protecto 20	26	anthracite	As HW 30 sfl also available with PU-skin, wipeable and in medical grey
Protecto 20 B2	33	anthracite	As HW 36 B2 also available with PU-skin, wipeable and in medical grey
Protecto 50	26	black	As HW 30 sfl also available with polyester viscose fleece as surface
Protecto 51	26	anthracite	As HW 30 sfl also available with PP spunbond as surface
Protecto 60	26	anthracite, silver	As HW 30 sfl and additionally coated with aluminium foil
Protecto Air LV	23	grey, black	Largely open-cell polyether-based polyurethane foam, the surface of which is sealed with a polyester-based polyurethane skin for sound permeability
Pruvtec	25.5	anthracite, black	Largely open-cell polyurethane foam with a sound-permeable sealed surface
Polyester foams			
HW 7 sfl	23	grey	Good UV resistance
HW 18 TS	75	anthracite	Very good acoustic properties, ester polyol base
HW 38 UL	33	anthracite	Optimised fire behaviour (UL94)
HW 40 S	40	anthracite	Very high-quality foam for sealing applications, low fogging, soft elasticity
Protecto 20 UL	32	anthracite, black	As HW 38 UL. The surface is sound-permeable and sealed with a PUR film.
Filter foams			
PPI 20, PPI 20 FR	36	black	Filter foams with 20–60 pores per inch
PPI 20 FR	36	black	
PPI 45, PPI 45 FR, PPI 45 blau	32	black, blue	
PPI 60, PPI 60 FR, PPI 60 gelb	30	black, yellow	
Composite foams			
V 6, V 8, V 12, V 16, V 18, V 20	–	mottled	Very high densities up to approx. 200 kg / m³ possible, very good acoustic properties

Impregnated Foam

Permanently Elastic PU Foams

Discover the versatility of our impregnated foams

Impregnated foams from Hanno offer you the perfect solution for a wide range of applications. Thanks to modified acrylate dispersion impregnations, the polyurethane (PU) flexible foam-based foams are not only water-repellent and fire-resistant, but also chemical-resistant and particularly durable.

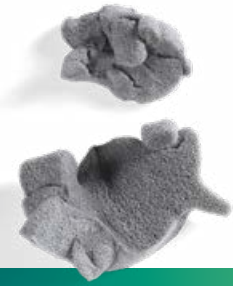
Whether in the construction industry, the automotive sector or the packaging industry – our impregnated foams perform reliably in demanding applications, offering flexibility, durability and reliable protection. They offer a high-performance combination of flexibility, durability and protection for a wide range of industrial applications.

Why should you choose our impregnated foams?

Our products are manufactured according to defined high quality standards – for reliable performance in demanding applications. We rely on innovative technologies and continuous research & development to always offer you the best solutions.

Hannoband®-BG1 and HBD Premium

The permanently elastic sealing tapes Hannoband®-BG1 or HBD Premium are resistant to ageing and hydrolysis.



Properties

- Permanently elastic
- Sound insulating
- Resistant to ageing and hydrolysis
- Good recovery properties



Further product information:

Technical data, installation instructions and info
(<https://www.hanno.com/en/products/impraegnierter-schaum>)

Hanno®-EL 1

Durable ESD Transport Protection

Sensitive components in the electronics industry require special protection for shipping. In addition to impacts, electrostatic discharges can also cause damage.

The soft-elastic Hanno®-EL 1 foam is electrostatically conductive and supports the controlled dissipation of electrostatic charges. The foam is continuously electrostatically conductive with a surface resistance of $< 10^5 \text{ Ohm}$ – for reliable ESD protection.

Typical applications

- Electronics packaging



Product overview

Name	Density approx. (kg/m³)	Colour	Features and characteristics
Redusoft DI 80	80	black	Permanently elastic, sealing (depending on degree of compression), breathable, very good fire properties
Redusoft DI 150	150	black	
Redusoft DI 150 FR	150	black	Permanently elastic, sealing (depending on degree of compression), breathable, excellent fire behaviour (EN 45545*)
Hannoband®-BG1	–	black, grey, light grey	Pre-compressed sealing tape for connection and movement joints between different building components, driving rain-proof
Hannoband®-HBD Premium	–	black, grey	
EL 1	20–30	black	Permanently electrostatically conductive $< 10^5 \text{ Ohm}$

* Detailed information on fire behaviour can be found in our technical data sheets: www.hanno.com/en/products/technical-data-sheets-installation-instructions

Polyethylene (PE) Foam

The Smart Choice for your Projects

Hanno®-PE-Foam is a closed-cell polyethylene foam. It is characterized by particularly high hydrolysis resistance and chemical resistance.

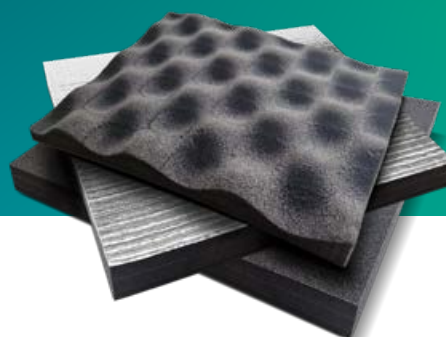
Thanks to its wide range of delivery forms, it can be used as a sealing material almost anywhere. It is supplied in panels, as cut pieces or as punched sections, and is self-adhesive.

Typical applications

- Sealing, insulation

Properties

- Very good hydrolysis resistance
- Very good chemical resistance
- Very good UV and ozone resistance
- Delivered in panels, as cut pieces or as punched sections, and is self-adhesive



Product overview

Name	Density approx. (kg/m³)	Colour	Features and characteristics
PE foam			
PE 16 P HF	16	grey	Cross-linked, halogen-free, extremely lightweight (16 kg/m³) PE foam with good flame resistance
PE 16 P HF AL	16	grey	PE 16 P HF, additionally laminated with robust aluminum foil (up to HL3, EN 45545-2*)
PE 16 P HF AL DRY	16	grey	PE 16 P HF, with dimpled structure
PE 25 N FR	25	anthracite	Non-crosslinked foam with coarse cell structure, good flame resistance and good sound absorption. For applications in damp and wet areas.
PE 25 N UV	25	anthracite	PE 25 N with improved UV resistance
PE 27 P	27	grey	Cross-linked foam with at least 30 % recycled content
PE 28 P	28	grey	Polyolefin foam, closed-cell
PE 28 P FR	28	grey	Polyolefin foam, closed-cell, flame-retardant
PE 33 C	33	black	Chemically cross-linked foam
PE 33 P	33	black	Physically cross-linked, airtight foam with good thermal insulation
PE 37 C	37	grey	Chemically cross-linked foam with good thermal insulation and strength
PE 60 P	60	grey	Cross-linked fine-pored foam with very good mechanical strength

* Detailed information on fire behaviour can be found in our technical data sheets: www.hanno.com/en/products/technical-data-sheets-installation-instructions



Further product information:

Technical data, installation instructions and info
([https://www.hanno.com/en/products/polyethylen-\(pe\)-schaum](https://www.hanno.com/en/products/polyethylen-(pe)-schaum))

Fleece

Versatile All-rounder Made of Polyester Fleece

The innovative sound and insulation product Hanno®-Fiber is ideally suited for various industrial applications. The polyester fiber weave with varying densities (depending on the application) is available self-adhesive and with an additional aluminium foil.

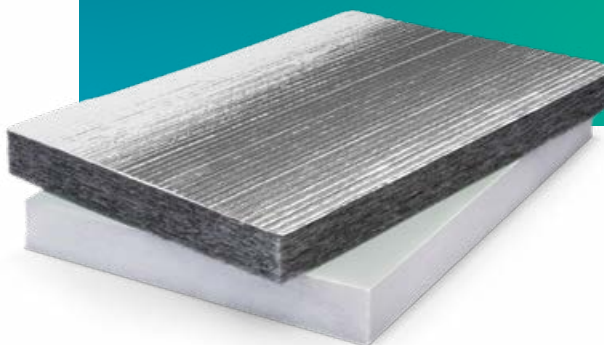
These versatile products also offer high-performance properties for a wide range of other industrial applications.

Typical applications

- Automotive industry
- Refrigeration and air conditioning
- Commercial vehicles
- Harvesters
- Caravans and motor homes
- Rail vehicles

Properties

- Densities of 20–30 kg/m³
- Very good sound and thermal insulation properties
- Hydrophobic/oleophobic customisable
- Good fire behaviour*
- Optionally available self-adhesive and laminated with an aluminium foil



Product overview

Name	Density approx. (kg/m ³)	Colour	Features and characteristics
Fiber 20	20	white	Good fire behaviour*
Fiber 20 AL	20	white	Good fire behaviour*, laminated with aluminum foil
Fiber 20 H	20	white	Good fire behaviour*, hydrophobic and oleophobic
Fiber 20 H AL	20	white	Good fire behaviour*, laminated with aluminum foil, hydrophobic and oleophobic
Fiber 30	30	white	Good fire behaviour*
Fiber 30 AL	30	white	Good fire behaviour*, laminated with aluminum foil
Fiber 30 H	30	white	Good fire behaviour*, hydrophobic and oleophobic
Fiber 30 H AL	30	white	Good fire behaviour*, laminated with aluminum foil, hydrophobic and oleophobic

* Detailed information on fire behaviour can be found in our technical data sheets: www.hanno.com/en/products/technical-data-sheets-installation-instructions



Further product information:

Technical data, installation instructions and info
(<https://www.hanno.com/en/products/vlies>)

Cellular Rubber

Flexible and elastic

Our closed-cell, soft-elastic cellular rubber is particularly suitable for elastic sealing of various types. HANNO offers a wide range of qualities for various applications. The temperature resistance of Hanno®-Cellular Rubber ranges from -40 to +120 degrees Celsius, depending on the quality.

We can produce (almost) any shape through custom manufacturing.

Typical applications

- Automotive industry
- Commercial vehicles
- Harvesters
- Caravans and motor homes
- Medical and sanitary technology
- Aeronautical engineering
- Ventilation and air-conditioning technology



Properties

- Suitable for elastic seals
- Available in many different shapes
- Fire retardant
- Highly elastic
- High water vapour diffusion resistance
- Low thermal conductivity
- Hydrolysis-resistant, depending on concentration usable with acids, alkalis, alcohol, silicone oils

Product overview

Name	Density approx. (kg/m³)	Colour	Features and characteristics
CR 80 EPDM	80 ± 15	black	Closed-cell, soft-elastic cellular rubber with special resistance to ageing and ozone
CR 100 EPDM-i	100	black	Not suitable for oils, greases and fuels
CR 100 EPDM-SC	100	black	EPDM foam with partially closed cell structure, self-adhesive on one side (acrylate adhesive)
ZG EPDM-SC 110	110	black	Flame retardant, highly elastic, high water vapour diffusion resistance, very low thermal conductivity
CR 130 CR	130 ± 20	black	Closed-cell, soft-elastic cellular rubber based on chloroprene rubber
CR 130 EPDM-H	130	black	Closed-cell, soft-elastic, with exceptional resistance to weathering and ozone
CR 130 EPDM-HT	130	black	Like CR 130 EPDM-H, temperature-resistant up to 135 °C
ZG Zellkautschuk V	–	black	Flame retardant, highly elastic, high water vapour diffusion resistance, very low thermal conductivity



Further product information:

Technical data, installation instructions and info
(<https://www.hanno.com/en/products/zellgummi>)

No more **PFAS!**

Hanno®-Tect-F-free

Be prepared for the EU-wide ban
for products containing PFAS.

NEW!



Responsibility

Research and development – highest quality and safety are our standard

Reliability and an up to date quality management system – besides warranties and product liability, we offer our customers the necessary safety when dealing with our products.

HANNO's quality management system is certified according to IATF 16949:2016 with integrated ISO 9001:2015 as well as the environmental policy based on DIN 14001. Our process-oriented approach and identification with clear procedures enable us to avoid errors and closely monitor cost-benefit identification.

Regular in-house and externally monitored quality controls and inspections go far beyond the legally required standard. Due to high-quality, non-blended basic materials, a consistently high quality is guaranteed for all HANNO products.

With innovative products on a high performance level, our research and development reacts to the requirements of our customers and translates them into technical possibilities. Test certificates from independent institutes additionally guarantee our product and process safety.



Modern laboratories and elaborate testing equipment maintain our high quality standards

Externally monitored quality controls and tests are carried out regularly



Environmental management & compliance

As a global mid-sized company, we fulfill comprehensive standards of compliance and corporate social responsibility (CSR). Waste prevention, regulated disposal, and systematic energy and resource management are integral parts of our corporate activities. For handling the materials we use, we rely on defined safety and environmental management processes.

Corresponding company and employee guidelines are part of HANNO's CSR. As a member of the Fachverband Schaumkunststoffe, HANNO aligns itself with the compliance and conduct rules published on our websites as well as to the Code of Conduct of the Verband der Nord-Westdeutschen Textilindustrie e. V.



Find out more here:
<https://www.hanno.com/en/company/company-mission>

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You can find a complete overview of our trading partners in Germany and worldwide at <https://www.hanno.com/en/contact-us/contact-person-hanno>

Notes

Hidden Talents

HANNO – The Specialist in Joint Sealing and Sound Insulation

Hanno Werk GmbH & Co. KG, headquartered in Laatzen near Hanover, Germany, has its core competences in construction joint sealing and industrial seals, technical sound insulation for the automobile and mechanical engineering industry and also in the improvement of room acoustics and sound insulation.

The product portfolio comprises the well-recognized and proven Hannoband® to seal window and façade joints, highly effective industrial stamping parts as well as effective acoustic tiles for room acoustics.



www.hanno.com/en

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