

PERFORMANCE CEILINGS
More scope for innovation



THERMATEX® Medical Range for hygiene and acoustics



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We offer healthcare solutions for the following areas:

- Hospitals
- Clinics
- Laboratories
- Doctors' surgeries
- Care homes
- Rehabilitation facilities

The THERMATEX® Medical Range fulfils the following requirements:

- Cleanroom classifications
- Sealed edges
- Resistance to bacteria and fungi
- Washability
- Humidity resistance
- Optimum acoustics
- Safe fire protection
- Accessibility
- Maintainability

Balance between hygiene and acoustics

We at Knauf AMF know that healthcare facilities place especially high demands for hygiene requirements on rooms and therefore also on the ceilings. Another aspect that is often given less consideration, but is at least as equally important, is the acoustic climate.

In patient areas, comfortable room acoustics increase the feeling of well-being and aid the healing process. A sound-optimised workspace is also important for those working in hospitals, care homes or laboratories, as too much noise disturbs concentration and can even lead to clinical signs of illness.

Thereby, different areas and activities in healthcare facilities demand very different acoustic requirements. These depend mainly on the type of use:

A corridor has different acoustic requirements to a patients' room. The colour scheme of different areas of a clinic also plays a role, as a comfortable colour scheme adds noticeably to the feeling of well-being.

All of this requires individual solutions. That is why we have developed the THERMATEX® Medical Range. The range not only fulfils the stringent hygiene requirements of the healthcare sector but also our high demands for fire protection and acoustic requirements. At the same time, the range offers a significant design element for every room.

Clean Room Classified

Low VOC

Recycled
Content

Product Warranty

Biosoluble Mineral Wool

Anti Microbial

Sealed edges

Fully
Recyclable

Fire Resistance

Balanced Acoustics



The THERMATEX® Medical Range for healthcare facilities

Depending on the risk of infection present, rooms can be divided into different groups. The products stated here are examples and recommendations. The ceiling to be installed is to be specified dependent on the actual room situation and its requirements. Should you require advice, please don't hesitate to contact us on +971 (4) 609 / 1805, or via email amfgcc@knaufamf.com



A

Area A
low hygienic relevance

- offices/administrative areas
- foyers
- corridors

B

Area B
average hygienic relevance

- Examination rooms
- Laboratory areas
- Patient rooms
- Sanitary rooms
- Kitchen areas
- Bathrooms

C

Area C
high hygienic relevance

- Operating theatres
- Intensive care



Fire protection

Whether you require a fire resistant construction or a fire protective ceiling, Knauf AMF offers different system solutions for both structural and independent fire protection. They contribute to fire protection whilst harmoniously integrating into the room concept design.



Care centre Orestades,
Denmark

AMF THERMATEX® surfaces	Class A	Class B	Class C	Surface	Hygiene	Cleanroom classification (ISO 14644-1)	Scrubability	Washability	Humidity	Air Permeability (DIN 18177)	Sound absorption (EN ISO 354)	Sound attenuation (as per ASTM E413-1/E1264 or EN ISO 10848)	Building material class (EN 13501-1/-2)
THERMATEX® Aquatec Medical (19 mm Thickness)				fleece facing	anti- microbial treatment against bacteria and fungi	ISO 3	✓	✓	up to 100 % RH	PM1 (≤ 30 m³/hm²)	$\alpha_w = 0.90$ $NRC = 0.90$	28 dB <i>CAC</i>	A2-s1, d0
THERMATEX® dB Aquatec Medical (19 mm Thickness)				fleece facing	anti- microbial treatment against bacteria and fungi	–	✓	✓	up to 100 % RH	PM1 (≤ 30 m³/hm²)	$\alpha_w = 0.70$ (H) $NRC = 0.70$	37 dB D_{nfw}	A2-s1, d0
THERMATEX® Alpha Medical (19 mm Thickness)				fleece facing	anti- microbial treatment against bacteria and fungi	ISO 4	✓	✓	up to 95 % RH	PM1 (≤ 30 m³/hm²)	$\alpha_w = 0.95$ (H) $NRC = 0.90$	28 dB D_{nfw}	A2-s1, d0
THERMATEX® dB Alpha Medical (22 mm Thickness)				fleece facing	anti- microbial treatment against bacteria and fungi	–	✓	✓	up to 95 % RH	PM1 (≤ 30 m³/hm²)	$NRC = 0.80$	40 dB <i>CAC</i>	A2-s1, d0
THERMATEX® Acoustic Medical (19 mm Thickness)				fleece facing	anti- microbial treatment against bacteria and fungi	ISO 4	✓	✓	up to 95 % RH	PM1 (≤ 30 m³/hm²)	$\alpha_w = 0.65$ (H) $NRC = 0.70$	38 dB D_{nfw}	A2-s1, d0
THERMATEX® dB Acoustic 24 Medical (24 mm Thickness)				fleece facing	anti- microbial treatment against bacteria and fungi	–	✓	✓	up to 95 % RH	PM1 (≤ 30 m³/hm²)	$\alpha_w = 0.65$ (H) $NRC = 0.70$	42 dB <i>CAC</i>	A2-s1, d0

Cleanroom application areas

- Laboratories
- Intensive care
- Operating theatres

	Air purity according to ISO 14644-1
Turbulent flow	1
	2
	3
	4
	5
Laminar flow	6
	7
	8
	9



Cleanrooms in healthcare areas

Cleanrooms are essential for medical research and the handling and sterile production of pharmaceuticals. They enable different parameters, such as particle number, germ number, temperature, humidity, and pressure to be exactly monitored and controlled. This ensures that the existing air and intake air has a high purity and fulfils all cleanliness criteria. This helps to protect patients and ensures the quality of medical products.

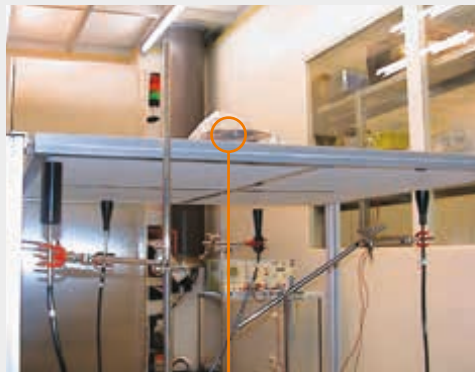
Air purity classification

The air purity classification according to EN ISO 14644 is the most well-known standard in the area of cleanroom technology. It states the maximum number of particles in the ambient air and divides the cleanrooms into classes from ISO 1 to ISO 9, with class 1 being the highest specification for air purity.

Cleanroom classification of the
THERMATEX® Medical Range:
ISO Class according to ISO 14644-1

ISO 3	THERMATEX® Aquatec Medical
ISO 4	THERMATEX® Alpha Medical THERMATEX® Acoustic Medical

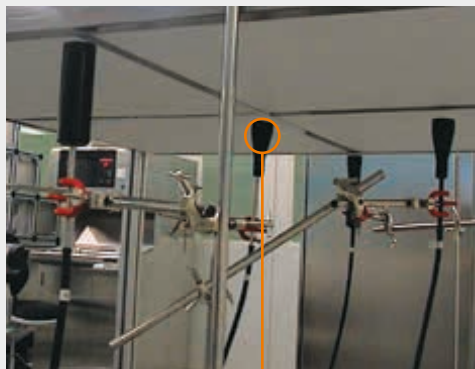
* Joints sealed with acrylic



Reference loading through
load speakers vibrations

Testing method

Highly sensitive measuring equipment can determine the number of particles present in the ambient air of cleanrooms. Determining the number of airborne particles enables the classification of materials. Cleanrooms are classified depending on the number of measured particles per cubic metre. The only particle groups to be considered are those with a cumulative frequency distribution between the critical particle sizes (lower limit) of 0.1 µm and 5 µm.



Measuring sensor (x4)



INCOR Hospital
Brazil



Sírio Libanês Hospital
Brazil



Sírio Libanês Hospital
Brazil



Application areas

- Clinics
- Hospitals
- Laboratories
- Patient's rooms
- Treatment rooms
- Disinfection rooms
- Consultation rooms

Particularly suitable Knauf AMF Medical products:

- THERMATEX® Acoustic Medical
- THERMATEX® dB Acoustic 24 Medical
- THERMATEX® Aquatec Medical
- THERMATEX® dB Aquatec Medical
- THERMATEX® Alpha Medical
- THERMATEX® dB Alpha Medical



THERMATEX® Medical Range

Hygena for the highest demands

Due to the high utilisation of hospitals and clinics, the risk of the spread of pathogens and thus the infection of already sick people increases. To prevent this, a multitude of national and international regulations must be taken into account during the planning stage. Amongst others, for example, the guidelines for hospital hygiene and preventing infection EN ISO 14644 or DIN 1946.

That is why Knauf AMF has developed the "Hygena finish", a special ceiling coating which, thanks to its unique composition, displays anti-bacterial and anti-fungal effects and therefore prevents the growth and spread of bacteria and fungi on the ceilings surface.





Application areas

- sensitive rooms in healthcare facilities
- sanitary facilities
- kitchens
- swimming pools and wellness facilities

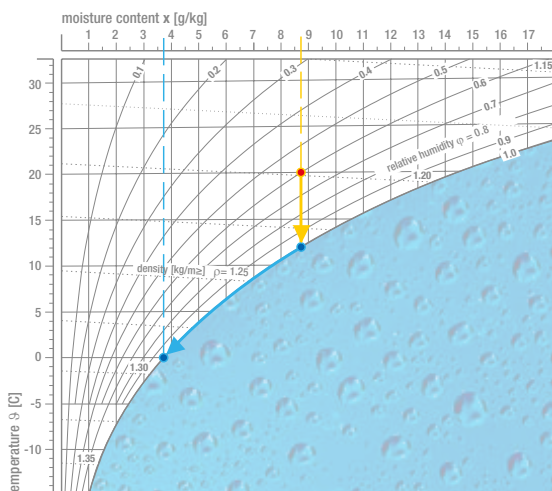
Did you know?

People constantly emit water to their environment. Alone during sleep, a person emits half to one litre of water per night through the skin and respiratory air. Aside this, the absorbing capacity of air is utilised when showering, washing etc., which for example, amounts to approximately 6-12 litres per day for a 4 person household.



Humidity resistance for a long service life

In healthcare facilities, many people and processes come together which can quickly lead to an increase in humidity. The regular cleaning of surfaces also adds to this. In order to withstand cleaning and increased humidity in the long-term, surfaces in healthcare facilities must be especially humidity resistant.



Example with 1 bar air pressure

At 20°C the total absorption capacity of air is approximately 14.7g/kg. If instead, the actual water content was 8.7g/kg (=absolute humidity), this would result in a relative humidity of 60%. If this air were then cooled, the water content would not change, however the absorption capacity of the air reduces. As a consequence the relative humidity increases to an extent, until at approximately 12°C, saturation is reached, beyond which no more water vapour can be absorbed (dew point). By further cooling, the excess water vapour condenses and leads to water droplet formation. Air at 0°C, can in comparison only absorb a maximum of 3.7g/kg of water until it reaches saturation.

$\vartheta = 20^{\circ}\text{C}$	$x = 14.7\text{g/kg}$	$\varphi = 100\%$
$\vartheta = 20^{\circ}\text{C}$	$x = 8.7\text{g/kg}$	$\varphi = 60\%$
$\vartheta = 0^{\circ}\text{C}$	$x = 3.7\text{g/kg}$	$\varphi = 100\%$

If unsuitable materials are used in these critical areas with increased humidity, it can lead in many cases to adverse visual effects or even structural damage.

THERMATEX® Aquatec can be used under these conditions without any problems.



City Clinic Sofia,
Bulgaria



City Clinic Sofia,
Bulgaria



City Clinic Sofia,
Bulgaria

Humidity has a significant influence on the stability and structure of a mineral ceiling and therefore its longevity. High levels of water vapour content can lead in many cases to a loss of dimensional stability and deformation. Air behaves similarly to a sponge and can, dependent on the temperature take in water in the form of vapour.



THERMATEx® Aquatec Medical

the optimum solution for high humidity

With THERMATEx® Aquatec Medical we offer you a ceiling tile specially developed for hygiene sensitive rooms with regularly high humidity. Due to its composition, it is humidity resistant up to 100% RH (relative humidity) and remains dimensionally stable in internal areas with high climatic demands.

Our ceiling systems are complemented with corrosion protected grid and accessories, as high humidity and corrosive pollutants can also affect the substructure. The ceiling tile is the ideal solution for healthcare areas. Thanks to its white, smooth fleece-coated surface, the tile can be easily cleaned, removing dust, dirt and possible deposits. This also effectively contains the growth of bacteria and germs in humid ambient air.

Advantages of THERMATEx® Aquatec Medical

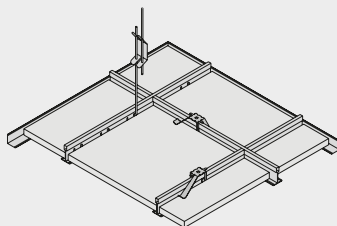
- 100% RH (rel. humidity)
- washable
- cleanroom class 3 according to ISO 14644-1
- highly absorbing, $\alpha_w / NRC = 0.90 / 28 \text{ dB}$
(EN ISO 11654 / ASCM C 423/ ISO 10848)
- white, smooth fleece-coated surface
- anti-microbial coating
- sealed edges

Installation THERMATEX® Aquatec Medical

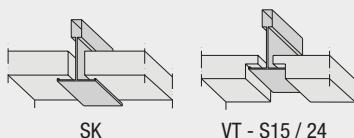
AMF VENTATEC® grid is ideally suited for the standard installation of AMF THERMATEX® Aquatec Medical. The ceiling tiles and grid come from the same manufacturer and offer you the corresponding system advantages. The grid has been specially designed for high-quality AMF ceiling tiles and with its performance properties offers many advantages for designers, installers and distributors. AMF offers suitable solutions for all exposure classes (corrosion protection) according to EN 13964 and the respective installation systems. Please also observe the installation and cleaning guidelines for AMF THERMATEX® Aquatec Medical.

System C - exposed construction

- visible grid construction
- square edge (SK) or recessed (VT-S) edge configuration
- quick and efficient installation
- easily demountable for maintenance work
- numerous international approvals and certificates

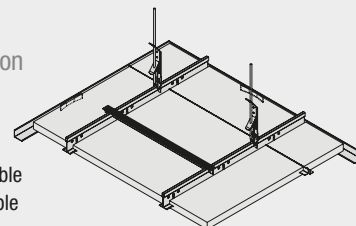


Edge configurations

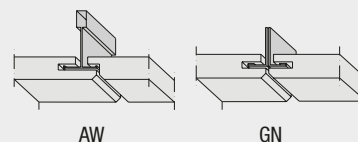


System A - concealed construction

- concealed construction profiles
- discreet, smooth optic
- edge configuration AW/GN demountable
- ceiling cavity retrospectively accessible

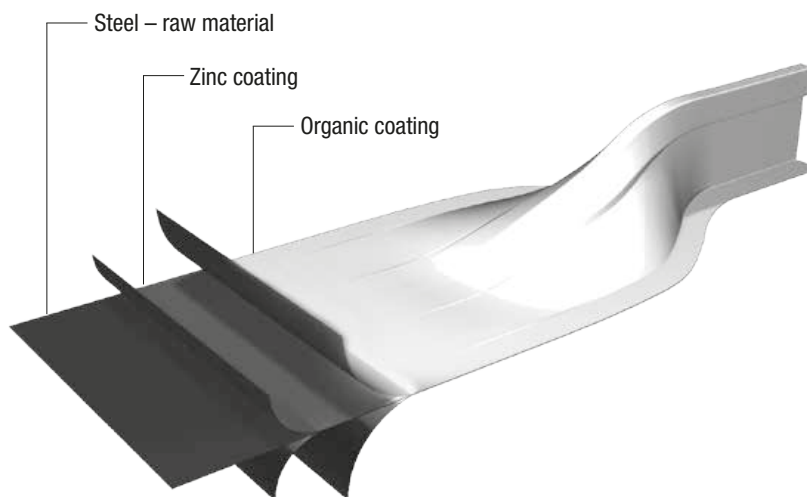


Edge configurations



Corrosion resistant grid

When installing THERMATEX® Aquatec Medical in rooms with increased humidity (above 90% RH) a special grid with enhanced protection against corrosion should be used.



Class	Conditions	Application examples	Recommended substructure
A	Building components generally exposed to varying relative humidity up to 70% and varying temperature up to 25°C, but without corrosive pollutants.	Offices, shops, schools, hotels, sports halls, storage areas	Conventional grid system e.g. AMF VENTATEC®
B	Building components exposed to varying relative humidity up to 90% and varying temperature up to 30°C, but without corrosive pollutants.		
C	Building components exposed to relative humidity over 90% and a risk of condensation.	Shower rooms, food production (e.g. dairies, breweries), laundries	Grid system with corrosion protection
D	More severe than the above.	Swimming pools chemical plants	



Cleaning the THERMATEX® Medical Range

In healthcare and care facilities, the ability to clean to a clinical level is essential to keep infection rates as low as possible. Therefore, all surfaces should be easy to clean.

Dry cleaning

- With a soft cloth, soft brush or vacuum cleaner.

Damp cleaning

- With a well wrung-out cloth or sponge. Ensure that the edges and the reverse sides of the tiles do not come into contact with humidity. Following cleaning, the surface should be dried with a soft cloth.

Wet cleaning

- With lukewarm water (up to 40°C), a sponge and mild cleaning agent.

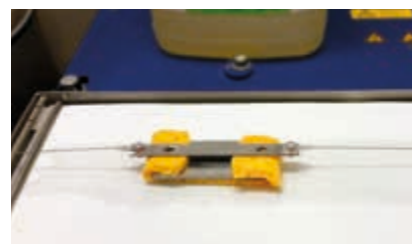
Pressure cleaning

- THERMATEX® Aquatec Medical can be cleaned weekly with a high pressure cleaner, when the entire ceiling should be cleaned at the same time. The surface must be dried after cleaning. Pressure cleaning is only possible for ceilings installed on an exposed grid (SK edge) and with a corrosion resistant grid system. Cleaning guidelines and installation instructions must be adhered to.



Washability

A surface must have the ability to be wet washed in order for it to be clinically clean. Moreover, the chemical resistance in terms of cleaning, process and disinfection reagents is especially important.



Scrubability tested according to modified ASTM D-2486

Unsoiled finished product was scrubbed with a nylon bristle brush. Sample graded after 200 cycles (double strokes).

AMF THERMATEX® Acoustic Medical	Test cycles (double strokes)	Result	Mass loss (scrubbed off)
Sample 1	200	A – No Break	Δ 0.09 g (< 1%)
Sample 2	200	A – No Break	Δ 0.13 g (< 1%)

Washability tested according to modified ASTM D-4828

Unsoiled finished product covered in the runway of the sponge with agent – after 1 min. washed with a sponge soaked with same agent. Sample graded after 200 cycles (double strokes).

AMF THERMATEX® Acoustic Medical	Test cycles (double strokes)	Result
Mega Clean – triple 7	200	A – No Break

Applied Classification

A = No Break	D = 25% – 50% Severe
B = 0% – 10% Slight	E = 50% – 100% Very Severe
C = 10% – 25% Moderate	



Anti-dirt effect

The more air permeable a material is, the more dirt deposits will accumulate on the material. Due to low air permeability according to DIN 18177, Knauf AMF provides a reduced (dust) filter effect and therefore minimises the risk of contamination.



Indoor Air Quality

The products under para. 2 shall not exceed the emission values listed in Table 1 in the test chamber in conformity with the „Health risk assessment process for emissions of volatile organic compounds (VOC) from building products“ developed by the Committee for Health-related Evaluation of Building Products.

Emission Values

Substance	Requirements Final Value 28 Days
Total organic compounds within the retention range $C_6 - C_{16}$ (TVOC)	$\leq 100 \mu\text{g}/\text{m}^3$
Total organic compounds within the retention range $> C_{16} - C_{22}$ (TSVOC)	$\leq 20 \mu\text{g}/\text{m}^3$
C substances ¹²	$\leq 1 \mu\text{g}/\text{m}^3$ per single value
Total VOC without LIC ^{13, 14}	$\leq 50 \mu\text{g}/\text{m}^3$
R value	≤ 1
Formaldehyde	$\leq 0.05 \text{ ppm}$



Quiet promotes healing and concentration

Clinics are not per se quiet places: Activities from early in the morning until late into the evening create a constant sound level which can become excessive noise.

However, patients require lots of peace and quiet to heal quickly. Hospital or clinic staff are also dependent on a quiet workplace to enable them to concentrate and work effectively. Here, sound absorption plays an important role during the design and planning stage of the

acoustic room comfort. For example, noise from corridors should not transmit into the patient rooms; confidential conversations in doctor's rooms are private and shouldn't be transmitted through doors, walls and ceilings into other rooms.



What is sound absorption?

The energy of sound waves is absorbed or reflected from boundary surfaces as well as objects and people within a room. Sound absorption refers to the reduction of sound energy in a room through a sound wave losing energy through component surfaces.

The appropriate sound absorption ensures that the sound in a room is perceived as louder or quieter. Thus, it determines the acoustic well-being of a user in a room as it shortens the reverberation time, reduces the noise level and increases speech intelligibility.

The ability of a material to "swallow" sound waves depends on the materials composition. Porous, open-cell or perforated materials normally absorb sound very well.

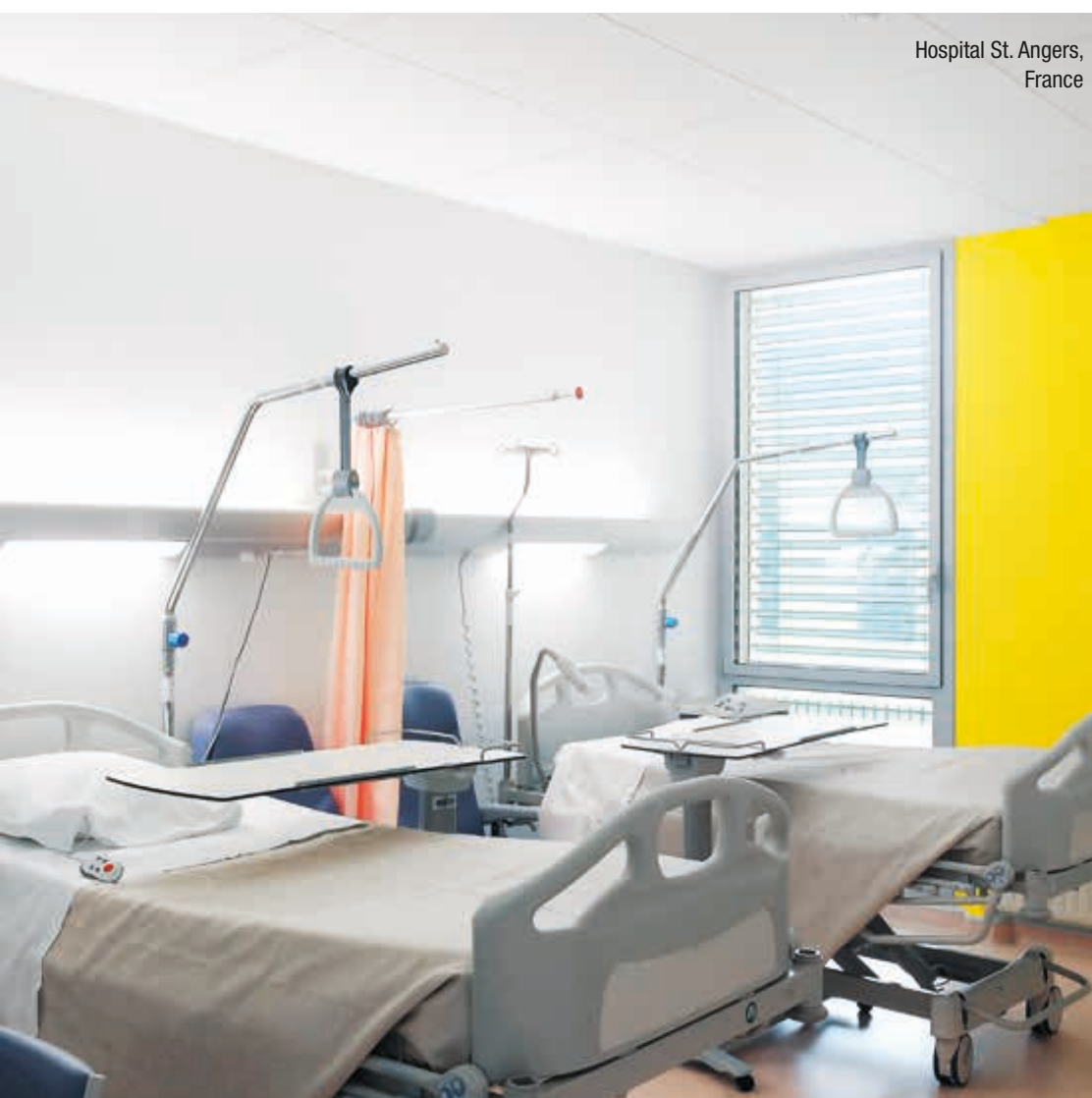
"Good acoustic quality" describes the conditions in a room that enable the best possible transmission from a sound source to a listener.



Hospital St. Angers,
France



Doctors Surgery Kassel,
Germany



Hospital St. Angers,
France



What is sound attenuation?

A room's ceiling, along with all adjoining components between rooms, contributes to transmitting sound between rooms. It is therefore necessary that the ceiling material has the highest possible sound attenuation value. In contrast to the optimisation problem with sound absorption, here maximisation is important. Ceilings in the THERMATEx® Medical Range achieve high sound attenuation values according to EN ISO 10848 and ASTM E413-1 and are therefore very well suited for reducing the sound transmission between rooms.



Institut Bauen
und Umwelt e.V.

HQE®

Environmental network AMF

At Knauf AMF, sustainability begins during product development. For example, through the selection of raw materials, the closed material cycle in the manufacturing process or the markedly long life-cycle and recyclability of the products.

Raw materials and production

When selecting raw materials, Knauf AMF puts the greatest possible emphasis on natural materials: clay, perlite, bio-soluble mineral wool from stone and starch from corn and potatoes. Resource-friendly production is for us a matter of course. Energy optimised production planning, a closed water system within the plant and re-use of off-cuts and rejected goods are just a few examples of this.

Environment

Using "old" mineral tiles to produce "new" mineral tiles is a possible option of recycling. We are continually searching with our clients for environmentally friendly possibilities for re-use and using the materials in other products.

Transport

We systematically analyse our transport routes in terms of environmental aspects. This includes modern lorries, environmentally friendly transport by train or ship and as local as possible supply sources for our raw materials.

Recycling

In addition to re-utilising production waste, we also offer our clients the possibility to feed our products back into the recycling process after removal.

Certification – proof of performance

With our Environmental Management System according to ISO 14001 introduced in 2002, the compliance with all environmental regulations, balancing our environmental inputs and the continual improvement of environmental protection, is not only an integral part of what we do, but also public proof of our commitment.

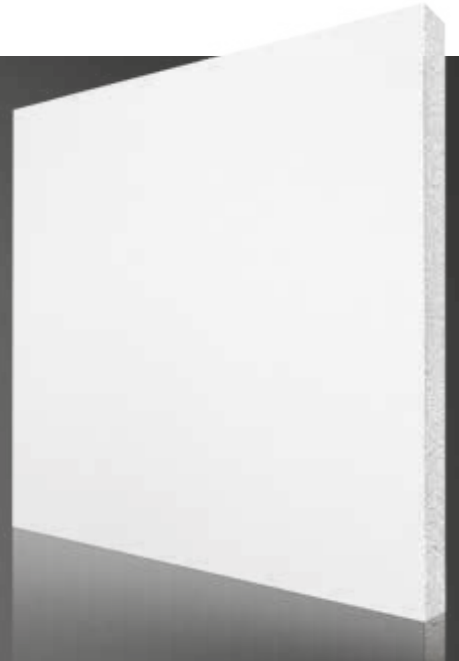
Furthermore, we and our products have been awarded with numerous international environmental certificates (Type I, Type II and Type III declarations according to international harmonised ISO-Standards) for good environmental performance.





THERMATEX® Aquatec Medical

Thanks to its special composition, THERMATEX® Aquatec Medical shows moisture resistance of up to 100 % RH. This means that even with a high humidity and temperatures between 0 and 40°C the panel is inherently stable at all times. If necessary, THERMATEX® Aquatec Medical can be cleaned using water. Additionally, thanks to good sound absorption, the ceiling panel shows excellent acoustic features, which makes it a perfect solution for areas with strict hygiene requirements.



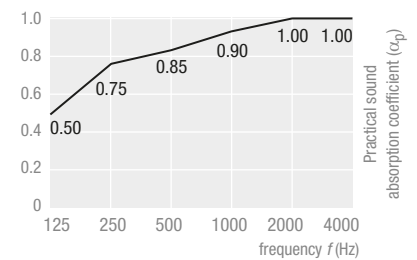
Technical performance

Building material class	A2-s1, d0 as per EN 13501-1 Class A as per ASTM E1264 (tested according to ASTM E84)
Sound absorption	$\alpha_w = 0.90$ as per EN ISO 11654 and EN ISO 354 $NRC = 0.90$ as per ASTM C423 and ASTM E1264
Sound attenuation	$D_{n,f,w} = 28$ dB as per EN 717-1 and EN 10848 $CAC = 28$ dB as per ASTM E413-1 and ASTM E1264 (19 mm thickness, according to test certificate)
Light reflectance	up to 88 %
Thermal conductivity	$\lambda = 0.040$ W/mK as per EN 12667
Humidity	up to 100 % RH
Air Permeability	PM1 (30 m³/hm²) as per DIN 18177
Clean room classification	ISO-class 3 as per ISO 14644-1
Hygiene	anti-microbial treatment against bacteria and fungi
Scrubability	tested as per ASTM D2486 (modified)
Washability	tested as per ASTM D4828 (modified)
Colour	white similar to RAL 9010

Sealed edges ✓

System	C Exposed Grid System, demountable ceiling A Concealed system, panels demountable
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Sound absorption data



Available dimensions, edge details	Thickness / Weight 19 mm (c. 4,7 kg/m²)		
	SK	VT-S 15/24	AW/GN
Please note minimum quantities and delivery times.			
600 x 600	✓	✓	✓

THERMATEX® dB Aquatec Medical

Thanks to its special composition, THERMATEX® dB Aquatec Medical shows moisture resistance of up to 100 % RH. This means that even with a high humidity and temperatures between 0 and 40°C the panel is inherently stable at all times. If necessary, THERMATEX® dB Aquatec Medical can be cleaned using water. Additionally, thanks to good sound absorption, the ceiling panel shows excellent acoustic features, which makes it a perfect solution for areas with strict hygiene requirements.



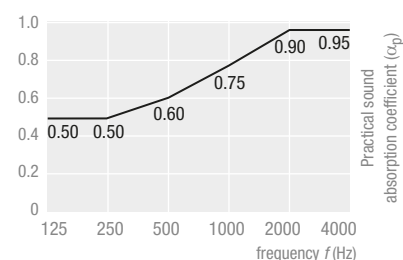
Technical performance



Building material class	A2-s1, d0 as per EN 13501-1
Sound absorption	Class A as per ASTM E1264 (tested according to ASTM E84) $\alpha_w = 0.70$ (H) as per EN ISO 11654 and EN ISO 354 $NRC = 0.70$ as per ASTM C423 and ASTM E1264
Sound attenuation	$D_{n,f,w} = 37$ dB as per EN 717-1 and EN 10848 (19 mm thickness, according to test certificate)
Light reflectance	up to 88 %
Thermal conductivity	$\lambda = 0.040$ W/mK as per EN 12667
Humidity	up to 100% RH
Air Permeability	PM1 (30 m³/hm²) as per DIN 18177
Hygiene	anti-microbial treatment against bacteria and fungi
Scrubability	tested as per ASTM D2486 (modified)
Washability	tested as per ASTM D4828 (modified)
Colour	white similar to RAL 9010

Sealed edges ✓

System  Exposed Grid System, demountable ceiling

Sound absorption data



Available dimensions, edge details	Thickness / Weight 19 mm (c. 4,7 kg/m²)	
	SK	VT-S 15/24
Please note minimum quantities and delivery times.		
600 x 600	✓	✓



THERMATEX® Alpha Medical

THERMATEX® Alpha Medical is a mineral ceiling tile providing high sound absorption. The light weight and perforations of the core board create Class A sound absorber. With a strong white surface the appearance of THERMATEX® Alpha Medical is smooth and elegant. New generation bio-soluble mineral wool, clay and starch, contribute to the excellent acoustic performance.



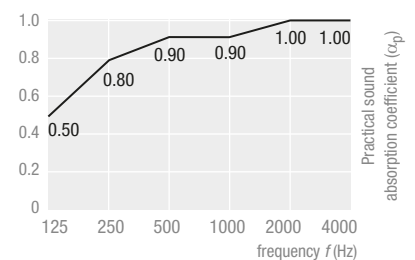
Technical performance





Building material class	A2-s1, d0 as per EN 13501-1 Class A as per ASTM E1264 (tested according to ASTM E84)
Sound absorption	$\alpha_w = 0.95$ as per EN ISO 11654 and EN ISO 354 $NRC = 0.90$ as per ASTM C423 and ASTM E1264
Sound attenuation	$D_{n,f,w} = 28$ dB as per EN 717-1 and EN 10848 (19 mm thickness, according to test certificate)
Light reflectance	up to 88 %
Thermal conductivity	$\lambda = 0.040$ W/mK as per EN 12667
Humidity	up to 95 % RH
Air Permeability	PM1 (30 m ³ /hm ²) as per DIN 18177
Clean room classification	ISO-class 4 as per ISO 14644-1
Hygiene	anti-microbial treatment against bacteria and fungi
Scrubability	tested as per ASTM D2486 (modified)
Washability	tested as per ASTM D4828 (modified)
Colour	white similar to RAL 9010

Sealed edges ✓

System  Exposed Grid System, demountable ceiling

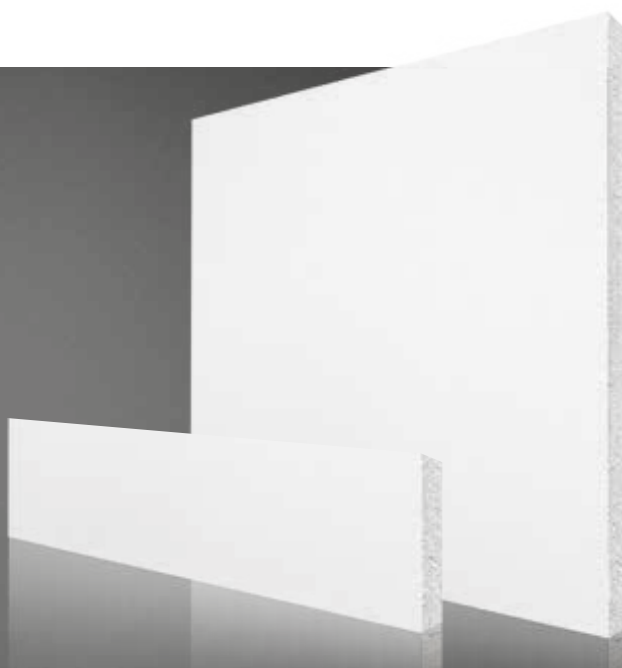
Sound absorption data



Available dimensions, edge details	Thickness / Weight 19 mm (c. 3,0 kg/m ²)			
	SK	VT-S 15/24	VT-S 15F	VT 15/24 (on request)
Please note minimum quantities and delivery times.				
600 x 600	✓	✓	✓	✓
600 x 1200	✓	✓	✓	✓

THERMATEX® dB Alpha Medical

THERMATEX® dB Alpha Medical is a mineral ceiling tile providing high sound absorption. The light weight and perforations of the core board create Class A sound absorber. With a strong white surface the appearance of THERMATEX® dB Alpha Medical is smooth and elegant. New generation biosoluble mineral wool, clay and starch, contribute to the excellent acoustic performance.



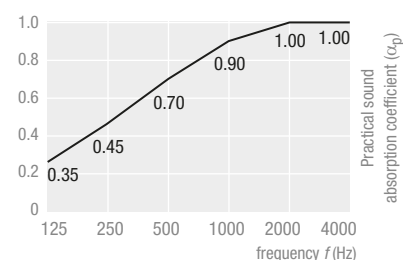
Technical performance





Building material class	A2-s1, d0 as per EN 13501-1 Class A as per ASTM E1264 (tested according to ASTM E84)
Sound absorption	$NRC = 0.80$ as per ASTM C423 and ASTM E1264
Sound attenuation	$D_{n,f,w} = 38$ dB as per EN 717-1 and EN 10848 $CAC = 40$ dB as per ASTM E413-1 and ASTM E1264 (22 mm thickness, according to test certificate)
Light reflectance	up to 88 %
Thermal conductivity	$\lambda = 0,040$ W/mK as per EN 12667
Humidity	up to 95 % RH
Air Permeability	PM1 (30 m³/hm²) as per DIN 18177
Hygiene	anti-microbial treatment against bacteria and fungi
Scrubability	tested as per ASTM D2486 (modified)
Washability	tested as per ASTM D4828 (modified)
Colour	white similar to RAL 9010

Sealed edges ✓

System  Exposed Grid System, demountable ceiling

Sound absorption data



Available dimensions, edge details	Thickness / Weight 22 mm (c. 5,5 kg/m²)			
	SK	VT-S 15/24	VT-S 15F	VT 15/24 (on request)
Please note minimum quantities and delivery times.				
600 x 600	✓	✓	✓	✓
600 x 1200	✓	✓	✓	✓



THERMATEX® Acoustic Medical

THERMATEX® Acoustic Medical is a 19 mm thick ceiling tile made from a special perforated mineral board with an acoustic fleece facing. The combination of high density, bio-soluble mineral wool with clay and starch provides excellent physical characteristics, particularly for acoustic performance.



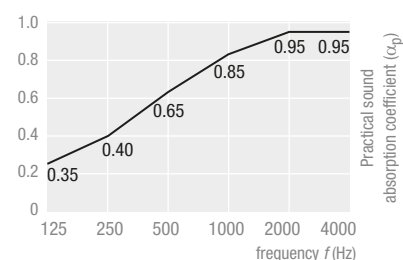
Technical performance

Building material class	A2-s1, d0 as per EN 13501-1
Sound absorption	Class A as per ASTM E1264 (tested according to ASTM E84) $\alpha_w = 0.65$ (H) as per EN ISO 11654 and EN ISO 354 $NRC = 0.70$ as per ASTM C423 and ASTM E1264
Sound attenuation	$D_{n,c,w} = 38$ dB as per EN 717-1 and EN 20140-9 (19 mm thickness, according to test certificate)
Light reflectance	up to 88 %
Thermal conductivity	$\lambda = 0.052 - 0.057$ W/mK as per DIN 52612
Humidity	up to 95% RH
Air Permeability	PM1 (30 m³/hm²) as per DIN 18177
Clean room classification	ISO-class 4 as per ISO 14644-1
Hygiene	anti-microbial treatment against bacteria and fungi
Scrubability	tested as per ASTM D2486 (modified)
Washability	tested as per ASTM D4828 (modified)
Colour	white similar to RAL 9010

Sealed edges ✓

System	<p>C Exposed Grid System, demountable ceiling</p> <p>F Free span system, with exposed or concealed suspension</p> <p>I Bandraster system, with exposed or concealed suspension</p> <p>A Concealed system, panels demountable / not demountable</p>
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Sound absorption data

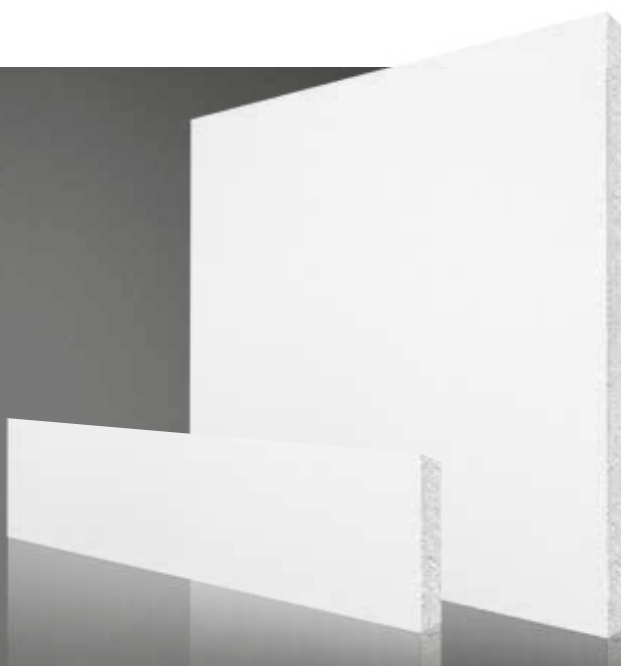


Available dimensions, edge details	Thickness / Weight 19 mm (c. 4,6 kg/m²)			
	SK	VT 15/24	VT-S 15/24	AW/GN
Please note minimum quantities and delivery times.				
600 x 600	✓	✓	✓	✓
600 x 1200	✓	✓	✓	✓
plank sizes available on request	✓	✓	✓	✓

THERMATEX®

dB Acoustic 24 Medical

THERMATEX® dB Acoustic Medical is the ideal solution for high sound attenuation requirements. Additionally good levels of sound absorption are achieved and the white unperforated surface creates an excellent appearance. The combination of high density, bio-soluble mineral wool with clay and starch provides excellent physical characteristics, particularly for acoustic performance.



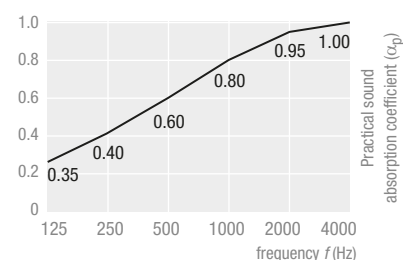
Technical performance

Building material class	A2-s1, d0 as per EN 13501-1
Sound absorption	Class A as per ASTM E1264 (tested according to ASTM E84) $\alpha_w = 0.65$ (H) as per EN ISO 11654 and EN ISO 354 $NRC = 0.70$ as per ASTM C423 and ASTM E1264
Sound attenuation	$D_{n,c,w} = 41$ dB as per EN 717-1 and EN 20140-9 $CAC = 42$ dB as per ASTM E413-1 and ASTM E1264 (24 mm thickness, according to test certificate)
Light reflectance	up to 88 %
Thermal conductivity	$\lambda = 0.052 - 0.057$ W/mK as per DIN 52612
Humidity	up to 95% RH
Air Permeability	PM1 (30 m³/hm²) as per DIN 18177
Hygiene	anti-microbial treatment against bacteria and fungi
Scrubability	tested as per ASTM D2486 (modified)
Washability	tested as per ASTM D4828 (modified)
Colour	white similar to RAL 9010

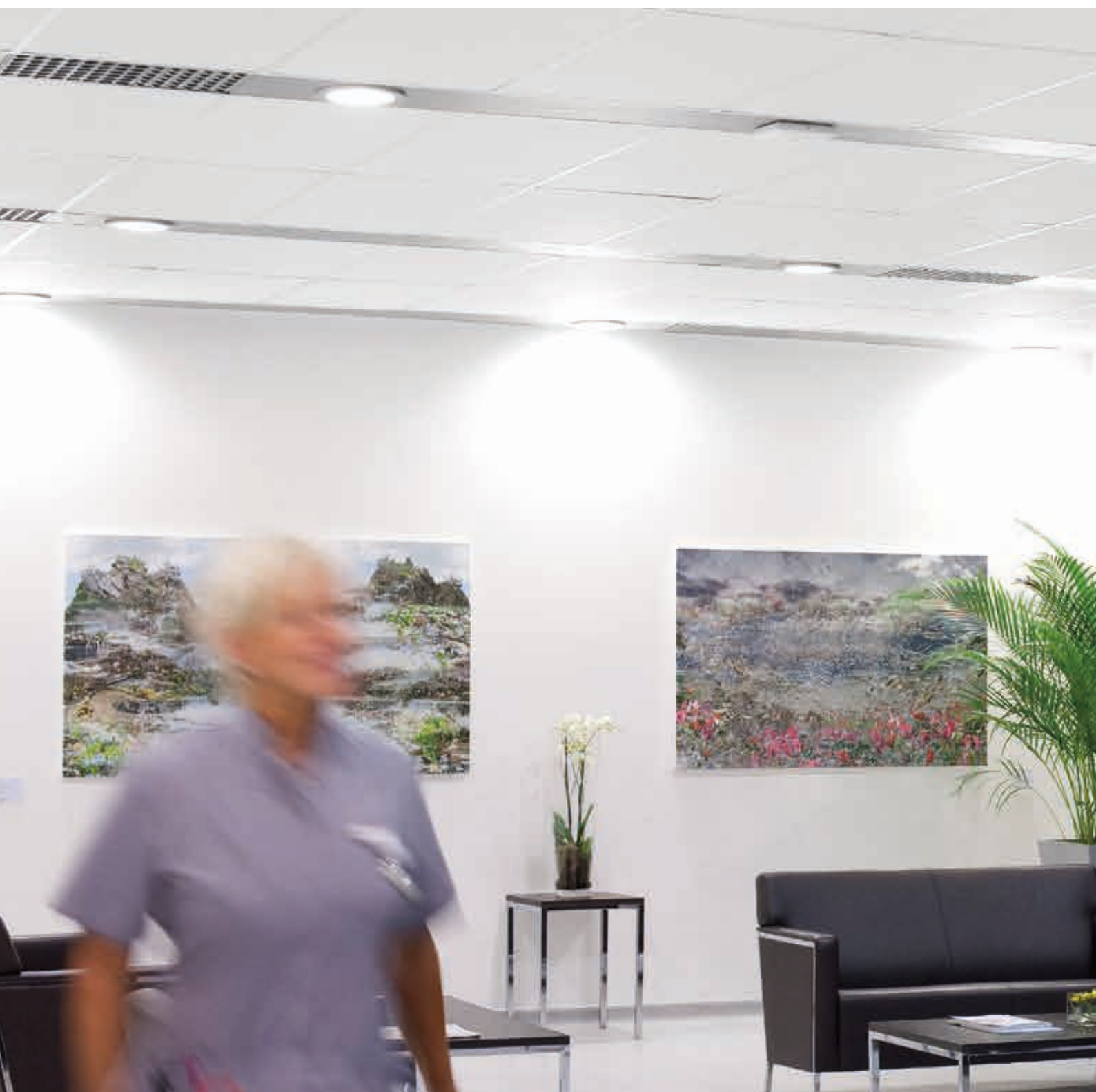
Sealed edges ✓

System	<p>C Exposed Grid System, demountable ceiling</p> <p>F Free span system, with exposed or concealed suspension</p> <p>I Bandraster system, with exposed or concealed suspension</p>
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Sound absorption data



Available dimensions, edge details	Thickness / Weight 24 mm (c. 8,4 kg/m²)				
	SK	VT 15/24	VT-S 15/24	AW/SK	GN/SK
Please note minimum quantities and delivery times.					
600 x 600	✓	✓	✓	-	-
600 x 1200	✓	✓	✓	-	-
plank sizes available on request	-	-	-	✓	✓



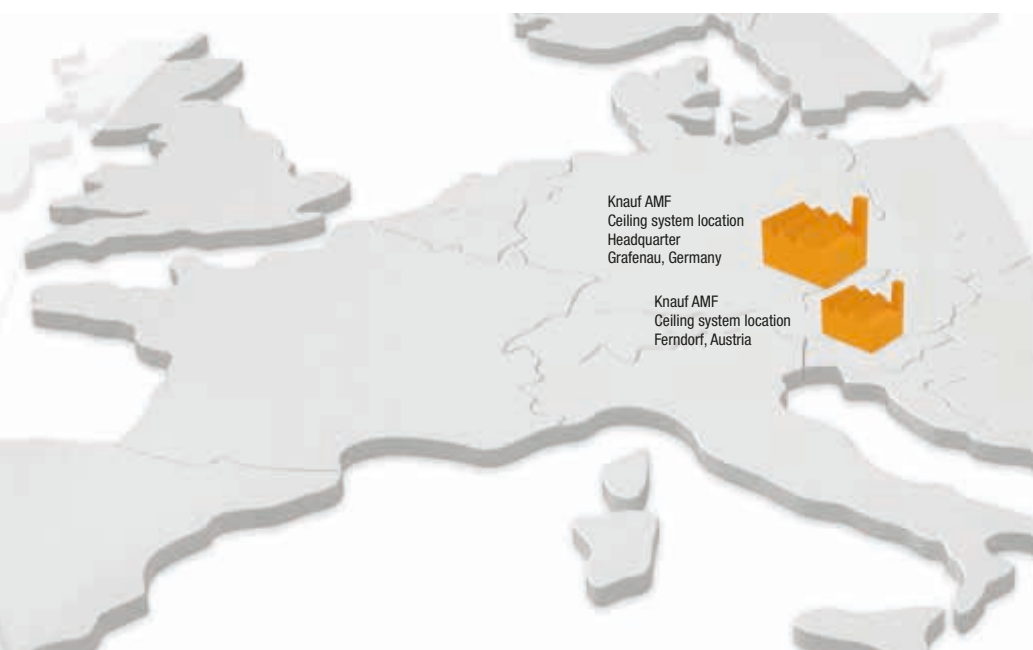


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PERFORMANCE CEILINGS
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Knauf AMF Dubai

Phase 5 East, A Block,
Office # 847, Dubai Airport
Free Zone Authority
P.O. Box: 293713, Dubai

Tel.: +971 (4) 609 / 1805
Fax: +971 (4) 609 / 1806

amfgcc@knaufamf.com
www.amfceilings.com

Knauf AMF GmbH & Co. KG

Elsenthal 15, D-94481 Grafenau
Germany

Tel.: +49 (0) 85 52 / 422 - 0
Fax: +49 (0) 85 52 / 422 - 32

info@knaufamf.de
www.amfceilings.com

HERADESIGN® –

Knauf AMF Deckensysteme GmbH
9702 Ferndorf 29, Austria
Tel.: +43 4245 2001-3003
office@heradesign.com

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09/2014