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SAINT-GOBAIN

RIGIDUR®

Installation guidelines Floor

using Rigidur® Flooring Elements

SAINT-GOBAIN

Rigidur® gypsum Fibreboards Hard - smooth - single layer ... and much more!

Those who build cleverly, build with Rigidur! Intelligent solutions for walls, ceilings and floors

Advantages you can build on:

- **Maximum cost-effectiveness**
  Even a single-layer design fulfills fire, sound and fire protection requirements
- **High level of safety**
  Tested suitability for statics and stability, approved for earthquake-proof construction
- **Guaranteed time savings**
  Extremely smooth and closed surface enables subsequent coatings without prior surface treatment
- **Problem-free load fastening**
  Wardrobes, paintings or shelves are easily and securely installed with simple screws
- **Optimum indoor climate**
  Certified as a healthy building material
- **Outstanding sound and impact sound insulation**
  Optimal protection against noise in wall and floor constructions

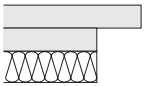
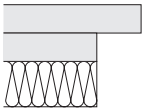
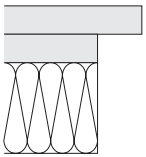
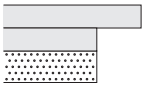
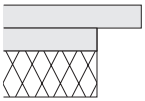
Personalised support
By consulting with our experts, you will benefit from our extensive know-how and personalised advice in the planning and execution of demanding construction projects. **rigidur.de**

RIGIDUR®

Contents

1 General information

1.1 Overview of Rigidur® Flooring Elements

	Element thickness	Format (width x length)	Weight kg/m²	Properties	Application
Rigidur Flooring Elements 20/25  2 x 10.0 mm / 2 x 12.5 mm	20 mm 25 mm	500 x 1,500 mm 500 x 1,500 mm	24.4 31.3	Pre-primed gypsum fibreboards with rebate edges. Extremely hard and smooth surface without lamination on the reverse. Reaction to fire acc. to DIN EN13501-1 : A2-s1,d0 (C.3).	For the quick construction of dry screed floors with fire protection requirements in new buildings and for renovating old buildings. Suitable for installation with underfloor heating (according to manufacturer's instructions).
Rigidur Flooring Element 30/35 MW  2 x 10.0 mm / 2 x 12.5 mm + 10 mm MW	30 mm 35 mm	500 x 1,500 mm 500 x 1,500 mm	26.8 33.0	Pre-primed gypsum fibreboards with rebate edges. Extremely hard and smooth surface with mineral wool lamination on the reverse. Reaction to fire acc. to DIN EN 13501-1 : A2-s1,d0 (C.3).	For the quick creation of dry floor screeds with fire and sound protection requirements in new buildings and the renovation of old buildings.
Rigidur Flooring Element 45 MW  2 x 12,5 mm + 20 mm MW	45 mm	500 x 1,500 mm	34,6	Pre-primed gypsum fibreboards with rebate edges. Extremely hard and smooth surface with mineral wool lamination on the reverse. Reaction to fire acc. to DIN EN 13501-1 : A2-s1,d0 (C.3).	For the quick creation of dry floor screeds with fire and sound protection requirements in new buildings and the renovation of old buildings.
Rigidur Flooring Element 65 MW  2 x 12.5 mm + 40 mm MW	65 mm	500 x 1,500 mm	36.2	Pre-primed gypsum fibreboards with rebate edges. Extremely hard and smooth surface with mineral wool lamination on the reverse. Reaction to fire acc. to DIN EN 13501-1 : A2-s1,d0 (C.3).	For the quick creation of dry floor screeds with fire and sound protection requirements in new buildings and the renovation of old buildings.
Rigidur Flooring Element 30/35 HF  2 x 10.0 mm / 2 x 12.5 mm + 10 mm HF	30 mm 35 mm	500 x 1,500 mm 500 x 1,500 mm	27.1 33.0	Pre-primed gypsum fibreboards with rebate edges. Extremely hard and smooth surface with soft wood fibre lamination on the reverse. Reaction to fire acc. to DIN EN 13501-1: Bfl-s1.	For the quick creation of dry floor screeds with fire and sound protection requirements in new buildings and the renovation of old buildings.
Rigidur Flooring Element 40/50 PS  2 x 10.0 mm + 20/30 mm PS	40 mm 50 mm	500 x 1,500 mm 500 x 1,500 mm	25.6 25.8	Pre-primed gypsum fibreboards with rebate edges. Extremely hard and smooth surface with polystyrene lamination on the reverse. Reaction to fire acc. to DIN EN 13501-1: E.	For the quick creation of dry floor screeds with high thermal insulation requirements in new buildings and the renovation of old buildings.

1.2 Rigidur® accessory range for flooring elements

	Rigidur Nature Line screed adhesive	Rigidur screed adhesive	Rigidur drywall screws
Product specification	Environmentally safe screed adhesive, that does not contain any substances, that require labelling of hazardous substances.	Solvent-free polyurethane-based adhesive.	Made of steel, specially treated, black phosphate.
Application area	For the bonding of rebate/edge areas of Rigidur Flooring Elements and/or an additional layer of Rigidur H on top of Elements that have already been installed.	For the bonding of rebate/edge areas of Rigidur Flooring Elements and/or an additional layer of Rigidur H on top of Elements that have already been installed.	For the fastening of Rigidur Flooring Elements: 3.9 x 19 mm for screed structure 2 x 10 mm 3.9 x 22 mm for screed structure 2 x 12.5 mm
Package size	1 kg/bottle	1 kg/bottle	19 mm - 200/500/1,000 pcs./box 22 mm - 1,000 pcs./box
Consumption	approx. 60 g/m²	approx. 60 g/m²	14 pieces/m²
Coverage	17 m²/bottle	17 m²/bottle	approx. 70 m²
Application time	approx. 10 minutes	approx. 10 minutes	–
Application temperature	7-25 °C	5-30 °C	–
Shelf life	12 months in original unopened packaging	12 months in original unopened packaging	unlimited
Storage conditions	in a frost-free location	not frost-sensitive	in a dry location

	Rigips Mineral wool edge insulation strips	**Rigidur leveling fill**	**Rigidur sound insulation fill**	**Rigidur MixBinder**
Product specification	Mineral wool, building material classification A1 acc. to A1 DIN EN 13501-1, melting point 1,000 °C.	Natural expanded clay, reaction to fire classified as A1 acc. to DIN EN 13501-1, non-combustible, extremely resilient to loads, rotproof.	Natural expanded mineral anhydrite, non-combustible. Extremely resilient to loads and rotproof. Reaction to fire classified as A1 acc. to DIN EN 13501-1.	Cementitious binder; fire behavior A1 according to DIN EN 135011
Application area	As sound insulation elements between Flooring Elements/adjacent components and as system components in the creation of fire-proof structures.	As a dry fill to level out floors unevenness from 10 mm or to adjust the heights under c Flooring Elements. Can also be used as a component in the creation of composite fills.	Mechanically bonded fill for improving the noise and footstep sound insulation of storey ceilings and for levelling out uneven floors up to a height of 150 mm.	For creating bound fills for fill heights exceeding 20 mm in combination with Rigips levelling compound.
Package size	Boxes containing 120 pcs.: 10 x 30 x 1,500 mm 40 pcs.: 10 x 75 x 1,500 mm 36 pcs.: 10 x 100 x 1,500 mm	50 l/bag	16 l/bag = 25 kg	15 kg/bag
Consumption	1 piece per 1.25 m wall connection	10 l/m² (at a fill height of 1 cm)	1 l per mm fill height	15 kg/100 l levelling compound
Coverage	180 (30 mm)/60 (75 mm)/54 (100 mm) meters per box	5 m² (at a fill height of 1 cm)	1 bag yields approx. 16 mm fill height per m²	–
Application time	–	–	–	–
Application temperature	–	–	–	not below 5 °C
Shelf life	unlimited	unlimited	unlimited	6 months
Storage conditions	in a dry location	in a dry location	in a dry location	in a dry and protected from frost location

	Rigips VARIO joint filler
Product specification	High polymer-modified material acc. to DIN EN 13963/type 4B.
Application area	For the filling of joints in Rigips Flooring Elements and covering of fasteners.
Package size	5 kg/bag, 25 kg/bag
Consumption	approx. 0.1 kg/m²
Coverage	50 m²/bag
Application time	min. 40 minutes
Application temperature	not below 5 °C
Shelf life	max. 3 months once opened
Storage conditions	in a dry and frost-free location

2 Construction requirements

2.1 Construction site conditions

Construction with gypsum fibreboard systems has now reached a highly technically sophisticated level. The following recommendations and information for the planner/installer are provided to ensure quality installation and clarity about general structural conditions when using gypsum fibreboard systems.
These statements on construction site conditions are supported by the Gypsum Board Industry Group in the Federal Association of the Gypsum Industry: **www.gips.de**

Rigidur note

Is also essential to observe the load classes if the **dry screed** is installed before the planned extension. It is therefore extremely important that suitable protective measures are taken to preserve the installed dry screed, e.g. through full-surface and pressure-resistant covers.

- Rigidur Flooring Elements should **not be installed** in buildings with a permanent relative **humidity of more than 70 %.**
- Gypsum fibreboard systems should be **protected from long-term exposure to moisture before, during and after installation.**
- **Sufficient ventilation** should also be ensured in buildings once installation work is complete.
- Filing work should only be carried out when there are **no major changes in the length** of the gypsum fibreboards are expected as a result of changes in humidity and temperature.
- The material and room temperature must **not fall below** +5 °C for prolonged periods **during bonding and filling works.**

Rigidur note

Observe the **application temperatures** on the packaging of the special Rigidur screed adhesives

Winter construction

- **Rapid, sudden heating** of rooms **must be avoided,** otherwise, stress cracks may occur as a result of changes in length.
- **Direct blowing** of hot or warm air onto the gypsum fibreboard surfaces must be **avoided at all costs.**
- Sufficient **ventilation** must be ensured.

Rigidur note

- Plastering work generally leads to a drastic increase in relative humidity. **Thorough and even ventilation** must be ensured. Screeds should be installed after plastering work has been completed and the plaster has dried.
- **Mineral wool** to be installed must comply with the Ordinance on Hazardous Substances (GefStoffV) and DIN 18165 -1.

2.2 Storage

- Store the elements on a stable and flat surface, preferably on a pallet. Vertical storage may cause deformation.
- During storage, the load-bearing capacity of the substrate must be taken into account.

3 Products and application areas

3.1 Rigidur® Flooring Elements

Rigidur Flooring Elements comprise two gypsum fibreboards joined at the manufacturing stage. The reverse of the Rigidur Flooring Elements can be laminated with various insulating materials to achieve special properties.

The Rigidur Flooring Elements are 500 x 1,500 mm in size and feature a 50 mm wide rebate edge on all four sides. This rebate edge allows frictional and overlapping installation of the boards to create a continuous dry floor screed surface. The outstanding quality properties of the Rigidur Flooring Elements allow a system solution to be tailored to all types of flooring:

- Ideal for new buildings and the renovation/refurbishment of old buildings.
- Tailored to meet sound/heat insulation and fire protection requirements in the construction of residential, office and administrative buildings.
- Suitable for under-floor heating systems.
- Easy installation with prefabricated elements.
- Lighter weight, resulting in lower ceiling loads.
- Quick, clean and dry solution.

Rigidur information

Rigidur Flooring Elements are produced in board thickness combinations of 2 x 10 mm and 2 x 12.5 mm and with/without lamination. The numeric part of the name, e.g. Rigidur Flooring Element 20 or 25, indicates the total thickness of the element (20 or 25 mm thickness), while a subsequent pair of letters indicates the laminated insulation material (MW = mineral wool, HF = soft wood fibre, PS = polystyrene).

Rigidur note

Rigidur gypsum fibreboards have been awarded the seal of approval "Building material tested and recommended by the IBR" by the Institute for Building Biology, Rosenheim. Details and certificates can be found in the "Technical information" section at **rigips.de/downloads**

Rigidur Flooring Elements **20** oder **25**

Rigidur Flooring Elements **30 MW** oder **35 MW**

Rigidur Flooring Elements **45 MW**

Rigidur Flooring Elements **65 MW**

Rigidur Flooring Elements **30 HF** oder **35 HF**

Rigidur Flooring Elements **40 PS** oder **50 PS**

3.2 Application areas for flooring elements

Depending on their composition, Rigidur Flooring Elements can demonstrate special properties with regard to permissible loads, sound/fire protection and thermal insulation. They can also be combined with other products to achieve optimum floor structures.

With the wide range of technical combination options available, the following pages are aimed at helping you select a safe and proven floor structure for your planned area of application.

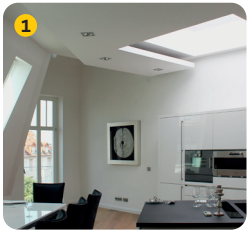
The suitability of Rigidur Flooring Elements for specific uses, also in combination with further insulating materials, is based on the permitted loads set out in DIN EN 1991-1-1/NA:2010-12.

Application areas based on DIN EN 1991-1/NA

Example of use/ area of application	Category based on DIN EN 1991-1/NA (perpendicular loads)	Area load	Individual load
1 **Residential room**	A1, A2, A3	2 kN/m²	1 kN
2 **Office**	B1, D1	2 kN/m²	2 kN
3 **Hospital**	B2	3 kN/m²	3 kN
3 **School, restaurant** (load assignment differs from that stated in DIN EN 1991-1-1/NA:2010-12)	C1	4 kN/m²	3 kN
4 **Cinema, auditorium**	C2	4 kN/m²	4 kN
4 **Museum, concert hall, factory**	B3, C3, C5, D2, E1.1	5 kN/m²	4 kN

These category assignments offer, for example, the following potential application areas for the various Rigidur Flooring Element types:

1 Residential room
Selected systems from underfloor heating suppliers can be used in combination with **Rigidur Flooring Elements 20** to create high-quality dry screeds at a low height. The advantages are short warm-up times and good controllability.



Cosy hot water under-floor heating system with a Rigidur Flooring Element height of just 20 mm

2 Office
Rigidur Flooring Elements 30 MW are also suitable for offices with floor loads of up to 2 kN/m² while offering an improvement in footstep sound insulation of 22 dB on solid floors.

High stability and sound insulation properties with Rigidur Flooring Element MW

3 Hospital
Flooring Elements with soft wood fibre lamination (HF) are also suitable for hospitals and schools with floor area loads of up to 4 kN/m². Rigidur levelling compound can be used to level out uneven surfaces.

Rigidur Flooring Elements HF for highly durable flooring areas

3.3 Application areas for usage classes 1 to 4

Application on stable substrates			Bearing layer	Possible combination with fill and one type of insulation				
Application areas/use/areas of use	Area load 	Individual load 	Suitable Rigidur screed element	Rigidur levelling compound	Rigidur sound insulation fill	Bonded fill	Wood fibre insulation board, e.g. Gutex with a compression strength ≥ 150 kPa	EPS, XPS, PUR with a compression strength ≥ 150 kPa
1 **Residential room** Rooms and corridors in residential buildings, hotel rooms, incl. associated kitchens & bathrooms	2 kN/m²	1 kN	EE 20/25 EE 30/35 HF EE 30/35/45/ 65 MW EE 40/50 PS	10 - 100 mm 10 - 100 mm 10 - 100 mm 10 - 100 mm	15 - 150 mm	≥ 20 mm ≥ 20 mm ≥ 20 mm ≥ 20 mm	≤ 100 mm [1] ≤ 100 mm [1] ≤ 100 mm [1] ≤ 100 mm [1]	≤ 200 mm ≤ 200 mm ≤ 200 mm ≤ 200 mm
2 **Office** Corridors in office buildings, office areas, medical surgeries without heavy equipment, wards and recreation rooms incl. corridors. Sales areas up to 50 m² in residential, office and comparable buildings	2 kN/m²	2 kN	EE 20/25 EE 30/35 HF EE 40/50 PS EE 30/35/45/ 65 MW	10 - 60 mm 10 - 60 mm 10 - 60 mm 10 - 30 mm	15 - 60 mm	≥ 20 mm ≥ 20 mm ≥ 20 mm ≥ 20 mm	≤ 100 mm ≤ 100 mm ≤ 50 mm ≤ 50 mm	≤ 200 mm ≤ 200 mm ≤ 100 mm ≤ 100 mm
3 **Hospital** Corridors and kitchens in hospitals, hotels, nursing homes, corridors in boarding schools, etc.; treatment rooms in hospitals, including operating rooms without heavy equipment; cellars in residential buildings	3 kN/m²	3 kN	EE 20 EE 25 EE 30/35 HF EE 40/50 PS	10 - 60 mm [2] 10 - 60 mm 10 - 60 mm [2] 10 - 30 mm [2]	–	≥ 20 mm ≥ 20 mm ≥ 20 mm ≥ 20 mm	≤ 50 mm ≤ 50 mm ≤ 50 mm ≤ 20 mm	≤ 100 mm ≤ 100 mm ≤ 100 mm ≤ 60 mm
3 **School, Restaurant** Areas with tables, e.g. day-care centres, nurseries, classrooms, cafes, restaurants, dining rooms, reading rooms, reception rooms, staff rooms (load assignment deviating from DIN EN 1991-1-1/NA:2010-12)	4 kN/m²	3 kN	EE 20 EE 25 EE 30/35 HF EE 40/50 PS	10 - 60 mm [2] 10 - 60 mm 10 - 60 mm [2] 10 - 30 mm [2]	–	≥ 20 mm ≥ 20 mm ≥ 20 mm ≥ 20 mm	≤ 50 mm ≤ 50 mm ≤ 50 mm ≤ 20 mm	≤ 100 mm ≤ 100 mm ≤ 100 mm ≤ 60 mm
4 **Cinema, auditorium** Areas with fixed seats, e.g. churches, theatres or cinemas, congress halls, auditoriums, waiting rooms	4 kN/m²	4 kN	EE 20/25 EE 30/35 HF	–	–	≥ 20 mm ≥ 20 mm	≤ 20 mm [2] ≤ 20 mm [2]	≤ 100 mm [3] ≤ 100 mm [3]
4 **Museum, concert hall** Areas that are freely accessible, such as museums, exhibition halls, lobbies of public buildings, hotels and areas where large numbers of people gather, e.g. in buildings such as concert halls. Entrance areas, areas in retail shops and department stores. Areas in factories and workshops with light-duty operations (stationary loads)	5 kN/m²	4 kN	EE 20/25 EE 30/35 HF	–	–	≥ 20 mm ≥ 20 mm	≤ 20 mm [2] ≤ 20 mm [2]	≤ 100 mm [3] ≤ 100 mm [3]

[1] A compression strength ≥ 70 kPa is sufficient
[2] In combination with a Rigidur H load distribution board ≥ 10 mm
[3] Compression strength ≥ 200 kPa

Rigidur notes

- Permitted individual loads are based on the spacing of at least 50 cm between each other and a gap of at least 10 cm to the corner of the room.
- The individual load area is based on a circle with 50 mm diameter.
- The sum of the individual loads must not exceed the maximum load-bearing capacity of the floor structure.
- It is important to ensure that loads on dry floor screed elements do not exceed the permitted individual loads (e.g. loads transported by hand pallet truck).
- Assuming installation is realised correctly, the maximum deformation caused by all individual loads stated will be ≤ 3 mm.

4 Substrates

Rigidur Flooring Elements should be laid on a stable, level and dry substrate and cover its entire surface. Permanent moisture protection in accordance with DIN 18195 must be provided for components directly adjacent to the ground.

4.1 Solid floor

Any unevenness in the existing concrete surface should be levelled out. A 0.2 mm thick PE film should then be laid on top, overlapping each sheet by approx. 300 mm.

Rigidur note

The film can be removed when refurbishing dry, solid floors.

4.2 Wooden beam floor

The load bearing capacity of existing wooden beam floors must be checked. Loose planks or boards must be fixed in place. The substrate must not give way or be elastic. A vapour-permeable trickle protection layer (e.g. soda kraft paper or raw felt board) should be laid on wooden beam floors rather than film.

4.3 Steel trapezoidal sheet floor

Before laying Rigidur Flooring Elements, a full layer of e.g. load-distributing wooden boards, sheet or similar must be installed. Grooves up to 50 mm deep can alternatively be covered with Rigidur levelling compound to a height of 10 mm above the highest point.

4.4 Levelling out unevenness on the bare ceiling

Rigidur Flooring Elements should be laid on a level and dry Substrate and cover its entire surface. Any unevenness in the slab should be levelled in accordance with the following recommendation:

- Levelling up to 5 mm: Fill small surface defects with Rigips VARIO joint filler
- Levelling up to 30 mm: Levelling filler, e.g. weber.floor 4320 alternative weber.floor 4160 or weber.floor 4150
- Levelling from 10 mm: Rigidur levelling compound up to the maximum fill height (according to chapter 3.3)
- Levelling from 20 mm: Bond fill for particularly high compression strength (according to chapter 3.3)

Levelling of unevenness with dry fill or bonded fill

1. **Levelling with Rigidur levelling fill (dry fill)**
   Rigidur levelling compound is a dry fill made from natural expanded clay, suitable for levelling any floor unevenness ≥ 10 mm. It is non-combustible, highly durable and rot-proof. It not only improves thermal and sound insulation, but also increases the fire resistance of floor structures to up to 120 minutes.

2. **Compensation with Rigidur sound insulation fill**
   Rigidur sound insulation fill made from natural anhydrite, suitable for levelling out uneven floors from a fill height of 15 mm. At the same time, it increases the sound insulation of ceiling constructions, especially with wooden beams and solid wooden ceilings.

3. **Levelling using bound fill**
   Rigidur levelling compound is mixed with Rigidur MixBinder to create a bounded fill, which is then applied to the floor. The bound fill exhibits greater compression strength and is thus also capable of absorbing greater loads. It can be used for fill heights ≥ 20 mm and displays outstanding thermal and sound insulation properties. Fill heights ≥ 30 mm also meet fire protection requirements.

Rigidur® levelling compound

Rigidur levelling compound is a loose dry fill, made of natural expanded clay, which is suitable for levelling out any unevenness in the floor.

Technical data	
Grain size	1-5 mm
Volume/weight per bag	50 l, approx. 17.5 kg
Thermal conductivity λ_R	0.16 W/(m·k)
Bulk density at 10 cm bulk height	approx. 35 kg/m²
Residual moisture	max. 1.5 % by volume
Reaction to fire	A1 according to DIN EN 13501-1

Rigidur information

Due to the low weight of Rigidur levelling compound, it is particularly recommended for use in wooden beam ceilings from a structural point of view.

Rigidur® sound insulation fill

Rigidur sound insulation fill made from natural anhydrite for creating a level base layer under Rigidur dry screeds.

Technical data	
Grain size	2 - 6 mm
Volume/weight per bag	approx. 16 l/25 kg
Bulk density at 10 cm bulk height	approx. 160 kg/m²
Consumption per m²	1 l per mm pouring height
Range of coverage	One bag provides approx. 16 mm bulk height per m²
Palletizing	48 bags per pallet (1,200 kg net)
Reaction to fire	A1 according to DIN EN 13501-1

Rigidur information

Rigidur sound insulation fill is suitable for use on wooden beam ceilings to improve sound insulation by weighting the ceiling structure. It also covers pipes and cables and provides a flat, level substrate for the Rigidur dry screed.

Rigidur® levelling compound with Rigidur® MixBinder as bonded fill

Cementitious binding agent for use with Rigidur levelling compound to create a bound fill. Two bags of Rigidur leveling compound are combined with one bag of Rigidur MixBinder.

Technical data	
Bulk density at 10 cm bulk height	approx. 50 kg/m²
Compression strength (N/mm²) – initial test	> 1
Shrinkage (mm/m)	< 1
Yield when mixed 2:1	90 to 100 l
Reaction to fire	A1 according to DIN EN 13501-1

4.5 Preparation works

To avoid impact the transmission of footstep sound between the Rigidur Flooring Elements and the abutting walls, a 10 mm thick edge insulation strips should be inserted between the two (2). In the case of fireproof structures, the Rigips mineral wool edge insulation strip must be used in accordance with the approval and extended to the unfinished floor.

Apply foil/paper

Any required trickle protection films/papers should be laid under cables and pipes. If this is not possible, they should be laid loosely on the ground. The sheets must then be pressed against the existing installations. It is important to ensure that no cavities remain. The paper ensures that levelling material does not flow through any gaps, such as knotholes or open joints, to prevent bulk material from trickling through. The edge of the film (paper) should be approx. 50 mm higher than the expected final height of the dry floor (1).

Laying edge insulation

Rigidur information

The Rigips mineral wool edge insulation strips are available in 30/75/100 mm width x 1,500 mm length.

The installation height is calculated from the finished dry screed height plus the subsequent thickness of the top layer. The edge insulation strips should be attached, ensuring they are fitted closely to the surface of the wall and right into the corners of the room. There should be no curves in the corners under any circumstances. The compound must completely fill out the corners of the room.


Connect edge insulation strips tightly up to the wall corner

4.6 Application of Rigidur® levelling compound

To avoid unnecessary dust when spreading the Rigidur levelling compound, place the bag in the appropriate position on the floor and cut it open at the bottom 1 and lift it away upwards 2.

With deeper fill layers, the levelling compound can be poured between parallel dams of the appropriate height and levelled off using a screed rail. Rigidur levelling compound should then be tipped into any remaining cavities, spread evenly 3 and levelled off again with the screed rail 4. It is particularly important to ensure a flat surface. It is not necessary to compact the fill or use an excessive quantity.

Cut the bag open at the bottom

Carefully pull up the bag

Distribute fill

Flat pouring surface

Rigidur application instructions

- For the application of Rigidur levelling compound, commercially available screed templates are recommended.
- The depth of the fill layer should be a minimum of 10 mm.
- No post-processing is required for fill heights up to 100 mm.
- When laying Rigidur Flooring Elements on dry fill, it is possible to start in the front right-hand corner of the room instead of following the stated laying sequence to avoid stepping on the already levelled fill.
- Installation pipes which should be covered with fill must be laid at least 20 mm apart and covered by a minimum fill layer of 10 mm.

4.7 Application of Rigidur® sound insulation fill

The Rigidur sound insulation fill is applied to the substrate.
Tip: Cut open at the bottom to avoid unnecessary dust exposure 1.

The sound insulation fill can be pre-spread with a rake 2 ...

or with a smoothing trowel 3.

For higher fills, pour on parallel dams at the appropriate height and align the pull off rails 4.

Markings on the wall are helpful for determining the pouring height.

Horizontal levelling rails - integrated spirit levels make levelling easier 5.

A flat surface is achieved by evenly pulling the levelling template over the rails.

Compaction of the fill or excessive placement is not necessary 6.

Rigidur information

- For processing Rigidur sound-absorbing fill, we recommend the use of commercially available pull-off gauges.
- Minimum fill height is 15 mm.
- Pouring heights of up to 150 mm are possible.
- Pipes or cables to be covered must be laid at a distance of at least 20 mm and must also be covered to a height of at least 10 mm.

Due to the high mechanical bonding of the fill, it can be walked on with step islands made of slab sections after level removal 7.

When installing ISOVER Akustic EP 3 impact sound insulation boards, a load-bearing board layer on the fill is not absolutely necessary and the impact sound insulation board is sufficient 8.

The Rigidur Flooring Elements are laid according to the installation guidelines, starting in the rear left-hand corner of the room 9.

4.8 Application the bound fill

Mixing ratio 2 : 1

2 x 50 l Rigidur levelling compound and 1 x 15 kg Rigidur MixBinder.
Manual mixing:
Add approx. 8-10 l of water.
Mechanical mixing:
Add approx. 10-12 l of water.

The bound fill can be mixed and conveyed quickly and cost-effectively using a screed conveyor (e.g. Putzmeister Series M).

Manual processing of the bound fill

Depending on the volume, one or two bags of Rigidur levelling compound are filled into the concrete mixer.

Add ½ or one bag of the 15 kg container of Rigidur MixBinder ...

... and then filling in the required amount of water.

The material should be mixed for approx. 3 to 4 minutes and is then ready to be applied to the floor.

The mixed fill material should be spread over the floor 1. With deeper fill heights, the levelling compound can also be poured between parallel dams 2. before using screed rails to spread and smooth off the fill 3. Once the surface is completely flat the bound fill can be left to dry. Drying times can vary as they are dependent on fill heights 4.

Rigidur application instructions

- Before laying the Rigidur Flooring Elements 20/25, a smooth coat can be applied to ensure a smooth and even surface.
- Experience with the drying times of bonded fills has shown that these are dependent on room temperatures and fill heights. With a construction height of 60 mm, the drying time is approx. 24 to 36 hours at a room temperature of at least 20 °C.

Spreading bulk material

Distribute material

Smooth off using screed rails

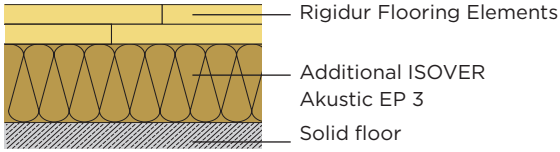
Flat surface of the bonded fill

4.9 Usage of mineral wool insulation boards

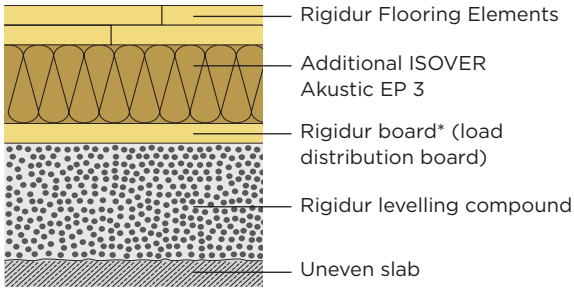
Suitable mineral wool insulating boards can be installed under Rigidur Flooring Elements 25. Rigips recommends ISOVER Acoustic EP 3 up to a thickness of 40 mm. This can significantly improve impact sound insulation. For more details, see chapter 10.3. The maximum permitted single load is 1 kN.

Rigidur information

Floor structure consisting of Rigidur Flooring Elements 25 with additional ISOVER Acoustic EP 3 insulation board up to 40 mm thick on solid floor.

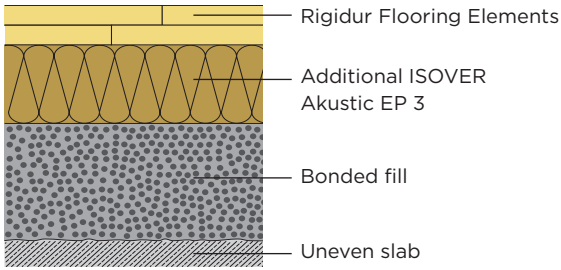


Floor structure consisting of Rigidur Flooring Elements 25 with an additional insulation board up to 40 mm thick and dry fill up to 60 mm deep with a Rigidur H load distribution board laid on top.



* Load distribution board is not necessary with Rigidur sound insulation fill

Floor structure consisting of Rigidur Flooring Elements 25 with an additional insulation board up to 40 mm thick and bound fill.



4.10 Laying the load distribution board

The load distribution board is required to protect the Rigidur levelling compound:

- for higher application areas (see chapter 3.3)
- when laying underfloor heating systems (see chapter 9.2)
- when laying suitable insulation boards

The Rigidur H load distribution board (Rigidur H 10 or Rigidur H 12.5) is laid butt-jointed over the entire surface directly after the Rigidur leveling compound has been levelled. Cross joints should be offset by 200 mm.

The load distribution boards must be placed close to the edge insulation 1 strips and laid flush on the Rigidur levelling compound 2.

Rigidur Flooring Elements, insulation boards or polystyrene support boards for floor heating can be laid directly on the pre-installed load distribution board 3.

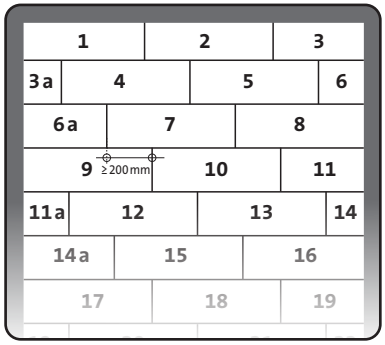
Rigidur installation instructions

During installation, care must be taken to ensure that the levelling compound is not walked on directly. In order to maintain the evenness of the fill, 'walkways' or 'stepping stones' must be provided. Sections of Rigidur boards, wooden material boards or similar are suitable for this purpose.

5 Installation instructions

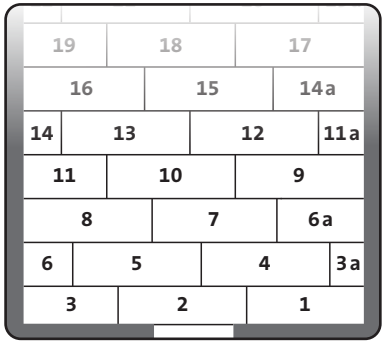
5.1 Laying the Rigidur® Flooring Elements

The Rigidur Flooring Elements should be laid longitudinally, starting from the left-hand corner of the room. The transverse joints of the Elements should generally be offset by at least 200 mm.



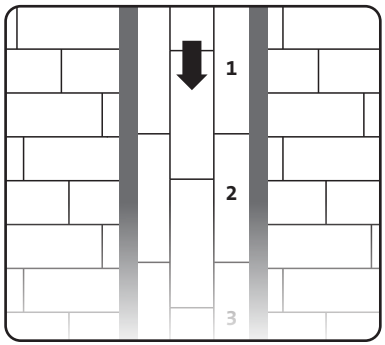
Laying the Flooring Elements, starting from the left-hand corner of the room and work towards the door

When laying Rigidur Flooring Elements onto dry fill, it is possible to start in the front right-hand corner of the room, in deviation from the specified laying sequence.



Laying the Flooring Elements from the front right-hand corner into the room

In corridors or rooms ≤ 1.5 m wide, Rigidur Flooring Elements should be laid lengthways.



arrangement of the Flooring Elements in narrow corridors

The rebate edges of Flooring Elements that abut walls should be sawn off to ensure a full board layer over the substrate.

The rebate edge should be cut off where it abuts a wall

Laying the Flooring Elements on Rigidur levelling compound using "stepping stones"

Rigidur installation instructions

- The longitudinal joints of the first row of Flooring Elements should be aligned in such a way that the subsequent rows can be joined tightly when laid without offsetting.
- The transverse joints should also be a tight fit and flush with the surface.
- Whether it is necessary to fill the joints and fastening points depends on the floor covering to be laid in each individual case (see section 8 "Floor coverings").

5.2 Bonding the Rigidur® Flooring Elements

Apply the Rigidur floor adhesive to the rebate and board edges using the double nozzle.

Rigidur notes

- In order not to interfere with the adhesive setting process of already installed Flooring Elements, we recommend the use of "stepping stones" to avoid standing directly on them when working.
- The adhesive will be fully hardened after approx. 24 hours. The surface is then load bearing and floor coverings can be applied.

Rigidur information

Rigidur Nature Line screed adhesive:
The environmentally safe screed adhesive, which contains no substances subject to specific labelling requirements. It is used for the bonding of rebate and edge area of Rigidur Flooring Elements.

Rigidur screed adhesive:
Polyurethane-based, solvent-free floor adhesive. The expanding adhesive is suitable for bonding Rigidur Flooring Elements and an additional layer of Rigidur H boards.

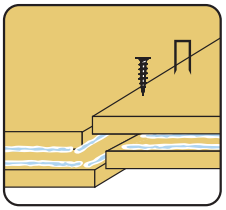
5.3 Fixing the Rigidur® Flooring Elements

The Rigidur Flooring Elements should be fastened in place at the edges on a row-by-row basis as they are laid using Rigidur drywall screws or galvanized, resin-coated staples. (The gap of approx. 250 mm should be left between each Rigidur drywall screw and approx. 150 mm between each staple). An appropriate fastener length should be selected to ensure that the reverse of the Rigidur Flooring Elements is not penetrated.

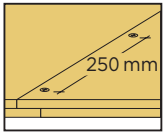
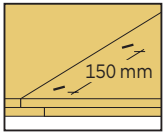
Quick installation with expansion staples

Rigidur notes

- To achieve the required contact pressure, apply your body weight to the installed Flooring Element when screwing or stapling it in place.
- The bonded and screwed/stapled Rigidur Flooring Elements together in the rebate area offers maximum stability.
- If underfloor heating is to be installed in technology, the elements must be fixed with staples and not with screws.

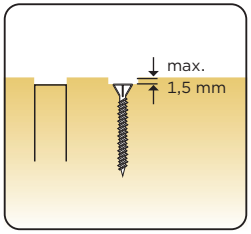


Fasteners for Rigidur Flooring Elements

	Rigidur drywall screws	staples
Elements with 2 x 10 mm Rigidur panels	3.9 x 19 mm	Ø 1.0-1.6 mm Length: 18-19 mm
Elements with 2 x 12.5 mm Rigidur panels	3.9 x 22 mm	Ø 1.0-16 mm Length: 21-22 mm
Gap	250 mm 	150 mm 

5.4 Correct depth for the penetration of screws and staples

When using staples and screws, it is important to ensure the correct penetration depth. The staples and screws should not be sunk too deep, nor should they protrude above the surface, as this will make it impossible to achieve a smooth finish when filling the fixing points. Staples and screws should either be flush with the surface of the board or sunk to a max. depth of 1.5 mm.



Once the screed adhesive has set sufficiently, use a scraper to remove any oozing adhesive from the edges of the rebate, and then use VARIO Joint Filler to fill the joints and any surface defects.

Knock off excess hardened adhesive

Rigidur note

The adhesive is fully hardened after approx. 24 hours. The surface can then bear the permitted loads and be covered with the corresponding flooring

5.5 Inspection after installation the Rigidur® Flooring Elements

In general, DIN 18202 "Flatness tolerances in building construction" can be used when inspecting laid dry screed floors, in so far as no additional agreements have been concluded.

The maximum height offset between the rebate edges of the laid Rigidur Flooring Elements may not exceed 2 mm.

The laid Rigidur Flooring Elements may not yield by more than 3 mm, also at the edges, when the maximum permitted individual load is applied (see chapter 3.3).

Under normal conditions the Rigidur dry floor screed structure will have reached full strength and be ready for floor coverings 24 hours after installation.

The surface of the Rigidur Flooring Elements must be clean, dry and free of grease before being covered. Residues of screed adhesive and excess adhesive in the joint area should be removed to ensure optimum adhesion between the surface of the gypsum fibreboard surface and the products subsequently applied to it.

Any joints which between the Elements (max. 2 mm wide) should simply be filled with Rigips VARIO joint filler and should not be exceed to the surface of Floor Elements.

6 Rooms with a high level of humidity

6.1 Rigidur® Flooring Elements in domestic rooms with a high level of humidity

Rigidur Flooring Elements can also be used as a dry screed in domestic rooms with a high level of humidity. This includes domestic bathrooms and kitchens, bathrooms in hotel rooms and similar areas.

Water exposure classes and application examples
(Extract: Water exposure class according to DIN 18534, table 1)

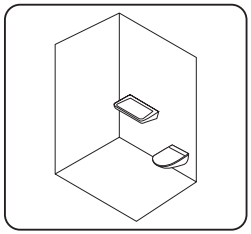
Water exposure class	Exposure to water	Application examples
W0-I	**low** Areas with infrequent exposure to spray water	- Domestic floor areas without drainage e.g. kitchens, utility rooms, guest toilets
W1-I	**moderate** Areas with frequent exposure to water spray or infrequent exposure to process water, without intensification due to accumulation of water	- Floor areas in domestic bathrooms with drain - Floor areas in bathrooms without/with drain without high water exposure from the shower area

Rigidur notes

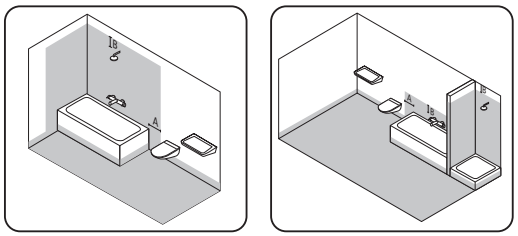
- In bathrooms with level-access showers, the use of Rigidur Flooring Elements is possible if the shower base is installed as a prefabricated element with an integrated slope. We recommend the use of Rigidur Flooring Elements with pressure-resistant insulating materials such as soft wood fibre or EPS lamination.
- Depending on the classification in the aforementioned exposure classes W0-I or W1-I, additional sealing measures are necessary - as with all other screed systems.

Rigidur information

The following illustrations are examples of the requirements for water exposure classes W0-I and W1-I for domestic rooms with a high level of humidity (taken from leaflet 5 of the Bundesverband der Gipsindustrie e.V.).



Toilet and washstand without requirements for bonded waterproofing



Examples of bathrooms with requirements for bonded waterproofing

A > 30 cm, **B** > 20 cm

Low or no exposure to spray water, water exposure class W0-I

Moderate exposure to splash water (splash water area), water penetration classes W1-I

Definition of measures for different water exposure classes (extract)

Water exposure class	Color in the Illustrations	Required measure
W0-I	White	No further sealing measures are necessary between Flooring Elements and the floor covering.
W1-I	Light gray	Additional sealing measures are necessary. Manufacturer-approved systems for gypsum-based prefabricated screeds are suitable. Polymer dispersions sealants, plastic/cement mortar combinations or resin-based thermo-setting sealants can be used here.

6.2 Necessary sealing measures

For the professional sealing of dry screed floors and joints, there is a wide range of components available from different manufacturers. However, the combination of Rigidur Flooring Elements and sealing components from Saint-Gobain Weber offers users a range of proven solutions.

This system consists of the following components:
- **Liquid waterproofing membrane weber.tec 822**
- **Sealing tape weber.tec 828**
- **Sealing and tile adhesive for use in use in walk-in showers weber.xerm 844**

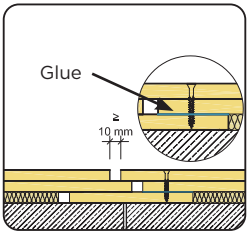
The manufacturer's processing instructions must be observed.

More information on flooring can be found in section 8 "Floor coverings".

7 Joint details

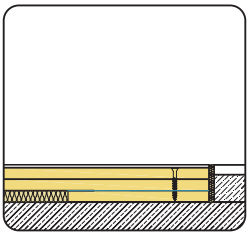
7.1 Expansion joint

If expansion joints already exist in the building shell, they must be continued in the dry floor screed. Expansion joints in the dry floor screed should be located at intervals of at least 15 meters (depending on the shape of the room). They should only be screwed and bonded on one side (see detail).



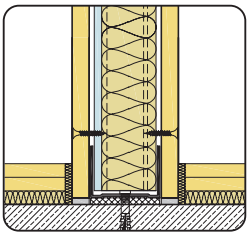
7.2 Joints to solid floor

Joints to solid floors should be underlaid. Remove at least 10 cm of insulation material. The Rigidur Flooring Element should be bonded to the underlay and fastened in place using screws or staples. Edge insulation strips must be provided for separation.



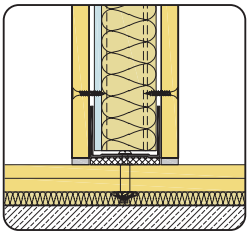
7.3 Joints between panels and unfinished floor

The wall panel should be fastened to the unfinished floor and the Rigidur dry floor screed elements should be placed directly against the wall panel using an edge insulation strip in between (to prevent sound transmission).



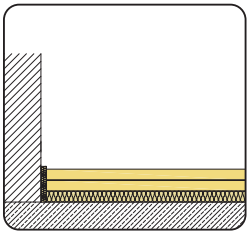
7.4 Installation wall on Rigidur® Flooring Elements

The Stand the wall panels directly on the Rigidur dry floor screed. The maximum permitted loads must be observed (information on fire protection on request).



7.5 Joint between Rigidur® screed to solid wall

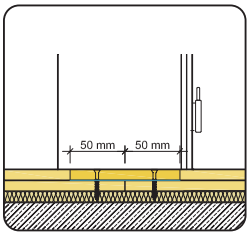
The joint to the solid wall must be provided with a Rigips mineral wool edge insulation strip to separate the construction parts.



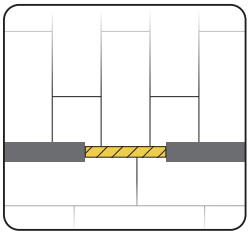
7.6 Installation in doorways

Variant 1
At least 50 mm should be removed from the top board layer of each Flooring Element ending at the doorway.

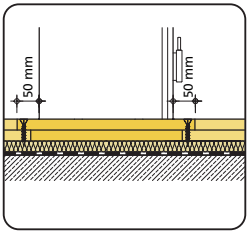
Carefully remove any adhesive residue and apply an adhesive bed to the entire surface of the resulting, clean recess. A precisely fitting piece of Rigidur H board of the appropriate thickness is, then bonded and fastened into place using Rigidur drywall screws.



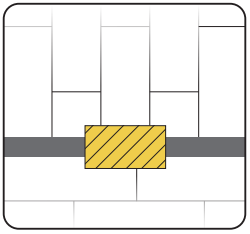
Cross-section diagram


Top view

Variant 2
The door opening should initially Remain clear. Approx. 50 mm should be removed from the subsequent top layers. A piece of Rigidur floor screed cut to the appropriate size (with and/or without lamination) should be bonded into place and fastened using Rigidur drywall screws.



Cross-section diagram

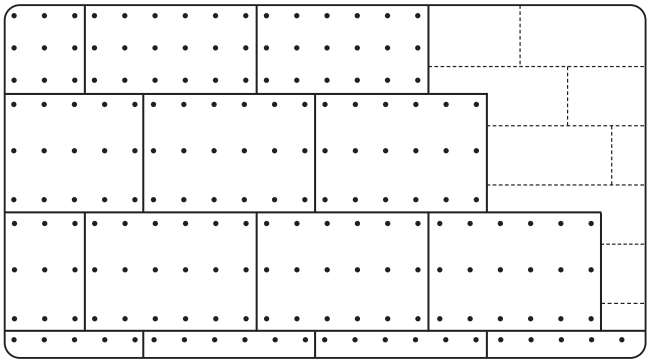

Top view

Rigidur note

Element joints: Any open joints up to 2 mm wide between the Elements should simply be filled flush with the surface with Rigips VARIO joint filler once the adhesive has hardened.

7.7 Installation of an additional layer of Rigidur® H

To increase fire protection or load bearing capacity, an additional layer of Rigidur H 10 or Rigidur H 12.5 can be applied on the Rigidur dry floor screed. To avoid cross joints and ensure that joints are offset by at least 200 mm, the longitudinal edge of the additional layer of Rigidur H boards should be laid parallel to the longitudinal edge of the Flooring Elements. The additional layer of Rigidur H should be laid in position and the outlines of the boards marked on the dry floor screed. The board should then be removed and lines of Rigidur Nature Line screed adhesive applied approx. 100 mm apart in the marked area. The board layer should then be laid in position again and fastened to the dry floor screed. The screws or staples should be inserted in rows along the edges of the boards and down the centre (see laying diagram). Before installing the next board of the additional layer, adhesive should also be applied to the short edges of the already installed boards so that they are completely filled with adhesive when the next board is laid.



Rigidur processing instructions

- Approx. 140 g/m² of Rigidur screed adhesive per square meter is required to lay a third layer.
- A bottle covers approx. 6 m².

7.8 Installation of Rigidur® H boards only

When bonding Rigidur H gypsum fibreboards as dry screeds, the following points must be observed:

- The preferred size is 1,500 x 1,000 mm.
- The first board layer should be laid with the stamped, rough side facing up and must be free of dirt and dust before applying the second layer to ensure optimum bonding.
- Rigidur screed adhesive should be applied in the same way as described in the notes on installing an additional layer of boards. Adhesive should also be applied to the short edges of the boards already laid in the second layer to ensure that they are filled with adhesive when the next board is laid.
- Where possible, the adhesive should only be applied to an area equivalent to one board at a time to ensure that the maximum processing time is not exceeded.
- The joints in the second layer must be offset from those in the first layer by at least 200 mm.
- Lay the second layer with the s tamped, rough side facing down.
- Once the second layer has been laid, it should be fastened into place immediately using staples set max. 150 mm apart or Rigidur drywall screws set max. 250 mm apart longitudinally/transversely.

8 Floor coverings

For the professional installation of floor coverings on Rigidur dry screed floors, a wide range of components from different manufacturers is available. Saint-Gobain Weber, UZIN or MAPEI offer proven solutions for the professional installation of floor coverings on Rigidur Flooring Elements.

Rigidur notes

- The processing information for Rigidur Flooring Elements, relevant trade guidelines and instructions specified by the adhesive, mortar and floor covering manufacturers must be observed.
- The adhesives and mortars used must be expressly suitable for use with gypsum-based dry floor screeds. If the adhesive manufacturer specifies system-based priming, this must be observed irrespective of any pre-priming of the Flooring Elements.
- Any expansion joints in the dry floor screed and substrate must be taken into account when laying floor coverings and appropriate expansion joints must be included.
- The permitted individual loads must be observed for bathtub and shower feet. Where the dry floor screed is subject to point loads, we recommend installing the feet directly onto the slab while taking account of sound insulation aspects.

8.1 Pre-treatment

When bonding floor coverings to Rigidur Flooring Elements, the Elements must be primed to limit moisture absorption. Otherwise, it is possible that the required setting times for the adhesive will be inaccurate and that the properties stated by the manufacturer will not be exhibited. Primers specifically approved for use with gypsum-based dry floor screeds by the manufacturer are suitable.

Levelling filler must be used with thin floor coverings.
The board joints should first be filled with Rigips VARIO joint filler flush with the surface.

Rigidur note

If the floor covering manufacturer has specified the use of a specific primer or filler in their system, it must be ensured that it is suitable for gypsum-bound dry floor screeds.

8.2 Chair caster resistance

As a result of the specific material properties of the gypsum fibreboards used, Rigidur Flooring Elements are ideally suited to withstanding the stresses caused by chair casters. It is important to ensure that the selected floor covering meets chair caster resistance requirements.
Special chair casters which meet the requirements of DIN EN 985 and EN 12529 should also be used on such chair caster-compatible floor coverings.

8.3 Elastic floor coverings

All thicker elastic floor coverings such as textile carpets may be laid directly after installation of the Rigidur Flooring Elements and flush filling of joints and fastener heads with Rigips VARIO joint filler.

Rigidur note

Floor coverings such as carpets should be fixed in place using e.g. adhesive carpet tape. This should ensure that the covering can subsequently be removed without residues or damage to the screed. Alternatively, a liquid adhesive can be used. The manufacturer's installation recommendations should be observed.

Where floor coverings are to be bonded to the surface of the finished dry floor screed, Rigips recommends using the structures set out in the tables below.

If using PVC or similarly thin floor coverings, a layer of levelling filler should be applied to the Flooring Elements to ensure a homogeneous and completely smooth surf ace.

The relevant trade guidelines and processing instructions from the adhesive and flooring manufacturers must be observed.

System structure for bonding elastic floor coverings using Saint-Gobain Weber products

Floor covering	Carpet	Linoleum	PVC in sheets	PVC in tiles and planks (PVC design coverings)
Substrate	Install Rigidur Flooring Elements in accordance with instructions. Seal joints with Rigips VARIO joint filler			
Preparation of the substrate	clean, grind, vacuum off			
Priming of the substrate	weber.floor 4716 bonding primer, 1:1 thinned			
Filler	weber.floor 4033 fibre fine filler in 2-3 mm			
Adhesive	weber.floor 4820 linoleum and textile covering adhesive		weber.floor 4890 Universal adhesive	weber.floor 4818 design flooring adhesive

Processing according to the manufacturer's instructions in the technical data sheets

System structure for bonding elastic floor coverings with UZIN* products

Floor covering	Textile coverings and needle fleece	PVC, LVT and Rubber	Linoleum
Substrate	Install Rigidur Flooring Elements in accordance with instructions. Seal joints with Rigips VARIO joint filler.		
Preparation of the substrate	clean, grind, vacuum off		
Priming the substrate	UZIN PE 360 PLUS ~ 100-150 g/m² roll out thinly		
Filler	UZIN NC 112/UZIN NC 170 1.5 kg/mm² for NC 170 LevelStar and 1.7 kg/m² for NC 112		
Adhesive	UZIN UZ 88/ UZIN UZ 57 B 1 ~ 250-450 g/m²	UZIN KE 66 A 2 ~ 300 g/m²	UZIN LE 44 B 1 ~ 350 g/m²

Processing according to the manufacturer's instructions in the technical data sheets
* UZIN Application Technology: + 49 (0)731 4097257

Installation recommendation on Rigidur dry floor screed elements with MAPEI products

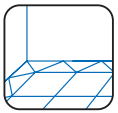
Floor covering	Textile coverings and needle-punched nonwoven	PVC/CV	Linoleum	Rubber	LVT[1)]
Substrate	Install Rigidur dry floor screed elements according to processing instructions				
Preparation of the substrate	Clean, grind, vacuum off, preparation according to DIN 18365 flooring work standard Observe the Federal Association of Screed and Floor Covering (BEB) guidelines "Assessing and preparing substrates, laying elastic and textile flooring, laminate, parquet and wood block parquet" (latest edition)				
Priming the substrate	Eco Prim T Plus (diluted with water at a ratio of 1: 2)				
Levelling (filler where necessary)	Ultraplan Xtra [2)] Planitex Fast				
Adhesive/bonding	Ultrabond Eco TX3, Ultrabond Eco TX2	Ultrabond Eco V4 SP, Ultrabond Eco V4 Evolution	Ultrabond Eco 530, Ultrabond Eco V4 SP	Ultrabond Eco V4 SP	Ultrabond Eco 4 LVT, Ultrabond Eco V4 SP
Tooth profile	TKB B1/B2	TKB A1/A2	TKB B1	TKB A1/A2	TKB A1/ A2
Consumption	approx. 350 - 450 g/m²	approx. 250 g/m²	approx. 350 g/m²	approx. 250 g/m²	approx. 250 g/m²

The technical data sheets of the products and currently valid standards and directives must be observed.

[1)] LVT (= Luxury Vinyl Tile) refers to PVC design floor coverings in panel form.

[2)] When laying ceramic and natural stone with cementitious adhesive mortars, an intermediate primer coat of ECO PRIM T PLUS is required after drying.

8.4 Tiles and natural stone coverings



Stoneware, natural stone and other tiles which can be installed using the thin-bed method can in principle be laid on all Rigidur Flooring Elements.

System for bonding ceramic floor tiles and natural stone slabs with products manufactured by Saint-Gobain Weber

Floor covering	Ceramic coverings	Natural stone coverings
Substrate	Install Rigidur dry screed elements according to the installation instructions	
Preparation of the substrate	clean, grind, vacuum off	
Priming of the substrate	weber.prim 801 [1)]	
Leveling filler	weber.plan 813-20	
Waterproofing	weber.xerm 844	
Application tile mortar	weber.xerm 850 Plus weber.xerm 852 weber.xerm 859F weber.xerm 860 weber.xerm 861	weber.xerm 859F weber.xerm 862 weber.xerm 866F
Tooth profile	Apply with toothed comb - comb size depends on panel format	
Joints grout	weber.fug 875 Ultracolor Plus	weber.fug 875F

The technical guidelines for the products and currently valid standards and directives must be observed.

[1)] For large-scale levelling and filling work, the substrates should be primed with weber.prim 802.

System for bonding ceramic floor tiles and natural stone slabs with products manufactured by MAPEI GmbH

Floor covering	Ceramic coverings	Natural stone coverings
Substrate	Install Rigidur dry screed elements according to the installation instructions	
Preparation of the substrate	clean, grind, vacuum off	
Priming of the substrate	Eco Prim T Plus (diluted with water 1:2)	
Leveling filler	Ultraplan Xtra/Planitex Fast [1)]	
Waterproofing	Mapelastic	
Application tile mortar	KERAFLEX MAXI S1 ZERO KERAFLEX VARIO QUICK S1 Consumption: 1.1 kg/m²/mm ULTRALITE S1 FLEX ZERO ULTRALITE S1 FLEX QUICK ULTRALITE S2 FLEX ULTRALITE S2 FLEX QUICK Consumption: 0.8 kg/m²/mm	Elastorapid Consumption: 1.6 kg/m²/mm MAPESTONE MAXI S1 ZERO Consumption: 1.1 kg/m²/mm
Tooth profile	Apply with toothed comb - comb size depends on panel format	
Joints grout	weber.fug 875 Ultracolor Plus	weber.fug 875F

The technical guidelines for the products and currently valid standards and directives must be observed.

[1)] When laying ceramic and natural stone with cement-bound adhesive mortars, an intermediate primer with ECO PRIM T PLUS is required after drying.

Rigidur notes

If the following points are observed, ceramic floor tiles with an edge length of up to 1,200 mm and natural stone slabs up to an edge length of 800 mm can be laid on Rigidur Flooring Elements.

- The maximum permissible individual loads for the tile sizes specified in the table are 2 kN (residential and office areas). Where the load-bearing layer structure in the application area only permits 1 kN (see chapter 3.3), the maximum individual load when using tiles may also only be 1 kN (residential area).
- Large-format tiles (edge length > 330 mm) must meet the requirements of a t least class Bla in accordance with EN 14411.
- The aspect ratio of the tile dimensions in combination with a Rigidur H ≥10 mm load distribution board can be a maximum of 1:3. Without a load distribution board, the aspect ratio is limited to 1:2.
- Unfinished ceilings must be sufficiently rigid. In particular, the upper panelling of wooden beam ceilings must not deform beyond a dimension of l/500 under variable loads.
- Butt-jointing tiles do not provide sufficient protection against moisture.
- Pre-soaking of the tiles is not permitted.

8.5 Parquet flooring

In principle, parquet flooring can be laid on all variants of Rigidur Flooring Elements, but the following rules and restrictions must be observed.

The construction site conditions must allow acclimatisation of the Flooring Elements. The room temperature should be 15-18 °C when installing parquet flooring. The ideal relative humidity range is between 50-65 %. A relative humidity of less than 40 % or more than 75 % should be avoided.
DIN 18356 "Parquet flooring work" and DIN EN 13226 should be applied by analogy.

Parquet types and usability on Rigidur Flooring Elements

- Floating parquet or laminate flooring can be used without any problems. The direction of the wood fibres is of no consequence.
- Two- or three-layer multi-layer parquet can be bonded to the Flooring Element (see following pages).
- The entire surface can be bonded (see following pages) for solid parquet made from non-swelling wood types.
- Solid wood parquet, which is susceptible to swelling, is not suitable for bonding to Flooring Elements, as the transfer of strong expansion and shrinkage forces to the Flooring Element would result in significant damage.
- Other solid parquet structures such as wood block parquet and solid parquet boards (e.g. in accordance with EN 13629) should also not be bonded to Rigidur Flooring Elements.

Rigidur processing instructions

- An edge joint of at least 10 - 15 mm must be observed through the screed, parquet and underlay layers.
- Do not fasten skirting boards to the floor.
- Fibre orientation changes such as those in basket weave and herringbone patterns reduce the forces generated by the deformation of the wood under varying moisture conditions.
- When bonding parquet, especially solid parquet, moisture levels in the wood must be in line with standards to prevent strong expansion or shearing forces. The moisture level in the wood must be allowed to acclimatize to the expected ambient humidity in the room before installation.
- When Appropriate edge distances to adjacent components must be observed when bonding parquet.
- When realising floating installation and bonding to a decoupling insulation layer, the expected point loads must be considered.
- The Flooring Element joints do not need to be filled when installing parquet flooring.
- Water-based synthetic resin dispersion adhesives are not suitable as their water content may cause deformation of the structure.
- Solvent-based single- or multi-component adhesives should not be used due to concerns about their ecological and work properties.

Bonding and installation recommendation from the Saint-Gobain Weber product range for parquet bonded to the substrate

Type of parquet	Multi-layer parquet	Strip parquet 19-22 mm	Solid parquet 8-16 mm
Substrate	Install Rigidur Flooring Elements according to the installation instructions. Seal joints with Rigips VARIO joint filler		
Preparation of the substrates	clean, grind, vacuum off		
Priming of the substrate (if filling is not required)		Optional: **weber.floor 4718** 1K-PUR quick primer, approx. 100-150 g/m²	
Priming of the substrate (if filling is required)	**weber.floor 4716** bonding primer 1:1 thinned with water	Optional: **weber.floor 4716** bonding primer 1:1 thinned with water	
Filler	**weber.floor 4033** fibre fine filler in 2-3 mm	**weber.floor 4033** fibre fine filler in 2-3 mm	
Adhesive for decoupling insulation	not required	**weber.floor 4832** 1-K STP parquet adhesive/ weber.floor 4836 1-K STP parquet adhesive, thrust resistant	
Decoupling insulation	not required	**weber.sys 832** impact and decoupling board laid crosswise/diagonally to the parquet	
Parquet adhesive	**weber.floor 4832** 1-K SMP multi-layer parquet adhesive	**weber.floor 4832** 1-K STP parquet adhesive/ weber.floor 4836 1-K STP parquet adhesive, thrust resistant	

Processing according to the manufacturer's instructions in the technical datasheets.

Bonding and installation recommendation from the UZIN* product range for parquet bonded to the substrates

Type of parquet	Multi-layer parquet where joint filling is required	Multi-layer parquet with no joint filling	Strip parquet 19-22 mm	Solid parquet 8-16 mm
Substrate	Install Rigidur Flooring Elements according to the installation instructions			
Preparation of the substrates	clean, grind, vacuum off			
Priming of the substrate (if filling is not required)		UZIN PE 414 BITURBO ~ 100-150 g/m², roll out thinly		
Priming of the substrate (if filling is required)	UZIN PE 360 PLUS ~ 100-150 g/m², roll out thinly	–		
Filler (if required)	UZIN NC 112 TURBO/ NC 170 3 mm thick, approx. 1.7 kg/m²	–		
Adhesive for decoupling insulation	not required	not required	UZIN MK 92 S Toothing B 3, ~ 800 g/m²	UZIN MK 92 S Toothing B 2, ~ 600-800 g/m²
Decoupling insulation	not required	not required	UZIN Multimoll Top 4/ UZIN Soft Sonic transverse/diagonal to the parquet	UZIN Multimoll Fleece crosswise/diagonally to parquet
Parquet adhesive	UZIN-MK 250/UZIN MK 200 Toothing B11 ~ 1,000-1,200 g/m²		UZIN-MK 92 S/UZIN MK 250 Toothing B11 ~ 1,000-1,200 g/m²	

Processing according to the manufacturer's instructions in the technical datasheets

* UZIN Application Technology: + 49 (0)731 4097257

Bonding and installation recommendation from the MAPEI product range for parquet bonded to the substrates

Type of parquet	Mosaic parquet 8 mm	Lamparquet 10 mm	Industrial parquet 10/23 mm	Strip parquet 22 mm	Multi-layer parquet 2-/3-layer	Solid wood block parquet
Substrate	Install Rigidur dry floor screed elements according to the installation instructions					
Preparation of the substrates	Clean, grind off, vacuum, preparation in accordance with the DIN 18356 parquet work standard Observe the Federal Association of Screed and Floor Covering (BEB) guidelines "Assessing and preparing substrates, laying elastic and textile floor coverings, laminate, parquet and wood block parquet" (latest edition)					
Priming Primer before levelling	Eco Prim T Pro (Diluted with water at a ratio of 1: 2)					
Priming before direct installation	Eco Prim PU 1K Turbo					
Leveling If filler required *	Ultraplan Xtra Planitex Fast					
Decoupling Decoupling membrane	If required: Mapetex fleece	Mapetex fleece	Mapetex fleece	Mapetex fleece	Not required	After consultation with AWT
Adhesive	Ultrabond Eco S968 1K Ultrabond Eco P909 2K Fast					
Tooth profile	TKB B2	TKB B2	TKB B2	TKB B2		
Consumption	approx. 450 g/m²	approx. 450 g/m²	approx. 450 g/m²	approx. 450 g/m²		
Bonding Adhesive	Ultrabond Eco S968 1K Ultrabond Eco P909 2K Fast				Ultrabond Eco S948 1K Ultrabond Eco S940 1K	After consultation with AWT
Tooth profile		TKB B3	TKB B3/B11	TKB B11	TKB B3/B11	
Consumption	approx. 800 - 900 g/m²	approx. 800 - 900 g/m²	approx. 800 - 1.100 g/m²	approx. 1.000 - 1.100 g/m²	approx. 800 - 1.100 g/m²	
Protection Surface protection	Lacquer: Ultracoat HT 2K Oil: Ultracoat Hard Oil Wax Plus					

* Where evenness does not meet the DIN 18202 standard
The technical guidelines for the products and currently valid standards and directives must be observed.

9 Heating systems

9.1 Under-floor heating systems

Under-floor heating systems create a pleasant and comfortable warmth and open up design scope by significantly increasing creative design options in room planning. Rigidur Flooring Elements enable the installation of under-floor heating systems not only in new buildings but also when renovating existing buildings.
Non-laminated Rigidur Flooring Elements are particularly well-suited here. The heating systems must be explicitly approved for use in combination with dry floor screeds by the manufacturer.

Rigidur Flooring Elements for under-floor heating systems

Rigidur Flooring Element	Installation height [mm]	Thermal conductivity [W/(m*K)]
EE 20	20	0.35
EE 25	25	0.35

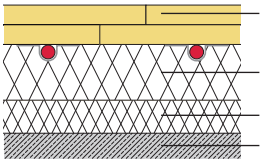
Rigidur information

RIGIPS has tested several combinations Rigidur Flooring Elements with the systems of under-floor heating manufacturers. The systems of the following companies are recommended in combination with Rigidur Flooring Elements:
- **Athe Therm Heizungstechnik GmbH**
- **herotec GmbH**
- **IVT GmbH & Co KG**
- **mfh systems GmbH** (formerly Jupiter Heizsysteme GmbH)
- **PYD® -Thermosysteme ml - Heiztechnik GmbH**
- **REHAU Trockensysteme**
- **Roth Werke GmbH**
- **Uponor GmbH (System Siccus)**
- **thermodämm Flächenheizungssysteme GmbH**
- Please confirm the suitability of under-floor heating systems from other manufacturers before installation.

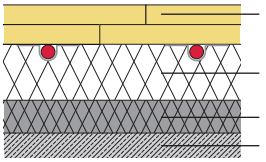
The Combinations of the tested under-floor heating systems and Rigidur Flooring Elements are suitable for use on stable substrates (without additional insulation layers or fill) up to max. area load 2 kN/m² and 2 kN individual load, unless otherwise stated by the under-floor heating system manufacturer. The "Ideal Öko"system from mfh systems GmbH and the "Roth Clima Comfort Panel System" from Roth Werke GmbH permit individual loads of 3 kN on firm substrates.

Further insulation layers below the under-floor heating system
The options for any structurally necessary insulating layer on a stable substrate below the rigid foam layer containing the pipes (supporting board) are listed below. All options apply for both Rigidur Flooring Elements. This combination is suitable for use up to an area load of 2 kN/m² and a point load of 1 kN (residential area).

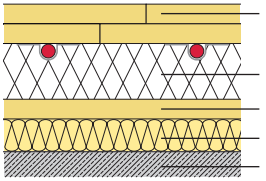
Rigidur information



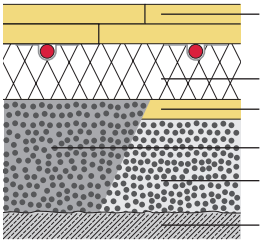
Maximum installation height 100 mm



Maximum installation height 150mm



ISOVER Akustic EP 3 mineral wool insulation board up to a thickness of 20 mm



Rigidur levelling compound: max. fill height 60 mm, bond fill for depths exceeding 20 mm

Rigidur notes

- The flow temperature of the under-floor heating system should be limited to max. 50 °C.
- The installation guidelines of the manufacturers of underfloor heating systems must also be observed.

Rigidur tip

The under-floor heating system should be separated from the Rigidur Flooring Elements by a 0.2 mm thick layer of PE film to ensure acoustic decoupling of the materials.

9.2 Under-floor heating with milling technology

The milling and installation technology from ECOtherm GmbH offers a particularly lean and economical under-floor heating system, e.g. for renovations in residential buildings. It has the necessary instruction and technical equipment for the professional installation of a milled underfloor heating system in the Rigidur Flooring Elements. This ensures, for example, that the maximum milling depth of 16 mm is not exceeded under any circumstances, that the necessary clearances are maintained and that the heating elements lie flat in the pipe routing. Other service providers are not approved by RIGIPS for milling in Rigidur Flooring Elements and the suitability for use of such dry screed constructions in accordance with our documentation is not guaranteed.

Rigidur information

The following Rigidur Flooring Elements can be used for this type of under-floor heating system in milled technology:
- Rigidur Flooring Elements 25
- Rigidur Flooring Elements 35 HF
- Rigidur Flooring Elementse 35 MW, 45 MW and 65 MW.
The minimum installation height of the entire floor, including under-floor heating, is just 25 mm with a level subfloor. Only 35 mm for impact sound requirements.

Installation
First, the Rigidur dry floor screed is laid in accordance with the installation instructions. Then ECOtherm mills channels directly into the previously laid Rigidur Flooring Elements to accommodate the underfloor heating 1.

Heating hoses are then inserted. Due to the special geometry of the milled channels, no further fixing aids are required 2.

Rigidur note

The Rigidur Flooring Elements are not fixed with screws, but only with staples in accordance with chapter 5.3.

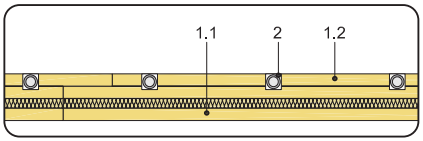
Finally, the remaining recesses are sealed with Rigips VARIO filler (Rigips VARIO joint filler). A maximum of 0.9 kg of Rigips VARIO filler is required per m² 3.

Top coverings
Surface coverings suitable for under-floor heating can be used, taking into account the information in chapter 8 "Floor coverings". For all elastic floor coverings, including carpets, the entire surface must be filled as usual.

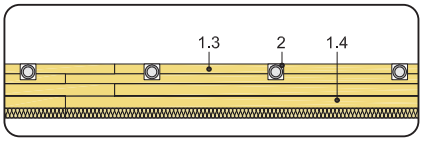
Fire protection
With fire protection requirement F 90, the construction height of the dry screed including insulation and ECOtherm underfloor heating is only at least 48 mm.

The following construction variants of the ECOtherm floor heating system in combination with Rigidur Flooring Element on wooden or solid ceilings with a fire protection requirement of F 90 from above have been verified by experts.

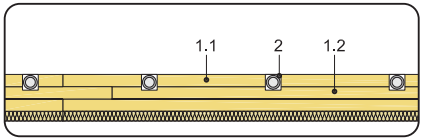
Structure from bottom to top:
Variant 1
Level substrate + Rigidur H 12.5 gypsum fibreboard + Rigidur Flooring Element 35 MW



Variant 2
Level substrate + Rigidur Screed Element 30 MW + Rigidur Flooring Element 20



Variant 3
Level substrate + Rigidur Flooring Element 35 MW + Rigidur H 12.5 gypsum fibreboard



1.1 Rigidur H gypsum fibreboard, d = 12.5 mm
1.2 Rigidur Flooring Element 35 MW
1.3 Rigidur Flooring Element 20
1.4 Rigidur Flooring Element 30/35 MW
2. Milling for underfloor for under-floor heating hoses 16 x 16 mm

Application areas
The combination of Rigidur Flooring Element and the underfloor heating system from ECOtherm GmbH corresponds to the application area of service class 1 with 2 kN/m² surface load and 1 kN individual load. The Rigidur leveling compound can be installed up to a thickness of 60 mm to achieve a level subfloor. The requirements for the bare floor apply in accordance with chapter 4.

When installing construction variants 1 - 3 and a level, load-bearing substrate, the area of application can be extended to service class 2 with 2 kN/m² surface load and 2 kN individual load. If a leveling fill is required to achieve a level substrate, the bonded Rigidur leveling compound must be installed without a thickness limit.
The requirements for the unfinished floor apply in accordance with chapter 4.

! Rigidur note

Additional impact sound insulation can be provided with separately laid ISOVER EP 3 boards. The structure must then be agreed with RIGIPS in advance.

9.3 Electric heating systems

Electric heating systems for floor temperature control can be used on all variants of Rigidur Flooring Elements. The heating mats should be installed on the Flooring Elements using the thin-bed method. The levelling filler or flex mortar must be approved by the manufacturer for use with gypsum- bound dry floor screeds and electric floor heating systems. The manufacturer's priming instructions must also be observed. Only systems which include floor sensors for temperature control can be used.

The temperature control system must ensure that temperatures inside the floor structure do not exceed 50 °C. All materials mentioned in the corresponding chapter 8 "Floor coverings" are suitable unless any further restrictions are imposed by the under-floor heating system manufacturer.

10.1 Fire protection with Rigidur Flooring Elements

Rigidur Flooring Elements	Fire resistance class in conjunction with	
	Solid floors Trapezoidal profile floors Wooden beam floors	Heated screed system [1]
Rigidur Flooring Elements 20	F 30	F 30
plus Rigidur H ≥ 10 mm	F 60	F 60
or plus loose fill ≥ 30 mm	F 90	F 90
or plus bound fill ≥ 30 mm	F 90	F 90
Rigidur Flooring Elements 25	F 60	F 60
plus Rigidur H ≥ 10 mm	F 90	F 90
or plus loose fill ≥ 30 mm	F 90	F 90
or plus bound fill ≥ 30 mm	F 90	F 90
Rigidur Flooring Elements 40/50 PS	F 30	
plus Rigidur H ≥ 10 mm	F 60	
or plus loose fill ≥ 30 mm	F 90	
or plus bound fill ≥ 30 mm	F 90	
Rigidur Flooring Elements 30/35 HF	F 90	
plus Rigidur H ≥ 10 mm	F 120	
or plus loose fill ≥ 30 mm	F 120	
or plus bound fill ≥ 30 mm	F 120	
Rigidur Flooring Elements ≥ 30/35/45/65 MW	F 90	
plus Rigidur H ≥ 10 mm	F 120	
or plus loose fill ≥ 30 mm	F 120	
or plus bound fill ≥ 30 mm	F 120	

Solid floors: Minimum thickness according to structural analysis, but at least 80 mm
Trapezoidal profile floors: Dimensioning according to structural analysis, additional layer of Rigidur H below the screed, d ≥ 10 mm or Rigips RF fireproof board ≥ 12.5 mm required.
Wooden beam floors: Wooden beam floors without/with insertion and formwork comprising wooden of tongue-and-groove panels, d ≥ 16 mm, ρ ≥ 600 kg/m³ or tongue-and-groove boards/planks, d ≥ 21 mm.

[1] Optional underlay or intermediate layer comprising of pressure-resistant insulating materials, thickness ≤ 30 mm, at least building material classification B2 according to DIN 4102-1 (e.g. polystyrene, rigid foam, mineral wool). Under any possible structure (Rigidur, loose fill, bonded fill) and suspended ceiling. Solid, wooden beam and steel trapezoidal sheet ceilings are possible as suspended ceilings.

Rigidur information

To ensure that building components offer minimum or increased level of sound insulation according to their use, corresponding requirements are defined in standards and guidelines. The central standard in this context is DIN 4109. Part 1 (DIN 4109-1: 2018-01) regulates the minimum airborne and footstep sound insulation values that must be observed. DIN 4109-5:2020-08 contains corresponding suggestions for defining increased noise protection. The following table provides an extract of the relevant values for ceilings.

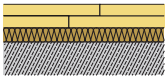
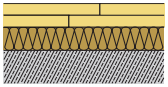
10.2 Airborne and footstep sound insulation requirements for protection against sound transmission from an external living or working area

	Minimum requirements according to DIN 4109-1:2018-01		**Increased requirements according to DIN 4109-5:2020-08**	
	req. R'_w [dB]	req. $L'_{n,w}$ [dB]	req. R'_w [dB]	req. $L'_{n,w}$ [dB]
Multi-storey buildings with apartments and workspaces				
Ceilings between apartments	≥ 54	≤ 50	≥ 57	≤ 45
Accommodation buildings				
Ceilings	≥ 54	≤ 50	≥ 57	≤ 45
Schools and comparable educational buildings				
Ceilings between classrooms or similar rooms	≥ 55	≤ 53	-	-

10.3 Sound insulation using Rigidur Flooring Elements on a solid floor

	Sound insulation Footstep sound insulation improvement ΔL_W in dB	
	Solid ceiling	Solid ceiling + 60 mm bound fill or Rigidur sound insulation fill
Rigidur FE 20/25	16	
Rigidur FE 30/35 MW	22	26
Rigidur FE 45 MW	25	29
Rigidur FE 65 MW	28	32
Rigidur FE 30 HF	19	
Rigidur FE 40/50 PS	16	

10.4 Sound insulation using Rigidur Flooring Elements in combination with ISOVER Akustic EP 3 on a solid floor

	Sound insulation Impact sound insulation improvement ΔL_W in dB	
		Solid ceiling
Rigidur FE 20 with ISOVER Akustic EP 3, 12 mm	25	
Rigidur FE 20 with ISOVER Akustic EP 3, 20 mm	28	

10.5 Thermal insulation using Rigidur Flooring Elements

	Thermal insulation Thermal resistance R in $m^2 K / W$
Rigidur FE 20	0.06
Rigidur FE 25	0.07
Rigidur FE 30 MW	0.31
Rigidur FE 35 MW	0.32
Rigidur FE 45 MW	0.64
Rigidur FE 65 MW	1.21
Rigidur FE 30 HF	0.30
Rigidur FE 35 HF	0.31
Rigidur FE 40 PS	0.56
Rigidur FE 50 PS	0.81

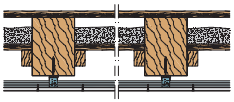
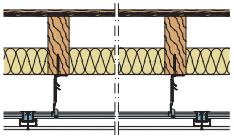
10.6 Sound insulation with Rigidur FE – old construction ceilings

Old construction ceilings

Basic construction: 24 mm plank covering screwed, ceiling beams 140/200, center distance 848 mm, insertion with weighting m′ = approx. 80 kg/m², Rigips hangers, Rigips CD profiles RigiProfil 60/27, Rigips planking

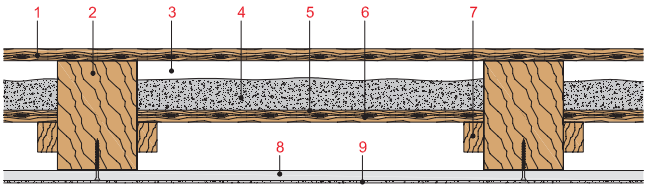
Footstep sound $L_{n,w}$ in dB
Airborne sound R_w in dB

Panelling for suspended ceiling in mm

	Old construction ceiling without FE	Rigidur FE 20/25 2 x 10 or 2 x 12.5 Rigidur H			Rigidur FE 30/35 HF 2 x 10 or 2 x 12.5 Rigidur H + 10 mm wood soft fibreboard				Rigidur FE 30/35 MW 2 x 10 or 2 x 12.5 Rigidur H + 10 mm mineral wool lamination				Rigidur FE 45 MW 2 x 12.5 Rigidur H + 20 mm mineral wool lamination				Rigidur FE 65 MW 2 x 12.5 Rigidur H + 40 mm mineral wool lamination			
		60 mm loose fill	100 mm loose fill	≥ 100 mm bonded fill	without	60 mm loose fill	100 mm loose fill	≥ 100 mm bonded fill	without	60 mm loose fill	100 mm loose fill	≥ 100 mm bonded fill	without	60 mm loose fill	100 mm loose fill	≥ 100 mm bonded fill	without	60 mm loose fill	100 mm loose fill	≥ 100 mm bonded fill
 soundproofed Rigips U-direct hangers	≥ 1 x 12.5 Rigips RF	65	54	52	55	56	55	54	53	55	52	50	48	54	50	49	46	53	47	48	45
		43	64	65	69	59	64	65	67	62	67	68	71	63	68	69	73	64	71	71	74
	≥ 2 x 12.5 Rigips RF	62	51	49	52	53	52	51	50	52	48	47	44	51	47	46	43	50	46	45	42
		45	65	67	71	61	65	67	69	64	70	71	74	65	71	72	75	66	72	73	76
 Rigips nonius hanger + 40 mm ISOVER Akustic TF	≥ 1 x 12.5 Rigips RF	56	47	44	51	52	51	50	49	51	46	41	43	50	45	40	42	49	42	39	41
		53	73	74	74	64	67	68	70	65	74	76	76	66	75	76	76	67	76	77	77
	≥ 2 x 12.5 Rigips RF	53	44	41	48	49	48	47	46	48	43	38	38	48	43	38	38	46	41	38	38
		54	74	74	74	66	69	70	72	67	76	78	78	68	77	78	78	69	78	78	78

Old construction slab with coarse plaster (reed mats with loam rendering) without Rigidur Flooring Elements

$L_{n,w}$ = 69 dB und R_w = 47 dB without Rigidur Flooring Elements



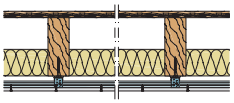
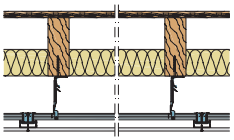
1 24 mm chipboard, screwed
2 160/220 ceiling beams, center distance = 848 mm
3 Cavity
4 Slide-in unit with weighting, m′ = 80 kg/m²
5 24 mm rourgh-sawn insertion bodars
6 Trickle protection
7 18 mm rough-sawn ceiling boarding
8 20 mm reed mats
9 Loam rendering, m′ = 15 kg/m²

10.7 Sound insulation with Rigidur FE – new construction ceilings

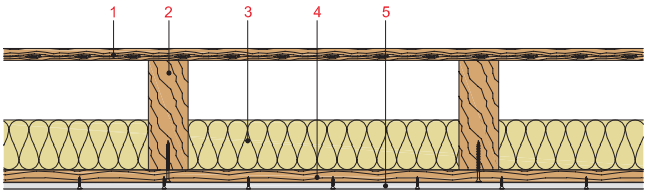
New construction ceiling

Basic construction:
Rigidur Flooring Elements*;
22 mm chipboard, screwed;
ceiling beams 80/220,
center distance = 625 mm;
cavity with 100 mm mineral wool ISOVER Akustic TP 1,
r = 14.8 kg/m³;
Rigips-dependenger*;
Rigips CD profiles 60/27;
Rigips planking*

* According to design variant: see table

Footstep sound $L_{n,w}$ in dB Airborne sound R_w in dB	Panelling suspended ceiling in mm	New construction ceiling without FE	Rigidur FE 20/25 2 x 10 resp. 2 x 12.5 Rigidur H			Rigidur FE 30/35 HF 2 x 10 bzw. 2 x 12.5 Rigidur H + 10 mm wood soft fibreboard				Rigidur FE 30/35 MW 2 x 10 resp. 2 x 12.5 Rigidur H + 10 mm mineral wool lamination				Rigidur FE 45 MW 2 x 12.5 Rigidur H + 20 mm mineral wool lamination				Rigidur FE 65 MW 2 x 12.5 Rigidur H + 40 mm mineral wool lamination			
			60 mm loose fill	100 mm loose fill	≥ 100 mm bonded fill	without	60 mm loose fill	100 mm loose fill	≥ 100 mm bonded fill	without	60 mm loose fill	100 mm loose fill	≥ 100 mm bonded fill	without	60 mm loose fill	100 mm loose fill	≥ 100 mm bonded fill	without	60 mm loose fill	100 mm loose fill	≥ 100 mm bonded fill
 soundproofed Rigips U-direct hangers	≥ 1 x 12.5 Rigips RF	60	50	48	51	51	48	45	47	53	46	44	41	53	44	42	41	51	43	41	41
		57	70	71	72	65	72	74	74	62	73	74	76	65	74	76	77	69	75	77	78
	≥ 2 x 12.5 Rigips RF	56	46	44	47	49	44	43	43	49	42	41	38	49	40	39	37	47	39	37	36
		60	73	74	75	66	75	76	77	65	76	78	78	68	77	78	79	72	78	79	80
 Rigips nonius hanger	≥ 1 x 12.5 Rigips RF	62	52	50	53	56	52	51	50	56	49	48	46	55	48	46	44	53	47	45	44
		57	69	70	71	64	71	72	73	62	72	73	74	64	73	74	75	68	74	76	77
	≥ 2 x 12.5 Rigips RF	58	48	46	49	52	49	47	46	52	43	41	40	51	42	40	39	49	41	39	38
		60	72	73	74	67	74	75	76	65	75	78	79	67	76	78	80	71	77	80	81

New build slab with gypsum board:
$L_{n,w}$ = 73 dB and R_w = 43 dB without Rigidur Flooring Elements



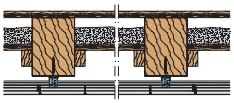
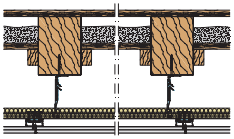
1 22 mm chipboard, screwed
2 80/220 ceiling beam, center distance = 625 mm
3 Cavity with 100 mm mineral wool ISOVER Akustic TP 1, ρ = 14.8 kg/m³
4 24 mm battens, center distance = 625 mm
5 12.5 mm GK board, screwed and filled m′ = 10.2 kg/m²

10.8 Sound insulation with Rigidur FE and Rigidur sound insulation fill - old construction ceiling

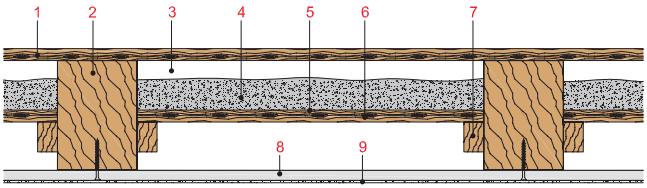
Old construction ceiling

Basic construction: 24 mm plank covering screwed, ceiling beams 140/200, center distance 848 mm, insertion with weighting m′ = approx. 80 kg/m², Rigips hangers, Rigips CD profiles RigiProfil 60/27, Rigips planking

Footstep sound $L_{n,w}$ in dB
Airborne sound R_w in dB

	Panelling suspended ceiling in mm	Old building ceiling without Screed elements	Rigidur FE 30/35 MW 2 x 10 resp. 2 x 12.5 Rigidur H + 10 mm mineral wool lamination			Rigidur FE 45 MW 2 x 12.5 Rigidur H + 20 mm mineral wool lamination			Rigidur FE 20/25 2 x 10 resp. 2 x 12.5 Rigidur H + 20 mm ISOVER AKUSTIC EP 3		
			without	30 mm sound insulation fill	60 mm sound insulation fill	without	30 mm sound insulation fill	60 mm sound insulation fill	without	30 mm sound insulation fill	60 mm sound insulation fill
 soundproofed Rigips U-direct hangers	Sound-decoupled U-shaped direct hangers ≥ 2 x 12.5 mm Rigips fire protection board	54 47	45 61	40 66	38 71	43 61	41 65	36 74	42 62	38 69	35 73
 Rigips Nonius hanger + 40 mm ISOVER Akustic TF	Rigips-Nonius suspension + 40 mm TF Twin ≥ 2 x 12.5 mm Rigips fire protection board	42 64	36 71	33 76	31 82	34 73	32 79	30 85	34 74	30 79	27 85

Old construction slab with reed mats and clay plaster:
$L_{n,w}$ = 66 dB and R_w = 41 dB without Rigidur Flooring Elements



1 24 mm chipboard, screwed
2 160/220 ceiling beams, center distance = 848 mm
3 Cavity
4 Slide-in unit with weighting, m′ = 80 kg/m²
5 24 mm rough sawn insert boards
6 Trickle protection
7 18 mm rough sawn ceiling formwork
8 20 mm reed mats
9 Clay plaster, m′ = 13 kg/m²

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