SINTEF

SINTEF Certification

No. 2441

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Teknisk Godkjenning

SINTEF Byggforsk confirms that

wedi wet room board

meets the requirements for product documentaton of the Norwegian Planning and Building Act (Plan- og Bygningsloven) and the associate Regulations on technical requirements for building works (Forskrift om tekniske krav til byggverk (TEK10)) with the characteristics, applications and conditions of use as specified in this document

1. Owner of the approval

wedi GmbH
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Germany
www.wedi.de

2. Manufacturer

wedi GmbH, Emsdetten, Germany

3. Product description

wedi wet room board consists of a core consisting of extruded polystyrene, XPS (Styrofoam IBA). The board has a polymer modified cement-based surface with baked-in fibre-glass reinforcement on both sides.

The boards must be used with a coating membrane sealing joints and lead-ins. The following coating membrane systems have been approved

- Schönox HA and matching sealing details (SINTEF Technical Approval 2389)
- F1 Membrane (SINTEF Technical Approval 2579) with NT sealing details:
- NT Flexi collar for use at wall box
- NT collars for use at other lead-ins in wall
- NT sealing tape

Board thicknesses and formats appear from Table 1. The boards have straight edges. The surface is grey and the core material is blue.

The boards have the following dimensional tolerances:

- thickness: ± 3mm
- length + 10mm
- width + 3mm

The board system delivered includes fittings, screws and washers.

Table 1
Dimensions and weights of wedi wet room boards

Thickness mm	Weight kg/m²	Standard dimension mm x mm
4	3.1	1250 x 600
6	3.2	1250 x 600
10	3.3	1250 & 2500 x 600
12.5	3.4	2500 x 600
20	3.6	2500 x 600
30	4.0	2500 x 600
40	4.2	2500 x 600
50	4.6	2500 x 600
80	5.6	2500 00

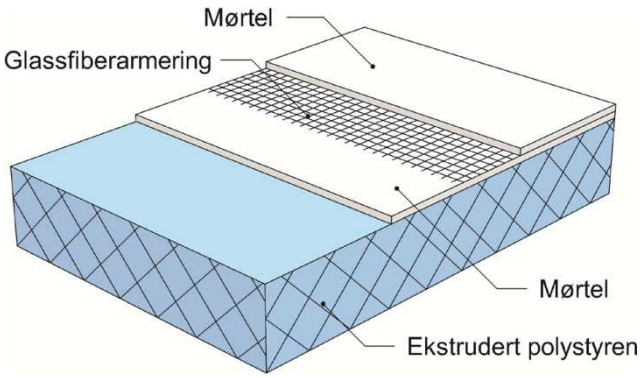

Fig. 1
Structure of wedi wet room boards. The boards are symmetrical with reinforced mortar on both sides.

4. Applications

wedi wet room board is used for walls in bathrooms and washrooms in residences, hotels and rooms with similar water loads. The boards can be used as a waterproof layer on walls when reinforcement tapes and wet room membranes are used to seal joints and anchorages. When used on floors in wet rooms, the entire board surface must be covered by a membrane. Other conditions of use are found in Section 7.

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The boards can be mounted directly on timber frames or existing supports of e.g. brick or concrete, including underground walls. The boards must always be covered by ceramic tiles or similar non-flammable cladding. Additional nails or additional board layers must be added to fasten heavy objects and support handles.

5. Characteristics

Material characteristics

Table 2 shows the product characteristics of the core material and Table 3 shows the product characteristics of wedi wet room board.

Table 2
Product characteristics of the core material (Styrofoam IBA)

Characteristic	Value	Testing method
Declared thermal conductivity, λ_D	0.035 W/(mK)	DIN 4108
Water vapour resistance 30mm thick board, equivalent air space thickness, s_d	4.6m	EN 12086
Water absorption at immersion	< 1.5 vol%	EN 12087
Compressive strength	250kN/m²	EN 826

Table 3
Product characteristics of wedi vet room board

Characteristic	Value	Testing method
Flexural moment capacity:	110Nmm/mm	DIN 53293
Flexural regidity - 10mm plate	95kNmm²/mm	DIN 53293
Shock resistance	3 x 120Nm 1)	ETAG 003
Adhesion between plaster and core material	0.6N/mm²	EN 1607

1) 20mm boards mounted on timber frames with a counter cc distance of 600mm resist 3 shocks of 120Nm
12mm boards mounted on timber frames with a counter cc distance of 300mm resist 3 shocks of 120Nm

Waterproofness

When installed acc. to the specifications of Section 7, the boards have passed functional testing of watertightness according to "Guideline for European Technical Approval of watertight covering kits for wet room floors and or walls" (ETAG 022), Annexes F and E.

Reaction to fire

Fire safety class of wedi wet room board without coating has not been established. Subject to ceramic tiles being covered, the surface complies with fire safety class In1 acc. to NS 3919.

6. Environmental conditions

Hazardous and environmentally hazardous chemicals

The product does not contain any prioritised environmental toxins or other relevant substances in quantities considered to be hazardous or environmentally hazardous. Prioritised environmental toxins include CMR, PBT and vPvB substances.

Indoor climate effect

The product is considered not to emit particles, gases or radiation with any negative effect on the indoor climate or with any health significance.

Waste handling/recycling possibilities

wedi wet room board must be sorted as residual waste during disposal. The product must be delivered to an authorised waste collection centre for energy recycling.

Environmental declaration

No environmental declaration (EDP) has been prepared for wedi wet room board.

7. Conditions of use

Storage and conditioning

The boards should be covered during storage and transport, e.g. to prevent dust and impurities from the building site from reducing adhesion to the products to be bound to the boards. Do not expose the boards to flame, other sources of ignition or organic solvents. During long-term storage the product should be protected from UV radiation.

Substrates

When installing wedi wet room boards, the substrate must comply with the requirements for directional and surface deviations for tolerance class B (2) as set out in NS 3420.

Vapour seal

Walls and decks facing the outdoor climate or facing rooms with no or limited heating must have a water vapour resistance inside with an equivalent air space thickness $s_d \geq 10$m if the wall is in the wet zone. Although only parts of the wall is in the wet zone, the entire wall must have a water vapour resistance inside with an equivalent air space thickness $s_d \geq 10$m if the wall faces the outdoor climate or rooms with no or limited heating. Alternatively, the moisture technical characteristics must be documented specifically in each case.

wedi wet room boards have a lower water vapour resistance than the limit value. In the given cases, wedi wet room boards must be applied a coating membrane on the warm side of the boards which together with wedi wet room boards gives a water vapour resistance with equivalent air space thickness of $s_d \geq 10$m. No vapour seal/plastic film need to be used behind the boards.

Sealing pipe lead-ins, joints and transitions

In the wet zones all board joints, transitions between the floor and walls, corners, lead-ins and screw fastenings must be sealed with a coating membrane with matching sealing details such as reinforcement tapes and collars. The coating membrane must cover the reinforcement tape in a width which is wider than the width of the tape. Use pipe collars for lead-ins, see Fig. 2.

The transition between the wall and the floor must be covered by a membrane, below and above the screeds, is shown in Fig. 3 and Fig. 4.

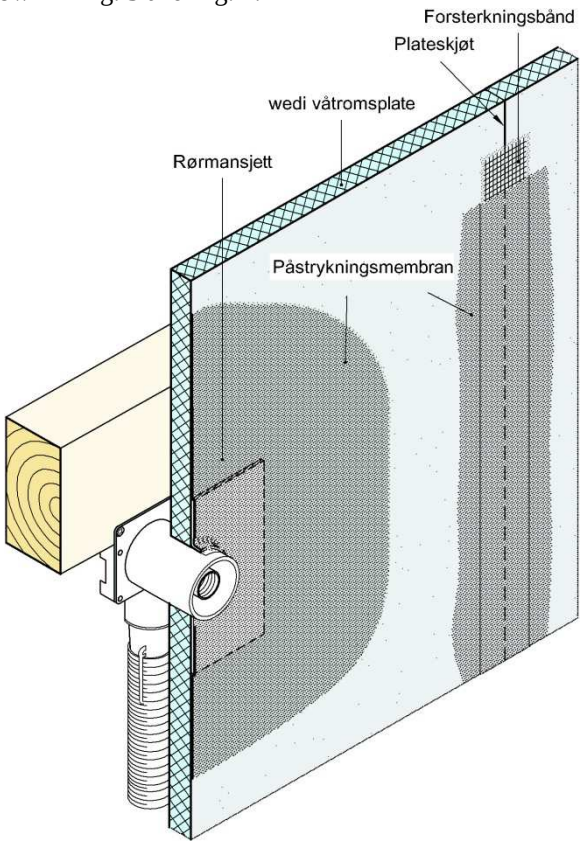

Fig. 2
Principle of waterproofing around pipe lead-ins and above joints

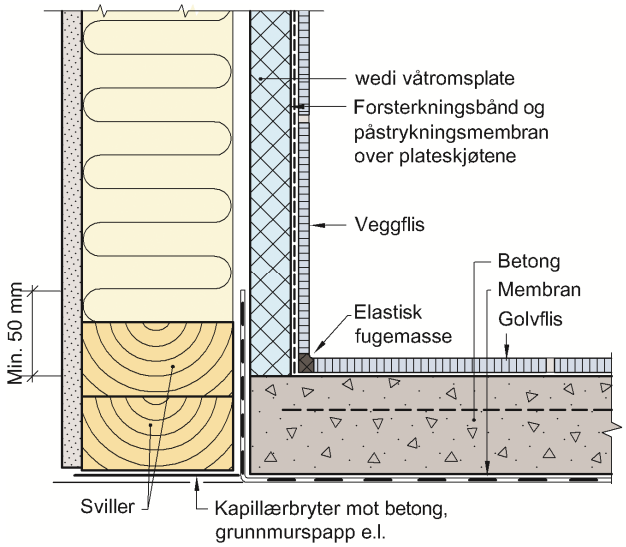

Fig. 3
Example of transition between tiled wall and floor with a membrane below the screed.

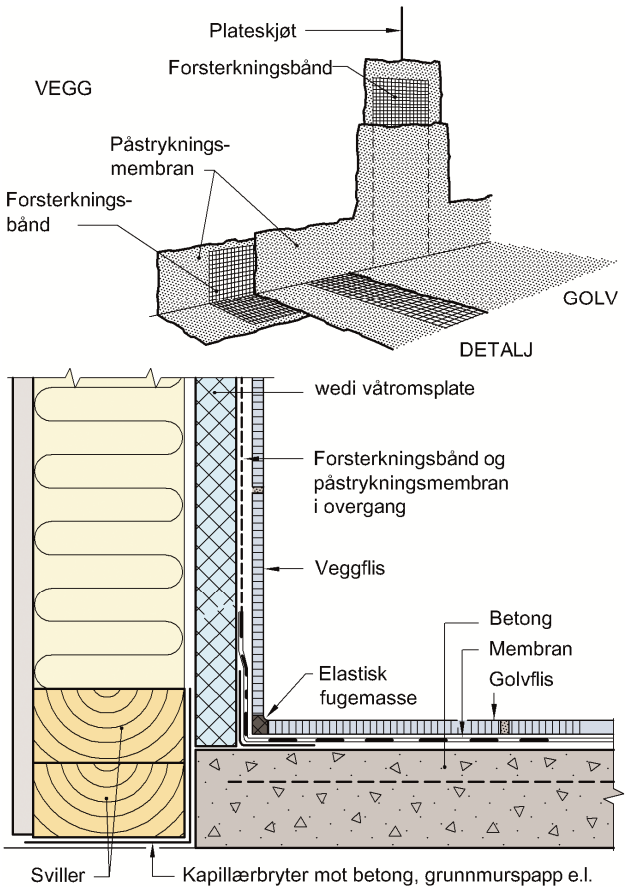

Fig. 4
For coating membrane in joints on walls and transitions between the floor/wall.

Installation on timber frames

20mm boards can be mounted directly on timber frames with a max. counter cc distance of 600mm. 12mm boards can be mounted directly on timber frames with a max. counter distance of 300mm. Thinner boards require a substrate of building boards or rough panels or the like. Additional nails or additional board layers must be added to fasten heavy objects such as sinks, support handles at the toilet, etc.

The boards must be fastened along the joints using screws and washers for the board system. The recommended max. c/c distance between the anchorages is 600mm. When mounting on building boards/rough panels, use 5 screws and washers @ m², corresponding to 8 screws and washers per 1.5m² board. At least 3 screws and washers are recommended evenly distributed on the middle of the board. Screws of a min. length of 20mm longer than the board thickness must be used.

Mounting on walls and concrete

When mounting directly on walls or concrete, the boards must be mounted using cement-based tile-glue with min. 6mm toothing. Alternatively, the boards can be fastened with dowels which are min. 20mm longer than the board thickness. See Fig. 5. Remove all loose wallpaper, plaster, paint and all dust before fastening the boards; check the absorption of the substrate.

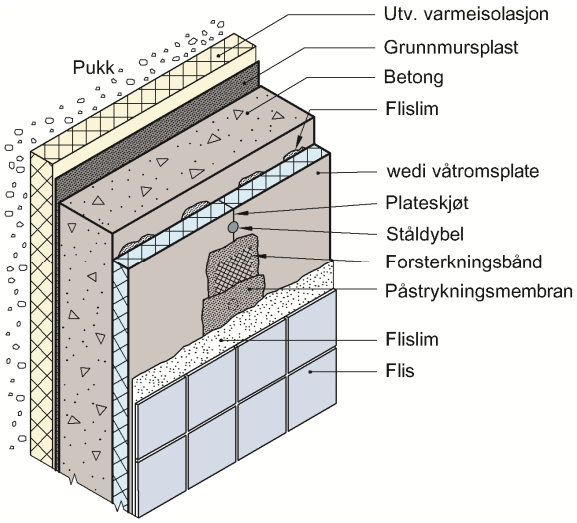

Fig. 5
Example of using wedi wet room board on an underground wall.

Surface treatment

wedi wet room boards must always be tiled. The max. water absorption capacity of the tiles is 20%.

8. Production control

wedi wet room boards are subject to monitoring product and production control carried out by SINTEF Byggforsk according to a contract for SINTEF Byggforsk Technical Approval.

The manufacturer, wedi GmbH, has a quality system certified by TÜV Rheinland Group according to ISO 9001, , reg. no. 01 100 042158.

9. Basis of the approval

The approval is based on the characteristics which are documented in the following reports:

- SINTEF Byggforsk. Testing wedi wet room board with F1 Membrane and NT sealing details. Report SBF2014F0201 of 17.6.2014.
- SINTEF Byggforsk. Testing wedi wet room board with Schönox HA membrane and sealing details. Report SBF2013F0067 of 18.3.2013.
- Danish Technological Institute, Aarhus, Denmark. Testing flexural strength. 0307/459101 of 24.1.2012.
- SINTEF Byggforsk. Testing resistance to soft shocks, 12mm and 20mm boards, ETAG 003. 3D017803 of 9.8.2008.
- Forschungsinstitut für Wärmeschutz e. V. Munich. Bestimmung der Wasserdampfdurchlässigkeit nachDIN EN 12086. Prüfbericht Nr. R-26/06 of 09.5.2006.
- Forschungsinstitut für Wärmeschutz e. V. Munich. Wasseraufnahme bei langzeitigem, völligem Eintauchen nach DIN EN 12089, Prüfverfahren 2A. Prüfbericht Nr. P2-05-081 of 20.10.2005.
- Forschungsinstitut für Wärmeschutz e. V. Munich. Wärmedämmstoffe aus extrudiertem Polystyrolschaum (XPS) nach DIN EN 13164. Prüfbericht Nr. U1.01-24/04 of 8.11.2004.
- Institut tBU BmbH. Prüfbericht Nr. 2.1/32165/551.0.1-2005 of 6.01.2006 (flexural rigidity and flexural moment capacity)
- Materialprüfungsamt Nordrhein-Westfalen MPA NRW. Prüfung auf Schwerentflammbarkeit nach DIN 4102-1. Prüfzeugnis Nr. 230004536 of 14.10.2004 (burning behaviour).

10. Marking

The boards must be marked with the name of the manufacturer and product and the production time. The marking must be applied either directly to the boards or to the packaging. It can also be marked by the approval mark of the Technical Approval: TG 2441.

Approval mark

11. Responsibility

The owner/manufacturer has independent product liability under applicable law. Use-based demands cannot be made with SINTEF Byggforsk in addition to the specifications of NS 8402.

12. Case administration

The project manager of the approval is Thale S. Plesser, SINTEF Byggforsk, dept. Bygninger og installasjoner, Oslo, Norway.

for SINTEF Byggforsk

Hans Boye Skogstad
Approval manager