

ISOMODUL — a smart profiled solution

Isomodul is an insulation board that is intended for both inside and outside works: it can be used as an insulation material for facades, walls, ceilings; it can be plastered etc.

Isomodul fibreboards insulation elements have qualities, which are not only required for ecological buildings: they guarantee natural ventilation of the building, they have excellent thermal insulation qualities and they may be used as ceiling or floor balancing and mass adding elements. Due to their brilliantly simple side profile, Isomodul insulation elements can be used as sound and thermal insulation elements in a variety of places, e.g. for muting the sounds of footsteps when constructing floors; as wall, ceiling and roof insulation elements or as inner or outer cladding for buildings with wooden frame.

Installation on floor

1) Isomodul is used here as an acoustic and thermal insulation material. Even with thin flooring materials, optimal insulation can be achieved when covering the surface completely. The integrated installation moulding is to be used for fastening underlay, short boards or parquet by nailing.

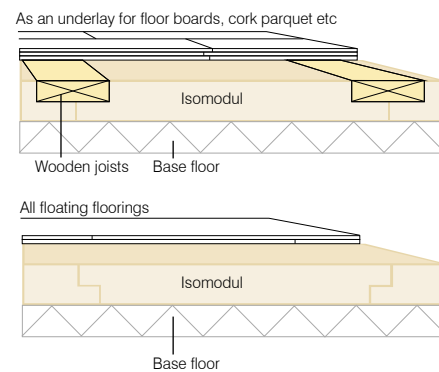
2) As a substrate for gluing floor covering materials or installing ceramic tiles. Whether installed with wooden joists or full cover, Isomodul will ensure step-proof floor with no sound bridges.

3) When installed with full cover, Isomodul provides an excellent acoustic and thermal insulation while being a substrate for gluing different boards, fitted carpets, linoleum, cork parquet etc.

4) Due to Isomodul's great durability, you can install even very thin floorings like parquet, cork and linoleum, laminate and other floating floorings directly on it. The thickness of insulation layer is not limited.

NB! Isomodul may also be used with water floor heating. The boards economise energy costs by storing heat.

Thickness	mm	50 ± 0,5
Width	mm	625 ± 2
Length	mm	1200 ± 2
Right angleness	mm/m	≤ 2
Linearity of edges	mm/m	± 1,5
Level of humidity	%	4,9
Density	kg/m ³	≥ 230
Thermal conductivity λ _s	W/mK	≤ 0,049
Thermal resistance	m ² /K/W	0,98...1,04
Reaction to fire R	euroclass	E
Expansion (Isomodul Plus)	%	≤ 7
Water receptivity when immersed into water for short term	kg/m ²	≤ 2,0
Vapour permeability	kg/m ² sPa	≥ 1,0 × 10 ⁻⁹
Vapour diffusion resistance coefficient μ _{dry, cap}	-	5
Weighted sound reduction index R _w	dB	22
Bending strength	N/mm ²	≥ 1,5
Tensile strength parallel to surface	kPa	≥ 10 (min 600)
Tensile strength perpendicular to surface	kPa	≥ 30
Useful dimensions	mm	625 x 1160 = 0,725 m ²
Number of boards in pallet	pcs	63
Surface area of boards on pallet	m ²	47,25



Installation on ceiling

Isomodul can be used as an acoustic and thermal insulation material for ceilings.

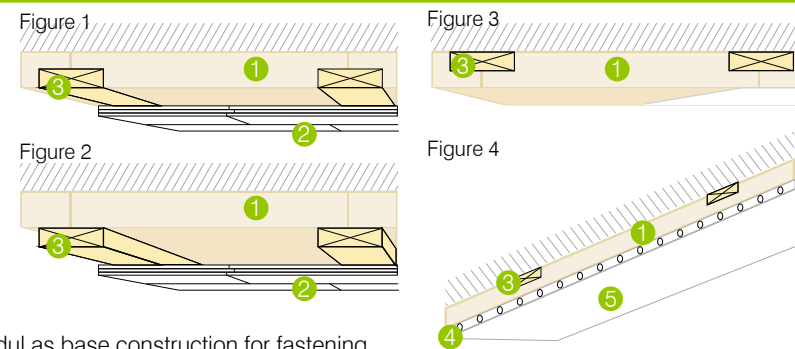
1) When using Isomodul insulation elements in ceiling as follows, you can achieve a space-saving acoustic and thermal insulation with the help of integrated installation moulding and by using different coating materials (wood, gypsum board etc).

2) Isomodul insulation boards can be used for installing backside-ventilated ceiling materials. This solution can also be used in rooms with no heating. When using Isomodul as base construction for fastening construction boards at 625 mm intervals, a complete insulation with no gaps will be achieved. Integrated installation mouldings allow for a space-efficient installation of the boards.

3, 4) A very simple and cost-effective solution is to install Isomodul on the ceiling and just plaster it. Ideal to be used with clay plaster in case of heated ceilings.

ATTENTION! Depending on the construction, the Isomodul's warm side may need a vapour barrier. Follow the corresponding physico-constructural criteria.

In case of unheated rooms or exterior constructions, use Isomodul Plus (impregnated).



- Figures 1-4
1. Isomodul
 2. Isotex ceiling panel
 3. Installation moulding
 4. Ceiling heating
 5. Plaster

Installation on wall

1) With Isomodul it is possible to attain good thermal and acoustic insulation and a finished surface with one work cycle (the wall can be plastered afterwards). Excellent room climate can be achieved by using clay plaster. When using Isomodul insulation element outdoors, they can be covered with special plaster.

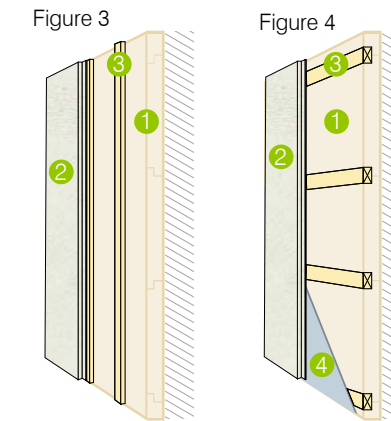
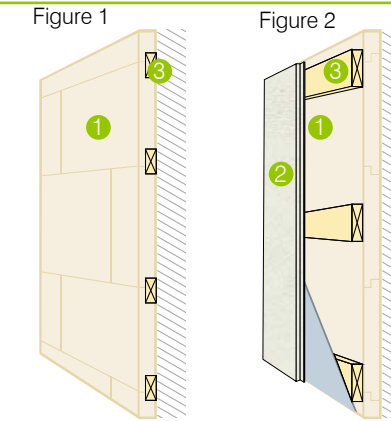
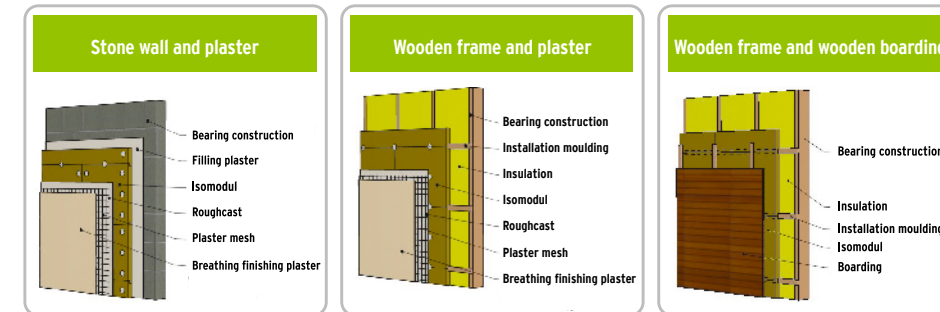
2) Isomodul provides a complete thermal and acoustic insulation for walls. Due to the integrated installation moulding, a space-efficient base construction is formed for installation of different wall covering materials. For example, you can hide electrical cords between Isomodul and wall panels or fill the gaps with mineral wool in order to provide extra insulation. If you wish to cover the wall with wallpaper, follow the instructions in the insulation board section (see Installation of insulation boards).

3) Isomodul boards, that are installed with full cover and have backside ventilation, are mainly used as thermal and/or acoustic insulation materials for cold rooms or exterior constructions.

4) In the same way, Isomodul can be used as a base construction for attaching construction boards with 625 mm distance. This also creates a space-efficient, full cover base construction, which can be used as an underlay for different wall covering materials. When insulating exterior walls from the inside, a vapour barrier film may be installed on Isomodul and installation moulding, if necessary.

Installation on exterior constructions

Isomodul Plus (impregnated)



- Figures 1-4
1. Isomodul
 2. Isotex wall panel, etc
 3. Installation moulding
 4. Vapour barrier

Certificates

Certificates issued for the products of AS Viisnurk (trademark ISOPLAAT):

Following certificates are issued for the products of AS VIISNURK (trademark ISOPLAAT):

1. Wind barrier boards
 - 1) Bureau Veritas Eesti OÜ, No 5114742, the qualities of the product correspond to the requirements of standards EN 622-1, EN 622-4, EN 13986, factory production control corresponds to the requirements of standard EN 13986
 - 2) Inspecta Estonia OÜ, No 1527-CPD-0012 factory production control corresponds to the requirements of standard EN 13986

2. Underlay
 - 1) Bureau Veritas Eesti OÜ, No 1121922, the qualities of the underlay and the factory production control correspond to the requirements of technical specification EE 8007037 TS 3:98
 - 2) Rakennustietosäätiö (The Building Information Foundation) RTS, Finland, emission class for health damaging agents in construction materials: M1

3. Insulation boards, Isomodul
 - 1) Bureau Veritas Eesti OÜ, No 5044639, WF Standard board, the qualities of the product correspond to the requirements of standard EN 13171, factory production control corresponds to the requirements of standard EN 13172

CE conformity mark: wind barrier board, insulation board
The management system of AS Viisnurk Building Materials Division corresponds to the requirements of standard ISO 9001:2008.



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General construction boards

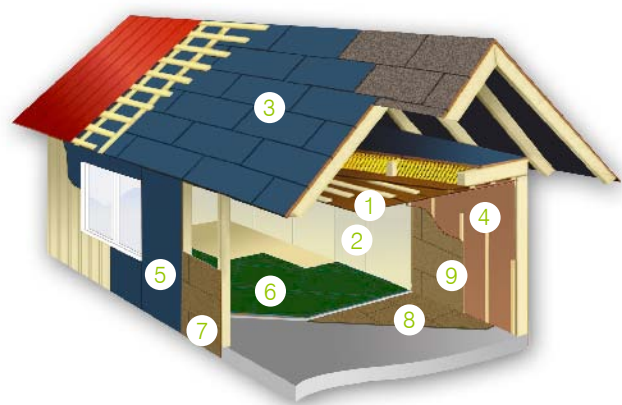


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WOODEN FIBREBOARDS

Wooden insulation fibreboards that wear ISOPLAAT trademark are multifunctional and natural construction and insulation materials. No glue or other chemical



adhesive substances are used when manufacturing the wooden fibreboards — the resin in wood acts as an adhesive component. You will get a warm, soundproof and breathing construction for your walls, ceiling or floor by using ISOPLAAT products in correct way. The porous structure of the boards gives them heat insulating and sound muting qualities. Wind barrier boards and roof boards are profoundly impregnated with paraffin that guarantees their persistent durability to weather conditions (the paint finishing acts just as Isoplaat's identification colour). Handling and installing the fibreboards is simple.

1. Ceiling panel (Isotex) 2. Wall panel (Isotex) 3. Roof board 4. Insulation board 5. Wind barrier board 6. Underlay 7,8,9 Isomodul

WIND BARRIER BOARDS

Wind barrier boards are used as wind blocking, insulating and stiffening elements in constructions of exterior walls, ceilings and roofs.

Wind barrier boards protect the thermal insulation layer from weather conditions. Due to their dense structure, the wind barrier boards prevent the cold air from getting on wall's thermal insulation layers, which prevents the construction from cooling down and guarantees the insulation to function effectively. Wind barrier boards are weatherproof, yet they grant the permeability of the vapour and air that extract from the house. For this reason they are installed directly on the outer layer of the thermal insulation. This guarantees the conversion of humidity and prevents the thermal insulation layer from getting damp. The boards are mechanically strong enough to be used as stiffening elements for construction. Wind barrier boards are marked with a sign "VIISNURK" on them.

Installation of wind barrier boards

Wind barrier boards are attached to construction in direction of frame. The distance between frame beams (measured from the centre-to-centre of the beam) must be 600 mm.

Wind barrier boards must be installed in a way that there are 2–3 mm gaps left between the boards. To ensure the weather ability of these connections that are not on the frame, a wooden joist must be set under the connection site and the ends of the boards are attached to this joist. You can also use elastic sealing mastic or construction tape (e.g. Pro-Clima) to tighten the 25 mm boards. The boards are attached with either nails or staples. A longitudinal streak in a centre of a board facilitates the nailing of the board.

Installation of 12 mm wind barrier boards

Use hot-dip galvanized nails with large nail heads (length: 40 mm or longer) or staples (length: 32 mm or longer). The distance between nails/staples and the edge of the board must be at least 10 mm. The distance between these nails/staples that are attached to the edge of the board must be 100 mm; the distance between these nails/staples that are attached to the centre of the board must be 200 mm. Approximate nail consumption: 25 pieces per square meter.

Installation of 25 mm wind barrier boards

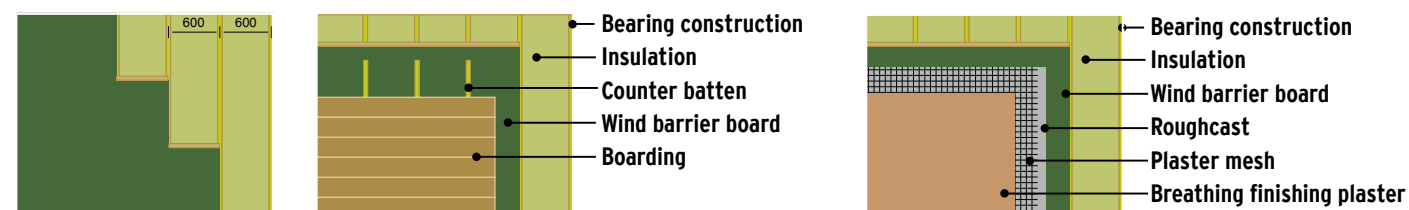
Use hot-dip galvanized nails with large nail heads (length: 70 mm or longer) or staples (length: 58 mm or longer). The distance between nails/staples and the edge of the board must be at least 10 mm. The distance between these nails/staples that are attached to the edge of the board must be 100–150 mm; the distance between these nails/staples that are attached to the centre of the board must be 300 mm. Approximate nail consumption: 15 pieces per square meter.



Installation of 25 mm wind barrier boards with tongue and groove joints

Unlike the usual wind barrier boards, the wind barrier boards with tongue and groove joints are attached horizontally (perpendicularly to frame). This eliminates the possibility that the connections of the boards do not overlap with the frame (no need to install additional joists, no need to use construction tape etc). This prevents the cold bridges from forming (if possible, install the boards so that they are slightly shifted).

Use hot-dip galvanized nails to nail the boards, we recommend nails with large nail heads (length: 70 mm or longer) or staples (length: 58 mm or longer). In order to prevent damages to tongue and groove joints, the distance between nails/staples and the edge of the board must be at least 35 mm. The distance between these nails/staples that are attached to the edge of the board must be 100–150 mm; the distance between these nails/staples that are attached to the centre of the board must be up to 200 mm.



Technical data

		12 mm board	25 mm board	25 mm board with joints
Thickness	mm	12 ± 1,2	25 ± 1,8	25 ± 1,8
Number of boards on pallet	pcs	90	45	45
Amount on pallet	m ²	291,6	145,8 / 162,0	86,4
Width	mm	1200 ± 2	1200 ± 2	800 ± 2
Length	mm	2700 ± 5	2700 / 3000 ± 5	2400 ± 5
Density	kg/m ³	≥ 240	≥ 230	≥ 230
Thermal conductivity λ ₁₀	W/mK	≤ 0,053		
Bending strength	N/mm ²	≥ 1,0	≥ 0,8	≥ 0,8
Expansion	%	≤ 6		
Air permeability, Δp 100 Pa	m ³ /m ² sPa	≤ 10 x 10 ⁻⁶		
Vapour permeability	kg/m ² sPa	≥ 1,5 x 10 ⁻⁹	≥ 1 x 10 ⁻⁹	≥ 1 x 10 ⁻⁹



Wind barrier boards must be covered with cladding no later than one month after installing them. In order to guarantee the conversion of humidity, a 20–50 mm air gap must be left between the board and the cladding. The battens of the cladding must be vertical or constructed in a way that guarantees the vertical movement of the air between the cladding and the wind barrier board.

ROOF BOARD

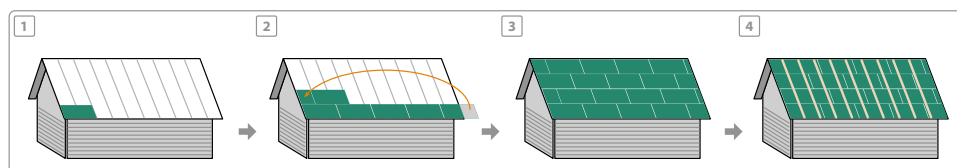
Roof boards are primarily intended to be used as an underlay for flashing and tile roofing materials.

The roof board is based on ISOPLAAT's wind barrier board and due to that its utilization range is as wide. Roof boards with tongue and groove joints protect the roofing constructions from moisture and condensed water. Using the roof boards also improves the sound and thermal insulation qualities of the construction. It is not necessary to use vapour barrier film.

Installation of roof boards

For the installation of roof boards, the distance between rafters must be 600–700 mm and the angle of the roof must be more than 20°. Always start installation from the lower end of the roof, placing the boards perpendicularly to the rafters (Figure 1). After you have cut the last board to a suitable size, you can start a new row with the same piece of roof board you have just cut off (Figure 2). This helps to avoid the tongue and groove joints at the ends of boards to overlap. Every board must extend at least

over two rafters. The boards are installed as shown on Figure 2. Fix the roof boards with galvanized 70 mm nails with large nail heads. To improve the waterproof qualities of the boards, tighten the valleys, ridges and duct penetrations of the roof (e.g. Tescon Pro-Clima). At the same time you install the boards, attach the counter battens and battens for roof covering materials (Figure 4). Do not step on boards between rafters!



Thickness	mm	25 ± 1,8
Number of boards on pallet	pcs	42
Amount on pallet	m ²	78,75
Useful width	mm	750 ± 3
Useful length	mm	2500 ± 5
Density	kg/m ³	≥ 230
Thermal conductivity λ ₁₀	W/mK	≤ 0,053
Bending strength	N/mm ²	≥ 0,8
Expansion	%	≤ 6
Air permeability, Δp 100 Pa	m ³ /m ² sPa	≤ 10 x 10 ⁻⁶
Vapour permeability	kg/m ² sPa	≥ 1 x 10 ⁻⁹

UNDERLAY

Underlay is used under floor covering materials (parquet, laminate) on hard and dry base surfaces. Underlay levels the minor unevennesses of the subfloor, mutes the sounds of footsteps and makes the floor warmer.

Installation of underlay

It is advisable to keep the underlay in the same room it is to be installed in for 24 hours before installation in order to balance the moisture inside the boards with humidity of the surrounding air. The boards are placed sideways and bars are put under and between them, so that the boards are exposed to air. Underlay is placed next to each other on base surface, leaving 5–10 mm expansion gaps between the boards and the walls.

In order to get an adequate expansion gap, you can place pieces of underlay between the walls

and the boards and remove them later when the underlay is installed.

Leave 1–2 mm gaps between the underlay (Figure 2).

You can fix the underlay with couple of glue dots (figure 3) or staples/nails in order to secure it. Underlay is installed in a way that the angle between the joints of flooring and the joints of boards would be 45°, this helps to avoid the joints of the boards and flooring to overlap (Figure 2 and 3).

Floorings are installed directly on underlay (Figure 3).

Thickness	mm	7,4 ± 0,3
Number of boards on pallet	pcs	280
Amount on pallet	m ²	201,6
Width	mm	600 ± 3
Length	mm	1200 ± 3
Density	kg/m ³	≥ 240
Thermal conductivity λ ₁₀	W/mK	≤ 0,050
Bending strength	N/mm ²	≥ 2,0
Impact noise reduction index	dB	-54
Impact noise insulation	dB	-22

1.



2.



3.



INSULATION BOARD

Insulation boards are used as insulating materials for interior walls, ceilings and other constructions as well as supporting elements for softer insulation materials. They are also used as standard boards for ISOTEX internal finishing boards.

Porous structure of the insulation boards gives the construction better heat insulating and sound muting qualities. Mechanical strength of the boards increases the stiffness of the construction and helps to support other insulation materials. Insulation boards store heat and do not let the construction to cool off so quickly. This helps to stabilise room temperature.

Installation of insulation boards

It is advisable to keep the insulation boards in the same room they are to be installed in for 1–2 days before installation — this helps to balance the moisture inside the boards with humidity of the surrounding air. The boards are placed sideways and bars are put under and between them, so that the boards are exposed to air. The boards are fixed to wooden surfaces with nails or staples, we recommend using galvanized nails with large nail heads.

Nails or staples are inserted 10–20 mm away from the edges of the boards with 150 mm gap between them; in central area the distance between nails/staples is 300 mm. You should use 40 x 2.2 mm nails or 1.7 x 25 x 32 mm staples in case of a 12 mm board. You should use 70 x 2.5 mm nails or 1.7 x 25 x 58 mm staples in case of a 25 mm board. When the insulation boards are later covered with wallpaper, it is advisable to observe that the distance between the central nail rows does not exceed 400 mm. The boards should be glued to stone walls with construction adhesive (e.g. wall panel adhesive Soudal 48A). The base surface must be flat and dust free. Apply stripes of adhesive to the back side of the board, approximately 30 mm away from the edges. Apply dots of adhesive to the central area of the board, approximately one dot after every 200 mm. Support the boards if necessary. When using glue, follow the instructions of the manufacturer.

Insulation boards can be covered with wallpaper or paint. Fill nail head holes and gaps between the boards first. Before covering the insulation boards with wallpaper, increase the adhesiveness of the boards by undercoating them with adhesive dispersion or wallpaper glue. Follow the instructions of wallpaper and wallpaper glue manufacturers.

All AS Viisnurk's insulation boards may be transported only in covered car to protect the boards from weather conditions. The manufacturer has a right to change the way of packaging and amount of goods on a pallet.

		12 mm plaat	25 mm plaat
Thickness	mm	12 (-1/+1,2)	25 (-1/+1,8)
Number of boards on pallet	pcs	90	45
Amount on pallet	m ²	291,6	145,8
Width	mm	1200 ± 2	1200 ± 2
Length	mm	2700 ± 5	2700 ± 5
Density	kg/m ³	≥ 230	≥ 230
Thermal conductivity λ ₁₀	W/mK	≤ 0,053	≤ 0,053
Bending strength	N/mm ²	≥ 1,0	≥ 0,8