

# EKO2 PERIMETER WALL

## Description

- perimeter wall of diffusion-open character

## Composition thickness 360 mm

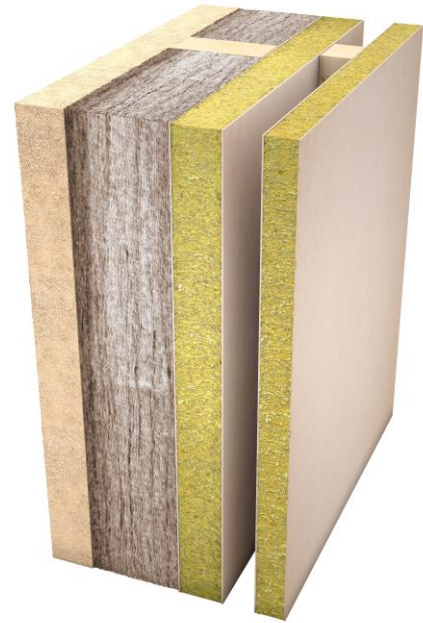
- wood fiber board thickness 80 mm
- KVH prisms + thermal insulation thickness 140 mm
- E60 Ekopanely boards
- wooden grating thickness 40 mm
- E60 Ekopanely boards

## Recommended use

- vertical perimeter structures of houses with almost zero energy consumption

## Restrictions

- max. wall height according to the design of the load bearing structure
- the gap between the Ekopanely boards is always underlaid by a wooden structure to provide fire resistance to the load bearing wall
- Ekopanely boards are not intended to be used as a structural board, lengthwise wall bracing is created in other ways e.g. in a wooden structure using diagonal elements according to the static assessment



# EKO2 PERIMETER WALL

TECHNICAL DATA SHEET

Technical information and parameters

DESCRIPTION	VALUE	UNIT	LEGAL REGULATION
1x soft fibre board			
1x E40/800 Ekopanely boards	80	mm	
dimensions: thickness	38 (tolerance + 2 mm)	mm	
width	800	mm	
length	1200 – 3200	mm	
1x E60/1200 Ekopanely boards			
dimensions: thickness	58 (tolerance + 2 mm)	mm	
width	1200	mm	
length	1200 - 3200	mm	
heat transfer coefficient U *	0.159	W/m <sup>2</sup> .K	ČSN 73 0540-2
phase shift	12	h	
air soundproofness	≥ 51	dB	ČSN EN ISO 717-1
fire resistance	≥ REI 120 DP3		EN 13501-2, EN 1365-1
fire-closed area	Yes, REW 120		EN 13501-2, EN 1365-1

\* U = heat transfer coefficient calculated only for insulating materials (without correction of thermal bridges)

## Note

- the standard thermal insulation in the wall is a natural thk. of 140 mm (around 30 kg/m<sup>3</sup>,  $\lambda=0,039$  W/m.K)
- delivery methods and storage conditions are provided in the technical data sheet of the product

## Installation procedure

- cutting (circular saw, jig saw) → edge bonding
- laying of Ekopanely boards in one row – only the face side on the outer surface (↓TOP↓)
- wiring in the space of the installation gap
- cutting out holes for the installation of electrical boxes (bore drill  $\varnothing$  68 mm – KP 64 LD or  $\varnothing$  73 mm – KU 68 LD, KPRL 68-70 LD)
- hanging of objects up to 30kg → screwing in of screws without pre-drilling and plastic wall plugs into the Ekopanel
- hanging of objects over 30 kg → reinforcement of wooden construction and anchoring of objects to this construction

## CLADDING OF EKO2 PERIMETER WALLS

- placing and anchoring of walls:
  - the positioning of the wall is predetermined by an anchored load bearing frame structure containing diagonal wall bracing according to the static assessment regulation

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(axis spacing of the posts and their profile is also prescribed by a structural engineer that should assess each structure individually)

- cladding from the outside of the perimeter wall EKO2:
  - coat the wooden structure and the mounting base with asphalt penetration so as to form an adhesive base for gluing the bitumen strip (aluband)
  - apply an aluband bitumen strip 100 mm wide to the prepared substrate to cover the gap between the mounting base and the wooden structure all around the perimeter of the building
  - fix the 80 mm thick aluminum base rail to the baseboard of the wooden frame construction (via the bitumen strip) using 3.1 x 36 mm aluminum nails x 300 mm and plastic joints along the entire perimeter of the building
  - apply low expansion mounting foam/sealing compriband tapes to the base profile at the soft fibre board laying location
  - place the soft fibre board in the base profile with the groove facing down and the spring up into the profile
  - screw the soft fibre board flat to the wall supporting structure with STR-H wall plugs in density of at least 6 pc/1 m<sup>2</sup>
  - observe the design principles defined by the manufacturer of soft fibre materials Pavatex, Steico,...
  
- surface protection of the outer side of the EKO2 perimeter wall:
  - soft wood fiber board has a declared standard min. of a month of exposure to weather conditions without the need for surface treatment. This factor is caused by the additive component of paraffin emulsion, which is the standard content of the board used. The surface treatment does not have to be done immediately after the cladding of the building.
  - The EKO2 perimeter wall is a diffusely open structure, which must have an outer surface finish made of suitable high diffusion-open materials. From common variants of surface treatment with plaster, the following system solutions can be used: Weber - diffusheet or Jub - JUBIZOL DIFFU, alternatively the application of ventilated facade cladding is possible.
  
- insertion of thermal insulation at a thickness of 140 mm:
  - insert the thermal insulation from the inside into the walls between the posts of the load bearing frame structure
  - coefficient of diffusion resistance of thermal insulation in the range of 1-5 and fire response category A1 - E
  
- 1st layer of cladding from the interior of the perimeter wall EKO2:
  - apply low expansion installation foam to the load bearing system at the place of laying the Ekopanel board

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- insert the Ekopanel board into the prepared place - the panel must be placed at least 20 mm from the bottom structure (foundation slab waterproofing, OSB covering, ...), place the Ekopanel board so that the facework requirement of board placement is adhered to (↓ TOP ↓)
- screw the Ekopanel board flatly into the wall construction using EP 5x100 mm screws with EP-P1 washers (without pre-drilling and plastic wall plugs) at a density of 9 screws / 1 m<sup>2</sup>
- any gaps can be sealed up by inserting compression insulating tape or low-expansion installation foam
- apply low expansion foam / compression insulating tape to the load bearing system at the place of laying the Ekopanel board and to the entire free edge of the anchored Ekopanel board
- place the second Ekopanel board snug on the joint so that the facework requirement of board placement is adhered to (↓ TOP ↓)
- screw the Ekopanel board flatly into the wall construction using EP 5x100 mm screws with EP-P1 washers (without pre-drilling and plastic wall plugs) at a density of 9 screws / 1 m<sup>2</sup>
- any gaps can be sealed up by inserting compression insulating tape or low-expansion installation foam
- underlay the created vertical joints between the individual Ekopanel boards along the whole length with an additional wooden structure - minimum board thickness of 20-30 mm and width 80 mm, if the Ekopanel board joint is not based on the load bearing system of the frame structure (requirement for ensuring the fire resistance of the load bearing wall)
- anchoring of the additional wooden structure of the underlaid joints to the Ekopanel boards using EP 5x80 mm screws x 500 mm, with the first joint x 250 mm from the floor and ceiling (without washers, without pre-drilling and plastic wall plugs)
- repeat the installation procedure systematically to the other end of the perimeter wall, where the last panel is width-adjusted as needed
- anchoring of the wooden grating at a thickness of 40 mm:
  - anchor the wooden grating with a thickness of 40 mm (standard batten 40/60 mm) on the first layer of the interior cladding from Ekopanel board with EP 5x100 mm screws (without washers, without pre-drilling and plastic wall plugs)
  - in the place of the subsequent anchoring of "heavier objects (hanging sink, kitchen unit, ...)", it is possible to brace the wall in this installation grating by means of the doubling of the battens or replacement with a board
- 2nd layer of cladding from the interior of the perimeter wall EKO2:
  - apply low expansion foam / compression insulating tape to the wooden grating and the ceiling at the place of laying the Ekopanel board

# EKO2 PERIMETER WALL

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→ Insert the Ekopanel board into the prepared place - the panel must be placed at least 20 mm from the bottom structure (foundation slab waterproofing, OSB covering, ...), place the Ekopanel board so that the facework requirement of board placement is adhered to (↓ TOP ↓)

→ screw the Ekopanel board flatly into the wooden grating using EP 5x70 mm screws with EP-P1 washers (without pre-drilling and plastic wall plugs) at a density of 9 screws / 1 m<sup>2</sup>

→ any gaps can be sealed up by inserting compression insulating tape or low-expansion installation foam

→ apply compression insulating tape or low expansion mounting foam to the entire free edge of the anchored Ekopanel board, the ceiling and the wooden grating

→ place the second Ekopanel board snug on the joint so that the facework requirement of board placement is adhered to (↓ TOP ↓)

→ screw the Ekopanel board flatly into the wooden grating using EP 5x70 mm screws with EP-P1 washers (without pre-drilling and plastic wall plugs) at a density of 9 screws / 1 m<sup>2</sup>

→ any gaps can be sealed up by inserting compression insulating tape or low-expansion installation foam

→ repeat the installation procedure systematically to the other end of the perimeter wall, where the last panel is width-adjusted as needed

- note:

→ application can be considered without PUR foam - it is necessary to consult with the building system supplier

→ we recommend that there not be a continuous joint through the whole structure of the EKO2 peripheral wall in the individual layers of the Ekopanel boards

## Installation tools

- hand-held circular saw
- jig saw
- drill
- hole saw (jig-borer)
- cordless drill/driver
- pistols for PUR foam
- hook for carrying Ekopanel boards

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Consumption and a description of fasteners

<b>EKO2 perimeter wall 10 LM (building perimeter)</b>	
MATERIAL DESCRIPTION	AMOUNT
Aluband 100 mm (10,000 mm)	1 pc
AL baseboard 80 mm (2,000 mm)	5 pcs
Plastic connectors	10 pcs
AL nail 3.1 x 36 mm	35 pcs = 0.028 kg
<b>EKO2 perimeter wall 10 m<sup>2</sup></b>	
MATERIAL DESCRIPTION	AMOUNT
Screw EP 5x100 mm	140 pcs
Washer EP-P1	180 pcs
Batten 40/60 mm	18 LM
Soft wood fiber board thickness of 80 mm	11 m <sup>2</sup>
Wood screw EP 5x70 mm	90 pcs
Thermal insulation thickness of 140 mm	9 m <sup>2</sup>
Ekopanel E60/1200	10 m <sup>2</sup>
Ekopanel E40/800	10 m <sup>2</sup>
Self-adhesive tape SP 100	1 pc/50 m <sup>2</sup> according to the number of cuts
Self-adhesive tape SP 75	1 pc/50 m <sup>2</sup> according to the number of cuts
Mounting foam 750 ml	yield 1 pc / 20 m <sup>2</sup>

Note: Fasteners do not take construction openings (windows, doors, scuntions, insulating frames, window sills) into account