

# EKO3 PERIMETER WALL

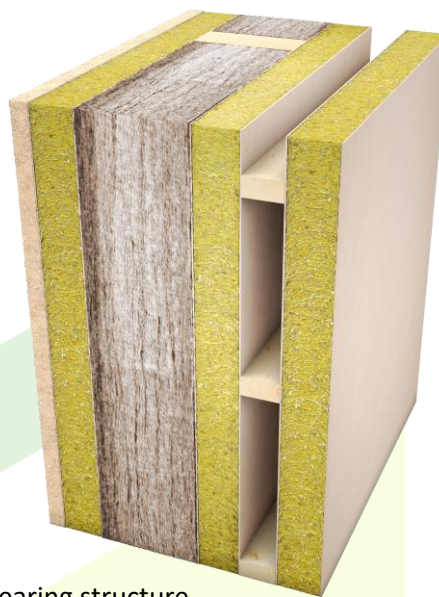
TECHNICAL DATA SHEET

## Description

- perimeter cladding of a load bearing wooden frame structure

## Composition thickness 380 mm

- wood fiber board thickness 20 mm
- E60 Ekopanely board
- KVH prisms + thermal insulation thickness 140 mm
- E60 Ekopanely board
- wooden grating thickness 40 mm
- E60 Ekopanely board



## Recommended use

- vertical perimeter structures of low-cost houses

## 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

## Technical information and parameters

DESCRIPTION	VALUE	UNIT	LEGAL REGULATION
3x E60 Ekopanely board dimensions: thickness	58 (tolerance + 2 mm)	mm	
width	1200, 800	mm	
length	1200 - 3200	mm	
heat transfer coefficient U *	0.179	W/m <sup>2</sup> .K	ČSN 73 0540-2
phase shift	17	h	
fire resistance	REI 45 DP3		EN 13501-2, EN 1365-1
fire response category	E		EN 13501-1

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

## Note

- the standard thermal insulation in the wall is mineral ( $\lambda = 0.037$  W / m.K) thickness 140 mm
- delivery methods and storage conditions are provided in the technical data sheet of the product

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## 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 ↓)
- installation of wiring in the installation space
- cutting of holes for wiring (bore drill diameter 68 mm - KP 64 LD or diameter 73 mm - KU 68 LD, KPRL 68-70 LD)
- hanging of objects → screwing in of screws without pre-drilling and plastic wall plugs

## CLADDING OF EKO3 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 (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 EKO3:
  - 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
  - place the 30/50 mm plastic profile on the aluminum base rail and use EP 6x120 mm screws x 400 mm to anchor the element to the bottom of the wooden structure along the entire perimeter of the building
  - apply low expansion installation foam / compression insulating tape to the load bearing system and the plastic profile at the location of laying the Ekopanely board.
  - place the Ekopanely board on the plastic profile so that the facework requirement of board placement is adhered to (↓ TOP ↓)
  - screw the Ekopanely 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 free edge of the anchored Ekopanely board, the load bearing system and the plastic prism at the place of laying the Ekopanely board

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- place the second Ekopanely board snug on the joint so that the facework requirement of board placement is adhered to (↓ TOP ↓)
- screw the Ekopanely 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 Ekopanely boards along the whole length with an additional wooden structure - minimum board thickness of 20-30 mm and width 80 mm, if the Ekopanely 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 Ekopanely boards using EP 5x80 mm screws x 500 mm with the first joint 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
- the prepared Ekopanely substrate is gradually clad with a soft wood fiber board with a thickness of 20 mm
- apply a low-expansion installation foam at the board placement location and screw the plate to the substrate with EP 5x70 mm screws in a quantity of 16 pcs / 1 m<sup>2</sup>
- the wood fiber board is in a tongue and groove design so it is laid horizontally from the bottom (set forward in front of the plastic profile from the aluminum base rail) horizontally and tongue up
- surface protection of the outer side of the EKO3 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 EKO3 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
- 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 - A2
- 1st layer of cladding from the interior of the perimeter wall EKO3:

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- apply low expansion installation foam to the load bearing system at the place of laying the Ekopanely board
- insert the Ekopanely 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 Ekopanely board so that the facework requirement of board placement is adhered to (↓ TOP ↓)
- screw the Ekopanely 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 Ekopanely board and to the entire free edge of the anchored Ekopanely board
- place the second Ekopanely board snug on the joint so that the facework requirement of board placement is adhered to (↓ TOP ↓)
- screw the Ekopanely 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 Ekopanely boards along the whole length with an additional wooden structure - minimum board thickness of 20-30 mm and width 80 mm, if the Ekopanely 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 Ekopanely 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 Ekopanely board with EP 5x100 mm screws x 500 mm (without washers, without pre-drilling and plastic wall plugs)
  - be sure to keep the spacing between the gratings of 500 mm, and 250 mm from the floor and the ceiling
  - 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

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- 2nd layer of cladding from the interior of the perimeter wall EKO3:
  - apply low expansion foam / compression insulating tape to the wooden grating and the ceiling at the place of laying the Ekopanely board
  - Insert the Ekopanely 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 Ekopanely board so that the facework requirement of board placement is adhered to (↓ TOP ↓)
  - screw the Ekopanely board flatly into the wooden grating 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 compression insulating tape or low expansion mounting foam to the entire free edge of the anchored Ekopanely board, the ceiling and the wooden grating
  - place the second Ekopanely board snug on the joint so that the facework requirement of board placement is adhered to (↓ TOP ↓)
  - screw the Ekopanely board flatly into the wooden grating 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
  - 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 EKO3 peripheral wall in the individual layers of the Ekopanely boards

## Installation tools

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

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Consumption and a description of fasteners

<b>EKO3 perimeter wall 10 LM (building perimeter)</b>	
MATERIAL DESCRIPTION	AMOUNT
Aluband 100 mm (10,000 mm)	1 pc
AL profile 80 mm (2,000 mm)	5 pcs
Plastic connectors	10 pcs
AL nail 3.1 x 36 mm	35 pcs = 0.028 kg
Plastic profile 30/50 mm (2,000 mm)	5 pcs
Screw EP 6x120 mm	26 pcs
<b>EKO3 perimeter wall 10 m<sup>2</sup></b>	
MATERIAL DESCRIPTION	AMOUNT
Screw EP 5x100 mm	342 pcs
Washer EP-P1	270 pcs
Batten 40/60 mm	18 LM
Soft wood fiber board thickness of 20 mm	11 m <sup>2</sup>
Wood screw EP 5x70 mm	160 pcs
Thermal insulation thickness of 140 mm	9 m <sup>2</sup>
Ekopanely E60	30 m <sup>2</sup>
Self-adhesive tape SP 100	1 pc/10 m <sup>2</sup> according to the number of cuts
Mounting foam 750 ml	yield 2 pcs / 10 m <sup>2</sup>

Note: Fasteners do not take into account window openings (reveals, lintels, window sills, ...).