

## ALU PLATES SYSTEM

### SYSTEM DESCRIPTION

Dry assembly system was drawn up to apply in places, where usually wet assembly systems can't be applied. It concerns mostly specialist buildings and prefabricated wooden houses, which can't handle the loading of about  $130 \text{ kg/m}^2$ , which can be handled by wet assembly systems. In this case, the Alu plates system can be applied, connected with panels dry screed panels, because the weight is only  $35 \text{ kg/m}^2$ . When it comes to beams floors, at specific conditions, setting even between floor joists is possible.

Second scope of using the alu plates system is renovation and renewal of existing buildings. 6 cm on the superstructure level, including dry screed panels is enough also for old buildings. The big advantage is also bridged time of waiting for bonding and drying of heating screed. After installing floor heating, laying of the floor can be immediately started. In dry assembly system, heating mass of screed panels is small. Thanks to that, quick adjusting to heating conditions is allowed.

Of course, system is also suitable for cement-based screed or anhydrite. Then, the thickness of a screed is, when it comes to normal screed, only 35-45 mm.

Alu plates system consists of formed styrene plastic foamed panels of 28, 35, 45 mm thickness and quality of EPS 100 (PS 20), EPS 200 (PS 30) with grooves. The zinc-plated or aluminium heat conducting plates are implemented to them, into which the 16x2 mm heating pipes are inserted. After laying out the expanded polystyrene panels, the system is covered by metal plates, which transfer the heat from pipes uniformly. For such placed system the screed or dry screed plates are set. The finish always constitutes a placing of the floor.

## TECHNICAL SPECIFICATION

Dry and wet screed with plates conducting the heat, for placing with a 125-250-375 mm spaces and with a heating pipe of 16 mm diameter.

Alu Plates system heating/cooling	
Product features	Thermal insulation without reducing the footsteps
Nominal thickness in mm	28
Heat conducting capability DIN V 4108-10 in W/mK	0,035
Heat transfer resistance in m <sup>2</sup> K/W	0,58
Positive stress (at 10% deformation) kPa	200
Moving load in kPa	60
Scope of appliance according to DIN 4108-10	DEO
Voluntary quality control	CE/MPA
Fire class according to EN 13501	E Class
Material class according to DIN 4102	B1
Material	EPS polystyrene
Valid standard	EN 13163, DIN V 4108-10
Name according to the standard	EPS-EN13163-T4-L1-W1-S1-P4-DTL(1)5-CS(10)200
Length x width in mm	1000 x 625
Floorage in m <sup>2</sup>	0.625
Unit of packaging in pieces	16 plates
Unit of packaging in m <sup>2</sup>	10,00
Carton dimensions (length x width x height) in mm	1010 x 630 x 460

Accessories	
Heat conducting lamellas (Panel 16)	With set places of cracking 100 mm
Material	Zinc-plated steel sheet or aluminium
Dimensions (length x width) in mm	0,5 mm
Carton package	750 x 120
	50 pieces (37,5 mb)
Fitting (OS 16 Strand)	125 mm from pipe's spaces (inside)

## FOUNDATION STRUCTURE

Dry and wet screed with heat conducting lamellas, for setting with 125-250-375 mm spaces and heating pipe of 14 mm diameter

### Dry screed (for floor heating appliance)

At dry screed elements placing, it should be, in accordance with DIN 18202, checked, if the foundation is flat. Irregularities on small spaces should be smoothed with painter's putty, on large spaces with self-levelling compound.

In case of wooden beam roofs, it can't spring, loose boards should be attached. Below the insulation on wooden beam roof, only one insulating layer should be placed, as a hydroinsulating layer.

Additional heat insulation in case of a need:

- EPS polystyrene DEO – WLG 035 – 200 kPa
- DEO – WLG 025 polyurethane

Additional footsteps insulation in case of a need:

- Fibreboard
- Mineral wool plate

Area of application	25 mm dry screed	20 mm dry screed
Dry screed	maximum spot load	maximum spot load
Residential buildings	2,5 kN	1,5 kN
Office space	2,5 kN	1,5 kN
Restaurants, schools	2,5 kN	1,5 kN
Shop floors ( $\leq 50 \text{ m}^2$ ) in residential and office buildings	2,5 kN	1,5 kN

### Wet screed

At applying the wet screed there should be minimum thickness of the screed considered, depending on it's type and on surface area loading  $\text{kN/m}^2$ .

Recommended thicknesses of the screed – covering according to DIN 18560 in mm above the top of the heating pipe (=top edge of plate ).

Type of the screed	CT cement screed		CAF Self-levelling screed based on calcium	
Stretching ability at bending	F5 Class	F4 Class	F5 Class	F7 Class
$\leq 2 \text{ kN/m}^2$	40 mm	45 mm	30 mm	30 mm
$\leq 3 \text{ kN/m}^2$	55 mm	65 mm	45 mm	40 mm
$\leq 4 \text{ kN/m}^2$	60 mm	70 mm	50 mm	45 mm
$\leq 5 \text{ kN/m}^2$	65 mm	75 mm	55 mm	50 mm

## ASSEMBLY INSTRUCTION

Setting the elements for dry assembly on clean and smooth surface, and easy, forcible joining of particular plates, thanks to improved projections system and system of gradual joining the elements to prevent thermal bridges creation.

Placing the lamellas and heating/cooling fittings in existing plates' grooves structure, depending on required spaces and directions of placing. Because of thermal expansion, the space between lamellas should be 5 mm.

Easy placing of 16x2 mm multilayered joining pipe into grooves existing in metal plates, and conducting fittings onto  $\Omega$  pipe, by inserting. The heating lamellas placed on the edge should be covered by marginal insulation zone's foil. Because of small linear expansion, a high quality joining pipe should be applied.

To protect the construction of the system, the elements, after placing the pipe and pressure control, on the whole surface should be placed with a PE foil, which is used as an insulation layer. Next, the dry screed elements can be placed without using tools.

## PIPES ARRANGEMENT

Dry and wet screed with heat conducting lamellas to place with 125-250-375 mm spaces and the heating pipe of 16 mm diameter.