

Ytong Multipor Mineral Insulation Boards

Insulating Pitched Roofs



YTONG
—multipor



General Information

Ytong Multipor FD – Applications, Purposes and Objectives	
Abbreviation	Application examples
DAD	Exterior insulation on roofs and ceilings, protected from weather, insulation below ceiling
DAA	Exterior insulation on roofs and ceilings, protected from weather, insulation below weather-proof layer
DI	Interior insulation on ceiling (bottom) or roof, insulation below rafters/supporting construction, suspended ceilings, etc.
DEO	Internal insulation on ceiling or floor slab (top) without acoustic insulating requirements

- Ytong Multipor Mineral Insulation Board in compliance with General Construction Supervisory Approval Z-23.11-1501
- Thermal insulating material consisting of calcium silicate hydrates, lime, sand, cement, water and air-entraining agent porosity 95 % by volume.
- Non-combustible – Fire classification A1 – DIN EN 13501-1, A1 DIN 4102; free of fire proofing and binding agents

Product characteristics

- Solid, mineral, fibre-free construction material
- Biologically and microbiologically harmless
- Highly resistant to pressure and virtually non-compressible in practical construction
- Open for vapour diffusion
- Resistant to aging, deformation and change in volume
- Easy to process
- Distinguished by Deutsche Institut für Bauen und Umwelt (DIBU) [German Institute for Construction and Environment], previously "Arbeitsgemeinschaft Umweltverträgliches Bauprodukt e.V."
- Ecological and economical construction material
- Completely recycleable



Natureplus quality symbol

Product figures

Ytong Multipor FD – Applications, Purposes and Objectives	
Product figures	Ytong Multipor FD 400
Compressive strength	350–400 kPa
Rated value for compressive strength s_{zul}	160 kPa
E modulus E	200 N/mm ²
Bending strength	≥ 80 kPa
Deformation	≤ 1 mm at 1.000 N point load
Density	approx. 110 kg/m ³
Water vapour diffusion resistance coefficient	$\mu = 3/5$
Thermal conductivity	$\lambda = 0.045$ W/mK
Fire classification	Non-combustible - fire classification A1 according to DIN EN 13501-1
Heat expansion coefficient	10 ⁻⁵ /K
Specific thermal capacity C	1.3 kJ/(kgK)

Areas of application

General requirements

- Buildings with special fire protection requirements
- Buildings with high ecological requirements
- Buildings with high summer thermal insulation

Roof top insulating systems on solid and lightweight roofs

- Roofing on wooden subconstructions
- Roofing on aerated concrete subconstructions
- Roofing on reinforced concrete subconstructions
- Roofing on profiled steel sheeting subconstructions
- Metal roof constructions without second shell

Ytong Multipor Accessories



Ytong Multipor light mortar (WI, DI, WTR, DAD, DAA, DEO)

- Light mortar LW according to EN 998-1; Non-combustible – fire classification A2 according to EN 13501-1; Consumption approx. 2 kg/m²
- The mineral insulation boards can be laid on aerated concrete roofs using Ytong Multipor light mortar.
- On sloping roof systems and with material thicknesses greater than 200 mm, the insulation boards can also be glued with light mortar.

Ytong Multipor pitched roof systems

Roof-top insulation for small format roofing on Ytong aerated concrete roof slabs

Processing instructions:

The aerated concrete roof slabs must be laid wind-tight on the sub-construction.

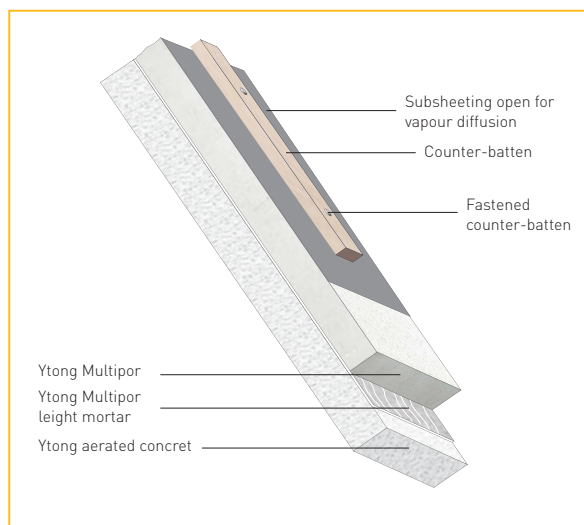
Penetrations through the aerated concrete layer must be closed wind tight; if necessary, create connection with cold self-adhesive sheet. Eave, pent and verge areas must be completed up to the top of the insulating material using wall construction materials.

Ytong Multipor mineral insulation boards can be laid on aerated concrete ceiling slabs - using Ytong Multipor light mortar. A vapour barrier is not required.

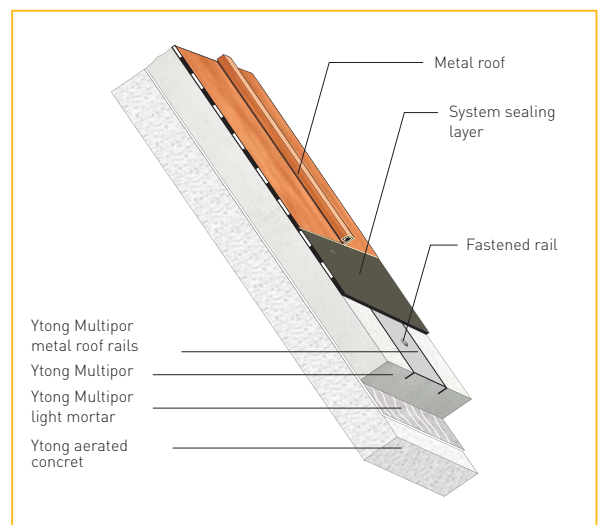
Insulating layers with a thickness greater than 200 mm should be laid in 2 layers, also glued to one another with Ytong Multipor light mortar.

The minimum thickness for the thermal insulation is 100 mm. The insulation boards should be butted together tightly without gluing the longitudinal and lateral joints. Avoid holes in the thermal insulating layer, fill unavoidable voids with FERMACELL levelling compound material. Install a subsheet open for vapour diffusion below the thermal insulation and connect at passages and in connection areas according to good roofing practice.

Fasten counter-battens through the insulating layer in the aerated concrete ceiling slab. Fasten with aerated concrete screws according to manufacturer's specifications. Construct roof extensions at eaves and pent area with solid structural timber sections. The length of the rafter sections depends on the planned roof extension.



Roof top insulation for small format roofing on aerated concrete roof slabs



Metal roof rail system on Ytong aerated concrete roof slabs

Ytong Multipor pitched roof systems

Roof-top insulation for small format roofing on wood constructions

Processing instructions:

Provide for vapour and wind barrier above formwork level and properly fastened to adjacent structural parts. Ensure that holes through the formwork level are connected wind-tight.

Eave, pent and verge areas should be lined up to the top of the insulation with an edge board.

Lay the Ytong Multipor Mineral Insulation Boards on the vapour and wind barrier with PUR insulation adhesive. Insulating layers with a thickness greater than 200 mm should be laid in 2 layers, also glued to one another with PUR insulation adhesive or Ytong Multipor light mortar. The minimum thick-

ness for the thermal insulation is 100 mm. The maximum insulation thickness depends on the type of screws used. As a rule, fastening is accomplished at an angle of 67 degrees, inclined toward the eave.

Screws in the areas of the corners and edges may also be required to compensate for wind suction.

Statistic calculations are required to determine the number of screws.

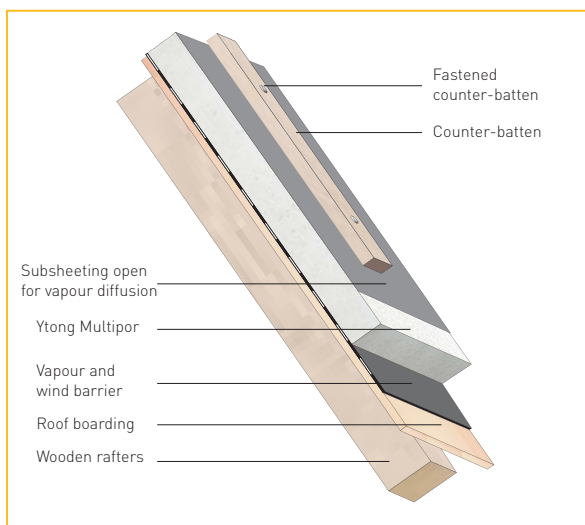
Install insulation boards butted tightly without gluing the longitudinal or lateral joints.

Avoid holes in the thermal insulating layer, fill unavoidable voids with FERMACELL levelling compound. Fasten a subsheet open for

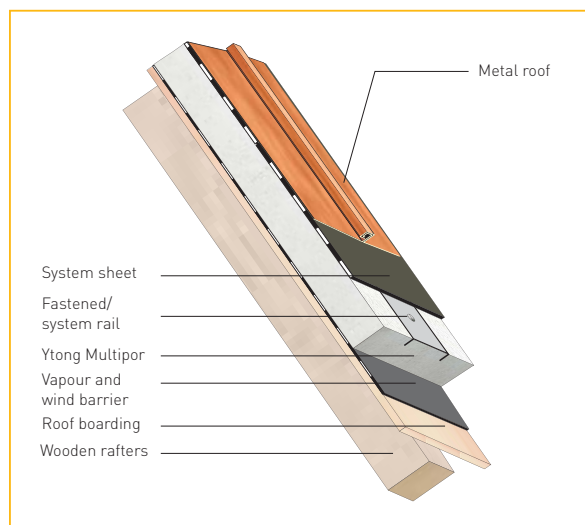
vapour diffusion above the thermal insulation through the counter-battens and connect at passages and in connection areas according to good roofing practice.

Fasten counter-batten through the insulating layer in the wooden rafters. Fasten with approved fastening hardware, e.g. BIERBACH-DaBAU screws. Construct roof extensions at eaves and pent area with solid structural timber.

The length of the rafter sections depends on the planned roof extension.

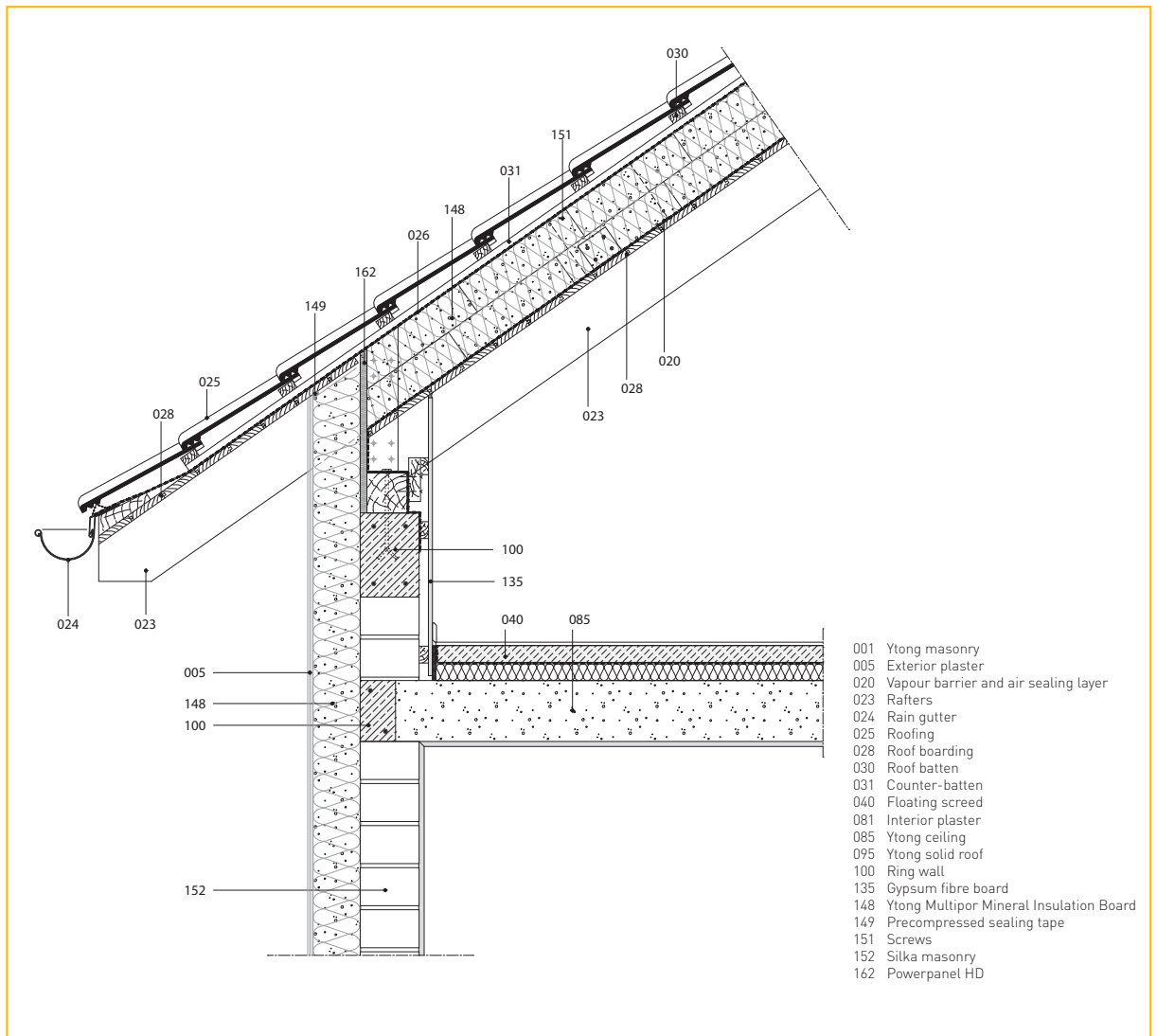


Roof-top installation for small format roofing on wood constructions



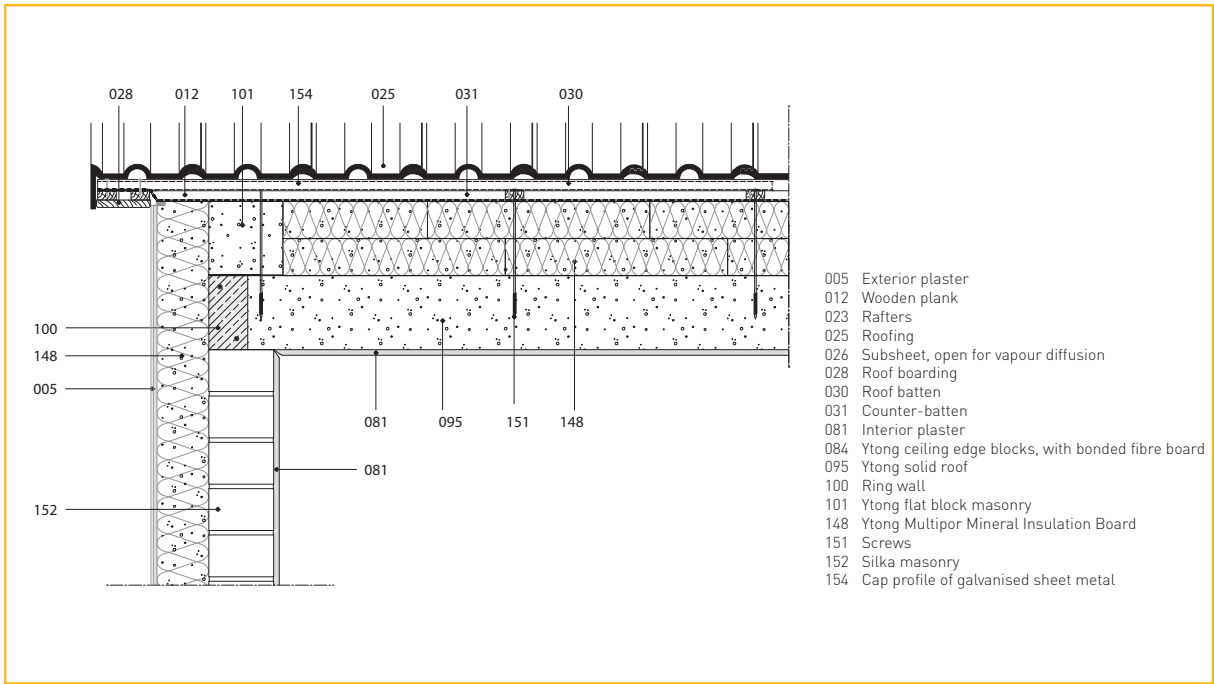
Metal roof rail system on wood constructions

Execution details

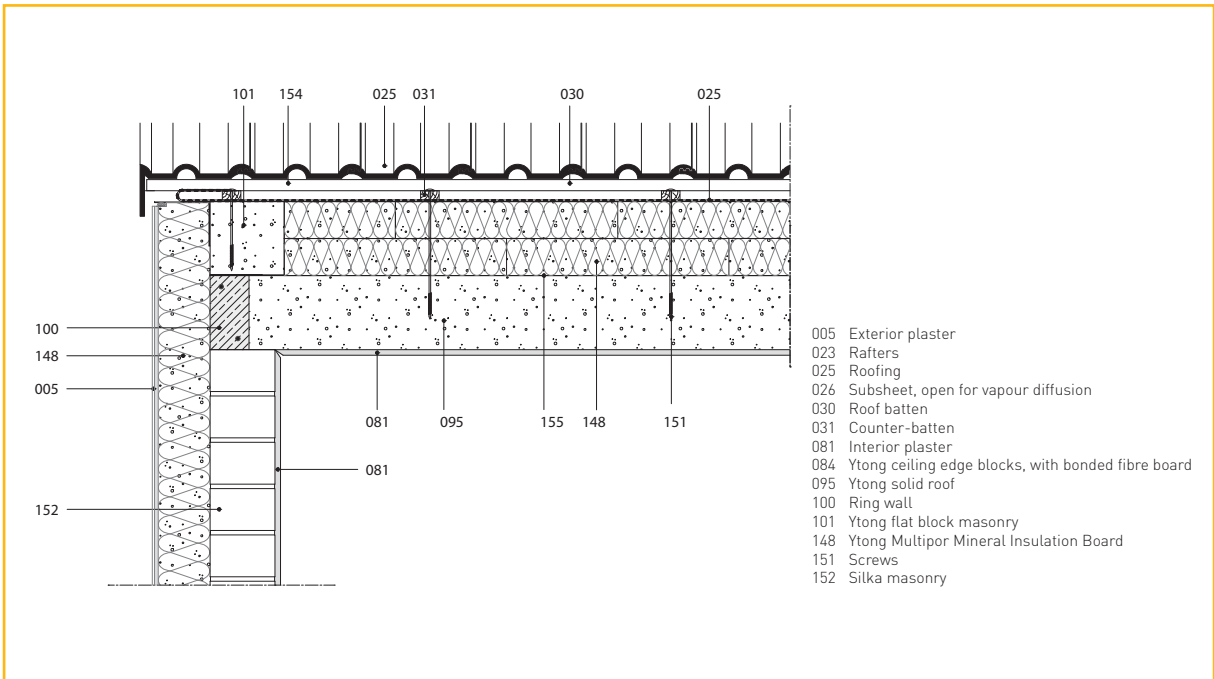


Ytong Multipor – Eave with visible rafter heads





Ytong Multipor – Verge with flying rafters



Ytong Multipor – Verge without extension

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Since legal rules and regulations are subject to change, this information is not legally binding.
It is necessary to check the applicable regulations in each individual case.

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