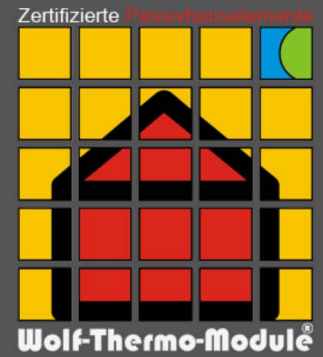


WOLF - THERMO - MODULE

The professional solution for Passive Houses & Carbon Neutral Homes



Certified by the **Passivhausinstitut** in Darmstadt suitable components for Passive Houses, connectors for zero thermal bridges.

Wolf-Thermo-Modul Roof

Roof insulation U-Value 0.13-0.22 W/m²K
Batten size 320mm and 340mm

Wolf-Thermo-Modul Ceiling

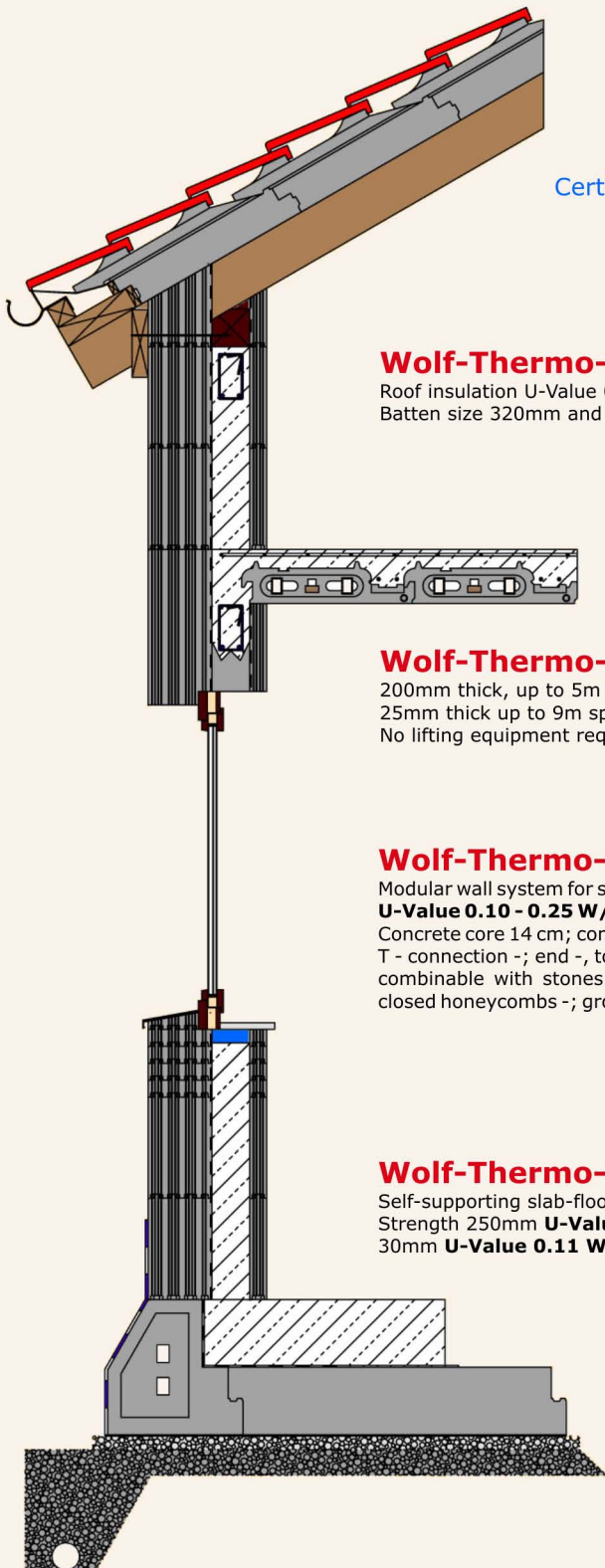
200mm thick, up to 5m span **U-value 0.35 W/m²K**
25mm thick up to 9m span **U-Value 0.34 W/m²K**
No lifting equipment required.

Wolf-Thermo-Modul Wall System

Modular wall system for supporting exterior walls
U-Value 0.10 - 0.25 W/m²K
Concrete core 14 cm; consisting of straight lines -; 90° angle -;
T - connection -; end -, to fall and cover edge stones. In the raster, 6.25 cm combinable with stones from the standard program. Wind tightness by closed honeycombs -; groove and feeder system.

Wolf-Thermo-Module Floor

Self-supporting slab-floor insulation system
Strength 250mm **U-Value 0.13 W/m²K**
30mm **U-Value 0.11 W/m²K**





“A place I really feel at home”



Building a house is one of life's biggest decisions. It should be comforting to know that you will not be alone in your mission but that you can rely on the support of a competent partner.

We offer a simple modular building system which will relieve you from all those technical details that only cause worry and stress. You can build your new home yourself or have it built by a professional builder.

This catalogue includes some building style examples, but remember, WTM can be used to build your own design in collaboration with our technicians. The choice is yours.



Our system guarantees highest possible stability from the outset.

WTM can incorporate your needs and wishes in a totally flexible building system that will also satisfy any aesthetic preferences. Designing with WTM facilitates your ideas for open-plan spaces or compartments with ease.

Our products are designed with an emphasis on strength, durability and performance, being the essentials for a perfect modern home. Your house should be nothing less than a place for a lifetime of peace and happiness.



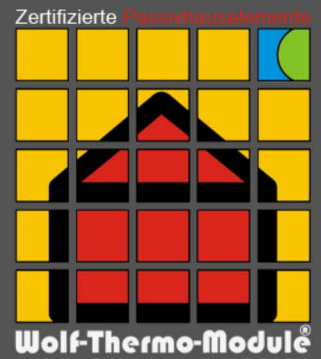
We would be happy to hear you say that your new WTM house is:

“a place I really feel at home”

Welcome to your **Wolf-Thermo-Module** partner.



Quality for your new home



Building projects are enhanced using WTM's superior concept.

- Suitable for all wall finishes
- Suitable for all architecture
- Suitable for all services
- Suitable for all house styles

We always guarantee 100% quality and a personal service tailored to meet your individual wishes.

We would like you to feel well in your new home throughout your entire life. The choice of wall construction plays an important role in the well-being of any inhabitant.

We offer an extensive range of options for you to consider.

For each of these options we have a tried and tested solution to ensure that there will be no harmful or dangerous effect from the ingress of dampness or the build up of condensation within our walls in the future.

The secret lies in the internal insulation of our walls.

Internal, as well as external insulation, guarantees that ambient heat is retained within the home and that any heat required, can be provided by means of **low-cost energy** heating.

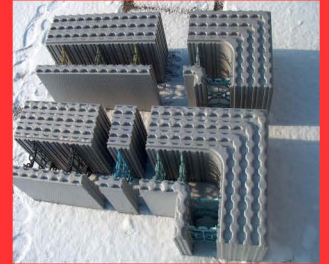
The value of a Wolf-Thermo-Module house

Houses built with reinforced cast-concrete solid walls and fitted with optimum thermal insulation against cooling and overheating will achieve the highest resale value for decades to come. We offer you the future of construction... today.

There are four basic high quality natural materials that need to be combined to achieve this perfection:

- Neopor insulation for the inner and outer shell
- B25 quality concrete (high acoustic absorption - high static load capacity)
- Red/Brown (light) bonding plaster undercoats
- Natural clay based finishing plasters
- All materials are suitable for use in Passive House (with certification) or Low-Energy house projects.

Concrete walls are seamlessly poured onsite. Therefore, potential future problems with thermal bridging from forgotten or substandard joint filling works are permanently eradicated by WTM.





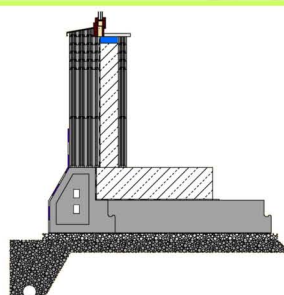
The foundation for solid development!

No.1 choice for slab-floor insulation, a 'feel good' home and more.

Whatever you want to build, whether it be Low-Energy or a full Passive-House,

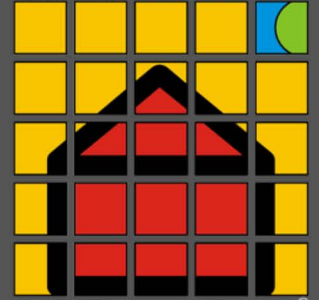
WTM will support you safely and economically.

- ★ Higher home comfort and a more pleasant living climate
- ★ Environmentally friendly construction
- ★ Insulation and financial security against rising energy costs
- ★ High quality building works

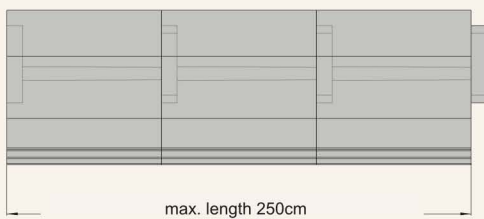
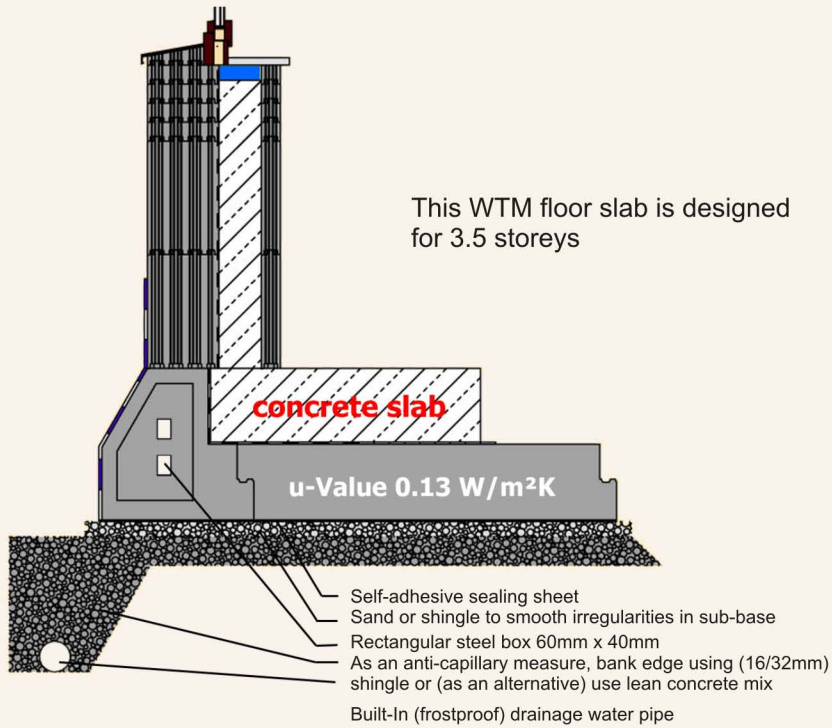


Rigid foam 300 kPa
Thermal conductivity (R Value): 0.035 W/m²K
Insulation Strength (U Value): 250mm: 0.13 W/m²K;
300mm: 0.11 W/m²K)

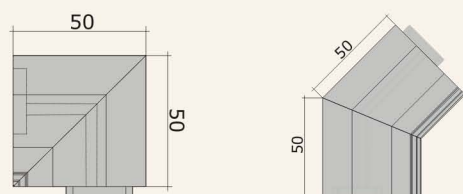
Building Product Approval No. Z-23.34-1644



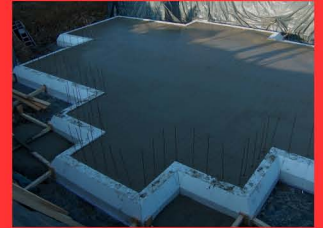
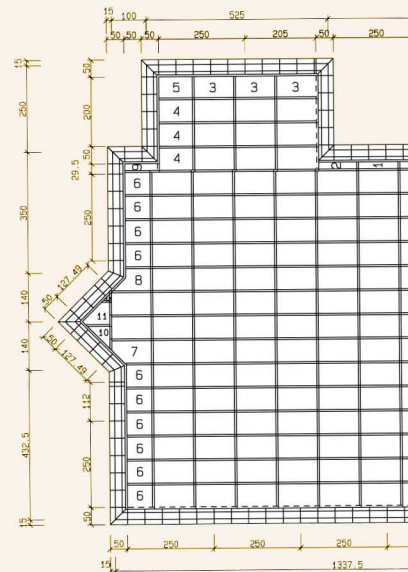
Professional insulation under the floor slab

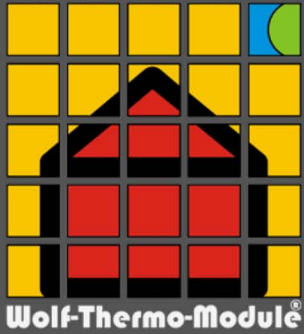


straight formwork



shuttering edges





Technical Information

for slab-floor insulation and shuttering edges

Thickness

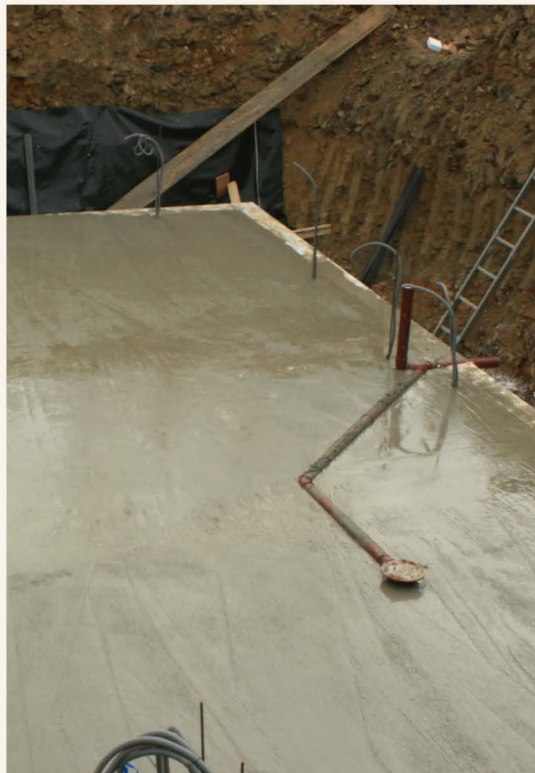
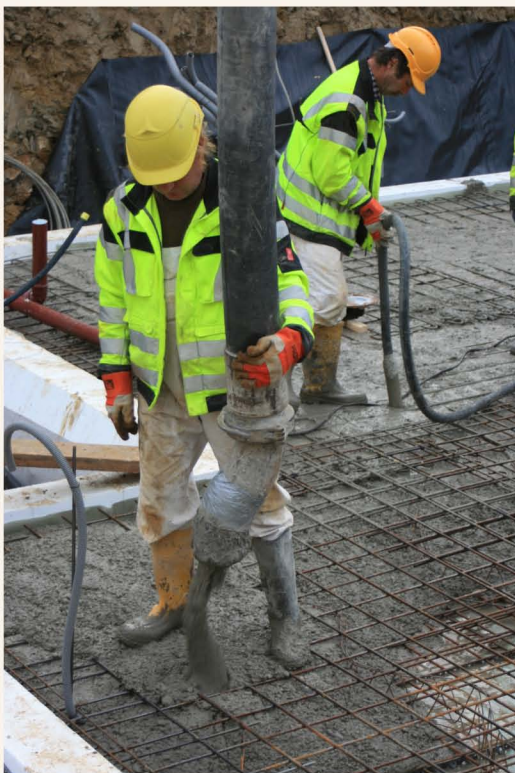
250 mm 300 mm

Dimensions	1195mm x 695mm	
Floor panels	0.83m ²	
U-Value	0.13 W/m ² K	0.11 W/m ² K

Physical properties of Polystyrol

	Tested to	Test result	
Application types	DIN 18164	Floor & Roof	
Strength	DIN 53420	300 kPa	
Material Class	DIN 4102	Flame resistant	
Thermal conductivity Measured at +10°C	DIN 52612	0.029 – 0.033 W/m ² K	
	Taken value	DIN 4108	0.035 W/m ² K
	The normal U-Value addition of 0.04 W/m²K does not apply!		
Compression test at 10% strain	DIN 53421	0.18 – 0.26 N/mm ²	
Continuous pressure test with <2% strain	DIN 1055-100	120 kPa	
Shear strength	DIN 53427	0.19 – 0.22 N/mm ²	
Bending strength	DIN 53423	0.42 – 0.50 N/mm ²	
Tensile strength	DIN 18164	0.37 – 0.52 N/mm ²	
e-Module Compression test	DIN 53457	7.40 – 9.00 N/mm ²	
Heat durability Short term	In accordance with DIN 53424	100 °C	
	Long term at 5000 N/mm ²	In accordance with DIN 18164	80 – 85 °C
	Long term at 20000 N/mm ²	DIN 18164	80 – 85 °C
Thermal expansion coefficient		5-7 x 10 ⁻⁵ 1/K	
Specific heat capacity	DIN 4108	1500 J/(kgxK)	
Absorption Run-off water retention	After 7 days	DIN 53428	2.0 Vol.- %
	After 1 year	DIN 53433	3.5 Vol.- %
Vapour transmission	DIN 52615	20 g/(m ² xd)	
Vapour diffusion	DIN 4108	40 / 100	

The floor slab's thermal comfort





A simple wall for an extensive life!

Low, low energy costs now... and for the future

- ★ Highest possible standard of living environment
- ★ The ideal wall solution for allergy sufferers (mildew & mould is permanently eradicated)
- ★ Best shielding qualities against sun radiation (over-warming)
- ★ Certified to the highest standard by the Passive House Institute in Darmstadt (Germany)
- ★ Building without thermal bridges using unique insulation: NEOPOR
- ★ Rapid construction



Rigid foam 180 kPa
Thermal conductivity (R-value) 0.031 W/m²K
Wall thickness:
312.5mm (U-Value 0,166 W/m²K)
and 437.5mm (U-Value 0,10 W/m²K)

Building Product Approval No. Z-15.2-206

Technical Information for WTM wall components



Physical properties of NEOPOR

	Tested to	Test result	
Certification type	GSH-Specification	PS 30 SE	
Application types	DIN 18164 Part 1	Walls (WV)	
Specific density	DIN 53420	30 kg/m ³	
Material class	DIN 4102	Flame resistant	
Thermal conductivity	Measured at +10°C	DIN 52612	0.029 – 0.033 W/m ² K
	Taken value	DIN 4108	0.035 W/m ² K
Compression test at 10% strain	DIN 53421	0.18 – 0.26 N/mm ²	
Continuous pressure test at <2% strain	DIN 1055-100	0.036–0.062 N/mm ²	
Shear strength	DIN 53427	0.19 – 0.22 N/mm ²	
Bending strength	DIN 53423	0.42 – 0.50 N/mm ²	
Tensile strength	DIN 18164	0.37 – 0.52 N/mm ²	
e-Module Compression test	DIN 53457	7.40 – 9.00 N/mm ²	
Heat durability	Short term	In accordance with DIN 53424	100 °C
	Long term at 5000 N/mm ²	In accordance with DIN 18164	80 – 85 °C
	Long term at 20000 N/mm ²	DIN 18164	80 – 85 °C
Thermal expansion coefficient		5-7 x 10 ⁻⁵ 1/K	
Specific heat capacity	DIN 4108	1500 J/(kgxK)	
Absorption Run-off water retention	After 7 days	DIN 53428	2.0 Vol.- %
	After 1 year	DIN 53433	3.5 Vol.- %
Vapour transmission	DIN 52615	20 g/(m ² xd)	
Vapour diffusion	DIN 4108	40 / 100	

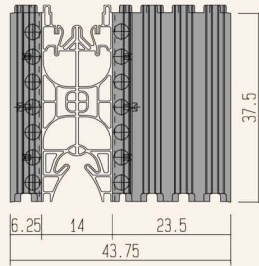
Build-Up wall former system for the creation of supporting walls using 140mm poured concrete at the core of the former. Parts include: 'Straight', 'Angle', 'T' & 'Lintel' connectors etc. in variants of 62.5mm.

The 'Tongue & Groove' joints between the formers prevent ingress from wind and weather. Plastic spacers between the inner and outer insulation skins eliminate any thermal and acoustic bridge possibilities.





WTM Professional Building System for Passive House walls



U-Value 0.10 W/m²K

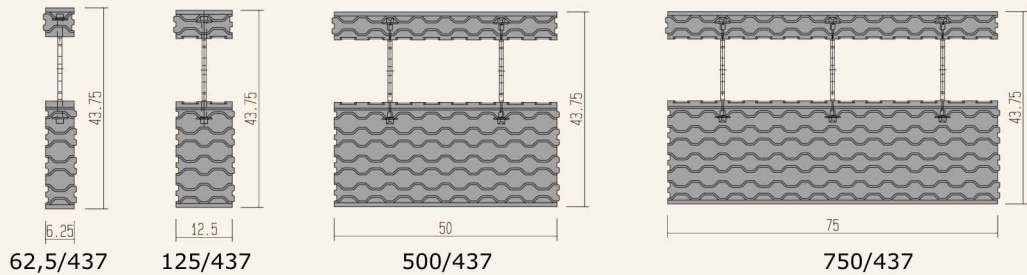
$\lambda = 0,031$ (Neopor)

Acoustic Performance: 52 db

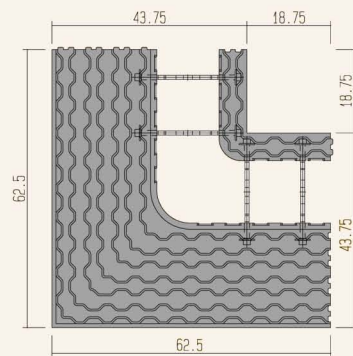
Material class: flame resistant

Specific density: 30 kg/m³

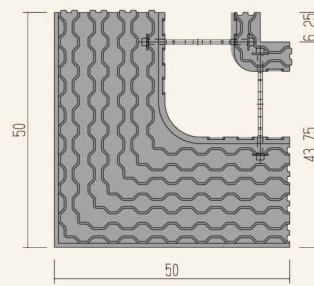
straight formwork in different lengths



90° exterior angle

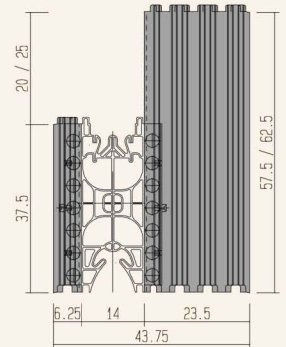


WL 625/437

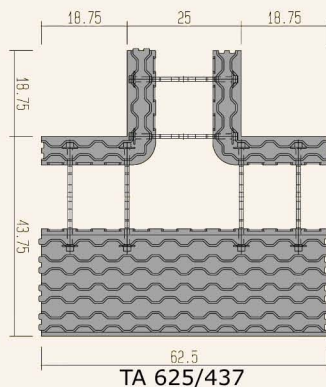


WL 500/437

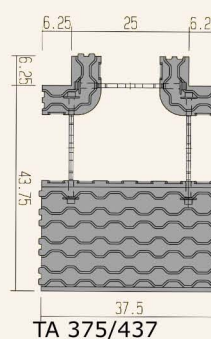
ceiling joint (cross section)



Interior wall connectors

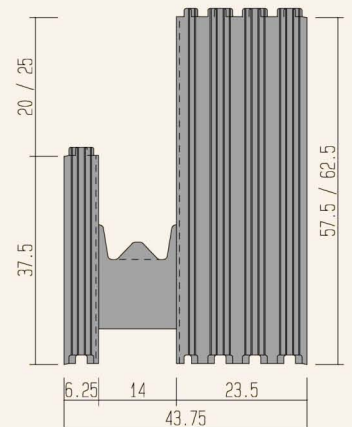


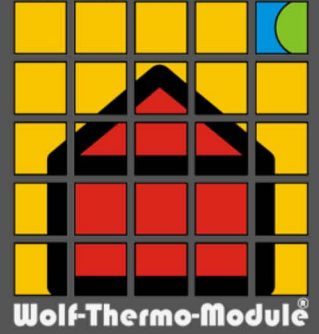
TA 625/437



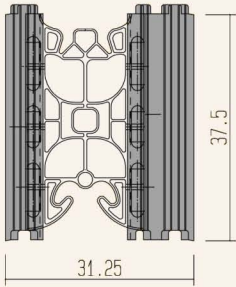
TA 375/437

Lintel (cross section)



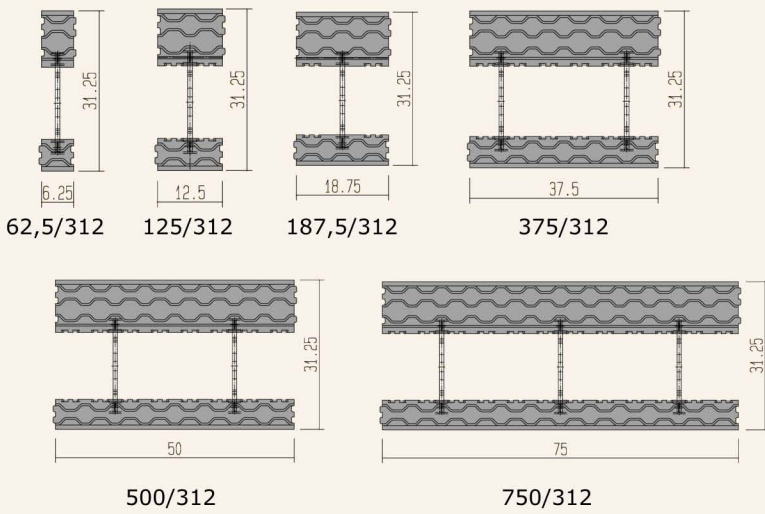


WTM Professional Building System for Low-Energy House walls

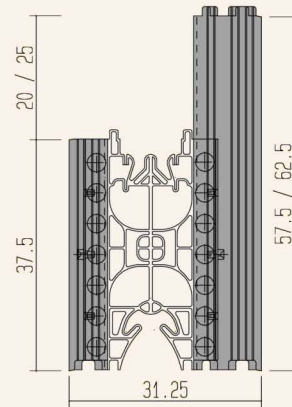


U-Value 0.23 W/m²K
 $\lambda = 0,031$ (Neopor)
 Acoustic Performance: 52 db
 Material class: flame resistant
 Specific density: 30 kg/m³

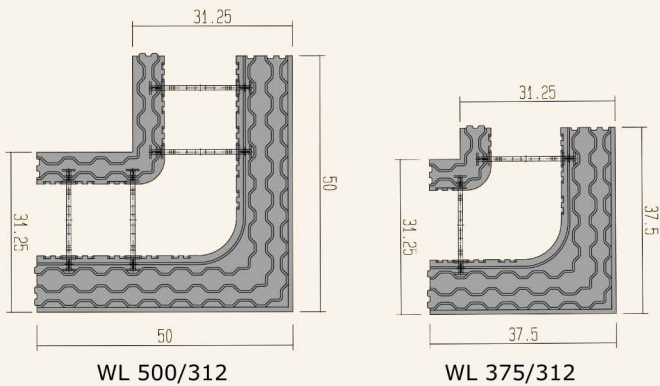
straight framework in different lengths



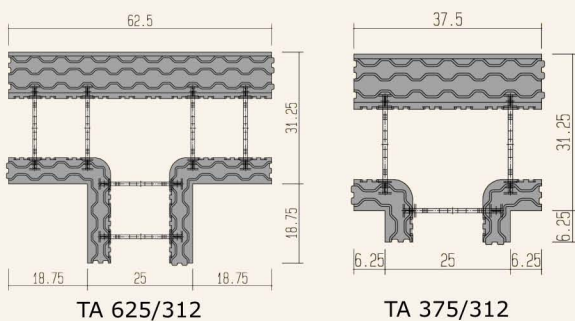
ceiling joint (cross section)



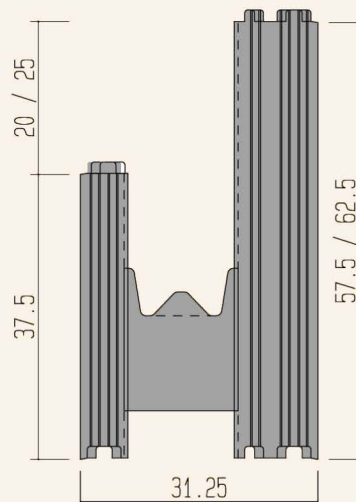
90° exterior angle



Interior wall connectors

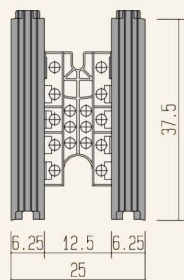


Lintel (cross section)





WTM Professional Building System for supporting walls



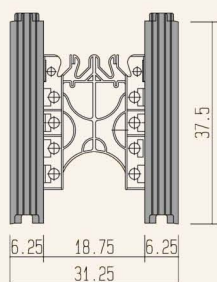
U-Value 0.23 W/m²K

$\lambda = 0,031$ (Neopor)

Acoustic Performance: 50 db

Material class: flame resistant

Specific density: 30 kg/m³



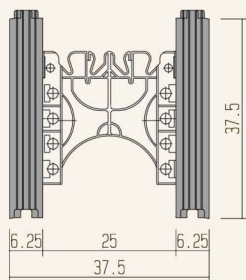
U-Value 0.23 W/m²K

$\lambda = 0,031$ (Neopor)

Acoustic Performance: 55 db

Material class: flame resistant

Specific density: 30 kg/m³



U-Value 0.23 W/m²K

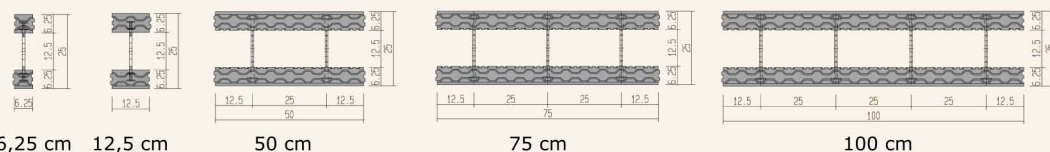
$\lambda = 0,031$ (Neopor)

Acoustic Performance: 58 db

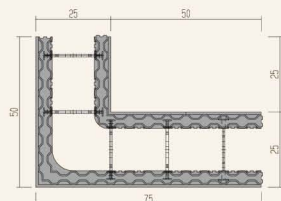
Material class: flame resistant

Specific density: 30 kg/m³

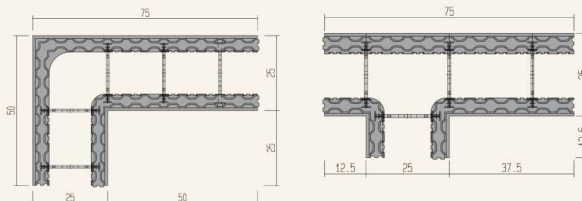
straight formwork in different lengths



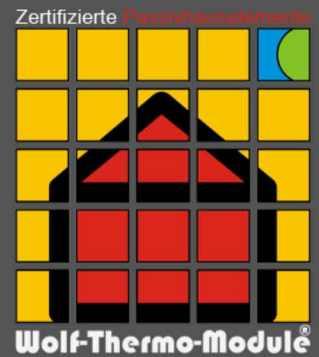
angle module 90°



T-connector



WTM Professional Building System Quick pour concrete floors



For speed and comfort

Precious heat is retained where it is needed (in the house) for a snug and cosy feeling

- ★ Massive energy savings for a lifetime
- ★ Condensation, damp, mould and mildew problems eliminated in the walls and floors
- ★ Optimal structural engineering and thermal performance
- ★ Extremely cost effective
- ★ Low weight (approx. 6,5 kg/RM)



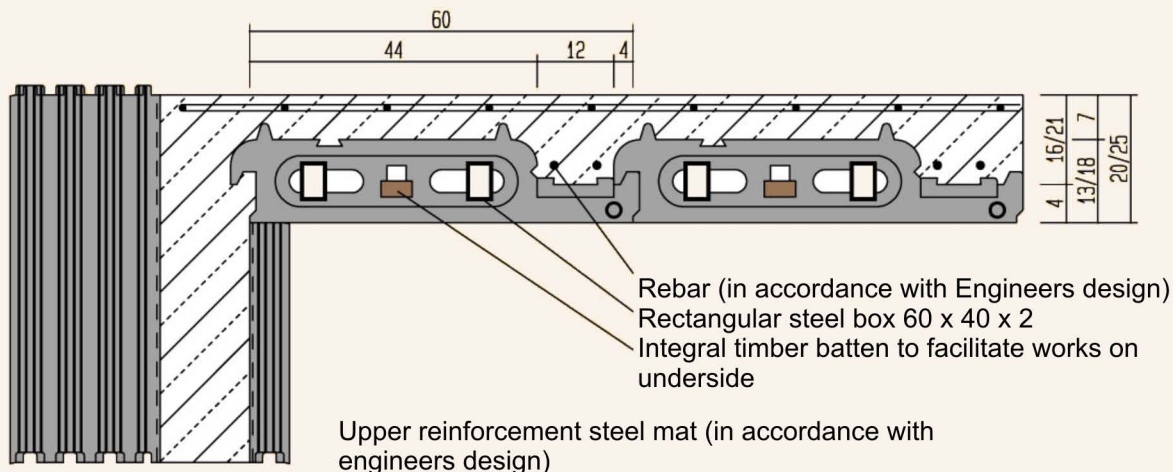
Rigid foam 180kPa
Thermal conductivity (R Value): 0.035 W/m²K

Floor thickness 200mm (for spans up to 5m)
Floor thickness 250mm (for spans up to 9m)



WTM Professional Building System

Quick pour concrete floors



Floor thickness

200mm

250mm

U-Value

(shell floor-unfinished):

0.35 W/m²K

0.34 W/m²K

Span

up to 5m

up to 9m

Active load

2.75 K/N m²

2.75 K/N m²

Concrete usage m³

≈ 0.10 m³/m²

≈ 0.12 m³/m²

Acoustic performance

(Shell ceiling-unfinished)

45 db

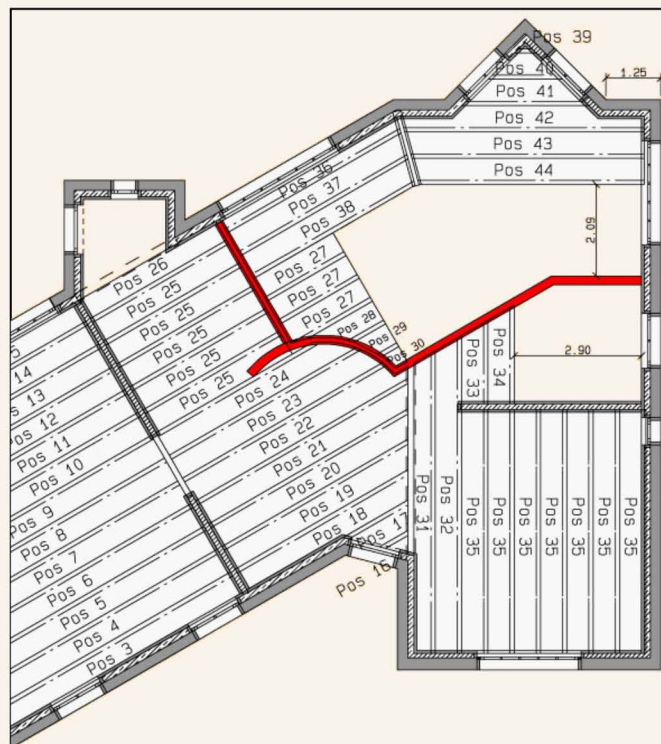
45 db

Formation of floors

Floor formers are easy to lay in accordance with the WTM floor plan supplied.

All parts are numbered and can be laid by 2 men @ 600mm centres. Floor panels lap onto supporting walls with a 62.5mm margin. Suitably sized and spaced rebar longitudinals (x2) are laid at intervals below the reinforcement matting all in accordance with the structural engineers design and WTM guidelines. The ready formed area should be suitably propped on the underside (at centres not exceeding 2m) prior to pouring concrete above.

Job done!



WTM Professional Building System Conventional Roof Insulation



An eternal friendship with Mother Nature

Roof insulation without
compromise to our future

- ★ High living comfort for a pleasant environment
- ★ Exceptionally cost effective
- ★ Insulation and financial security against rising energy costs
- ★ Minimal to zero heat loss

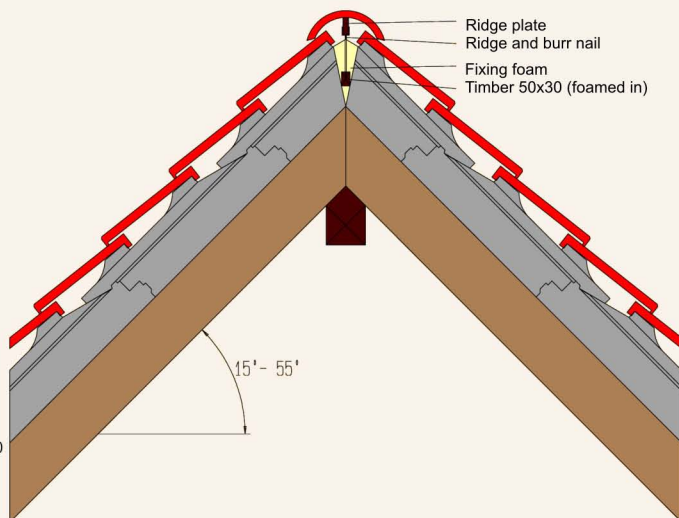
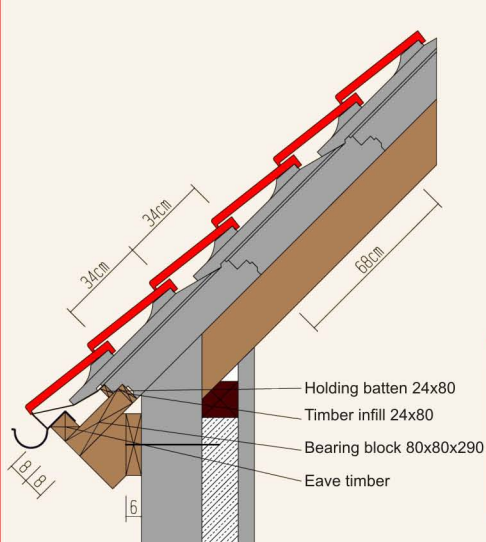


Polystyrol Rigidfoam PS 25 (or NEOPOR)
Thermal conductivity (R value): 0.035 W/ m²K
(NEOPOR: 0,031 W/m²K)



WTM Professional Building System

Conventional Roof Insulation



Insulation panel thickness

219mm

289mm

U-Value

0.143 W/m²K

0.109 W/m²K

Thermal conductivity

0.035 w/m²K

Tile spacing

340mm

Dimensions

1200mm x 680mm

Polystyrol Rigid Foam:
or Neopor

PS 28

Fire Rating

Flame resistant in accordance with
DIN 4102

Labour & Material savings:

- Battening not required.
- Faster installation (1 Panel = 0.96 m²)
- Only WTM roof panels facilitate screw-fixings for tile hanging.

Roof tiles of your choice:

- Suitable for all available tile formats. (Tile spacing 340mm)

Long lifespan:

- Because the insulation is applied externally to the roof, the loft space is much bigger and suitable for use as a living space. Heat, cold and moisture is kept permanently outside the main building shell.

Ecologically friendly construction:

- The Polystyrol used in WTM roof panels is carbon free and therefore equates to carbon free building. Polystyrol is 100% recyclable.
- Ideal for T&G timber cladding (or similar) on underside.

WTM Professional Building System Roof Panel



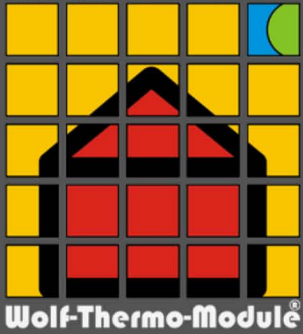
The -all in one- Roof System for fast and high quality building efficiency

Integral Roof Insulation & Rafter Panels

- ★ Simple installation by hand (no lifting equipment required)
- ★ Exceptionally cost effective
- ★ Significant reductions in labour cost
- ★ No thermal bridges

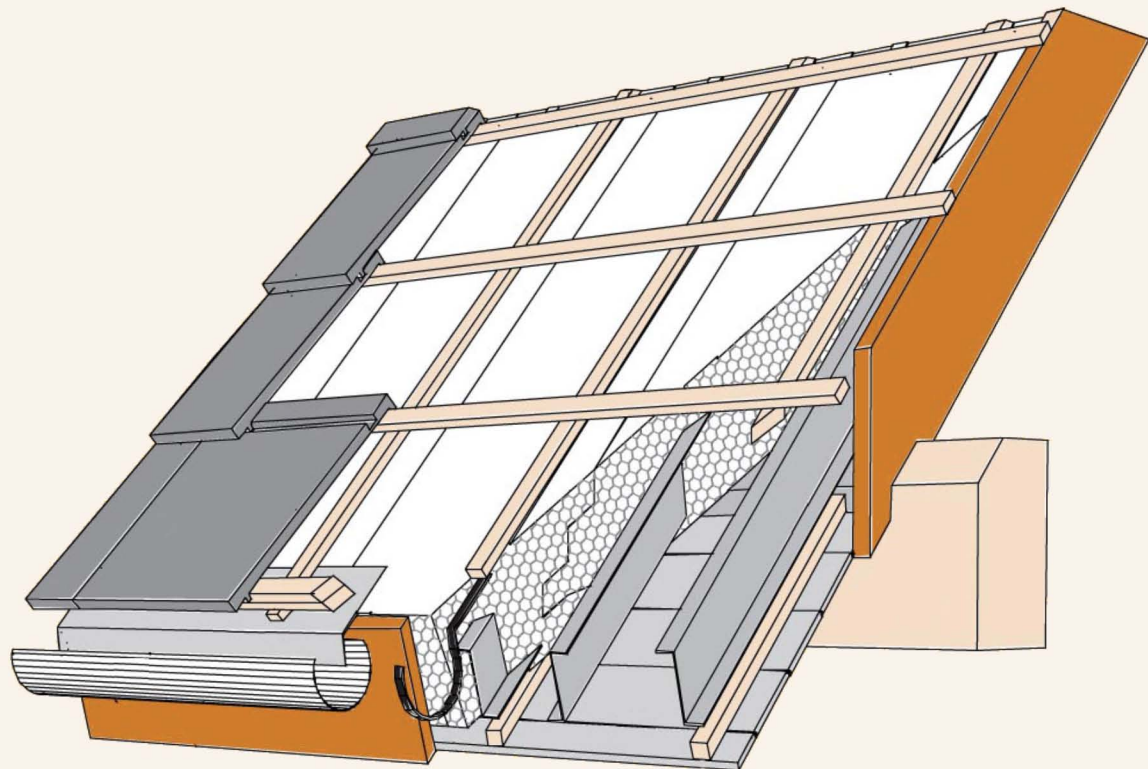


Neopor Rigidfoam: 180 kpa
Thermal Conductivity: 0.035 W/m²K



WTM Professional Building System Roof Panel

Interlocking impervious roof panels spanning from ridge to eave comprising 'Z Purlins' and Neopor Rigidfoam (dispenses with rafters, felting & insulation works)



Panel thickness

170mm

200mm

230mm

U-Value

0.20 W/m²K

0.17 W/m²K

0.15 W/m²K

Material

Polystyrol Rigid Foam PS 25

Thermal conductivity

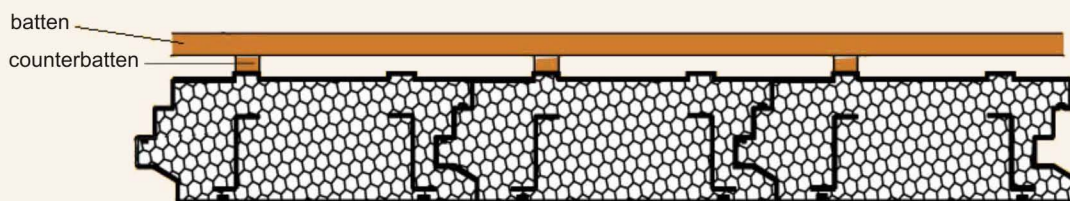
0.035 W/m²K

Fire rating

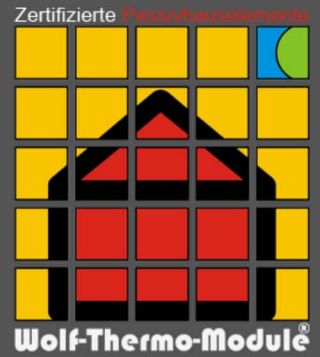
Flame resistant in accordance with
DIN 4102

Dimensions

Panel width: 510mm;
Panel length: up to 15m max.



WTM Professional Building System Roof Panel



Roof panel with 2 Z-Profiles $t_N = 1,2 \text{ mm}$

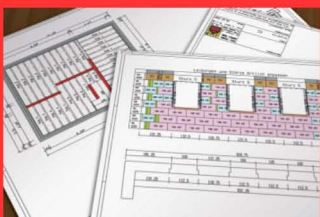
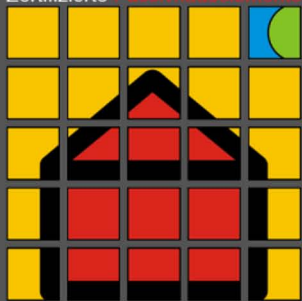
Table for maximum distance between supports [m] three point mounting

row 1: Approved distance between supports without restriction of deflexion. Assumption: gail force/h $\leq 20 \text{ m}$
 row 2: Approved distance between supports; restriction of deflexion $f \leq L/150$ in accordance with DAST - directive 016/4
 row 3: Approved distance between supports; restriction of deflexion $f \leq L/300$

Snow load		Roof pitch [°]							
So [kN/m ²]	row	0	10	20	30	40	50	60	70
1,00	1)	3,63	3,67	3,79	3,80	4,06	4,32	4,79	5,13
	2)	3,63	3,67	3,79	3,80	4,06	4,32	4,79	5,13
	3)	3,46	3,48	3,49	3,56	3,66	3,81	4,09	4,38
1,50	1)	3,23	3,27	3,39	3,47	3,82	4,18	4,74	5,13
	2)	3,23	3,27	3,39	3,47	3,82	4,18	4,74	5,13
	3)	3,21	3,23	3,32	3,29	3,51	3,73	4,06	4,38
2,00	1)	2,94	2,97	3,09	3,22	3,61	4,05	4,69	5,13
	2)	2,94	2,97	3,09	3,22	3,61	4,05	4,69	5,13
	3)	2,94	2,97	3,09	3,13	3,39	3,65	4,03	4,38
2,50	1)	2,71	2,75	2,86	3,01	3,29	3,79	4,63	5,13
	2)	2,71	2,75	2,86	3,01	3,29	3,79	4,63	5,13
	3)	2,71	2,75	2,86	3,00	3,28	3,58	3,99	4,38
4,50	1)	2,05	2,11	2,28	2,06	2,20	2,75	3,91	5,13
	2)	2,05	2,11	2,28	2,06	2,20	2,75	3,91	5,13
	3)	2,05	2,11	2,28	2,06	2,20	2,75	3,87	4,38

Bolt malfunction impossible!





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