

Kiwa Nederland B.V.

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European Technical Assessment **ETA 13/0411**
of 09/07/2015

General Part

Technical Assessment Body issuing the ETA: Kiwa Nederland B.V.	
Trade name of the construction product	PhoneStar
Product family to which the construction product belongs	Product area code: 21 Self-supporting composite lightweight panels for use in internal walls
Manufacturer	Wolf Bavaria GmbH Gutenbergstrasse 8 D-91560 Heilsbronn, Germany www.wolf-bavaria.com
Manufacturing plant(s)	Plant 1, Plant 2, Plant 3
This European Technical Assessment contains	34 pages including 3 Annex(es) which form an integral part of this assessment.
This European Technical Assessment is issued in accordance with regulation (EU) No 305/2011, on the basis of	Annex 3 contains confidential information and is not included in the European Technical Assessment when that assessment is publicly disseminated ETAG 016, edition November 2003, Part 1: General and Part 4: Specific aspects relating to Self-supporting Composite Lightweight Panels for use in internal walls and ceilings, used as European Assessment Document (EAD)

This version replaces ETA 13/0411, version 1 issued on 17/06/2013.

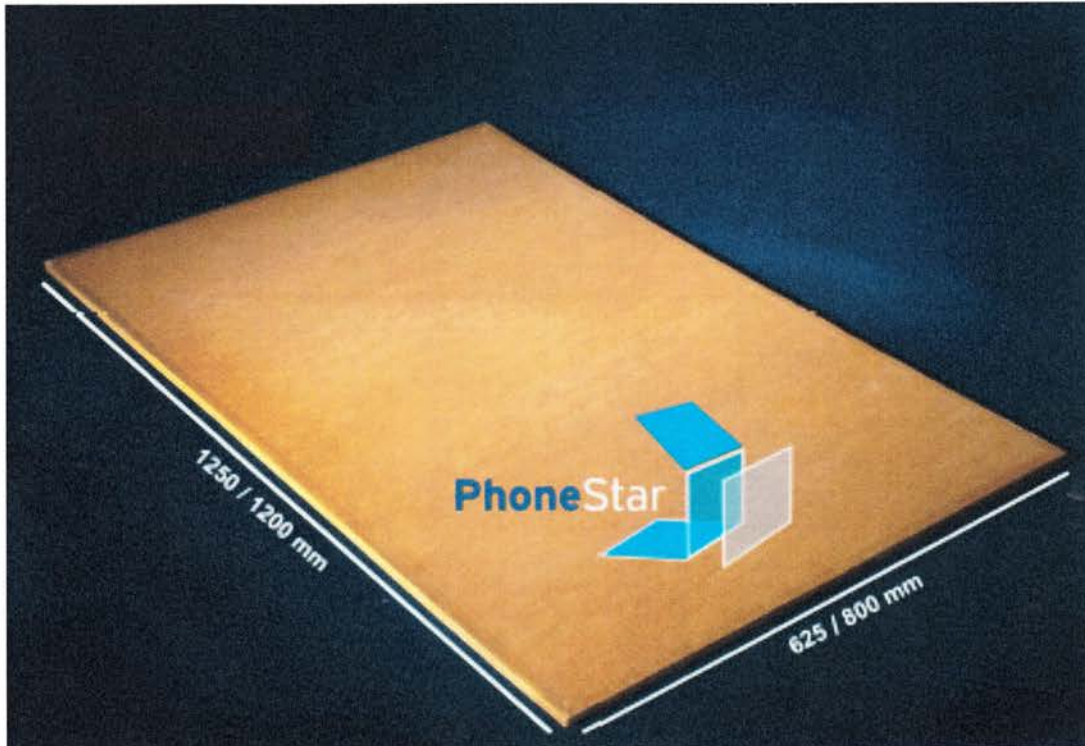
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Specific parts

1. Technical description of the product

PhoneStar are boards made of water resistance corrugated cardboard. Hollow spaces are filled with a mixture of dry sand; the cutting edges were closed by an adhesive paper tape. PhoneStar are self-supporting composite lightweight boards for use in internal walls.



The PhoneStar boards are produced in thicknesses between 9 and 15 mm.

PhoneStar boards have a length of 1000 mm up to 1250 mm and a width of 500 mm up to 800 mm.

In general there are three different types of PhoneStar:

PhoneStar Twin
PhoneStar ST Twin
PhoneStar Plus Twin



Thickness 9-10 mm
Two Waves in one direction

PhoneStar Tri
PhoneStar ST Tri
PhoneStar Plus Tri



Thickness 12,5-15 mm
Three wave in one direction

PhoneStar Professional
(Abb. Prof.)



Thickness 15 mm
Three wave crossed

1.1. Geometry PhoneStar boards

The dimensions of the PhoneStar boards are:

Length : 1000 to 1250 mm;
Width : 500 to 800 mm;
Thickness : 9 to 15 mm.

With the following tolerances determined to EN 822:

Length : ± 3 mm;
 Width : ± 3 mm;
 Thickness : ± 1 mm;
 Squareness : ± 1 mm/m.








1.2. Density PhoneStar boards

The density of the PhoneStar boards is minimum 1300 kg/m³ ± 100 kg/m³ or more.

1.3. Surface hardness PhoneStar boards

The surface hardness of the PhoneStar boards is ≤ 15 mm determined in accordance with EN 520.

1.4. Other components

Product	Picture	Description
Wolf Tape Roll / 50 m		Taping cutting edges of PhoneStar
Wolf System Glue Bottle 1,1 kg Approx. 10 m ² a bottle		Gluing plasterboards on PhoneStar at different systems solutions. Or gluing PhoneStar together.
Wolf System Dowel Box: 50 / 250 pcs. Dimensions: 6 x 60, 6 x 80, 8 x 100 mm Consumption: 12 pcs. / plate		Direct installing PhoneStar on masonry walls
Gypsum screw Dimension: 5,5 x 38 mm Box: 500 pcs.		Fixing a plasterboard in PhoneStar
Timber Screw Dimension: 3,9 x 35 mm Box: 1000 pcs.		Fixing PhoneStar plates in timber constructions
Metal Screw Dimension: 3,9 x 35 mm Box: 1000 pcs.		Fixing PhoneStar plates in metal constructions.
Gypsum fibre Screw Dimension: 3,9 x 22 mm Box: 1000 pcs		Fixing Plasterboard in PhoneStar in connection with Wolf System Glue.

2. Specification of the intended use(s) in accordance with the applicable European Assessment Document (hereinafter EAD)

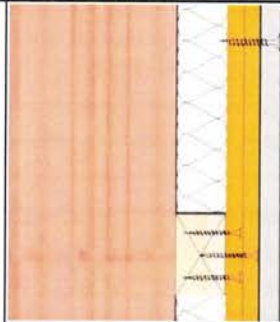
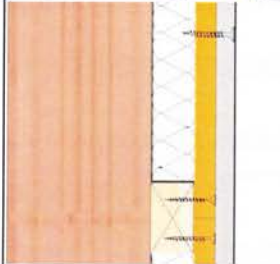
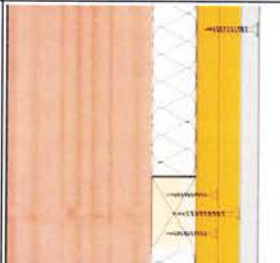
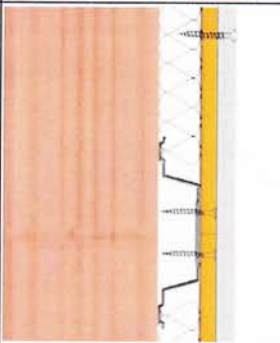
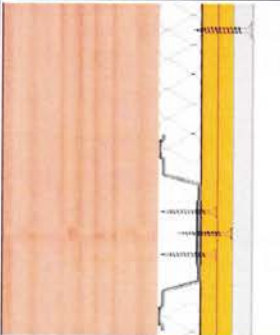
PhoneStar boards for planking and lining of building components. PhoneStar boards are only to be used as additional panel(s) behind the surface panel of internal walls and ceilings in order to improve acoustic and thermal performance. PhoneStar boards can not be the final layer. It is necessary to screw and or glue a plaster board on top of PhoneStar.

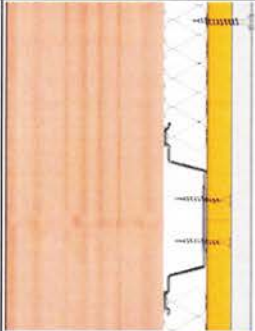
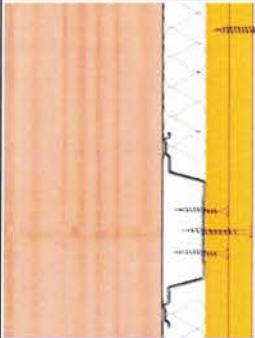
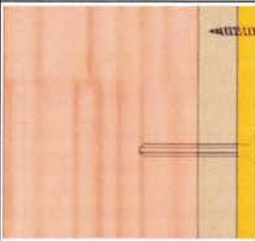
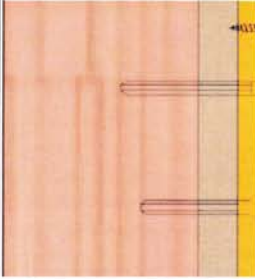
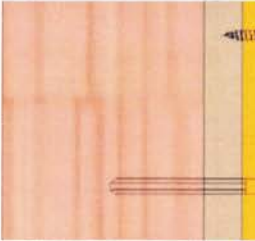
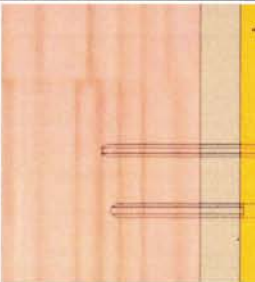
The intended working life of the PhoneStar plates is assumed to be at least 10 years. The indication of the working life of a system cannot be interpreted as a guarantee given by the producer (or the approval body) but is regarded only as a mean of choosing the right products in relation to the expected economically reasonable working life.

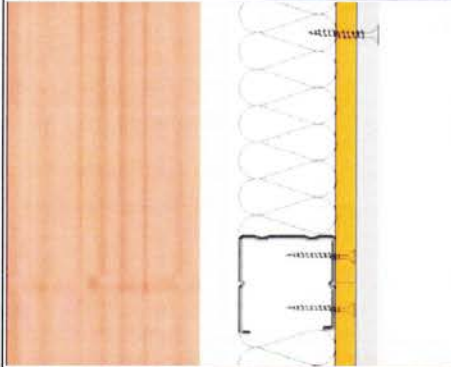
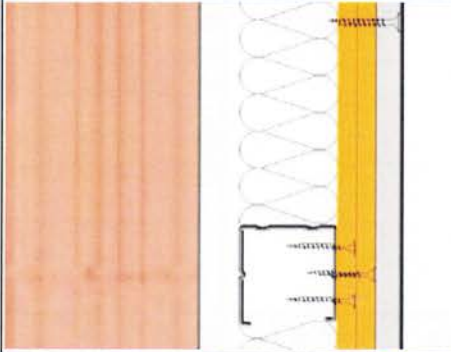
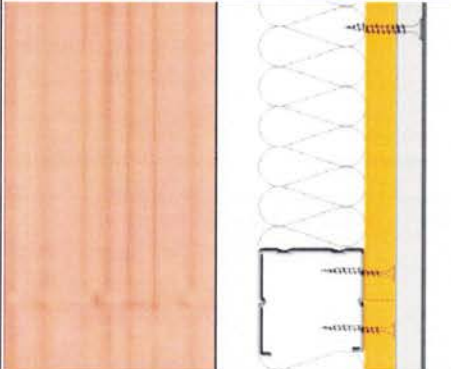
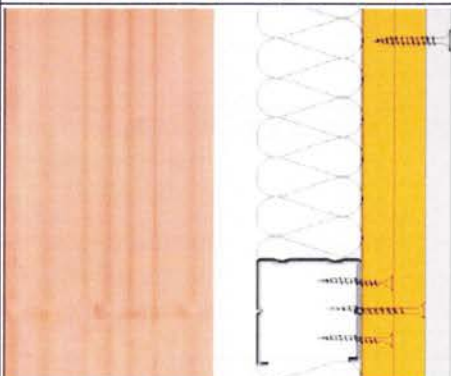
Examples of applications are given in the tables of paragraph 2.1 – 2.4.

2.1. Application area: Masonry walls

Type	Ref. No	Constructions on masonry walls	Thickness [mm]	System drawing
1	WMZ D 1.1	Masonry wall 115 mm PhoneStar Twin 10 mm Plasterboard 12,5 mm Or PhoneStar ST Twin 9 mm Or PhoneStar Plus Twin 10 mm	22,5	
2	WMZ D 1.1 2 x 10 mm	Masonry wall 2 x PhoneStar Twin 10 mm Plasterboard 12,5 mm Or PhoneStar ST Twin 9 mm Or PhoneStar Plus Twin 10 mm	32,5	
3	WMZ D 1.2	Masonry wall PhoneStar (Tri or Prof.) 15 mm Plasterboard 12,5 mm Or PhoneStar ST Tri 12,5 mm Or PhoneStar Plus Tri 15 mm	17,5	
4	WMZ D 1.2 2 x 15 mm	Masonry wall 2 x PhoneStar (Tri or Prof.) 15 mm Plasterboard 12,5 mm Or PhoneStar ST Tri 12,5 mm Or PhoneStar Plus Tri 15 mm	42,5	
5	WMZ L 1.2	Masonry wall Battens W 50 x T 30 mm PhoneStar Twin 10 mm Plasterboard 12,5 mm Or PhoneStar ST Twin 9 mm Or PhoneStar Plus Twin 10 mm	52,5	

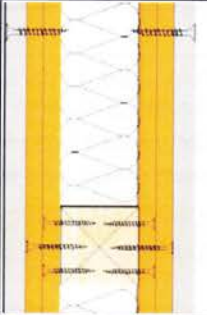
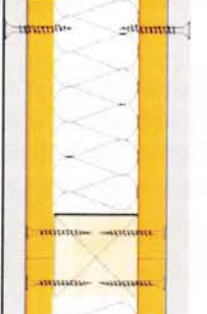
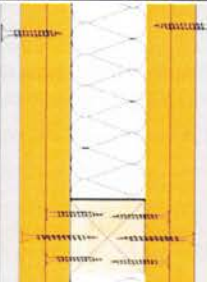
Type	Ref. No	Constructions on masonry walls	Thickness [mm]	System drawing
6	WMZ L 1.2 2 x 10 mm	Masonry wall Battens W 50 x T 30 mm 2 x PhoneStar Twin 10 mm Plasterboard 12,5 mm Or PhoneStar ST Twin 9 mm Or PhoneStar Plus Twin 10 mm	62,5	
7	WMZ L 1.2	Masonry wall Battens W 50 x T 30 mm PhoneStar (Tri or Prof.) 15 mm Plasterboard 12,5 mm Or PhoneStar ST Tri 12,5 mm Or PhoneStar Plus Tri 15 mm	57,5	
8	WMZ L 1.2 2 x 15 mm	Masonry wall Battens W 50 x T 30 mm 2 x PhoneStar (Tri or Prof.) 15 mm Plasterboard 12,5 mm Or PhoneStar ST Tri 12,5 mm Or PhoneStar Plus Tri 15 mm	72,5	
9	WMZ H 1.1	Masonry wall Resilient bars T 27 mm Phonestar Twin 10 mm Plasterboard 12,5 mm Or PhoneStar ST Twin 9 mm Or PhoneStar Plus Twin 10 mm	49,5	
10	WMZ H 1.1 2 x 10 mm	Masonry wall Resilient bars T 27 mm 2 x PhoneStar Twin 10 mm Plasterboard 12,5 mm Or PhoneStar ST Twin 9 mm Or PhoneStar Plus Twin 10 mm	59,5	

Type	Ref. No	Constructions on masonry walls	Thickness [mm]	System drawing
11	WMZ H 1.2	Masonry wall Resilient bars T 27 mm PhoneStar (Tri or Prof.) 15 mm Plasterboard 12,5 mm Or PhoneStar ST Tri 12,5 mm Or PhoneStar Plus Tri 15 mm	54,5	
12	WMZ H 1.2 2 x 15 mm	Masonry wall Resilient bars T 27 mm PhoneStar (Tri or Prof.) 15 mm Plasterboard 12,5 mm Or PhoneStar ST Tri 12,5 mm Or PhoneStar Plus Tri 15 mm	69,5	
13	WMZ W 1.1	Masonry wall Wood fibre 20 mm PhoneStar Twin 10 mm Plasterboard 12,5 Or PhoneStar ST Twin 9 mm Or PhoneStar Plus Twin 10 mm	42,5	
14	WMZ W 1.1 2 x 10 mm	Masonry wall Wood fibre 20 mm 2 x PhoneStar Twin 10 mm Plasterboard 12,5 Or PhoneStar ST Twin 9 mm Or PhoneStar Plus Twin 10 mm	52,5	
15	WMZ W 1.2	Wood fibre 20 mm PhoneStar (Tri or Prof.) 15 mm Plasterboard 12,5 Or PhoneStar ST Tri 12,5 mm Or PhoneStar Plus Tri 15 mm	47,5	
16	WMZ W 1.2 2 x 15 mm	Wood fibre 20 mm 2 x PhoneStar (Tri or Prof.) 15 mm Plasterboard 12,5 Or PhoneStar ST Tri 12,5 mm Or PhoneStar Plus Tri 15 mm	62,5	

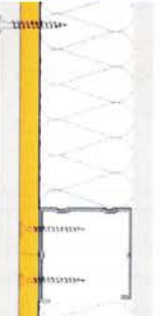
Type	Ref. No	Constructions on masonry walls	Thickness [mm]	System drawing
17	WMZ V 1.1	Air gab 10 mm Steel stud T 50 mm (Cavity) PhoneStar Twin 10 mm Plasterboard 12,5 mm Or PhoneStar ST Twin 9 mm Or PhoneStar Plus Twin 10 mm	82,5	
18	WMZ V 1.1 2 x 10 mm	Air gab 10 mm Steel stud T 50 mm (Cavity) 2 x PhoneStar Twin 10 mm Plasterboard 12,5 mm Or PhoneStar ST Twin 9 mm Or PhoneStar Plus Twin 10 mm	92,5	
19	WMZ V 1.2	Air gab 10 mm Steel stud T 50 mm (Cavity) PhoneStar (Tri or Prof.) 15 mm Plasterboard 12,5 mm Or PhoneStar ST Tri 12,5 mm Or PhoneStar Plus Tri 15 mm	87,5	
20	WMZ V 1.2 2 x 15 mm	Air gab 10 mm Steel stud T 50 mm (Cavity) 2 x PhoneStar (Tri or Prof.) 15 mm Plasterboard 12,5 mm Or PhoneStar ST Tri 12,5 mm Or PhoneStar Plus Tri 15 mm	112,5	


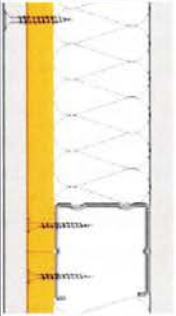

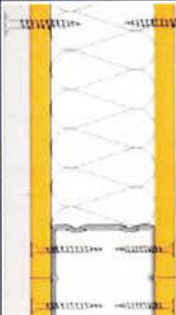
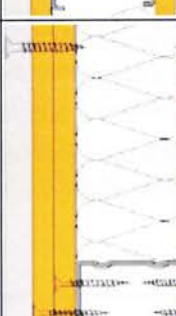
2.2. Application area: Timber stud walls

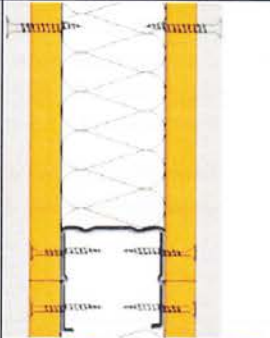
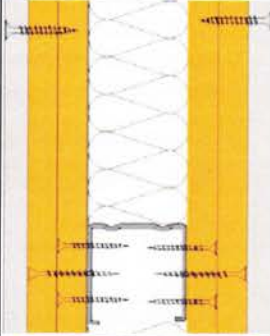
Type	Ref. No	Constructions on timber stud walls	Thickness [mm]	System drawing
1	WSH 1.1	Plasterboard 12,5 mm PhoneStar Twin 10 mm Timber stud T 45 mm (Cavity) Plasterboard 12,5 mm Or PhoneStar ST Twin 9 mm Or PhoneStar Plus Twin 10 mm	80,0	
2	WSH 1.1 2 x 10 mm	Plasterboard 12,5 mm 2 x PhoneStar Twin 10 mm Timber stud T 45 mm (Cavity) Plasterboard 12,5 mm Or PhoneStar ST Twin 9 mm Or PhoneStar Plus Twin 10 mm	90,0	
3	WSH 1.2	Plasterboard 12,5 mm PhoneStar (Tri or Prof.) 15 mm Timber stud T 45 mm (Cavity) Plasterboard 12,5 mm Or PhoneStar ST Tri 12,5 mm Or PhoneStar Plus Tri 15 mm	85,0	
4	WSH 1.2 2 x 15 mm	Plasterboard 12,5 mm 2 x PhoneStar (Tri or Prof.) 15 mm Timber stud T 45 mm (Cavity) Plasterboard 12,5 mm Or PhoneStar ST Tri 12,5 mm Or PhoneStar Plus Tri 15 mm	100	
5	WSH 2.1	Plasterboard 12,5 mm PhoneStar Twin 10 mm Timber stud T 45 mm (Cavity) PhoneStar Twin 10 mm Plasterboard 12,5 mm Or PhoneStar ST Twin 9 mm Or PhoneStar Plus Twin 10 mm	90,0	

Type	Ref. No	Constructions on timber stud walls	Thickness [mm]	System drawing
6	WSH 2.1 2 x 10 mm	Plasterboard 12,5 mm 2 x PhoneStar Twin 10 mm Timber stud T 45 mm (Cavity) 2 x PhoneStar Twin 10 mm Plasterboard 12,5 mm Or PhoneStar ST Twin 9 mm Or PhoneStar Plus Twin 10 mm	110,0	 A cross-sectional diagram of a timber stud wall. It shows two vertical timber studs (yellow) with a cavity between them. The wall is finished with two layers of plasterboard (grey) and two layers of PhoneStar Twin acoustic insulation (white zig-zag) on both sides. Dimensions are indicated with arrows and numbers.
7	WSH 2.2	Plasterboard 12,5 mm PhoneStar (Tri or Prof.) 15 mm Timber stud T 45 mm (Cavity) PhoneStar (Tri or Prof.) 15 mm Plasterboard 12,5 mm Or PhoneStar ST Tri 12,5 mm Or PhoneStar Plus Tri 15 mm	90,0	 A cross-sectional diagram of a timber stud wall. It shows two vertical timber studs (yellow) with a cavity between them. The wall is finished with two layers of plasterboard (grey) and two layers of PhoneStar (Tri or Prof.) acoustic insulation (white zig-zag) on both sides. Dimensions are indicated with arrows and numbers.
8	WSH 2.2 2 x 15 mm	Plasterboard 12,5 mm 2 x PhoneStar (Tri or Prof.) 15 mm Timber stud T 45 mm (Cavity) 2 x PhoneStar (Tri or Prof.) 15 mm Plasterboard 12,5 mm Or PhoneStar ST Tri 12,5 mm Or PhoneStar Plus Tri 15 mm	120,0	 A cross-sectional diagram of a timber stud wall. It shows two vertical timber studs (yellow) with a cavity between them. The wall is finished with two layers of plasterboard (grey) and two layers of PhoneStar (Tri or Prof.) acoustic insulation (white zig-zag) on both sides. Dimensions are indicated with arrows and numbers.

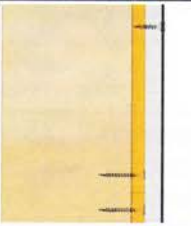


2.3. Application area: Steel stud walls

Type	Ref. No	Constructions on steel stud walls	Thickness [mm]	System drawing
1	WSM 1.1	Plasterboard 12,5 mm PhoneStar Twin 10 mm Steel stud T 50 mm (Cavity) Plasterboard 12,5 mm Or PhoneStar ST Twin 9 mm Or PhoneStar Plus Twin 10 mm	85,0	 A cross-sectional diagram of a steel stud wall. It shows two vertical steel studs (yellow) with a cavity between them. The wall is finished with two layers of plasterboard (grey) and two layers of PhoneStar Twin acoustic insulation (white zig-zag) on both sides. Dimensions are indicated with arrows and numbers.

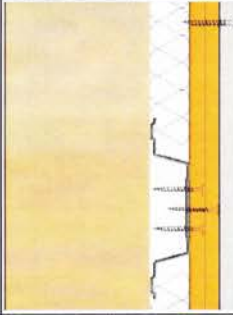
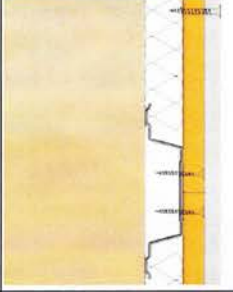
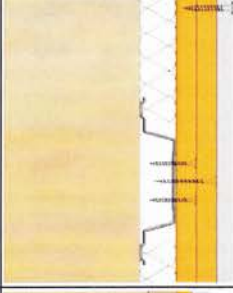
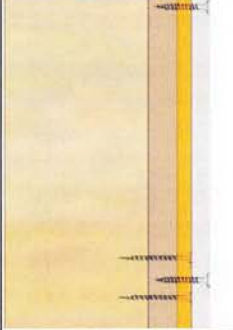

Type	Ref. No	Constructions on steel stud walls	Thickness [mm]	System drawing
2	WSM 1.1 2 x 10 mm	Plasterboard 12,5 mm 2 x PhoneStar Twin 10 mm Steel stud T 50 mm (Cavity) Plasterboard 12,5 mm Or PhoneStar ST Twin 9 mm Or PhoneStar Plus Twin 10 mm	95,0	
3	WSM 1.2	Plasterboard 12,5 mm PhoneStar (Tri or Prof.) 15 mm Steel stud T 50 mm (Cavity) Plasterboard 12,5 mm Or PhoneStar ST Tri 12,5 mm Or PhoneStar Plus Tri 15 mm	90,0	
4	WSM 1.2 2 x 15 mm	Plasterboard 12,5 mm 2 x PhoneStar (Tri or Prof.) 15 mm Steel stud T 45 mm (Cavity) Plasterboard 12,5 mm Or PhoneStar ST Tri 12,5 mm Or PhoneStar Plus Tri 15 mm	105	
5	WSM 2.1	Plasterboard 12,5 mm PhoneStar Twin 10 mm Steel stud T 50 mm (Cavity) PhoneStar Twin 10 mm Plasterboard 12,5 mm Or PhoneStar ST Twin 9 mm Or PhoneStar Plus Twin 10 mm	95,0	
6	WSM 2.1 2 x 10 mm	Plasterboard 12,5 mm 2 x PhoneStar Twin 10 mm Steel stud T 50 mm (Cavity) 2 x PhoneStar Twin 10 mm Plasterboard 12,5 mm Or PhoneStar ST Twin 9 mm Or PhoneStar Plus Twin 10 mm	115,0	

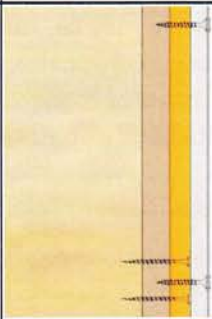
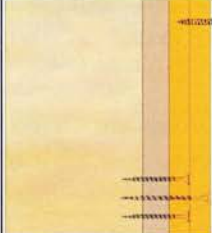
Type	Ref. No	Constructions on steel stud walls	Thickness [mm]	System drawing
7	WSM 2.2	Plasterboard 12,5 mm PhoneStar (Tri or Prof.) 15 mm Steel stud T 50 mm (Cavity) PhoneStar (Tri or Prof.) 15 mm Plasterboard 12,5 mm Or PhoneStar ST Tri 12,5 mm Or PhoneStar Plus Tri 15 mm	105,0	
8	WSM 2.2 2 x 15 mm	Plasterboard 12,5 mm 2 x PhoneStar (Tri or Prof.) 15 mm Steel stud T 50 mm (Cavity) 2 x PhoneStar (Tri or Prof.) 15 mm Plasterboard 12,5 mm Or PhoneStar ST Tri 12,5 mm Or PhoneStar Plus Tri 15 mm	130,0	

2.4. Application area: Solid timber walls

Type	Ref. No	Constructions on solid timber walls	Thickness [mm]	System drawing
1	WMH D 1.1	Solid timber wall PhoneStarTwin 10 mm Plasterboard 12,5 mm Or PhoneStar ST Twin 9 mm Or PhoneStar Plus Twin 10 mm	22,5	
2	WMH D 1.1 2 x 10 mm	Solid timber wall 2 x PhoneStar Twin 10 mm Plasterboard 12,5 mm Or PhoneStar ST Twin 9 mm Or PhoneStar Plus Twin 10 mm	32,5	
3	WMH D 1.2	Solid timber wall PhoneStar (Tri or Prof.) 15 mm Plasterboard 12,5 mm Or PhoneStar ST Tri 12,5 mm Or PhoneStar Plus Tri 15 mm	17,5	

Type	Ref. No	Constructions on solid timber walls	Thickness [mm]	System drawing
4	WMH D 1.2 2 x 15 mm	Solid timber wall 2 x PhoneStar (Tri or Prof.) 15 mm Plasterboard 12,5 mm Or PhoneStar ST Tri 12,5 mm Or PhoneStar Plus Tri 15 mm	42,5	
5	WMH L 1.2	Solid timber wall Battens W 50 x T 30 mm PhoneStar Twin 10 mm Plasterboard 12,5 mm Or PhoneStar ST Twin 9 mm Or PhoneStar Plus Twin 10 mm	52,5	
6	WMH L 1.2 2 x 10 mm	Solid timber wall Battens W 50 x T 30 mm 2 x PhoneStar Twin 10 mm Plasterboard 12,5 mm Or PhoneStar ST Twin 9 mm Or PhoneStar Plus Twin 10 mm	62,5	
7	WMH L 1.2	Solid timber wall Battens W 50 x T 30 mm PhoneStar (Tri or Prof.) 15 mm Plasterboard 12,5 mm Or PhoneStar ST Tri 12,5 mm Or PhoneStar Plus Tri 15 mm	57,5	
8	WMH L 1.2 2 x 15 mm	Solid timber wall Battens W 50 x T 30 mm 2 x PhoneStar (Tri or Prof.) 15 mm Plasterboard 12,5 mm Or PhoneStar ST Tri 12,5 mm Or PhoneStar Plus Tri 15 mm	72,5	
9	WMH H 1.1	Solid timber wall Resilient bars T 27 mm PhoneStar Twin 10 mm Plasterboard 12,5 mm Or PhoneStar ST Twin 9 mm Or PhoneStar Plus Twin 10 mm	49,5	

Type	Ref. No	Constructions on solid timber walls	Thickness [mm]	System drawing
10	WMH H 1.1 2 x 10 mm	Solid timber wall Resilient bars T 27 mm 2 x PhoneStar Twin 10 mm Plasterboard 12,5 mm Or PhoneStar ST Twin 9 mm Or PhoneStar Plus Twin 10 mm	59,5	
11	WMH H 1.2	Solid timber wall Resilient bars T 27 mm PhoneStar (Tri or Prof.) 15 mm Plasterboard 12,5 mm Or PhoneStar ST Tri 12,5 mm Or PhoneStar Plus Tri 15 mm	54,5	
12	WMH H 1.2 2 x 15 mm	Solid timber wall Resilient bars T 27 mm 2x PhoneStar (Tri or Prof.) 15 mm Plasterboard 12,5 mm Or PhoneStar ST Tri 12,5 mm Or PhoneStar Plus Tri 15 mm	69,5	
13	WMH W 1.1	Solid timberwall Wood fibre 20 mm PhoneStar Twin 10 mm Plasterboard 12,5 Or PhoneStar ST Twin 9 mm Or PhoneStar Plus Twin 10 mm	42,5	
14	WMH W 1.1 2 x 10 mm	Solid timber wall Wood fibre 20 mm 2 x PhoneStar Twin 10 mm Plasterboard 12,5 Or PhoneStar ST Twin 9 mm Or PhoneStar Plus Twin 10 mm	52,5	

Type	Ref. No	Constructions on solid timber walls	Thickness [mm]	System drawing
15	WMH W 1.2	Solid timber wall Wood fibre 20 mm PhoneStar (Tri or Prof.) 15 mm Plasterboard 12,5 Or PhoneStar ST Tri 12,5 mm Or PhoneStar Plus Tri 15 mm	47,5	
16	WMH W 1.2 2 x 15 mm	Solid timber wall Wood fibre 20 mm 2 x PhoneStar (Tri or Prof.) 15 mm Plasterboard 12,5 Or PhoneStar ST Tri 12,5 mm Or PhoneStar Plus Tri 15 mm	62,5	

3. Performance of the product and references to the methods used for its assessment

3.1. ER 1 – Mechanical resistance

3.1.1. Reaction to fire

PhoneStar panels are non-load bearing panels, therefore the mechanical resistance is considered under chapter 2.4 Safety in use (ER4).

3.2. ER 2 – Safety in case of fire

3.2.1. Reaction to fire

The PhoneStar panels, in relation to its reaction of fire behaviour are tested in accordance with EN 13501-1 and classified E.

3.2.2. Resistance to fire

Resistance to fire has not been determined and will be classified as NPD.

3.2.3. External fire performance

External fire performance is not considered in ETAG 016 part 4.

3.3. ER 3 – Hygiene, health and environment

3.3.1. Water permeability

Water permeability has not been determined and will be classified as NPD.

3.3.2. Vapour permeability

The water vapour resistance factor μ according to EN 12572:

- PhoneStar 10 mm = 17;
- PhoneStar 15 mm = 14.

3.3.3. Release of dangerous substances

PhoneStar boards do not contain dangerous substances.

In addition there may be other requirements applicable to the products falling within its scope (e.g. transposed European legislation and national laws, regulations and administrative provisions). In order to meet the provisions of the EU Construction Products Directive, these requirements need also to be complied with, when and where they apply.

3.3.4. Dimensional variations related to water penetration

Dimensional variations related to water penetration have not been determined and will be classified as NPD.

3.4. ER 4 – Safety in use

3.4.1. Mechanical resistance

PhoneStar panels are tested to determine the mechanical strength of a simply supported panel subject to positive load and the mechanical strength of a fixed panel subject to negative load. The results shown in the following table.

Product	Span in mm	Load	Max. Load (N) (avg)	Distance in mm (avg)
PhoneStar Twin PhoneStar ST Twin PhoneStar Plus Twin	312,5	Positive	1654,00	49,67
		Negative	1575,00	24,07
	625,0	Positive	327,33	53,67
		Negative	1062,67	43,20
PhoneStar Tri PhoneStar Plus Tri	312,5	Positive	4273,67	47,33
		Negative	3458,67	21,63
	625,0	Positive	1113,33	82,20
		Negative	2398,33	53,10
PhoneStar ST Tri (-24%)	312,5	Positive	3247,99	47,33
		Negative	2628,59	21,63
	625,0	Positive	846,13	82,20
		Negative	1822,73	53,10
PhoneStar Professional	312,5	Positive	3512,67	43,07
		Negative	2783,67	23,37
	625,0	Positive	962,00	73,23
		Negative	2053,67	47,30

3.4.2. Impact resistance

Impact resistance has not been determined and will be classified as NPD.

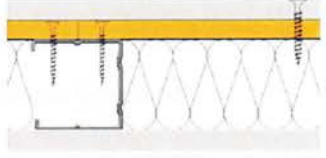

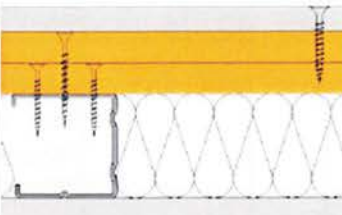
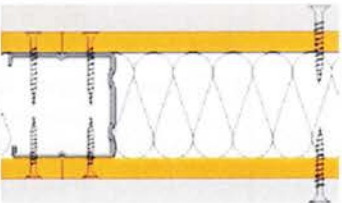
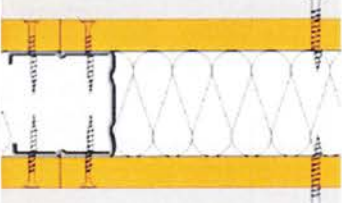
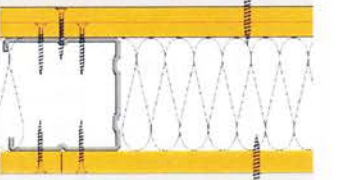
3.4.3. Resistance to fixings

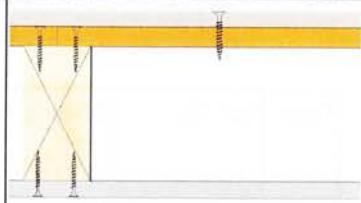
Resistance to fixings has not been determined and will be classified as NPD.

3.5. ER 5 – Protection against noise

3.5.1. Direct airborne insulation

The laboratory airborne sound insulation has been determined according to EN 140 – 3 for the constructions are given in following table:

Type	Ref. No	Construction	Thickness [mm]	Airborne sound insulation, R_w [dB]	System drawing
1	WSM 1.1	Plasterboard 12,5 mm PhoneStar Twin 10 mm Steel stud T 50 mm (Cavity) Plasterboard 12,5 mm	85,0	49	
2	WSM 1.2	Plasterboard 12,5 mm PhoneStar (Tri or Prof.) 15 mm Steel stud T 50 mm (Cavity) Plasterboard 12,5 mm	90,0	51	
3	WSM 1.2 2 x 15 mm	Plasterboard 12,5 mm PhoneStar (Tri or Prof.) 15 mm PhoneStar (Tri or Prof.) 15 mm Steel stud T 45 mm (Cavity) Plasterboard 12,5 mm	105	54	
4	WSM 2.1	Plasterboard 12,5 mm PhoneStar Twin 10 mm Steel stud T 50 mm (Cavity) PhoneStar Twin 10 mm Plasterboard 12,5 mm	95,0	55	
5	WSM 2.2	Plasterboard 12,5 mm PhoneStar (Tri or Prof.) 15 mm Steel stud T 50 mm (Cavity) PhoneStar (Tri or Prof.) 15 mm Plasterboard 12,5 mm	105,0	59	
6	WSM	Plasterboard 12,5 mm PhoneStar Twin 10 mm PhoneStar Twin 10 mm Steel stud T 75 mm (Cavity) PhoneStar (Tri or Prof.) 15 mm Plasterboard 12,5 mm	90,0	60 dB	

Type	Ref. No	Construction	Thickness [mm]	Airborne sound insulation, R _w [dB]	System drawing
7	WSH 1.2	Plasterboard 15,0 mm PhoneStar (Tri or Prof.) 15 mm Timber stud T 101,6 x 50,8 mm (no Cavity) Plasterboard 15,0 mm	146,6	50 dB	

3.5.2. Sound absorption



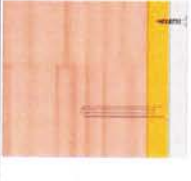

The sound absorption has not been determined and will be classified NPD.

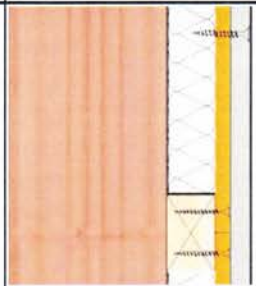
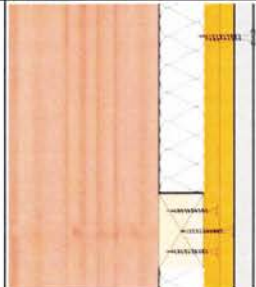
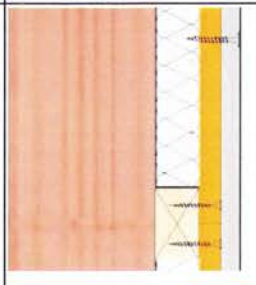
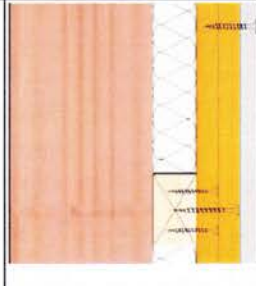
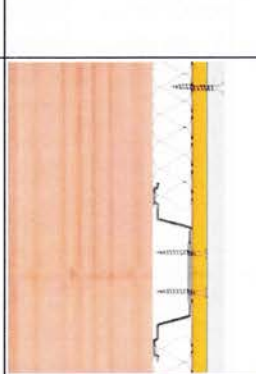
3.6. ER 6 – Energy economy and heat retention

3.6.1. Thermal insulation properties

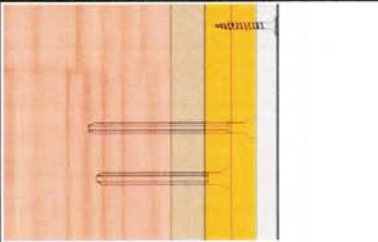
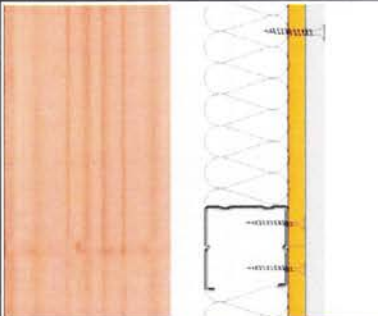
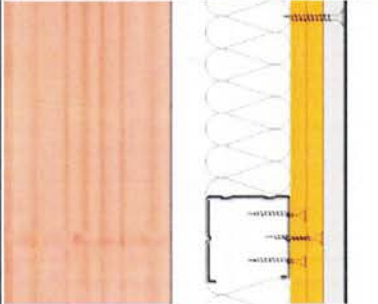
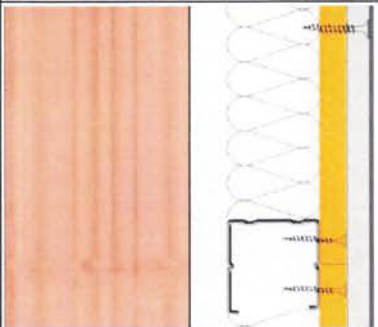
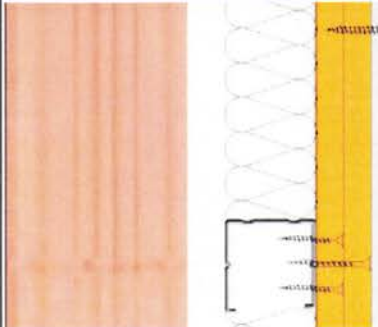
The thermal conductivity (λ) of PhoneStar panels is ≤ 0.17 W/(m·K) according to EN 12664. The calculated U-values for thermal conductivity of exemplary constructions have been determined according to EN 6946 for the constructions are given in the following tables.

3.6.1.1. Masonry walls

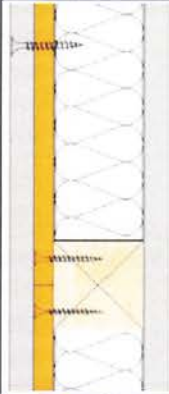
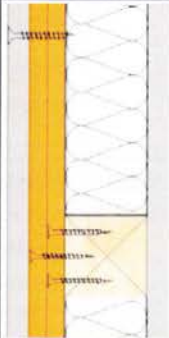
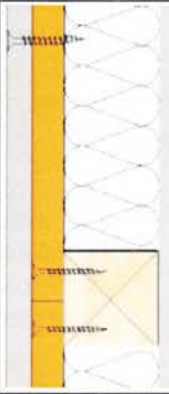
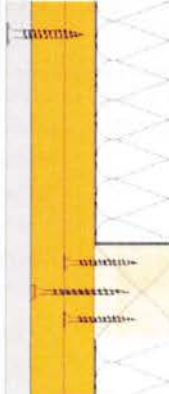
Type	Ref. No	Constructions on masonry walls	Thickness [mm]	U-Value [W/m ² K]	System drawing
1	WMZ D 1.1	Gypsum render 10 mm / 0,40 W/mK Brick 120 mm / 0,33 W/mK PhoneStar Twin 10 mm / 0,17 W/mK Plasterboard 12,5 / 0,21 W/mK Or PhoneStar ST Twin 9 mm Or PhoneStar Plus Twin 10 mm	152,5	1,30	
2	WMZ D 1.1 2 x 10 mm	Gypsum render 10 mm / 0,40 W/mK Brick 120 mm / 0,33 W/mK PhoneStar Twin 10 mm / 0,17 W/mK PhoneStar Twin 10 mm / 0,17 W/mK Plasterboard 12,5 / 0,21 W/mK Or PhoneStar ST Twin 9 mm Or PhoneStar Plus Twin 10 mm	162,5	1,21	
3	WMZ D 1.2	Gypsum render 10 mm / 0,40 W/mK Brick 120 mm / 0,33 W/mK PhoneStar (Tri or Prof.) 15 mm / 0,17 W/mK Plasterboard 12,5 / 0,21 W/mK Or PhoneStar ST Tri 12,5 mm Or PhoneStar Plus Tri 15 mm	157,5	1,26	
4	WMZ D 1.2 2 x 15 mm	Gypsum render 10 mm / 0,40 W/mK Brick 120 mm / 0,33 W/mK PhoneStar (Tri or Prof.) 15 mm/0,17 W/mK PhoneStar (Tri or Prof.) 15 mm/0,17 W/mK Plasterboard 12,5 / 0,21 W/mK Or PhoneStar ST Tri 12,5 mm Or PhoneStar Plus Tri 15 mm	172,5	1,13	

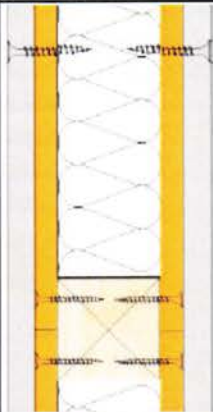
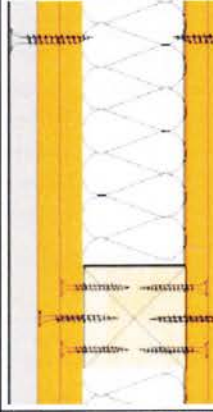
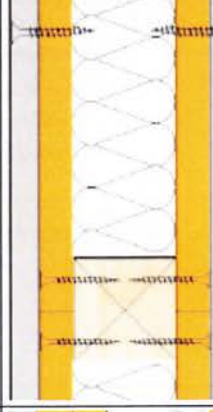
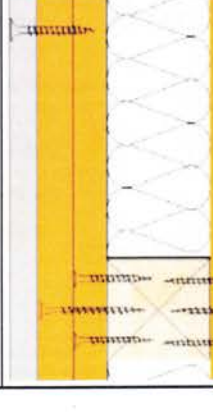
Type	Ref. No	Constructions on masonry walls	Thickness [mm]	U-Value [W/m ² K]	System drawing
5	WMZ L 1.2	Gypsum render 10 mm / 0,40 W/mK Brick 120 mm / 0,33 W/mK Battens W 50 x T 30 mm Mineral wool 30 mm / 0,041 W/mK PhoneStar 10 mm/0,17 W/mK Plasterboard 12,5 mm/0,21 W/mK Or PhoneStar ST Twin 9 mm Or PhoneStar Plus Twin 10 mm	182,5	0,72	
6	WMZ L 1.2 2 x 10 mm	Gypsum render 10 mm / 0,40 W/mK Brick 120 mm / 0,33 W/mK Battens W 50 x T 30 mm Mineral wool 30 mm / 0,041 W/mK PhoneStar Twin 10 mm/0,17 W/mK PhoneStar Twin 10 mm/0,17 W/mK Plasterboard 12,5 mm/0,21 W/mK Or PhoneStar ST Twin 9 mm Or PhoneStar Plus Twin 10 mm	192,5	0,69	
7	WMZ L 1.2	Gypsum render 10 mm / 0,40 W/mK Brick 120 mm / 0,33 W/mK Battens W 50 x T 30 mm Mineral wool 30 mm / 0,041W/mK PhoneStar (Tri or Prof.) 15 mm/0,17 W/mK Plasterboard 12,5 mm 0,21 W/mK Or PhoneStar ST Tri 12,5 mm Or PhoneStar Plus Tri 15 mm	187,5	0,70	
8	WMZ L 1.2 2 x 15 mm	Gypsum render 10 mm / 0,40 W/mK Brick 120 mm / 0,33 W/mK Battens W 50 x T 30 mm Mineral wool 30 mm / 0,041 W/mK PhoneStar (Tri or Prof.) 15 mm/0,17 W/mK PhoneStar (Tri or Prof.) 15 mm/0,17 W/mK Plasterboard 12,5 mm/0,21 W/mK Or PhoneStar ST Tri 12,5 mm Or PhoneStar Plus Tri 15 mm	202,5	0,66	
9	WMZ H 1.1	Gypsum render 10 mm / 0,40 W/mK Brick 120 mm / 0,33 W/mK Resilient bars T 27 mm Mineral wool / 0,40 W/mK PhoneStar Twin 10 mm / 0,17 W/mK Plasterboard 12,5 / 0,21 W/mK Or PhoneStar ST Twin 9 mm Or PhoneStar Plus Twin 10 mm	179,5	0,69	

Type	Ref. No	Constructions on masonry walls	Thickness [mm]	U-Value [W/m ² K]	System drawing
10	WMZ H 1.1 2 x 10 mm	Gypsum render 10 mm / 0,40 W/mK Brick 120 mm / 0,33 W/mK Resilient bars T 27 mm Mineral wool / 0,40 W/mK PhoneStar Twin 10 mm / 0,17 W/mK PhoneStar Twin 10 mm / 0,17 W/mK Plasterboard 12,5 / 0,21 W/mK Or PhoneStar ST Twin 9 mm Or PhoneStar Plus Twin 10 mm	189,5	0,67	
11	WMZ H 1.2	Gypsum render 10 mm / 0,40 W/mK Brick 120 mm / 0,33 W/mK Resilient bars T 27 mm Mineral wool / 0,40 W/mK PhoneStar (Tri or Prof.) 15 mm / 0,17 W/mK Plasterboard 12,5 / 0,21 W/mK Or PhoneStar ST Tri 12,5 mm Or PhoneStar Plus Tri 15 mm	184,5	0,68	
12	WMZ H 1.2 2 x 15 mm	Gypsum render 10 mm / 0,40 W/mK Brick 120 mm / 0,33 W/mK Resilient bars T 27 mm Mineral wool / 0,40 W/mK PhoneStar (Tri or Prof.) 15 mm / 0,17 W/mK PhoneStar (Tri or Prof.) 15 mm / 0,17 W/mK Plasterboard 12,5 / 0,21 W/mK Or PhoneStar ST Tri 12,5 mm Or PhoneStar Plus Tri 15 mm	199,5	0,64	
13	WMZ W 1.1	Gypsum render 10 mm / 0,40 W/mK Brick 120 mm / 0,33 W/mK Wood fiber / 0,45 W/mK PhoneStar Twin 10 mm / 0,17 W/mK Plasterboard 12,5 / 0,21 W/mK Or PhoneStar ST Twin 9 mm Or PhoneStar Plus Twin 10 mm	172,5	0,83	
14	WMZ W 1.1 2 x 10 mm	Gypsum render 10 mm / 0,40 W/mK Brick 120 mm / 0,33 W/mK Wood fiber / 0,45 W/mK PhoneStar Twin 10 mm / 0,17 W/mK PhoneStar Twin 10 mm / 0,17 W/mK Plasterboard 12,5 / 0,21 W/mK Or PhoneStar ST Twin 9 mm Or PhoneStar Plus Twin 10 mm	182,5	0,79	
15	WMZ W 1.2	Gypsum render 10 mm / 0,40 W/mK Brick 120 mm / 0,33 W/mK Wood fibre / 0,45 W/mK PhoneStar (Tri or Prof.) 15 mm / 0,17 W/mK Plasterboard 12,5 / 0,21 W/mK Or PhoneStar ST Tri 12,5 mm Or PhoneStar Plus Tri 15 mm	177,5	0,81	

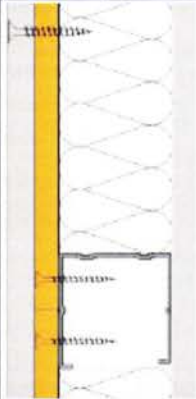
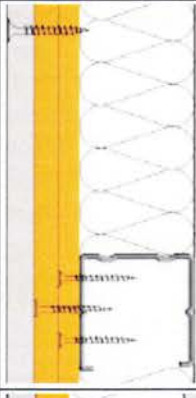
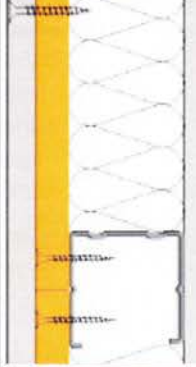
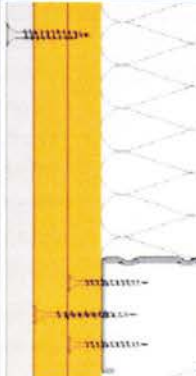
Type	Ref. No	Constructions on masonry walls	Thickness [mm]	U-Value [W/m ² K]	System drawing
16	WMZ W 1.2 2 x 15 mm	Gypsum render 10 mm / 0,40 W/mK Brick 120 mm / 0,33 W/mK Wood fibre / 0,45 W/mK PhoneStar (Tri or Prof.) 15 mm / 0,17 W/mK PhoneStar (Tri or Prof.) 15 mm / 0,17 W/mK Plasterboard 12,5 / 0,21 W/mK Or PhoneStar ST Tri 12,5 mm Or PhoneStar Plus Tri 15 mm	192,5	0,75	
17	WMZ V 1.1	Gypsum render 10 mm / 0,40 W/mK Brick 120 mm / 0,33 W/mK Metal Stud T 50 mm Mineral wool 50 mm / 0,40 W/mK PhoneStar Twin 10 mm / 0,17 W/mK Plasterboard 12,5 / 0,21 W/mK Or PhoneStar ST Twin 9 mm Or PhoneStar Plus Twin 10 mm	212,5	0,41	
18	WMZ V 1.1 2 x 10 mm	Gypsum render 10 mm / 0,40 W/mK Brick 120 mm / 0,33 W/mK Metal Stud T 50 mm Mineral wool 50 mm / 0,40 W/mK PhoneStar Twin 10 mm / 0,17 W/mK PhoneStar Twin 10 mm / 0,17 W/mK Plasterboard 12,5 / 0,21 W/mK Or PhoneStar ST Twin 9 mm Or PhoneStar Plus Twin 10 mm	222,5	0,40	
19	WMZ V 1.2	Gypsum render 10 mm / 0,40 W/mK Brick 120 mm / 0,33 W/mK Metal Stud T 50 mm Mineral wool 50 mm / 0,40 W/mK PhoneStar (Tri or Prof.) 15 mm/0,17 W/mK Plasterboard 12,5 / 0,21 W/mK Or PhoneStar ST Tri 12,5 mm Or PhoneStar Plus Tri 15 mm	217,5	0,41	
20	WMZ V 1.2 2 x 15 mm	Gypsum render 10 mm / 0,40 W/mK Brick 120 mm / 0,33 W/mK Metal Stud T 50 mm Mineral wool 50 mm / 0,40 W/mK PhoneStar (Tri or Prof.) 15 mm/0,17 W/mK PhoneStar (Tri or Prof.) 15 mm/0,17 W/mK Plasterboard 12,5 / 0,21 W/mK Or PhoneStar ST Tri 12,5 mm Or PhoneStar Plus Tri 15 mm	222,5	0,39	

3.6.1.2. Timber stud walls

Type	Ref. No	Constructions on timber studs	Thickness [mm]	U-Value [W/m ² K]	System drawing
1	WSH 1.1	Plasterboard 12,5 / 0,21 W/mK PhoneStar Twin 10 mm / 0,17 W/mK Timber stud T 45 mm Mineral wool 40 mm / 0,037 W/mK Plasterboard 12,5 / 0,21 W/mK Or PhoneStar ST Twin 9 mm Or PhoneStar Plus Twin 10 mm	80,0	0,69	
2	WSH 1.1 2 x 10 mm	Plasterboard 12,5 / 0,21 W/mK PhoneStar Twin 10 mm / 0,17 W/mK PhoneStar Twin 10 mm / 0,17 W/mK Timber stud T 45 mm Mineral wool 40 mm / 0,037 W/mK Plasterboard 12,5 / 0,21 W/mK Or PhoneStar ST Twin 9 mm Or PhoneStar Plus Twin 10 mm	90,0	0,66	
3	WSH 1.2	Plasterboard 12,5 / 0,21 W/mK PhoneStar (Tri or Prof.) 15 mm/0,17 W/mK Timber stud T 45 mm Mineral wool 40 mm / 0,037 W/mK Plasterboard 12,5 / 0,21 W/mK Or PhoneStar ST Tri 12,5 mm Or PhoneStar Plus Tri 15 mm	85,0	0,68	
4	WSH 1.2 2 x 15 mm	Plasterboard 12,5 / 0,21 W/mK PhoneStar (Tri or Prof.) 15 mm/0,17 W/mK PhoneStar (Tri or Prof.) 15 mm/0,17 W/mK Timber stud T 45 mm Mineral wool 40 mm / 0,037 W/mK Plasterboard 12,5 / 0,21 W/mK Or PhoneStar ST Tri 12,5 mm Or PhoneStar Plus Tri 15 mm	100,0	0,64	

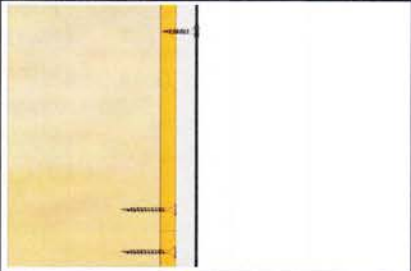
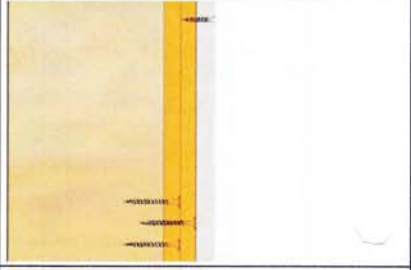
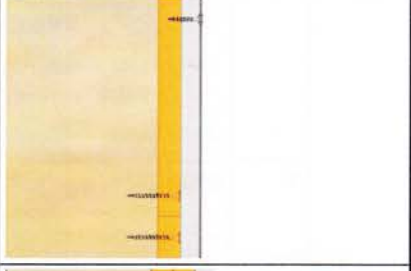
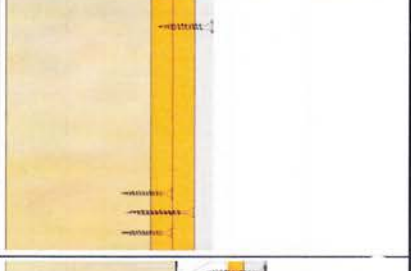
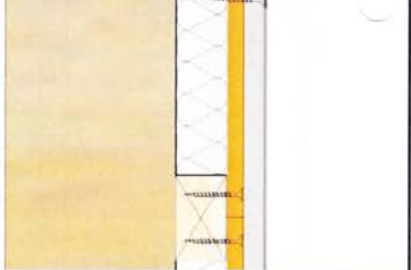
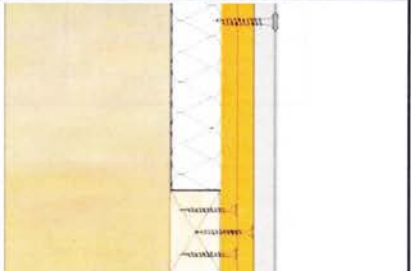
Type	Ref. No	Constructions on timber studs	Thickness [mm]	U-Value [W/m ² K]	System drawing
5	WSH 2.1	Plasterboard 12,5 / 0,21 W/mK PhoneStar Twin 10 mm / 0,17 W/mK Timber stud T 45 mm Mineral wool 40 mm / 0,037 W/mK PhoneStar Twin 10 mm / 0,17 W/mK Plasterboard 12,5 / 0,21 W/mK Or PhoneStar ST Twin 9 mm Or PhoneStar Plus Twin 10 mm	90,0	0,66	
6	WSH 2.1 2 x 10 mm	Plasterboard 12,5 / 0,21 W/mK PhoneStar Twin 10 mm / 0,17 W/mK PhoneStar Twin 10 mm / 0,17 W/mK Timber stud T 45 mm Mineral wool 40 mm / 0,037 W/mK PhoneStar Twin 10 mm / 0,17 W/mK PhoneStar Twin 10 mm / 0,17 W/mK Plasterboard 12,5 / 0,21 W/mK Or PhoneStar ST Twin 9 mm Or PhoneStar Plus Twin 10 mm	110,0	0,61	
7	WSH 2.2	Plasterboard 12,5 / 0,21 W/mK PhoneStar (Tri or Prof.) 15 mm / 0,17 W/mK Timber stud T 45 mm Mineral wool 40 mm / 0,037 W/mK PhoneStar (Tri or Prof.) 15 mm/0,17 W/mK Plasterboard 12,5 / 0,21 W/mK Or PhoneStar ST Tri 12,5 mm Or PhoneStar Plus Tri 15 mm	100,0	0,64	
8	WSH 2.2 2 x 15 mm	Plasterboard 12,5 / 0,21 W/mK PhoneStar (Tri or Prof.) 15 mm/0,17 W/mK PhoneStar (Tri or Prof.) 15 mm/0,17 W/mK Timber stud T 45 mm Mineral wool 40 mm / 0,037 W/mK PhoneStar (Tri or Prof.) 15 mm/0,17 W/mK PhoneStar (Tri or Prof.) 15 mm/0,17 W/mK Plasterboard 12,5 / 0,21 W/mK Or PhoneStar ST Tri 12,5 mm Or PhoneStar Plus Tri 15 mm	130,0	0,50	


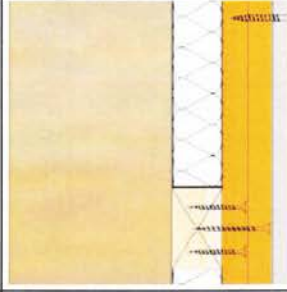
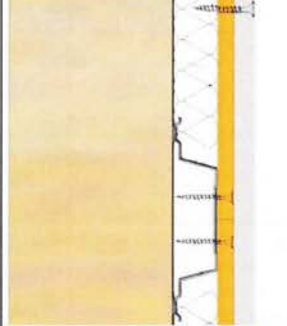
3.6.1.3. Metal stud walls

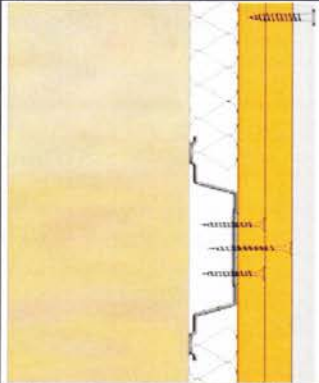
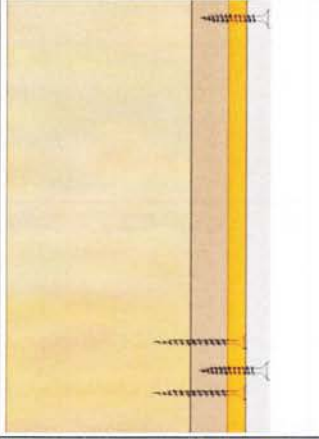

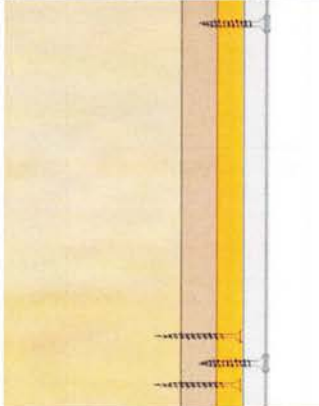
Type	Ref. No	Constructions on steel studs	Thickness [mm]	U-Value [W/m ² K]	System drawing
1	WSM 1.1	Plasterboard 12,5 / 0,21 W/mK PhoneStar Twin 10 mm / 0,17 W/mK Metal stud T 50 mm Mineral wool 40 mm / 0,037 W/mK Plasterboard 12,5 / 0,21 W/mK Or PhoneStar ST Twin 9 mm Or PhoneStar Plus Twin 10 mm	85,0	0,59	
2	WSM 1.1 2 x 10 mm	Plasterboard 12,5 / 0,21 W/mK PhoneStar Twin 10 mm / 0,17 W/mK PhoneStar Twin 10 mm / 0,17 W/mK Metal stud T 50 mm Mineral wool 40 mm / 0,037 W/mK Plasterboard 12,5 / 0,21 W/mK Or PhoneStar ST Twin 9 mm Or PhoneStar Plus Twin 10 mm	95,0	0,57	
3	WSM 1.2	Plasterboard 12,5 / 0,21 W/mK PhoneStar (Tri or Prof.) 15 mm/0,17 W/mK Metal stud T 50 mm Mineral wool 40 mm / 0,037 W/mK Plasterboard 12,5 / 0,21 W/mK Or PhoneStar ST Tri 12,5 mm Or PhoneStar Plus Tri 15 mm	90,0	0,58	
4	WSM 1.2 2 x 15 mm	Plasterboard 12,5 / 0,21 W/mK PhoneStar (Tri or Prof.) 15 mm/0,17 W/mK PhoneStar (Tri or Prof.) 15 mm/0,17 W/mK Metal stud T 50 mm Mineral wool 40 mm / 0,037 W/mK Plasterboard 12,5 / 0,21 W/mK Or PhoneStar ST Tri 12,5 mm Or PhoneStar Plus Tri 15 mm	105,0	0,55	

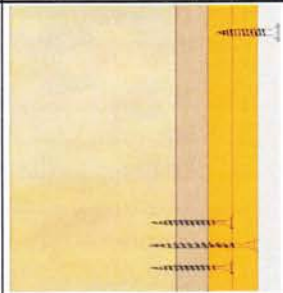
Type	Ref. No	Constructions on steel studs	Thickness [mm]	U-Value [W/m ² K]	System drawing
5	WSM 2.1	Plasterboard 12,5 / 0,21 W/mK PhoneStar Twin 10 mm / 0,17 W/mK Metal stud T 50 mm Mineral wool 40 mm / 0,037 W/mK PhoneStar Twin 10 mm / 0,17 W/mK Plasterboard 12,5 / 0,21 W/mK Or PhoneStar ST Twin 9 mm Or PhoneStar Plus Twin 10 mm	95,0	0,57	
6	WSM 2.1 2 x 10 mm	Plasterboard 12,5 / 0,21 W/mK PhoneStar Twin 10 mm / 0,17 W/mK PhoneStar Twin 10 mm / 0,17 W/mK Metal stud T 50 mm Mineral wool 40 mm / 0,037 W/mK PhoneStar Twin 10 mm / 0,17 W/mK PhoneStar Twin 10 mm / 0,17 W/mK Plasterboard 12,5 / 0,21 W/mK Or PhoneStar ST Twin 9 mm Or PhoneStar Plus Twin 10 mm	115,0	0,54	
7	WSM 2.2	Plasterboard 12,5 / 0,21 W/mK PhoneStar (Tri or Prof.) 15 mm/0,17 W/mK Metal stud T 50 mm Mineral wool 40 mm / 0,037 W/mK PhoneStar (Tri or Prof.) 15 mm/0,17 W/mK Plasterboard 12,5 / 0,21 W/mK Or PhoneStar ST Tri 12,5 mm Or PhoneStar Plus Tri 15 mm	105,0	0,55	
8	WSM 2.2 2 x 15 mm	Plasterboard 12,5 / 0,21 W/mK PhoneStar (Tri or Prof.) 15 mm/0,17 W/mK PhoneStar (Tri or Prof.) 15 mm/0,17 W/mK Metal stud T 50 mm Mineral wool 40 mm / 0,037 W/mK PhoneStar (Tri or Prof.) 15 mm/0,17 W/mK PhoneStar (Tri or Prof.) 15 mm/0,17 W/mK Plasterboard 12,5 / 0,21 W/mK Or PhoneStar ST Tri 12,5 mm Or PhoneStar Plus Tri 15 mm	135,0	0,55	

3.6.1.4. Solid timber walls

Type	Ref. No	Constructions on solid timber walls	Thickness [mm]	U-Value [W/m ² K]	System drawing
1	WMH D 1.1	Solid Wood 150 mm / 0,12 W/mK PhoneStar Twin 10 mm / 0,17 W/mK Plasterboard 12,5 / 0,21 W/mK Or PhoneStar ST Twin 9 mm Or PhoneStar Plus Twin 10 mm	172,5	0,61	
2	WMH D 1.1 2 x 10 mm	Solid Wood 150 mm / 0,12 W/mK PhoneStar Twin 10 mm / 0,17 W/mK PhoneStar Twin 10 mm / 0,17 W/mK Plasterboard 12,5 / 0,21 W/mK Or PhoneStar ST Twin 9 mm Or PhoneStar Plus Twin 10 mm	182,5	0,59	
3	WMH D 1.2	Solid Wood 150 mm / 0,12 W/mK PhoneStar (Tri or Prof.) 15 mm/0,17 W/mK Plasterboard 12,5 / 0,21 W/mK Or PhoneStar ST Tri 12,5 mm Or PhoneStar Plus Tri 15 mm	177,5	0,60	
4	WMH D 1.2 2 x 15 mm	Solid Wood 150 mm / 0,12 W/mK PhoneStar (Tri or Prof.) 15 mm/0,17 W/mK PhoneStar (Tri or Prof.) 15 mm/0,17 W/mK Plasterboard 12,5 / 0,21 W/mK Or PhoneStar ST Tri 12,5 mm Or PhoneStar Plus Tri 15 mm	192,5	0,57	
5	WMH L 1.2	Solid Wood 150 mm / 0,12 W/mK Battens W 50 x T 30 mm Mineral wool 30 mm / 0,037 W/mK PhoneStar Twin 10 mm / 0,17 W/mK Plasterboard 12,5 / 0,21 W/mK Or PhoneStar ST Twin 9 mm Or PhoneStar Plus Twin 10 mm	222,5	0,43	
6	WMH L 1.2 2 x 10 mm	Solid Wood 150 mm / 0,12 W/mK Battens W 50 x T 30 mm Mineral wool 30 mm / 0,037 W/mK PhoneStar Twin 10 mm / 0,17 W/mK PhoneStar Twin 10 mm / 0,17 W/mK Plasterboard 12,5 / 0,21 W/mK Or PhoneStar ST Twin 9 mm Or PhoneStar Plus Twin 10 mm	212,5	0,42	

Type	Ref. No	Constructions on solid timber walls	Thickness [mm]	U-Value [W/m ² K]	System drawing
7	WMH L 1.2	Solid Wood 150 mm / 0,12 W/mK Battens W 50 x T 30 mm Mineral wool 30 mm / 0,037 W/mK PhoneStar (Tri o. Prof.) 15 mm/0,17 W/mK Plasterboard 12,5 / 0,21 W/mK Or PhoneStar ST Tri 12,5 mm Or PhoneStar Plus Tri 15 mm	207,5	0,43	
8	WMH L 1.2 2 x 15 mm	Solid Wood 150 mm / 0,12 W/mK Battens W 50 x T 30 mm Mineral wool 30 mm / 0,037 W/mK PhoneStar (Tri o. Prof.) 15 mm/0,17 W/mK PhoneStar (Tri o. Prof.) 15 mm/0,17 W/mK Plasterboard 12,5 / 0,21 W/mK Or PhoneStar ST Tri 12,5 mm Or PhoneStar Plus Tri 15 mm	222,5	0,41	
9	WMH H 1.1	Solid Wood 150 mm / 0,12 W/mK Resilient bar T 27 mm Mineral wool 27 mm / 0,037 W/mK PhoneStar Twin 10 mm / 0,17 W/mK Plasterboard 12,5 / 0,21 W/mK Or PhoneStar ST Twin 9 mm Or PhoneStar Plus Twin 10 mm	199,5	0,43	
10	WMH H 1.1 2 x 10 mm	Solid Wood 150 mm / 0,12 W/mK Resilient bar T 27 mm Mineral wool 27 mm / 0,037 W/mK PhoneStar Twin 10 mm / 0,17 W/mK PhoneStar Twin 10 mm / 0,17 W/mK Plasterboard 12,5 / 0,21 W/mK Or PhoneStar ST Twin 9 mm Or PhoneStar Plus Twin 10 mm	209,5	0,42	
11	WMH H 1.2	Solid Wood 150 mm / 0,12 W/mK Resilient bar T 27 mm Mineral wool 27 mm / 0,037 W/mK PhoneStar (Tri o. Prof.) 15 mm/0,17 W/mK Plasterboard 12,5 / 0,21 W/mK Or PhoneStar ST Tri 12,5 mm Or PhoneStar Plus Tri 15 mm	204,5	0,43	

Type	Ref. No	Constructions on solid timber walls	Thickness [mm]	U-Value [W/m ² K]	System drawing
12	WMH H 1.2 2 x 15 mm	Solid Wood 150 mm / 0,12 W/mK Resilient bar T 27 mm Mineral wool 27 mm / 0,037 W/mK PhoneStar (Tri o. Prof.) 15 mm/0,17 W/mK PhoneStar (Tri o. Prof.) 15 mm/0,17 W/mK Plasterboard 12,5 / 0,21 W/mK Or PhoneStar ST Tri 12,5 mm Or PhoneStar Plus Tri 15 mm	219,5	0,41	
13	WMH W 1.1	Solid Wood 150 mm / 0,12 W/mK Wood fibre 20 mm / 0,04 W/mK PhoneStar Twin 10 mm / 0,17 W/mK Plasterboard 12,5 mm Or PhoneStar ST Twin 9 mm Or PhoneStar Plus Twin 10 mm	192,5	0,48	
14	WMH W 1.1 2 x 10 mm	Solid Wood 150 mm / 0,12 W/mK Wood fibre 20 mm / 0,04 W/mK PhoneStar Twin 10 mm / 0,17 W/mK PhoneStar Twin 10 mm / 0,17 W/mK Plasterboard 12,5 mm Or PhoneStar ST Twin 9 mm Or PhoneStar Plus Twin 10 mm	202,5	0,47	
15	WMH W 1.2	Solid Wood 150 mm / 0,12 W/mK Wood fibre 20 mm / 0,04 W/mK PhoneStar (Tri o. Prof.) 15 mm/0,17 W/mK Plasterboard 12,5 mm Or PhoneStar ST Tri 12,5 mm Or PhoneStar Plus Tri 15 mm	197,5	0,48	

Type	Ref. No	Constructions on solid timber walls	Thickness [mm]	U-Value [W/m ² K]	System drawing
16	WMH W 1.2 2 x 15 mm	Solid Wood 150 mm / 0,12 W/mK Wood fibre 20 mm / 0,04 W/mK PhoneStar (Tri o. Prof.) 15 mm/0,17 W/mK PhoneStar (Tri o. Prof.) 15 mm/0,17 W/mK Plasterboard 12,5 mm Or PhoneStar ST Tri 12,5 mm Or PhoneStar Plus Tri 15 mm	212,5	0,46	

3.6.2. Air permeability

The air permeability has not been determined and will be classified NPD.

3.7. ER 7 – Aspects of durability, serviceability and identification of the product

3.7.1. Aspects of durability

Creep has not been determined and will be classified as NPD.

3.7.2. Serviceability

Serviceability has not been determined and will be classified as NPD.

3.7.3. Aspects identification of materials and products

The ETA is issued for the products on the basis of the information deposited to Kiwa Nederland B.V. which identifies the panels that have been assessed and judged. Identification tests have been carried out on components, which confirm that the product under assessment conforms to its declared characteristics.

4. Assessment and verification of constancy of performance (hereinafter AVCP) system applied, with reference to its legal base

According to the decision 2000/447/EC – Commission Decision of date 13 June 2000, published in the Official Journal of the European Union (OJEU) L180/40 of 19/7/2000) of the European Commission, the systems of assessment and verification of constancy of performance (see Annex V to Regulation (EU) No 305/2011) given in the following table apply:

Product	Intended use	Levels or classes	Systems
Self-supporting composite lightweight panels	For uses subject to reaction to fire regulations	A ⁽¹⁾ , B ⁽¹⁾ , C ⁽¹⁾	1
		A ⁽²⁾ , B ⁽²⁾ , C ⁽²⁾	3
		A ⁽³⁾ , D, E, F	4

- 1) Materials for which the reaction to fire performance is susceptible to change during production; (in general, those subject to chemical modification, e.g. fire retardants, or where changes of composition may lead to changes in reaction to fire performance.
- 2) Materials for which the reaction to fire performance is not susceptible to change during the production process.
- 3) Materials of Class A that according to Decision 96/603/EC does not require to be tested for reaction to fire.

5. Technical details necessary for the implementation of the AVCP system, as provided for in the applicable EAD

The manufacturing process of the products is in accordance with the process that is agreed between Wolf Bavaria GmbH and Kiwa.

Changes to the product/production process, which could result in this deposited data / information being incorrect, should be notified to the approval body before the changes are introduced. The approval body will decide whether or not such changes affect the ETA and consequently the validity of the CE marking on the basis of the ETA and so whether further assessment / alterations to the ETA, is necessary.

Issued in Rijswijk on 09/07/2015

By Eric Hendriks, assessment engineer

Kiwa Nederland B.V.

Annex 1

Phonestar – Recommendations

Packaging, transport and storage

The PhoneStar boards are strapped on pallets encased in a thick corrugated cardboard box structure, which is placed over the product. PhoneStar shall be handled and stored with care and be protected from accidental damage. The PhoneStar boards must be protected from moisture during transport, storage and installation. The product should be stored flat, under cover, in dry well ventilated conditions inside. Protect PhoneStar from direct sunlight when stored over a long period of time.

Use, maintenance and repair

Before installing PhoneStar boards the house or building must be protected by floor, walls, roofs, windows and front doors which prevent infiltration and penetration of rain, snow etc. and of groundwater.

Check temperature and humidity and make sure they are in range of manufactures guidelines and this document. Measured values shall be documented!

The PhoneStar boards must be acclimatised before use. At least 24 hours or even more!

Protect PhoneStar from direct sunlight in the long run.

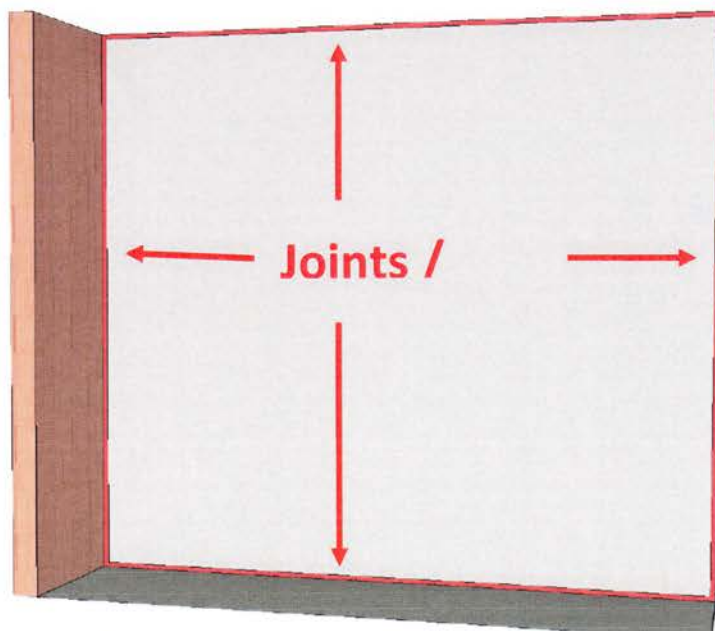
When doweling or screwing the PhoneStar boards on the construction, make sure that the label is facing inside the room (label shall be on the visible side).

Cut PhoneStar boards on a stable working table with a circle saw or a jigsaw and take care of general working protection. After cutting PhoneStar, the cutting edges must be sealed. In order to maintain the Wolf Bavaria guarantee, only Wolf Tape may be used. For further clarification see Annex 2 PhoneStar – Cutting and Taping.

Start installing PhoneStar in a bottom corner and dowel or screw and or glue the PhoneStar board on the construction. Avoid cross joints!

Make sure that the plasterboard does not touch any flanking elements. Leave there a joint between 2 – 3 mm and seal the joints with Wolff joint filler. This improves the airborne sound insulation. See Annex 2 Cutting & Taping.

The plasterboard needs a 3 mm joints to all flanking components. Seal the flanking joints with acryl or silicon (see red line in the picture below).



PhoneStar can not be used as final layer. It is necessary to screw and or glue a plaster board on top of PhoneStar.

After installing the Plaster board on PhoneStar, the Plaster boards shall be finished in accordance with the processing instructions by the manufacturer of the Plaster boards used.

Recommendations on maintenance and repair

Small damages on surfaces or edges can be sealed with Wolf Tape only. Before small damages on PhoneStar boards are sealed, make sure the channels are still filled with sand. In order to maintain the properties of PhoneStar boards, the channels shall be refilled with silicon sand when necessary.

For further information: please see the latest instruction manual of Wolf Bavaria GmbH under www.wolf-bavaria.com.

Annex 2

Phonestar – Cutting and taping



1 Dimensioning

Measure and mark the cutting line.



2 Cutting boards

Use a jig saw with metal-ceramic blade or buzz saw with a Widia blade and extraction. When necessary refill cutting edges with sand.



3 Taping boards

Tape the cutting edges with Wolf tape only. The tape shall be applied at least 20 mm around the corners.



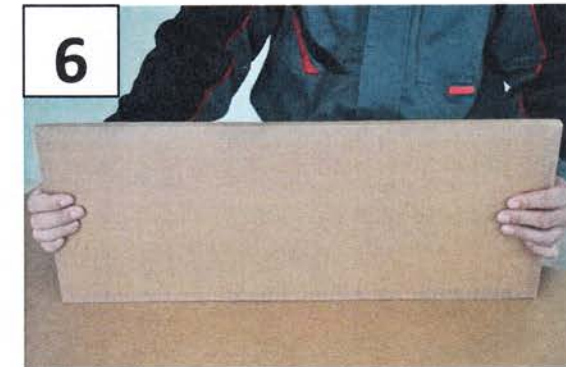
4 Folding corners

Fold the protruding part of the tape on the edges first and then fold the tape onto the board surface.



5 Folding longitudinal side

After folding the corners, fold the tape on the longitudinal side and press onto the board surface.



6 Done

Annex 3

Phonestar – Production locations

Plant 1:

Wolf Bavaria GmbH
Gutenbergstrasse 8
D-91560 Heilsbronn, Germany

Plant 2:

Hang es Tüz Kft
H-8284 NEMESGULACS
Banyatelep 21, Hungary

Plant 3:

Wolf Bavaria Proaktiv GmbH
Org. San. Bölgesi Atatürk Bulvari No:112/A
Ikitelli/Istanbul