



Laboratory for Fire Safety

Classification of fire resistance in accordance with EN 13501-2:2016 of a symmetrical metal stud partition wall with MAGOXX boards 2x6 mm

Classification report

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Classification report

Sponsor	SINH Building Solutions Saturnusstraat 60 6584 AC Den Haag The Netherlands
Prepared by	Peutz bv Lindenlaan 41, NL-6584 AC Molenhoek Postbus 66, NL-6585 ZH Mook The Netherlands
Notified Body	NB 2264
Product name	Light weight partition wall with MAGOXX boards 2x6 mm
Report number	YB 2198-1E-RA-001
Date of issue	February 17, 2020
Reference	HL/RO//YB 2198-1E-RA-001
Representative	ing. H.H.A. Leenders
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This classification report, containing 9 pages and an Appendix containing 12 pages, can only be used and reproduced as an entity.

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1 Introduction

This classification report defines the fire resistance classification assigned to a light weight partition wall with MAGOXX boards 2 x 6 mm. The system was tested in the Peutz Laboratory for Fire Safety in Mook using the standard heating curve and in accordance with the procedures given in EN 13501-2:2016.



For performing the testing and classification, the Laboratory for Fire Safety is recognized by the "Stichting Raad voor Accreditatie" (RvA).

The RvA is member of the EA MLA (**EA MLA: European Accreditation Organisation MultiLateral Agreement**: <http://www.european-accreditation.org>).

EA: "Certificates and reports issued by bodies accredited by MLA and MRA members are considered to have the same degree of credibility, and are accepted in MLA and MRA countries."

2 Details of the classified system

2.1 General

The element, a light weight partition wall with MAGOXX boards 2 x 6 mm, is defined as a non-loadbearing wall (partition).

2.2 Product description

The element, a light weight partition wall with MAGOXX boards 2 x 6 mm, is fully described in the test report listed in table 3.1.

The test specimen is built into a test frame consisting of a steel frame with a framework of heat-resistant concrete inside. The installation opening of the test frame is 4.05 m x 3.00 m (w x h).

The test specimen is symmetrical and consists of a metal stud frame covered with MAGOXX fire resistant boards.

The metal stud wall is composed of 2 horizontal UW-profiles size 75 x 40 x 0.6 mm and 8 vertical CW-75 profiles size 75 x 50 x 0.6 mm. The test specimen is completely fixed to the test frame by means of hammered plugs 6 x 55 (center-to-center 600 mm) with the exception of one vertical side. The free edge is fitted with rock wool, thickness 50 mm, to allow free movement. The distance between the studs is 600 mm (center-to-center) and in the cavity ROCKWOOL insulation material (70 mm Rocksono Base) is fitted tightly clamped between the studs.



At both sides, the metal stud frame is covered with a double layer of MAGOXX Fire board, thickness 6 mm. There is a horizontal joint at 350 mm from the top of the wall seen from the unexposed side. The horizontal joint in the second layer seen from the unexposed side is at 350 mm from the bottom of the wall. The boards are mounted with staggered joints. The boards are fixed with fast fix screws 3.9 x 30 mm (center-to-center 200 mm). The screws are not finished. The joints that connect to the supporting construction (the joints at the circumference of the complete element) are finished with a joint filler, type Knauf Fix & Finish. The joints between the MAGOXX boards are mounted tightly (butt joint width ≤ 1 mm) and the joints between the outside layers are finished with a joint filler, type Knauf Fix & Finish.

3 Reports and test results to support this classification

3.1 Test report

The classification is based on the report given in Table 3.1. The client has stated that the report provided may be used for this classification report.

t3.1 Used test report

Name of laboratory	Name of sponsor	Report reference number and date	Used methods
Peutz bv	SINH Building Solutions	Y 2198-2E-RA-001 dated February 17, 2020	EN 1363-1:2012 EN 1363-2:1999 EN 1364-1:2015

3.2 Test results

The test was performed using the standard heating curve. The summary of the test results achieved is shown in Table 3.2. The test was finished after 134 minutes in consultation with the sponsor.

t3.2 Test results

Assessment criterion	Elapsed time	Rejection criterion
Integrity (E)		
- sustained flaming	134 minutes	Not attained
- cotton pad	134 minutes	Not attained
- gap gauges	134 minutes	Not attained
Insulation (I)		
- increase of average temperature	85 minutes	Attained
- increase of maximum temperature	52 minutes	Attained
Radiation (W)		
- 15 kW/m ² (3 kW/m ² after 120 minutes)	134 minutes	Not attained
Deflection of the wall of 100 mm	37 minutes	Attained

4 Classification and field of application

4.1 Reference of classification

This classification has been carried out in accordance with Clause 7.5.2 of EN 13501-2:2016.

4.2 Classification

The element, a non-loaded wall, is classified according to the following combinations of performance parameters and classes as appropriate.

Fire resistance classification, up to height 3 m

**EI 45
EW 120
E 120**

Fire resistance classification, up to height 4 m

**EI 30
EW 30
E 30**

4.3 Field of application

4.3.1 General

This classification is valid for constructions that are identical in detail to the construction given in annex 1 and the information in chapter 2.2. Beside are within the direct field of application as defined in EN 1364-1:2015 one or more of the changes listed below allowed if the construction continues to comply with the appropriate design code for its stiffness and stability.

In all cases the following adaptations are possible:

- decrease in height of the wall;
- increase in thickness of the wall, minimum 100 mm;
- increase in thickness of the component materials;
- decrease in linear dimensions of the board, but not thickness, maximum board size 2650 x 1200 mm;
- decrease in stud spacing, maximum centre to centre 600 mm;
- decrease in distance of fixing centres, maximum centre to centre 200 mm;

- horizontal joints, of the type tested, are allowed. The horizontal joints have to be staggered;
- increase in the number of vertical joints, of the type tested. The vertical joints have to be staggered.

4.3.2 Extension of width

The construction is tested with a free edge and 4 m width and therefore the width may be increased without limitation (identical construction).

4.3.3 Extension of height

The maximum height is 3 m (EI 45, EW 120 and E 120). The construction may be applied up to a height of 4 m for the fire resistance of EI 30, EW 30 and E 30, provided the expansion allowances are increased pro-rata.

4.3.4 Supporting constructions

The result of the test of the non-loadbearing wall in a standard supporting construction according EN 1363-1 or the test frame is applicable to any other supporting construction of the same type (flexible or rigid) that has the same or a greater classified fire resistance (thicker, denser, more layers of boards, as appropriate) than the one used in the test.

5 Limitations

This classification document does not represent type approval or certification of this product.

H.H.A. Leenders, BSc



Head of Laboratory for Fire Safety

Mook,

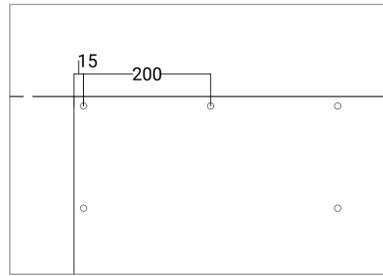
D.J. den Boer, BSc



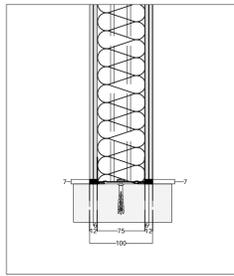
Management

This report contains 9 pages and 1 appendix of 12 pages

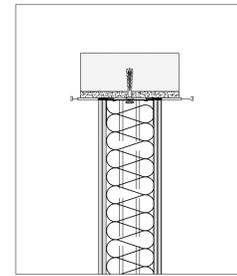
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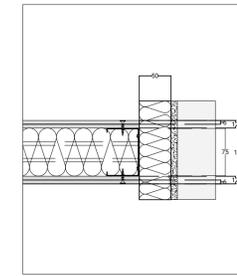
Schroef afstand, 1:5



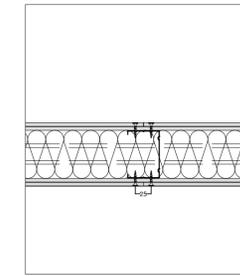
Bevestiging vloer, 1:5



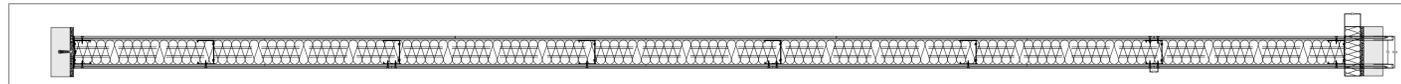
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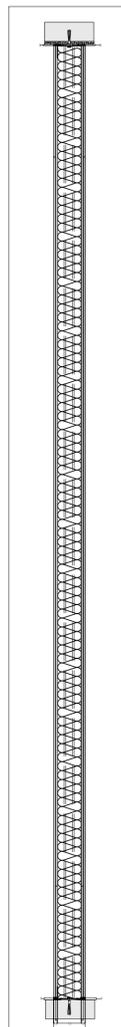
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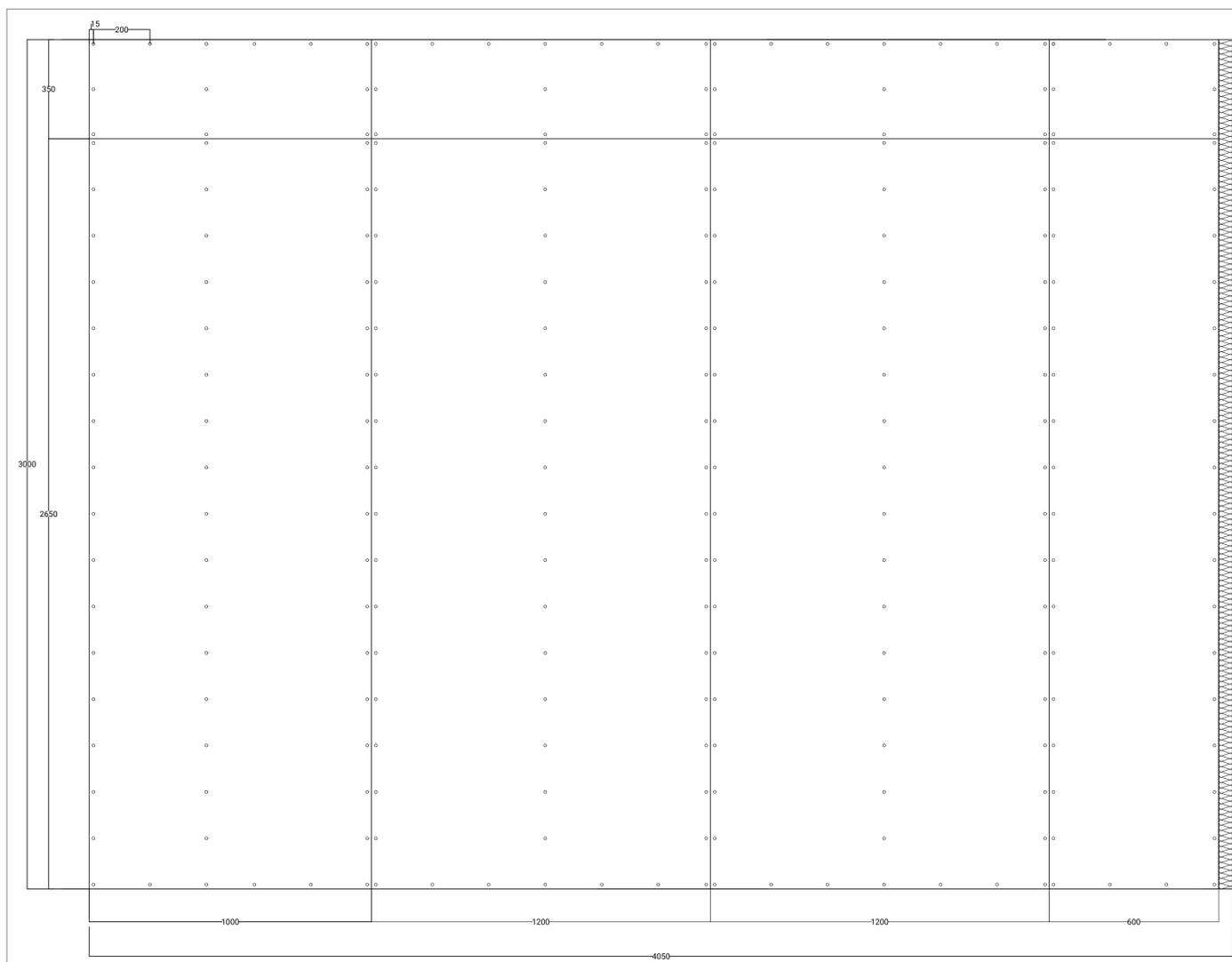
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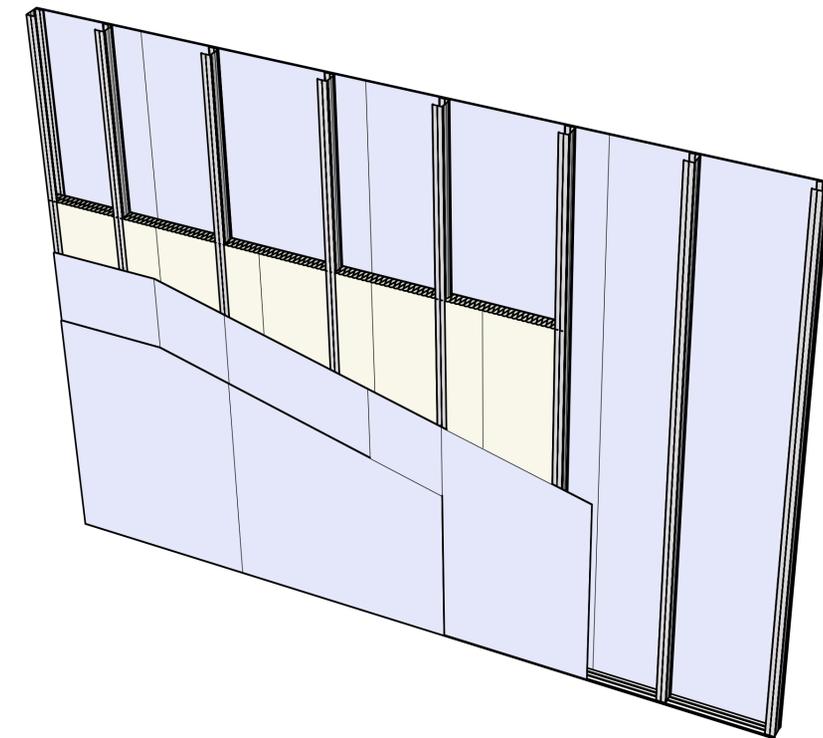
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Dwarsdoorsnede, 1:10



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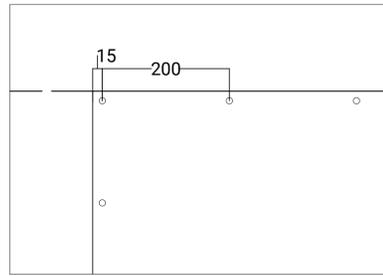


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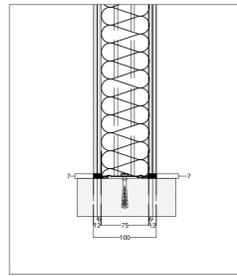
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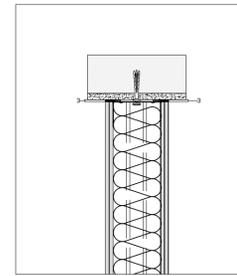
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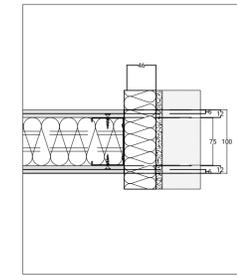
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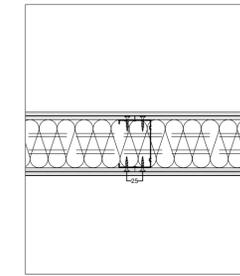
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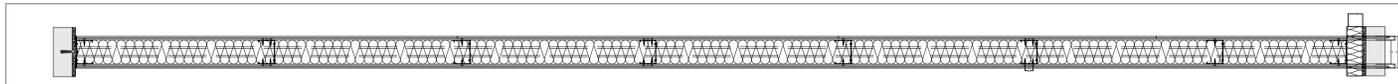
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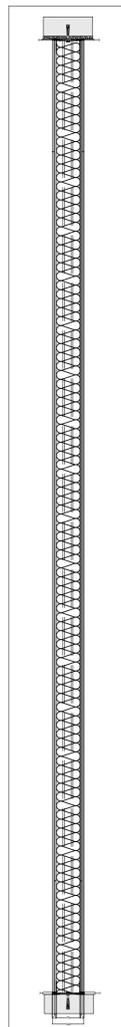
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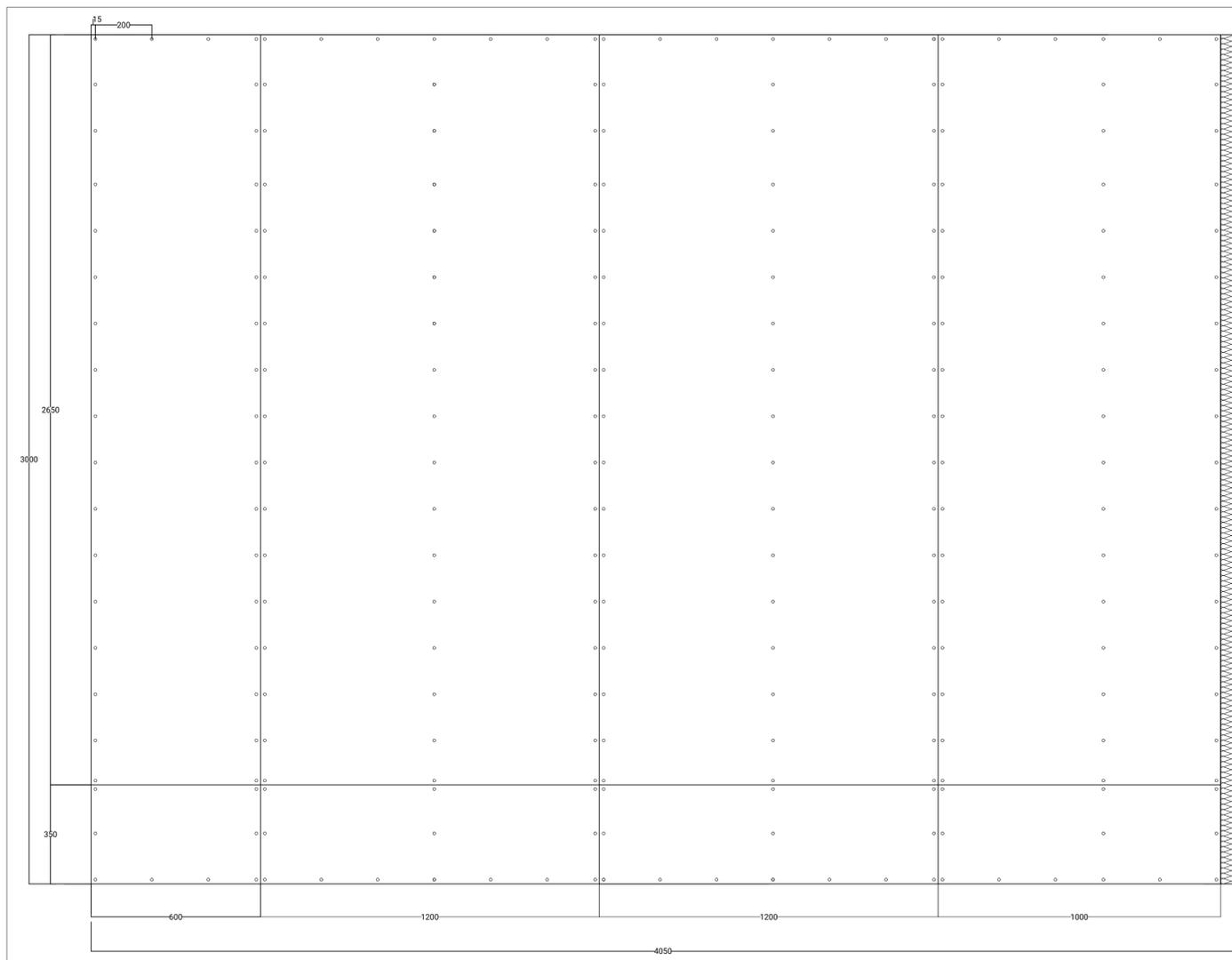
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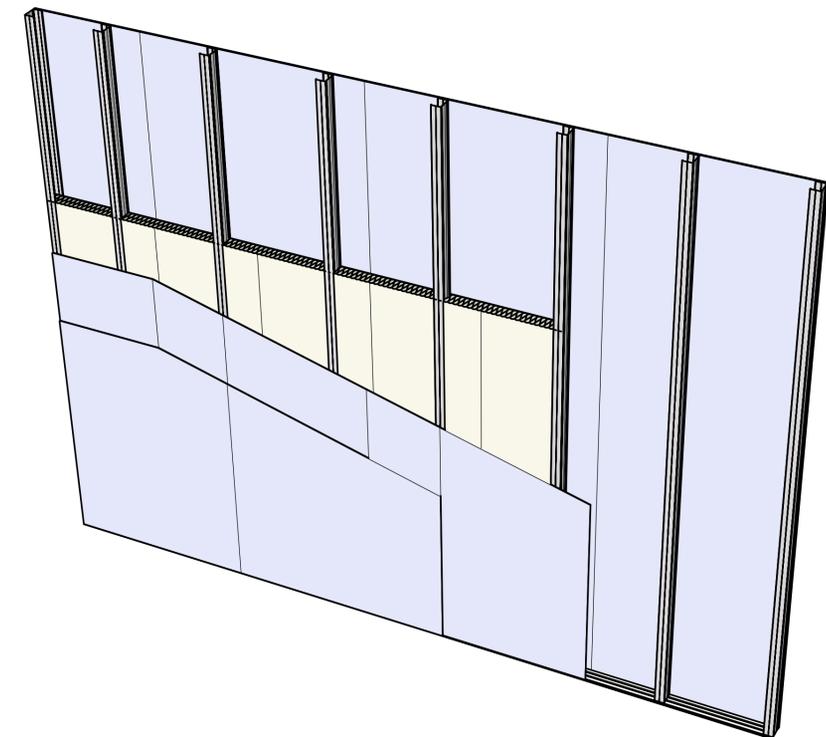
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Dwarsdoorsnede, 1:10



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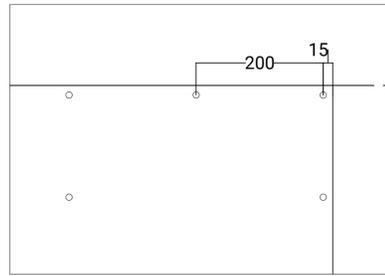


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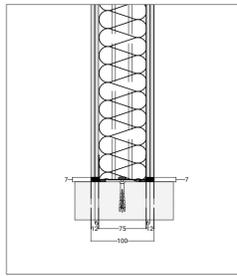
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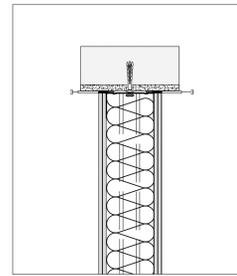
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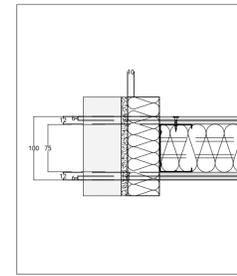
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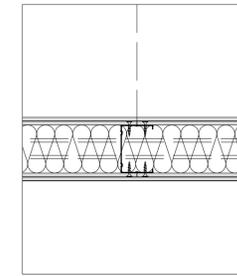
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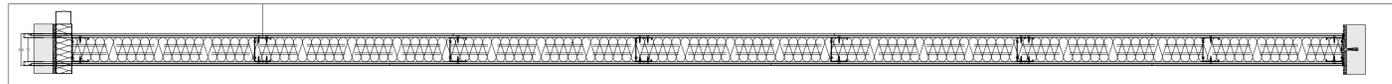
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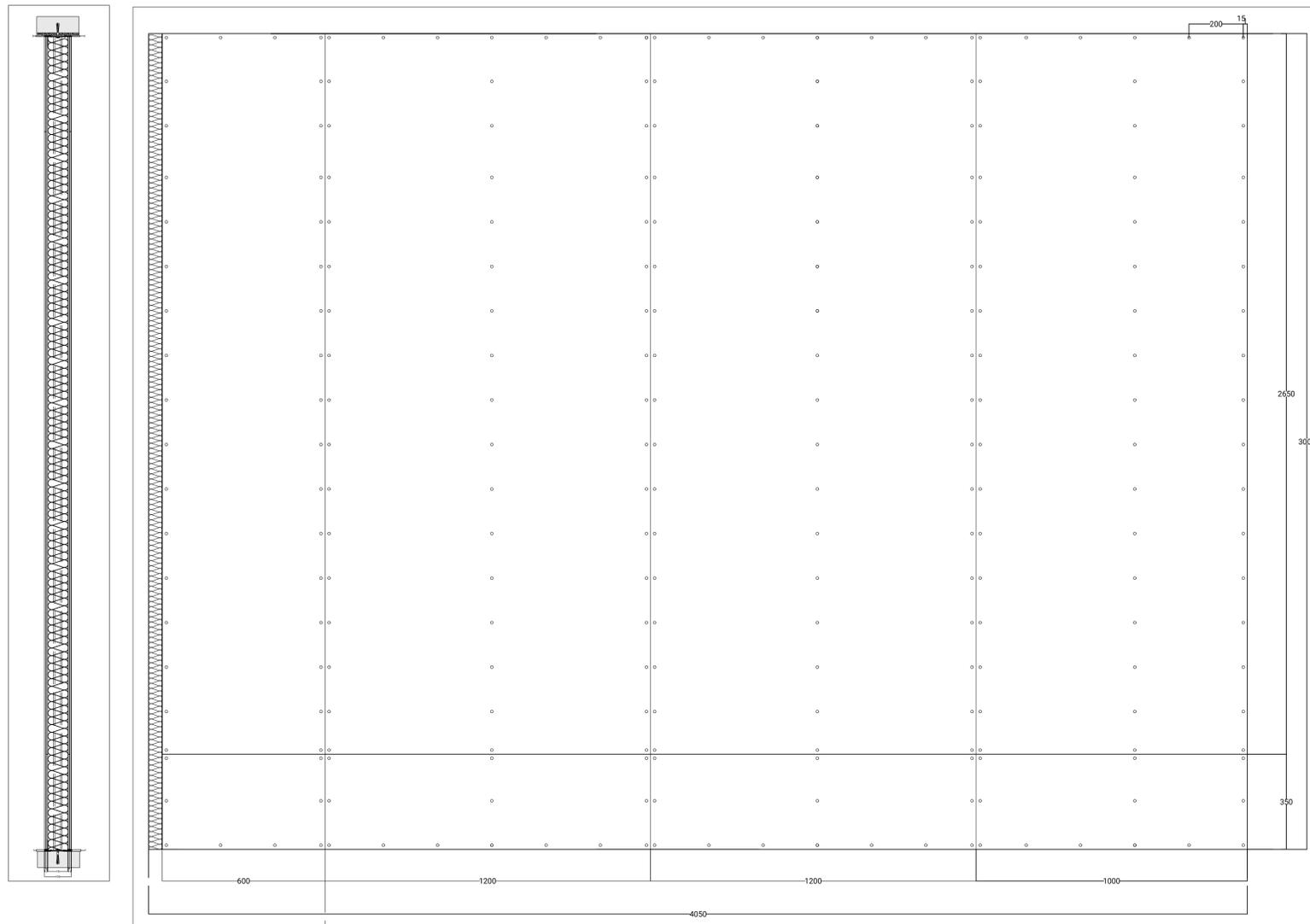
Bevestiging wand, 1:5



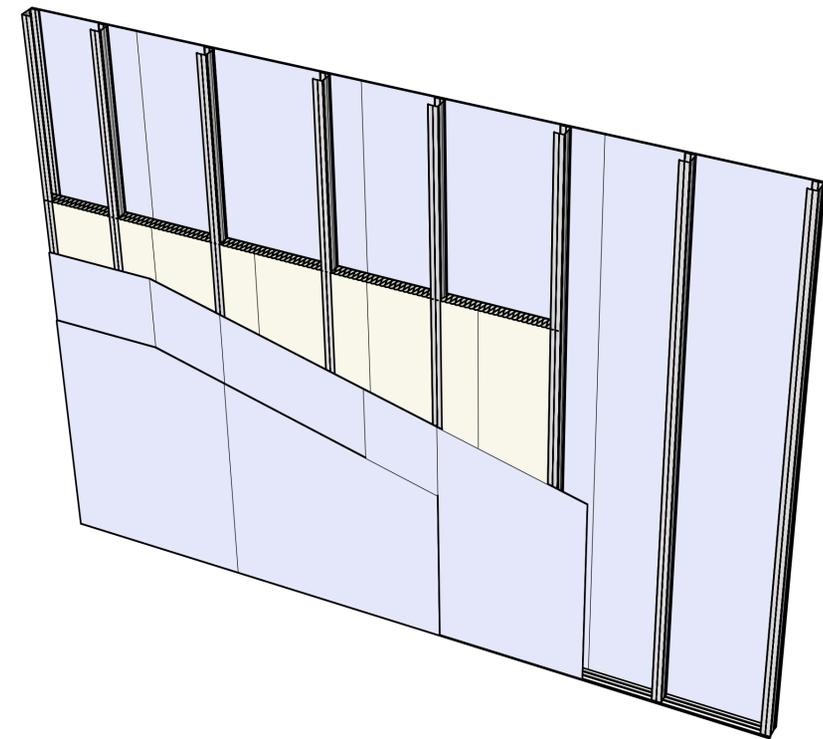
Platenlas, 1:5



Langsdoorsnede, 1:10



Dwarsdoorsnede, 1:10 Vooraanzicht verhitte zijde, onderste laag (nr.3)
1:10

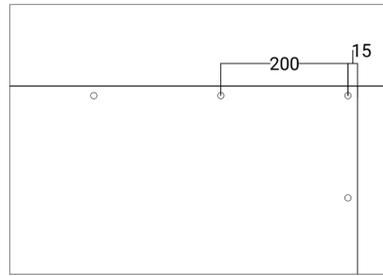


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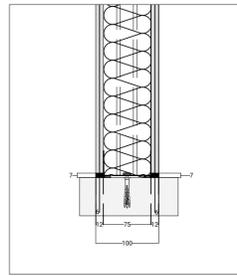
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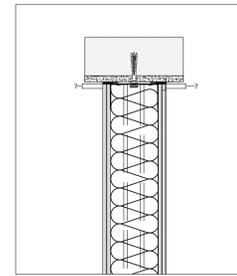
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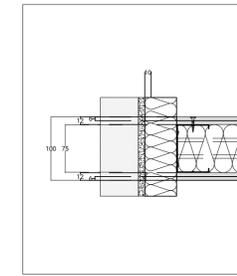
Schroef afstand, 1:5



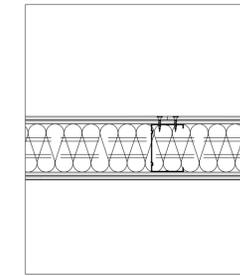
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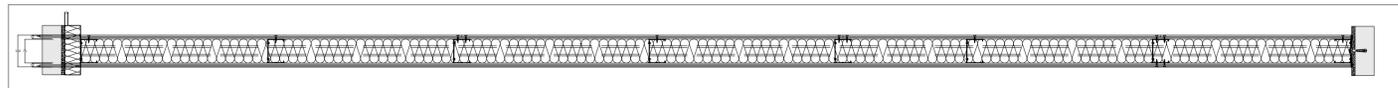
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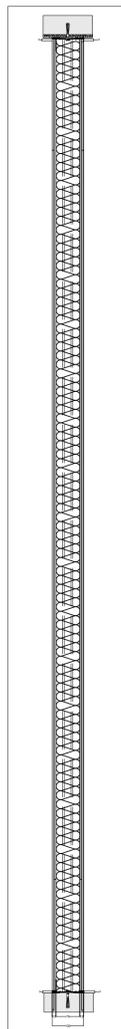
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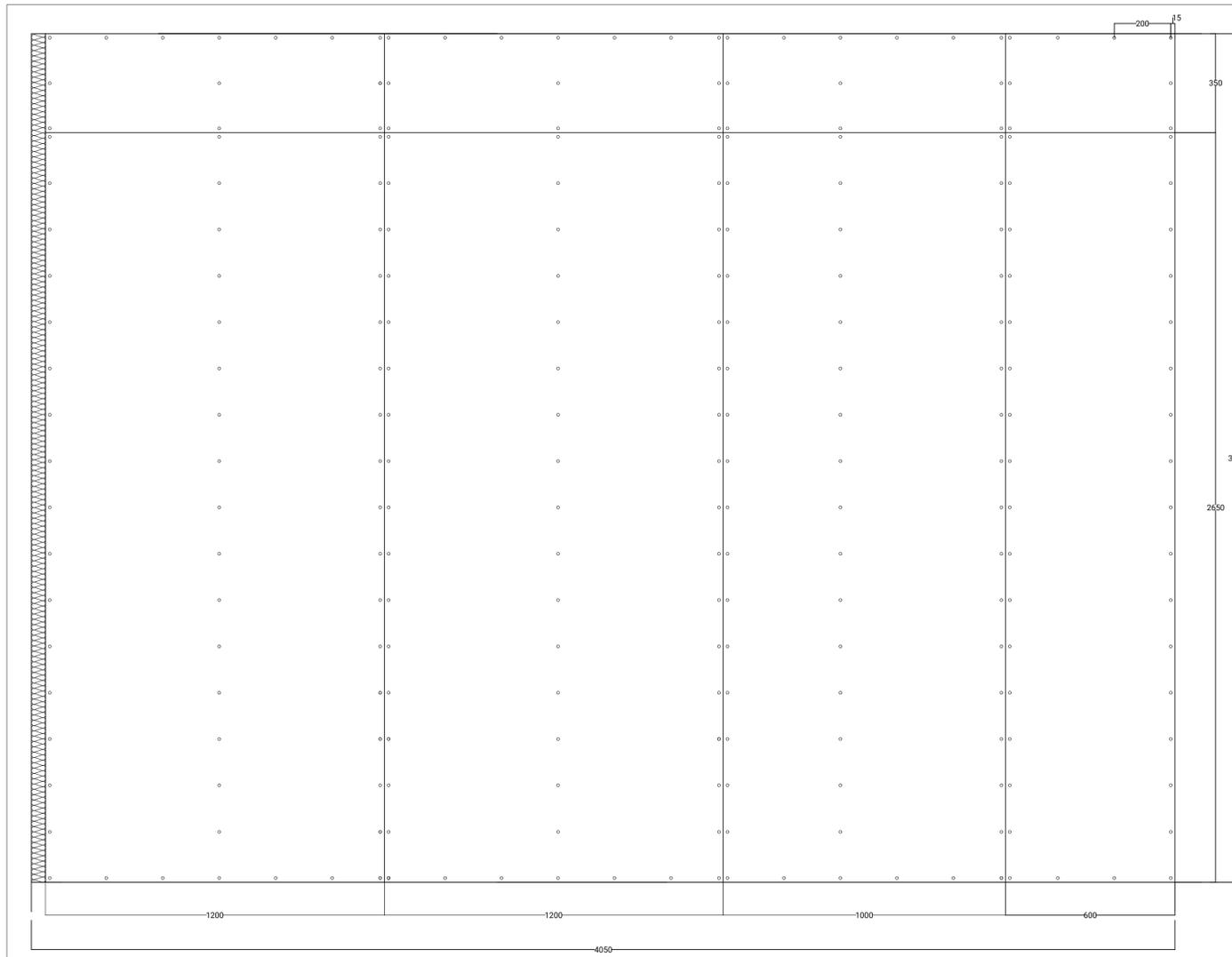
Platenlas, 1:5



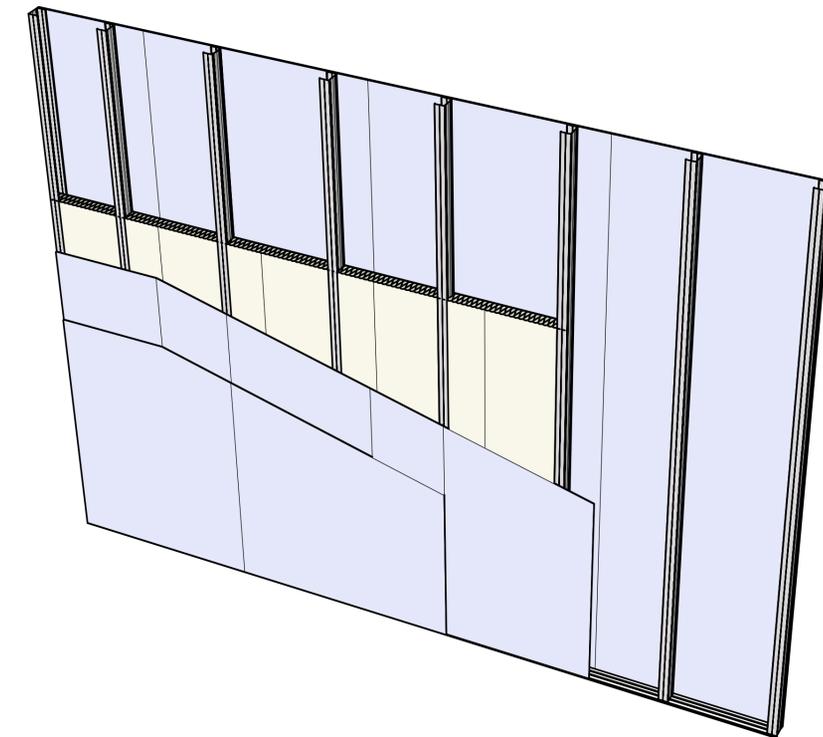
Langsdoorsnede, 1:10



Dwarsdoorsnede, 1:10



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1:10



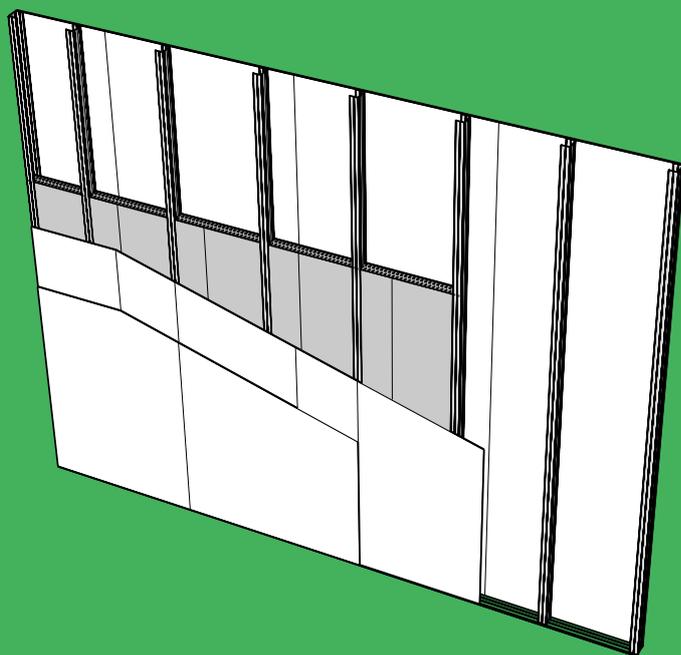
3D Model

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MAGOXX Board

safe, smart and sustainable



MAGOXX Staanderwanden

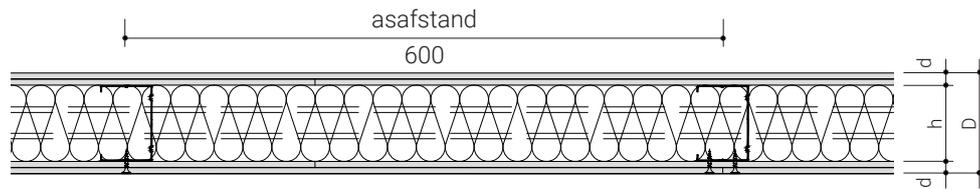
MAGOXX

Staanderwanden

Eigenschappen Staanderwanden

Technische eigenschappen

Enkele draagstructuur - éénlagige beplating

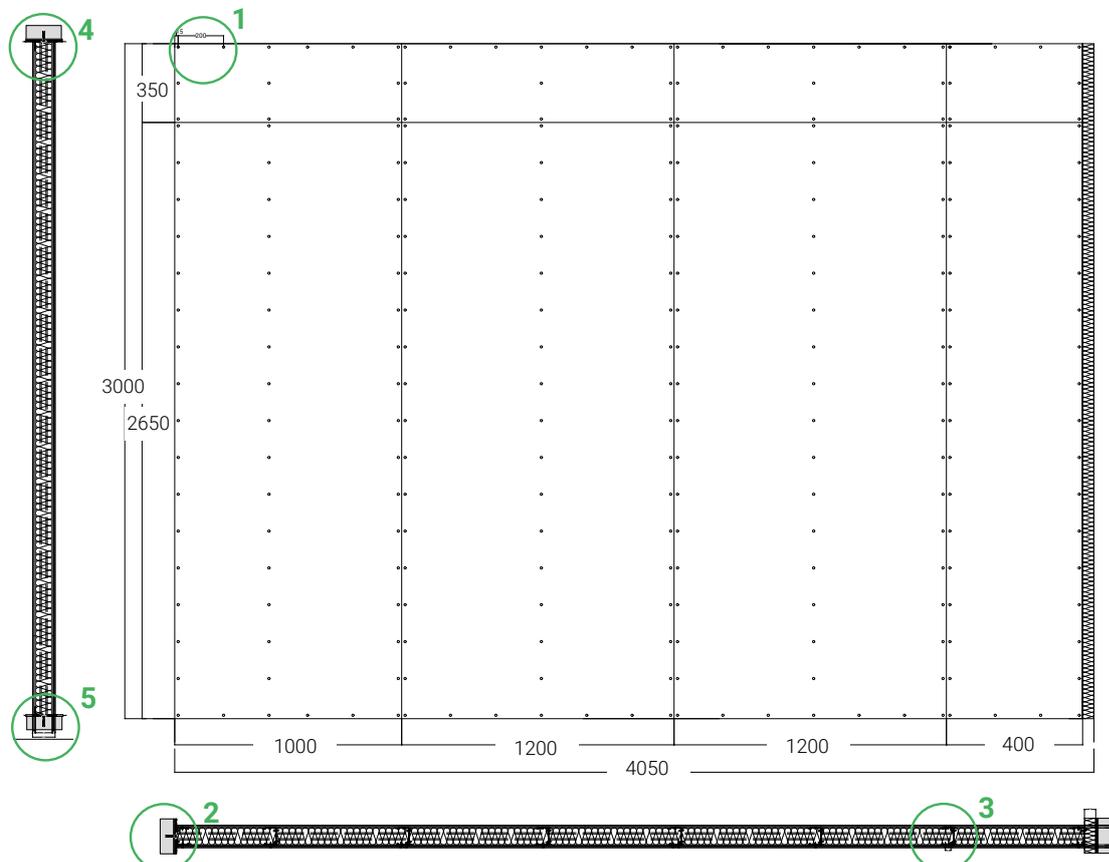


Afmetingen

Wanddikte D	Profiel (spouw) h	Beplying d	Gewicht ca. kg/m ²
100	75	12 (2x6)	28

Vooraanzicht & doorsnedes

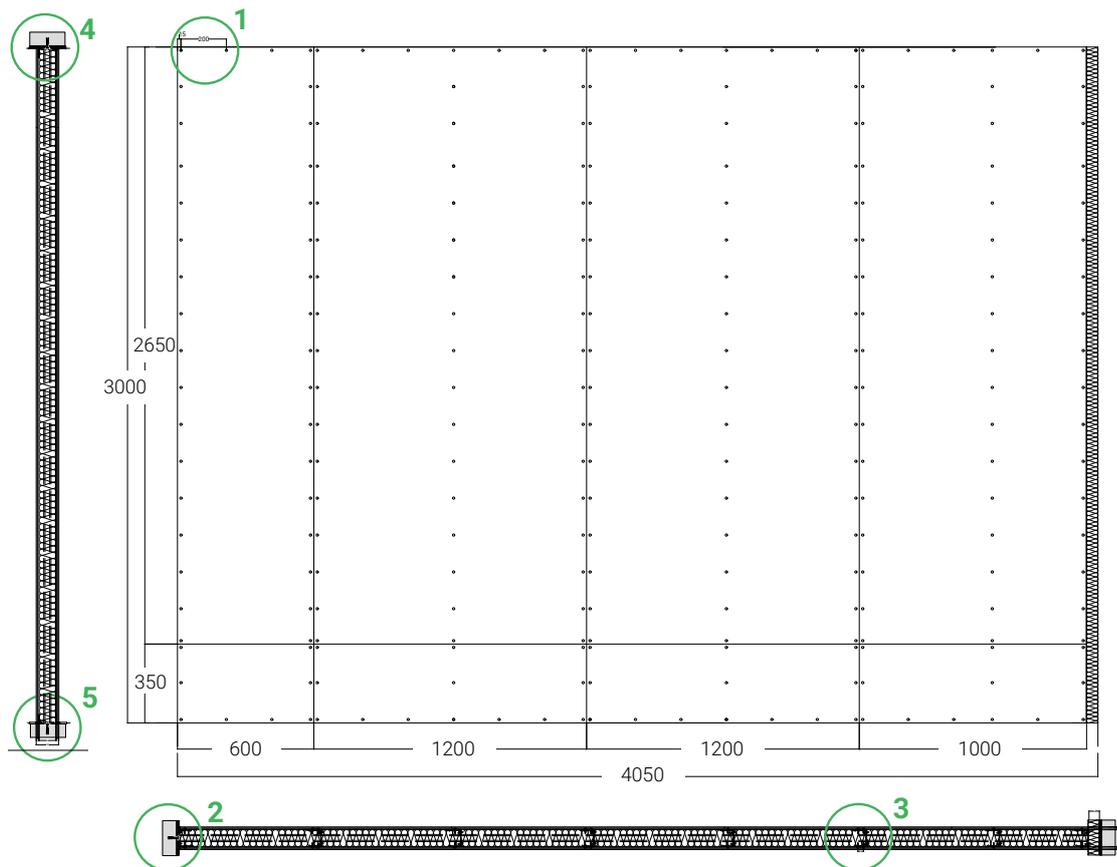
Onverhitte zijde, bovenste plaat (nr.1)



Eigenschappen Staanderwanden

Voor aanzicht & doorsnedes

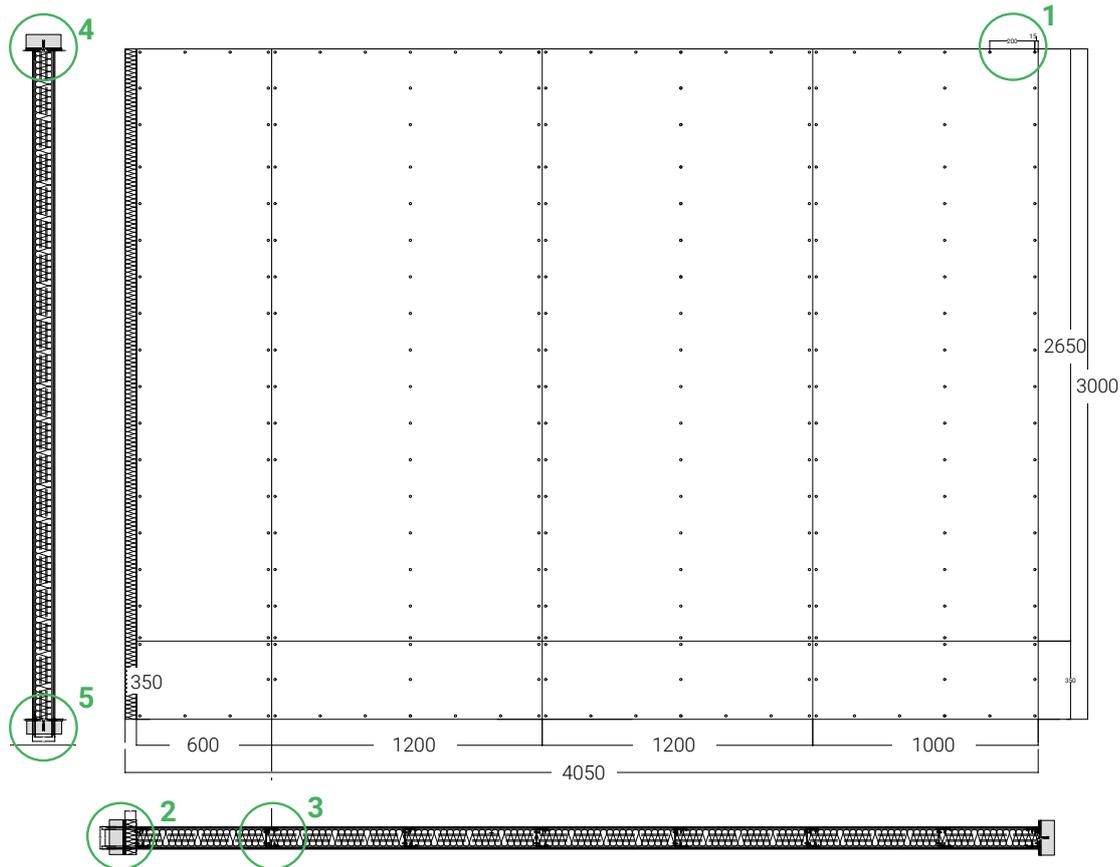
Onverhitte zijde, onderste plaat (nr.2)



Eigenschappen Staanderwanden

Vooranzicht & doorsnedes

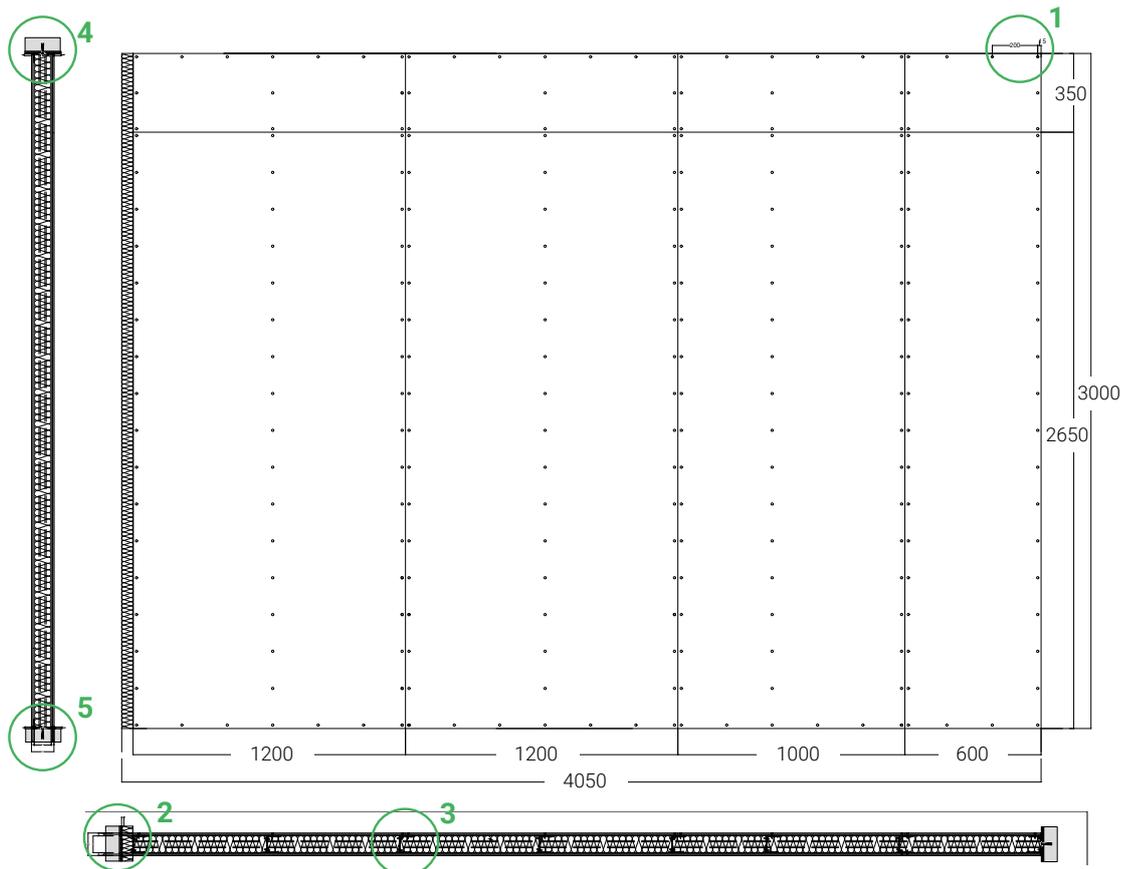
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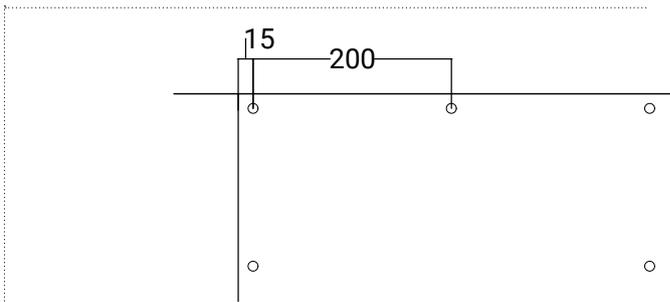
Eigenschappen Staanderwanden

Vooranzicht & doorsnedes

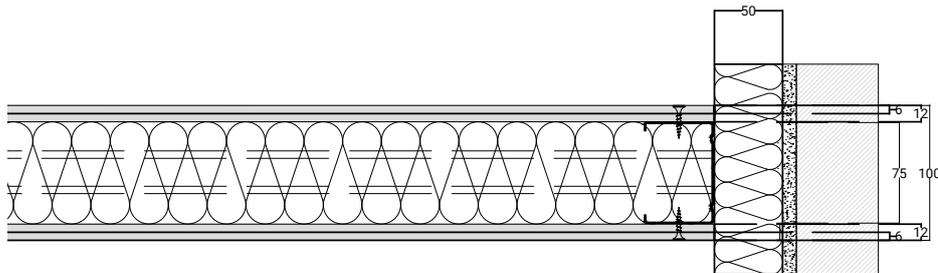
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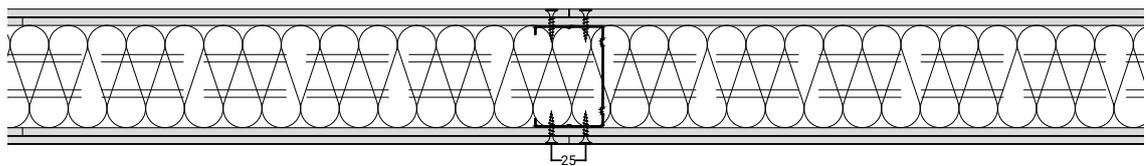
Details



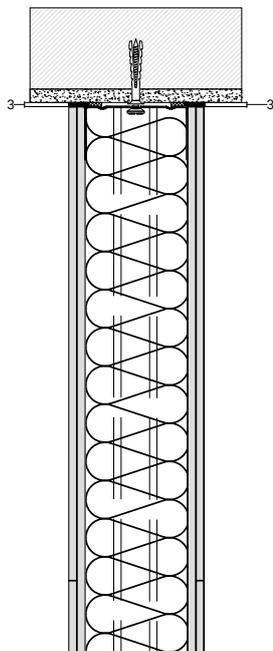
1. Schroefafstand



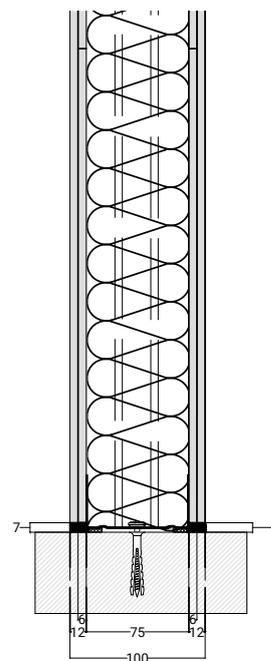
2. Aansluiting aan een massieve wand schaal 1:5



3. Platenlas schaal 1:5



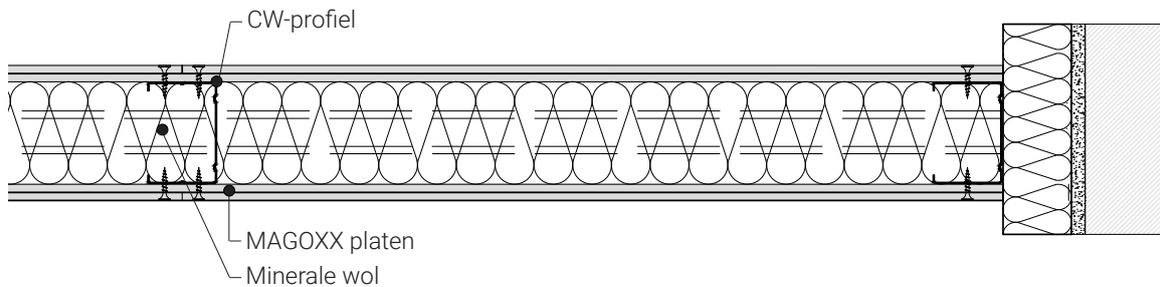
4. Plafondaansluiting schaal 1:5



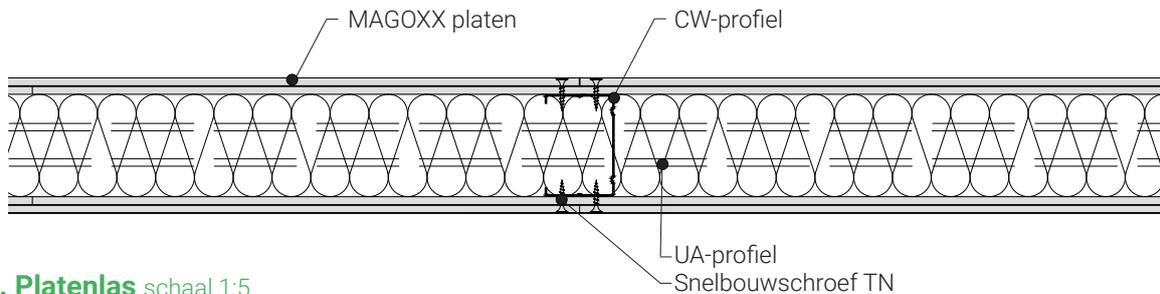
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Materiaalbenodigdheden

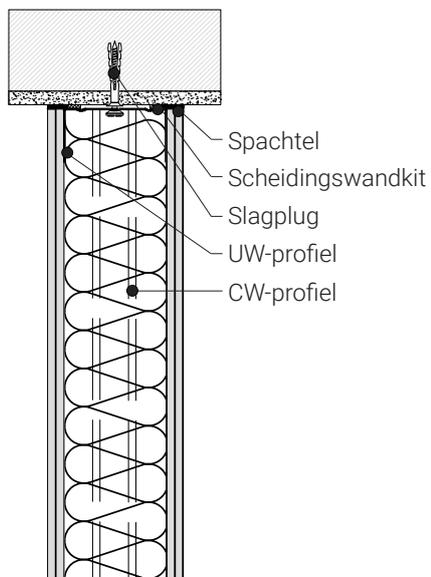
Staanderwanden



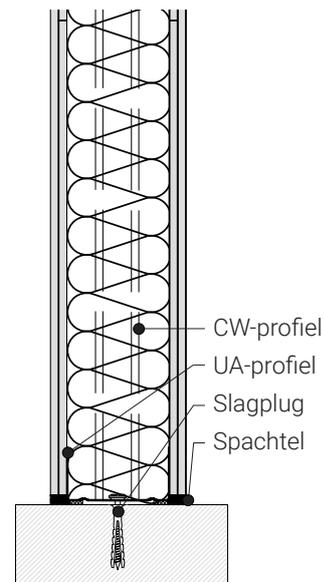
2. Aansluiting aan een massieve wand schaal 1:5



3. Platenlas schaal 1:5



4. Plafondaansluiting schaal 1:5



5. Vloeraansluiting schaal 1:5

Constructie + Montage

Staanderwanden

Specificatie materiaalbenodigdheden

Materiaalbenodigdheden per m² wand zonder verlies en afval.

Onderconstructie

- UW-profiel 75x40x0,6
- CW-profiel 75x50x0,6
- Popnagels $\geq 3 \times 8$ mm, verbinding CW- met UW-profiel (niet toepassen bij brandproef)
- Slagplug 6/55
- Isolatie minerale wol 70mm
- Minerale wol tussen muur en wand vrije zijde 50mm

Beplating

- MAGOXX brandwerende plaat 2650x1200x6 mm (2x)
- Snelbouwschroeven 3,9x30

Naadafwerking

- Spachtel

Constructie + montage

Constructie

De staanderwand bestaat uit een enkele metalen structuur (W111) met aan beide zijden een beplating van MAGOXX brandwerende platen.

Het metalen staanderwerk wordt rondom met de aangrenzende bouwdelen verbonden. De beplating wordt enkel laags aangebracht. In de spouw wordt isolatiemateriaal opgenomen.

Montage

Onderconstructie

De profielen die worden bevestigd aan aangrenzende bouwdelen, dienen te worden voorzien van dichtingsband.

Randprofielen tegen aangrenzende bouwdelen met hiervoor geschikte bevestigingsmiddelen aan de omringende bouwdelen bevestigen.

Asafstand voor de bevestigingspunten maximaal 1 m.

Aan wanden minimaal 3 bevestigingspunten.

Geschikte bevestigingsmiddelen voor massieve bouwdelen: slagpluggen.

Voor bevestiging aan niet massieve bouwdelen dienen voor het bouw materiaal geschikte bevestigingsmiddelen toegepast te worden.

Bij metalen staanderwanden met een enkelvoudige beplating, welke voorzien worden van tegelwerk, dient de asafstand van de staanders te worden teruggebracht naar 400 mm.

Beplating

Beplating uitvoeren met MAGOXX platen van de benodigde lengte.

Bij brandwerende eisen dienen de aansluitingsvoegen tussen de metalen staanderwand en de massieve bouwdelen met spachtelmateriaal te worden gevuld.

Schroefafstand 200 mm.