# Laboratory for Fire Safety

*Classification of fire resistance in accordance with EN 13501-2:2016 of a light weight partition wall with MAGOXX boards 12 mm*

*Classification report*

Report number YA 2159-2E-RA-001 d.d. October 31, 2019

# Laboratory for Fire Safety

## *Classification of fire resistance in accordance with EN 13501-2:2016 of a light weight partition wall with MAGOXX boards 12 mm*

## *Classification report*

| | |
|---|---|
| Client | SINH Building Solutions<br>Saturnusstraat 60<br>6584 AC Den Haag<br>The Netherlands |
| Prepared by | Peutz bv<br>Lindenlaan 41, NL-6584 AC Molenhoek<br>Postbus 66, NL-6585 ZH Mook<br>The Netherlands |
| Notified body | NB 2264 |
| Product name | Light weight partition wall with MAGOXX boards 12 mm |
| Report number | YA 2159-2E-RA-001 |
| Date of issue | October 31, 2019 |
| Reference | HL/RO//YA 2159-2E-RA-001 |
| Representative | ing. H.H.A. Leenders |
| Author | ing. R.R.H. Okkersen<br>0031 85 8228618<br>r.okkersen@peutz.nl |

This classification report, containing 9 pages and an Appendix containing 6 pages, can only be used and reproduced as an entity.

# Table of Contents

# 1 Introduction

This classification report defines the fire resistance classification assigned to a light weight partition wall with MAGOXX boards 12 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**: **E**uropean **A**ccreditation Organisation **M**ulti**L**ateral **A**greement: 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 12 mm, is defined as a non-loadbearing wall (partition).

## 2.2 Product description

The element, a light weight partition wall with MAGOXX boards 12 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 × 3.00 m (w × 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 × 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 single layer of MAGOXX fire resistant board, thickness 12 mm. The boards are not mounted offset. 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 are finished with a joint filler, type 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 2159-2E-RA -001 dated October 31, 2019 | EN 1363-1:2012<br>EN 1363-2:1999<br>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 120 minutes in consultation with the client.

*t3.2 Test results*

| Assessment criterion | Elapsed time | Rejection criterion |
|---|---|---|
| Integrity (E) | | |
| – sustained flaming | 120 minutes | Not attained |
| – cotton pad | 79 minutes | Attained |
| – gap gauges | 120 minutes | Not attained |
| Insulation (I) | | |
| – increase of average temperature | 91 minutes | Attained |
| – increase of maximum temperature | 53 minutes | Attained |
| Radiation (W) | | |
| – 15 kW/m$^2$ (3 kW/m$^2$ after 120 minutes) | 120 minutes | Not attained |
| Deflection of the wall of 100 mm | 32 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**<br>**EW 120**<br>**E 120** |

| Fire resistance classification, up to height 4 m |
|---|
| **EI 30**<br>**EW 30**<br>**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 figure 1. 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 adaptions are possible:

- decrease in height of the wall;
- increase in thickness of the wall;
- increase in thickness of the component materials;
- decrease in linear dimensions of the board, but not thickness;
- decrease in stud spacing;
- decrease in distance of fixing centres;
- increase in the number of vertical joints, of the type tested.

#### 4.3.2 Extension of width

Since the construction is tested with a width of 4 m and a free edge the width may be increased of an identical construction.

#### 4.3.3 Extension of height

Since the construction is tested with a height of 3 m and the deflection perpendicular to the wall was less than 100 mm till 32 minutes 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 of certification of this product.

Mook,

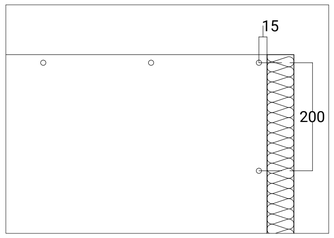
Ir. J.J. Mertens

Ing. D.J. den Boer

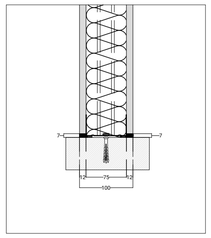
Head of Laboratory for Fire Safety

Management

This report contains 9 pages and 1 appendix of 6 pages




Schroef afstand, 1:5



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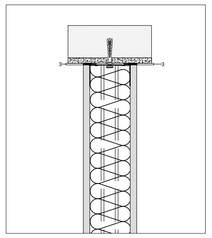
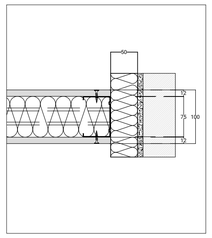


Bevestiging plafond, 1:5



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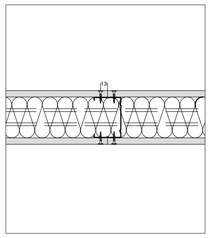
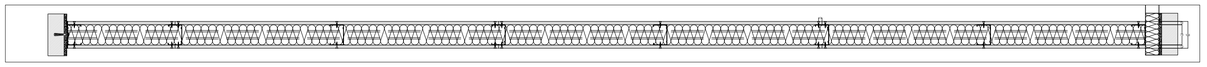
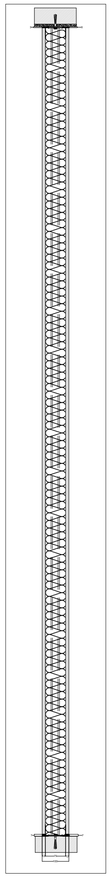


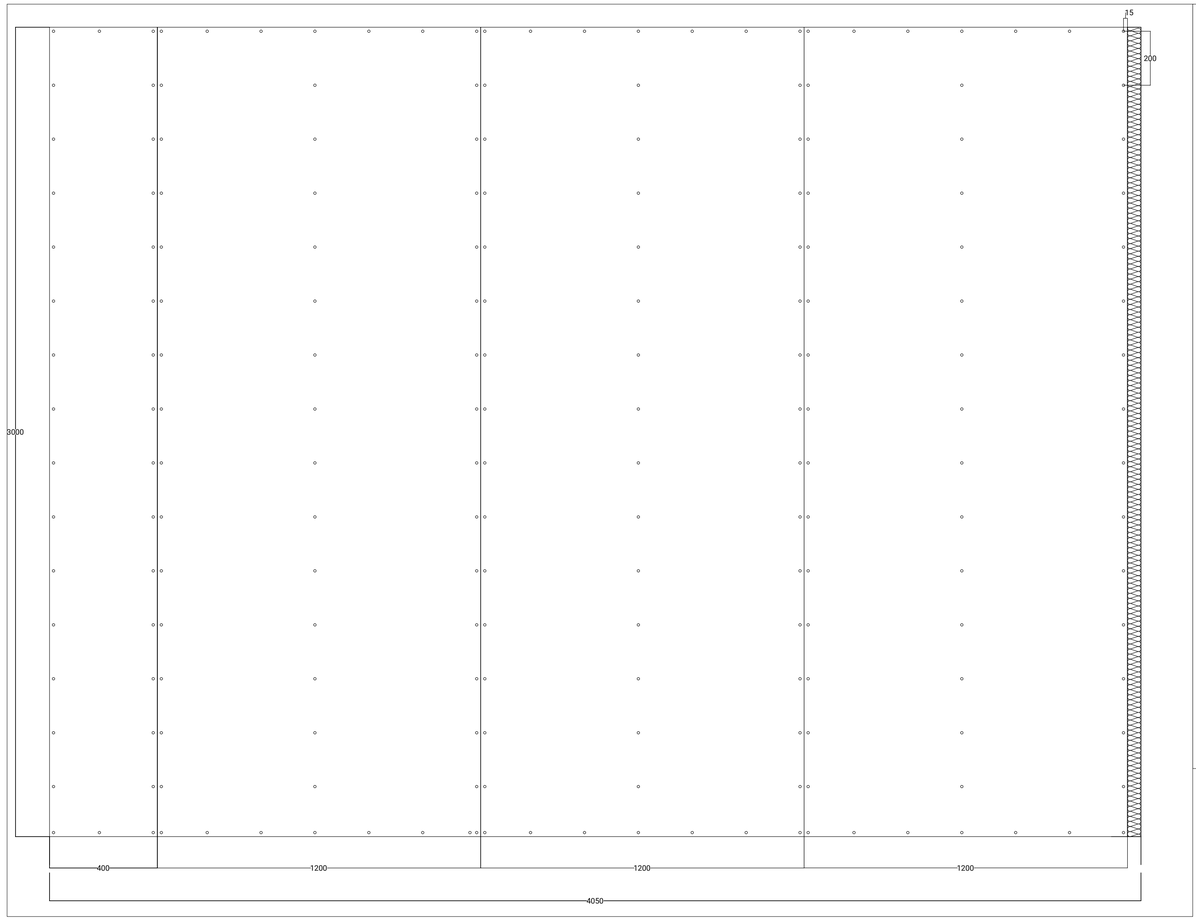
Platenlas, 1:5



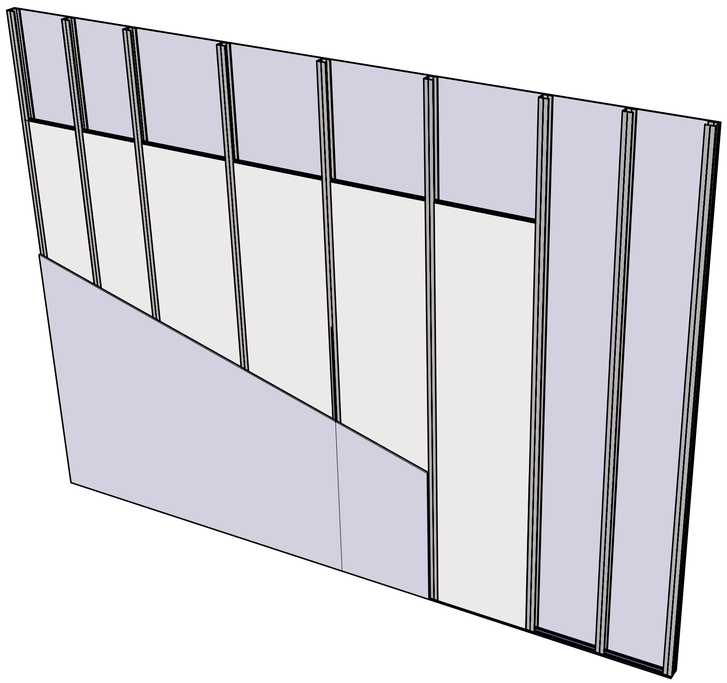
Langsdoorsnede, 1:10



Dwarsdoorsnede, 1:10




Vooraanzicht, 1:10



3D Model

Project:

Brandproef Staanderwanden MAGOXX

STARLING STRUCTURES
Iduna vestdijkpad 60- U7
2516 AH Den Haag

Overzicht plaatconstructie

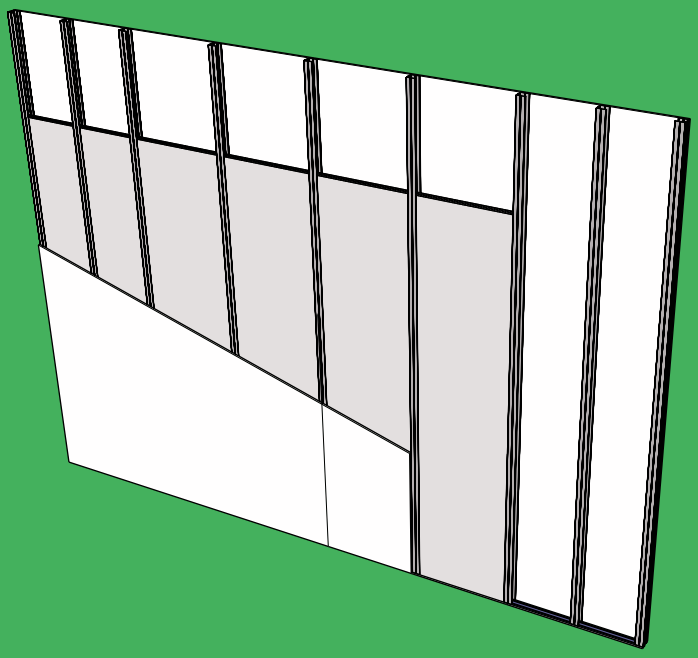
| | Naam | Datum | Paraaf |
|---|---|---|---|
| getekend: | Angéla Kortteven | 02-09-19 | |
| projectleider: | Frank Immerzeel | 10-09-19 | |
| opdrachtgever: | Withindia | | |
| Status | Final | | |

| | |
|---|---|
| schaal: | 1:10, 1:5 |
| projectnummer: | 100076 |
| besteknummer: | |
| formaat: | A1 |
| bladnummer: | 1 van 1 |
| | xxxx-xxx-VO-CI-01 |

Bestandsnaam: Overzichtstekening staanderwanden.dwg

PEUTZ

MAGOXX® Board
safe, smart and sustainable



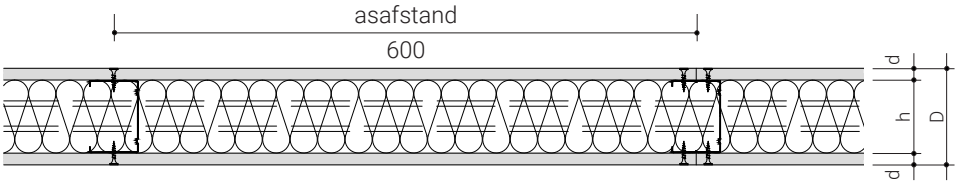
MAGOXX Staanderwanden

# MAGOXX
## Staanderwanden

# Eigenschappen
Staanderwanden

## Technische eigenschappen

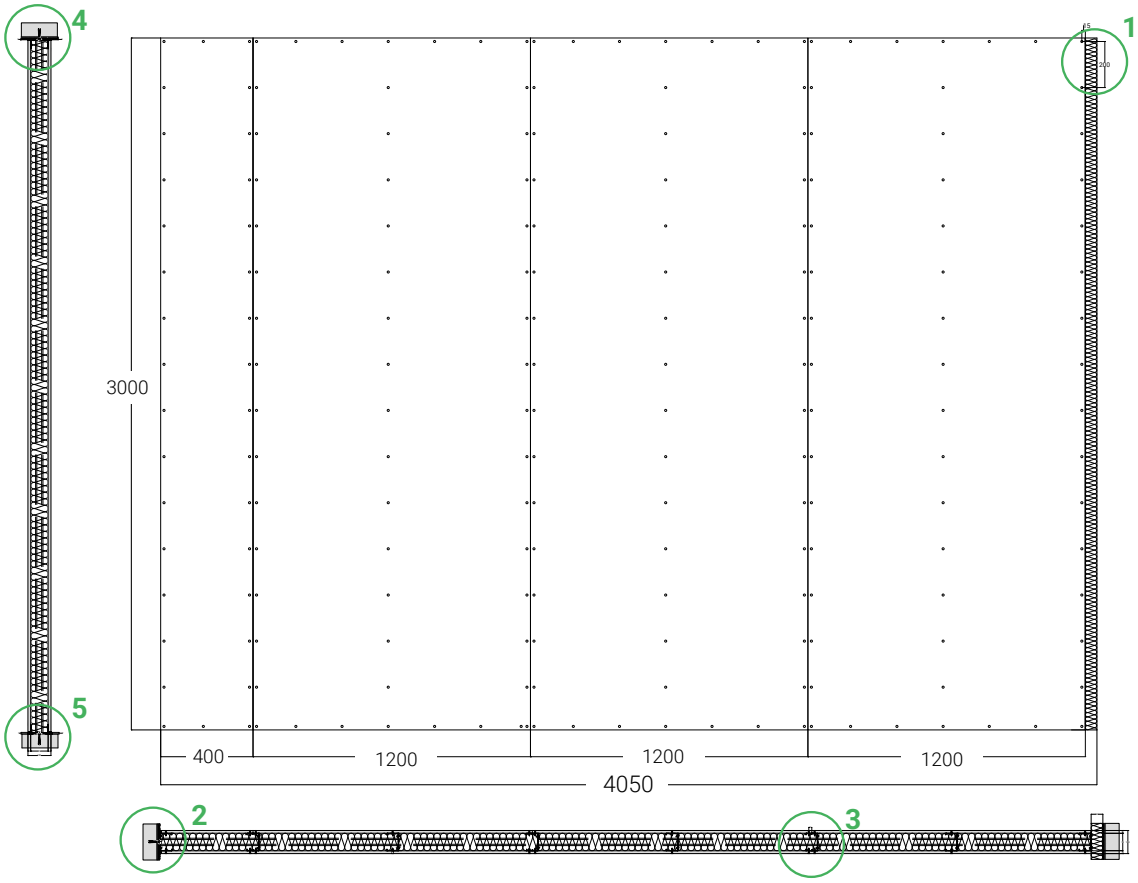
### Enkele draagstructuur - éénlagige beplating



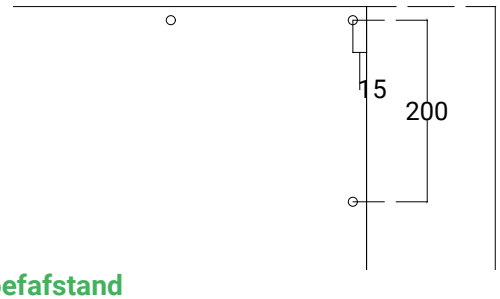

### Afmetingen

| Wanddikte<br>D | Profiel (spouw)<br>h | Beplating<br>d | Gewicht<br>ca. kg/m² |
|---|---|---|---|
| 100 | 75 | 12 | 28 |

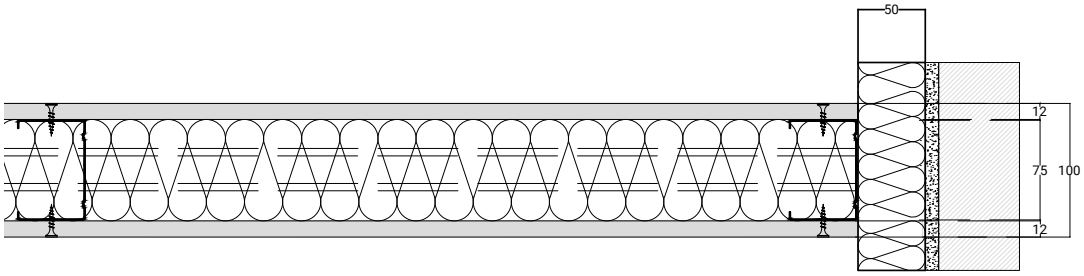
### Vooraanzicht & doorsnedes



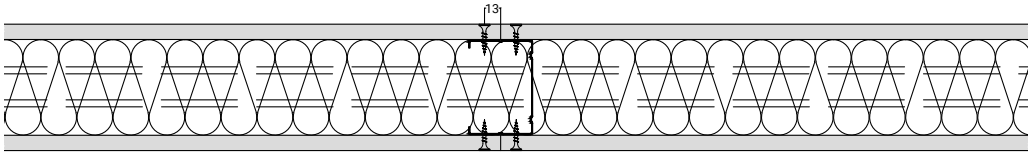
# Details



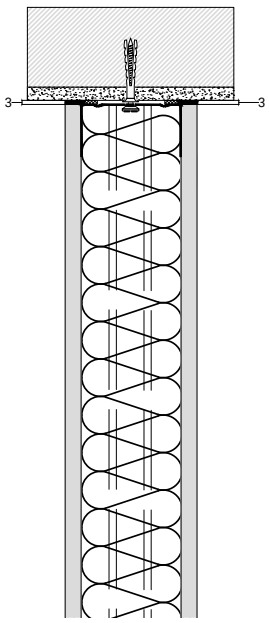

**1. Schroefafstand**



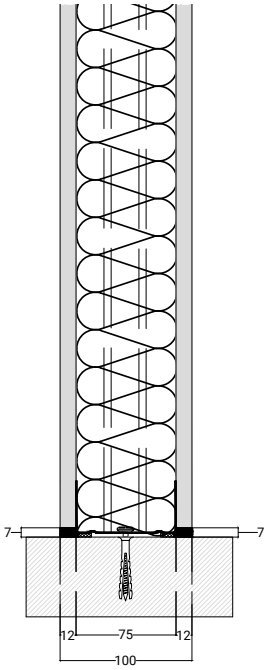

**2. Aansluiting aan een massieve wand** schaal 1:5




**3. Platenlas** schaal 1:5

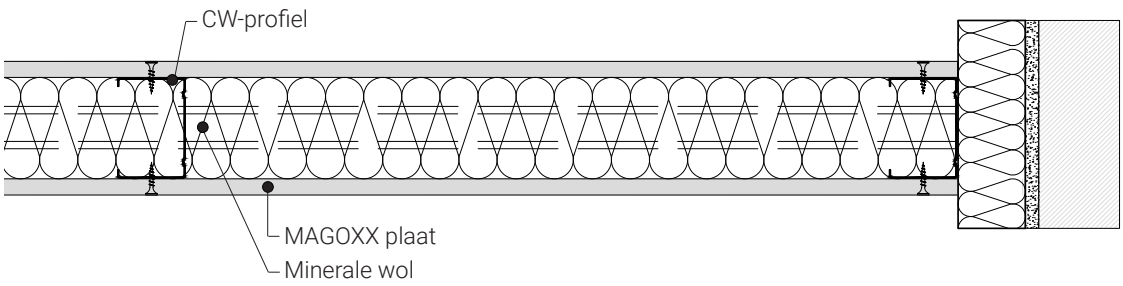



**4. Plafondaansluiting** schaal 1:5

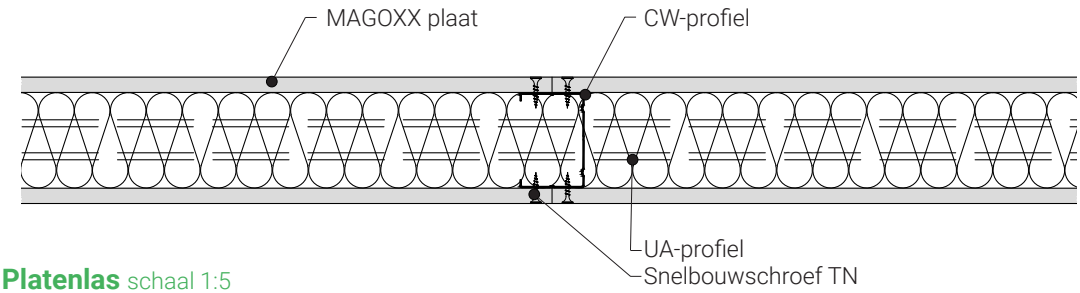



**5. Vloeraansluiting** schaal 1:5

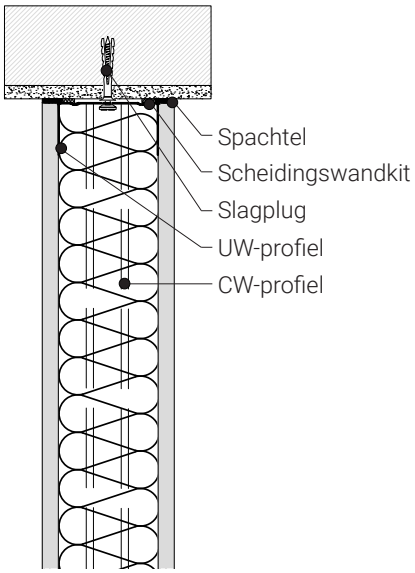
# Materiaalbenodigdheden
## Staanderwanden



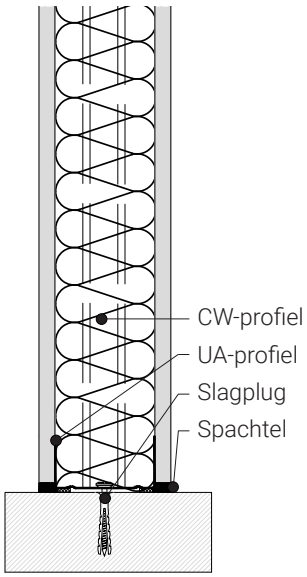

**2. Aansluiting aan een massieve wand** schaal 1:5




**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 ≥ 3 x 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 3000x1200x12 mm
- 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 bevestingspunten.
Geschikte bevestigingsmiddelen voor massieve bouwdelen: slagpluggen.

Voor bevestiging aan niet massieve bouwdelen dienen voor het bouwmateriaal 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.