

FIRE RESISTANCE CLASSIFICATION REPORT No. 14654B

Owner of the classification report:

AGC Glass Europe S.A.
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Introduction:

This classification report defines the classification assigned to a glazed non-loadbearing wall – Pyrobel 53N_Forster Fuego frame_silicone – in accordance with the procedures given in EN 13501-2:2007 +A1:2009: Fire classification of products and building elements – Part 2: Classification using data from fire resistance tests, excluding ventilation services.

This classification report consists of seven pages and five annexes and may only be used or reproduced in its entirety.

1 Details of classified product

1.1 General

The product is defined as a glazed non-loadbearing wall – Pyrobel 53N_Forster Fuego frame_silicone. It is evaluated in respect of the fire performance characteristics given in clause 5 of EN 13501-2:2007+A1:2009.

1.2 Product description

The test element is fully described in the test report provided in support of this classification listed in Clause 2.1. The drawings of this test report are enclosed in annexes 1 till 5.

Composition of the test specimen:

The test specimen is an unloaded glazed wall that consists of glass panes in a steel frame.

1.2.1 Glazing system:

The glazing system consists of glass panes [1]-[6], setting blocks [7], clip-on beads [8], bead fixings [9], glazing strips [10] and sealants [11]. The exact composition of the glass panes is confidential and is communicated to the laboratory.

[1]-[6] Glass panes – brand and type: Pyrobel 53N – nominal glass thickness: 52.7 ± 3.0 mm – measured thickness: 52 mm.

- position: shown in annex 1.
- fixation: clasped between the clip-on beads.
- orientation: the glass panes are symmetrical.

	Dimensions of the panes: (Width x Height)	Dimensions of the exposed area: (Width x Height)	Reference:
[1]	1300 mm x 2850 mm	1270 mm x 2820 mm	CM19750-01-501
[2]	670 mm x 960 mm	640 mm x 930 mm	CM19750-04-502
[3]	725 mm x 960 mm	695 mm x 930 mm	CM19750-03-502
[4]	670 mm x 960 mm	640 mm x 930 mm	CM19750-04-501
[5]	725 mm x 960 mm	695 mm x 930 mm	CM19750-03-501
[6]	1460 mm x 800 mm	1430 mm x 770 mm	CM19750-02-501

[7] Setting block – type: Promatect®-H – dimensions: 70 mm x 53 mm x 5 mm – density: 960 kg/m³ (NV).

- number: two per glass pane.
- position: under the glass panes.

- [8] Clip-on bead – material: steel – type: Forster Fuego – reference: 901257 – outer dimensions: 25 mm x 25 mm – wall thickness: 1.25 mm (NV).
- position: at the exposed and unexposed side.
 - fixation:
 - clipped on screws [9] – material: steel – diameter: 4 mm – length: 16 mm;
 - centre/centre distance: 200 to 300 mm.
- [10] Glazing strip – material: self-adhesive ceramic paper – brand and type: Superwool X607 – dimensions: 20 mm x 5 mm – density: 210 kg/m³.
- position: between the clip-on beads and the glass panes.
- [11] Sealant – material: neutral silicone – brand and type: Dow Corning Firestop 700 grey.
- position: sealing between the clip-on beads and the glass panes.

1.2.2 Framing system:

The framing system includes the frame components [12]-[13] and their fixing method [14]. The steel frame consists of vertical and horizontal (intermediate) profiles [12], so that the frame is divided in several parts.

- [12] Profile – material: steel and calcium silicate – brand and type: Forster Fuego – reference: 732.590 – outside dimensions: 55 mm x 110 mm – composed of three tube profiles with calcium silicate strips in between and inside – outside dimensions of the tube profiles: 55 mm x 20 mm – wall thickness of the profiles: 1.8 mm (NV) – dimensions of the calcium silicate strips between the tube profiles: 54 mm x 25 mm – dimensions of the calcium silicate strips in the tube profiles: 15 mm x 48 mm – density of the calcium silicate strips: 875 kg/m³.
- position: at the outer edges and between the glass panes.
 - fixation to the surrounding building structure:
 - with anchors [14] – material: steel – brand and type: Hilti 100 HT – diameter: 10 mm – length: 132 mm;
 - centre/centre distance: see annex 2.
 - fixation: the horizontal and the vertical (intermediate) profiles are welded together.
- [13] Intumescent strip – type: Palusol – section dimensions: 65 mm x 2 mm.
- number: one strip over the whole length of the profiles at the glass side.
 - fixation: glued.

[15] Setting block – type: Promatect-H – dimensions: 200 mm x 40 mm x 15 mm – density: 960 kg/m³ (NV).

- position: between the steel frame and the building structure at the lower horizontal edge.
- centre/centre distance: 800 to 900 mm.

[16] Mineral wool – type: Thermal insulation Superwool X607 – initial density: 96 kg/m³ (NV) – compressed to a thickness of approximately 15 mm.

- position: between the steel frame and the surrounding building structure.

2 Test report and test results in support of this classification

2.1 Test report

Name of laboratory that undertook the test	Identification number of test report	Owner of test report	Date of test	Test method
WFRGENT N.V.	14654A	AGC Glass Europe S.A.	26/11/2010	EN 1364-1:1999

Exposure conditions during the fire resistance test:

Temperature/time curve: standard as in EN 1363-1:1999.

Direction of exposure:

- the glazing system is symmetrical;
- the framing system is symmetrical.

One side exposed to the fire.

No load is applied.

One vertical edge is free, the other edges are fixed.

2.2 Test results

Parameter	Results
Loadbearing capacity	Not applicable
Integrity	
Time of ignition of cotton pad	123 minutes
Time of occurrence of sustained flaming	125 minutes
Time of failure of gap gauge criterion	No failure at test termination
Thermal insulation	
Time after which the mean temperature rise at the unexposed side exceeds 140 °C	No failure at test termination
Time after which the maximum temperature rise at the unexposed side exceeds 180 °C	No failure at test termination
Radiation	
Time after which the radiation exceeds 15 kW/m ²	No failure at test termination (*)
Mechanical action	
No impact test	Not applicable

(*) No failure at test termination in case of infinite width extension of the glazed wall (see Test report 14654A – Annex 10).

The test duration was 125 minutes.

3 Classification and field of application

3.1 Reference of classification

This classification has been carried out in accordance with clause 7.5.2 of EN 13501-2: 2007+A1:2009.

3.2 Classification

The element is classified according to the following combinations of performance parameters and classes as appropriate. No other classifications are permitted.

The classification is valid for both directions of the glazed wall.

EI 120, EI 90, EI 60, EI 45, EI 30, EI 20, EI 15
EW 120, EW 90, EW 60, EW 30, EW 20
E 120, E 90, E 60, E 30, E 20

3.3 Field of direct application

This classification is valid for the following end use applications according to EN 13501-2:2007+A1:2009 and EN 1364-1:1999.

The results of the fire test are directly applicable to similar constructions where one or more of the changes listed below are made and the construction continues to comply with the appropriate design code for its stiffness and stability. Other changes are not permitted.

- unlimited decrease in the wall width.
- unlimited increase in the wall width*.
- unlimited decrease in the wall height of 3 m. No extension in height is allowed above 3 m.
- decrease in linear dimensions of the panes.
- change in the aspect ratio of the panes provided that the largest dimension of the pane and its area are not increased.
- decrease in the distance between vertical profiles and horizontal profiles.
- decrease in distances between fixing centres.
- increase in the dimensions of framing members.
- allowances for expansion if none were incorporated in the test specimen.

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- change in the angle of installation of up to 10° from the vertical.

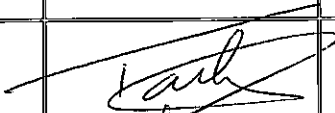
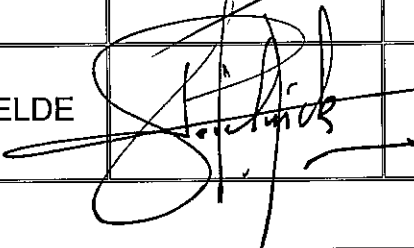
* the radiation intensity for an increased width till +∞ meters remains below 15kW/m².
The calculated values are shown in test report 14654A – Annex 10.

4 Duration of the validity of the classification report

At the time the standard EN 13501-2:2007+A1:2009 was published, no decision was made concerning the duration of validity of the classification document.

5 Warning

This classification document does not represent type approval nor certification of the product.

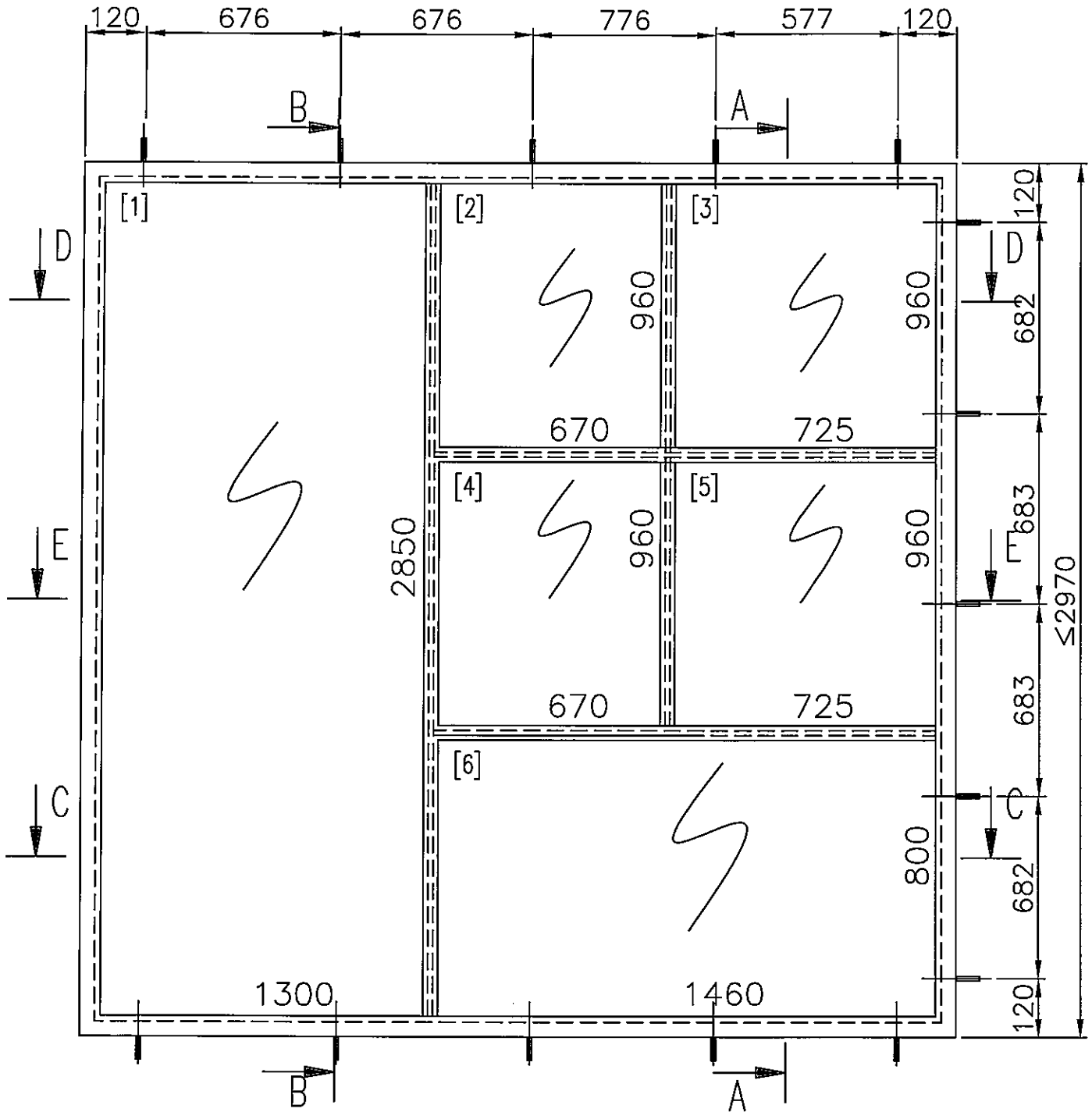
Report	Name	Signature*	Date
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Reviewed by	Prof. dr. ir. P. VANDEVELDE		3 1 JAN 2011
* For and on behalf of WFRGENT N.V.			

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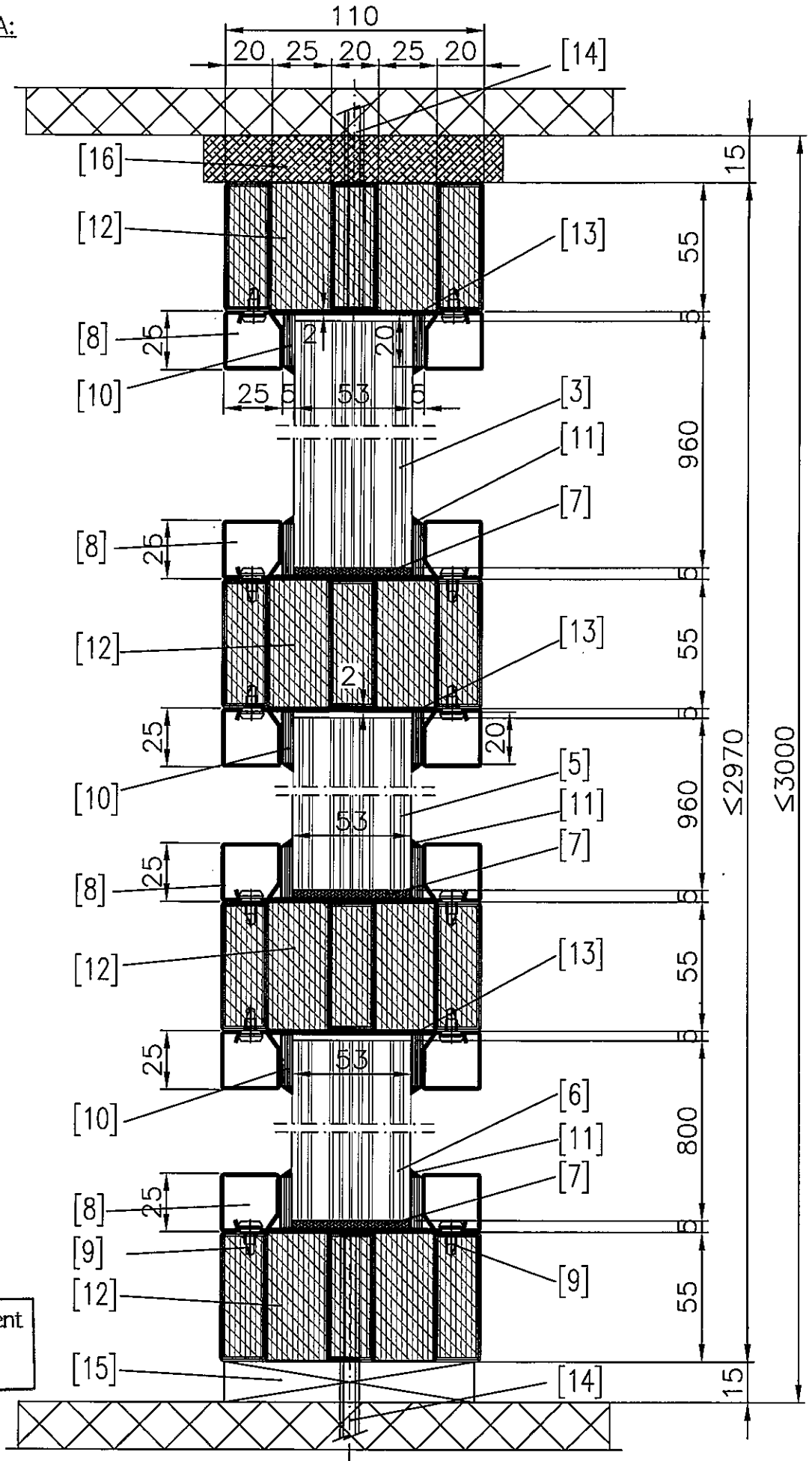
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Front view (unexposed side) – dimensions.

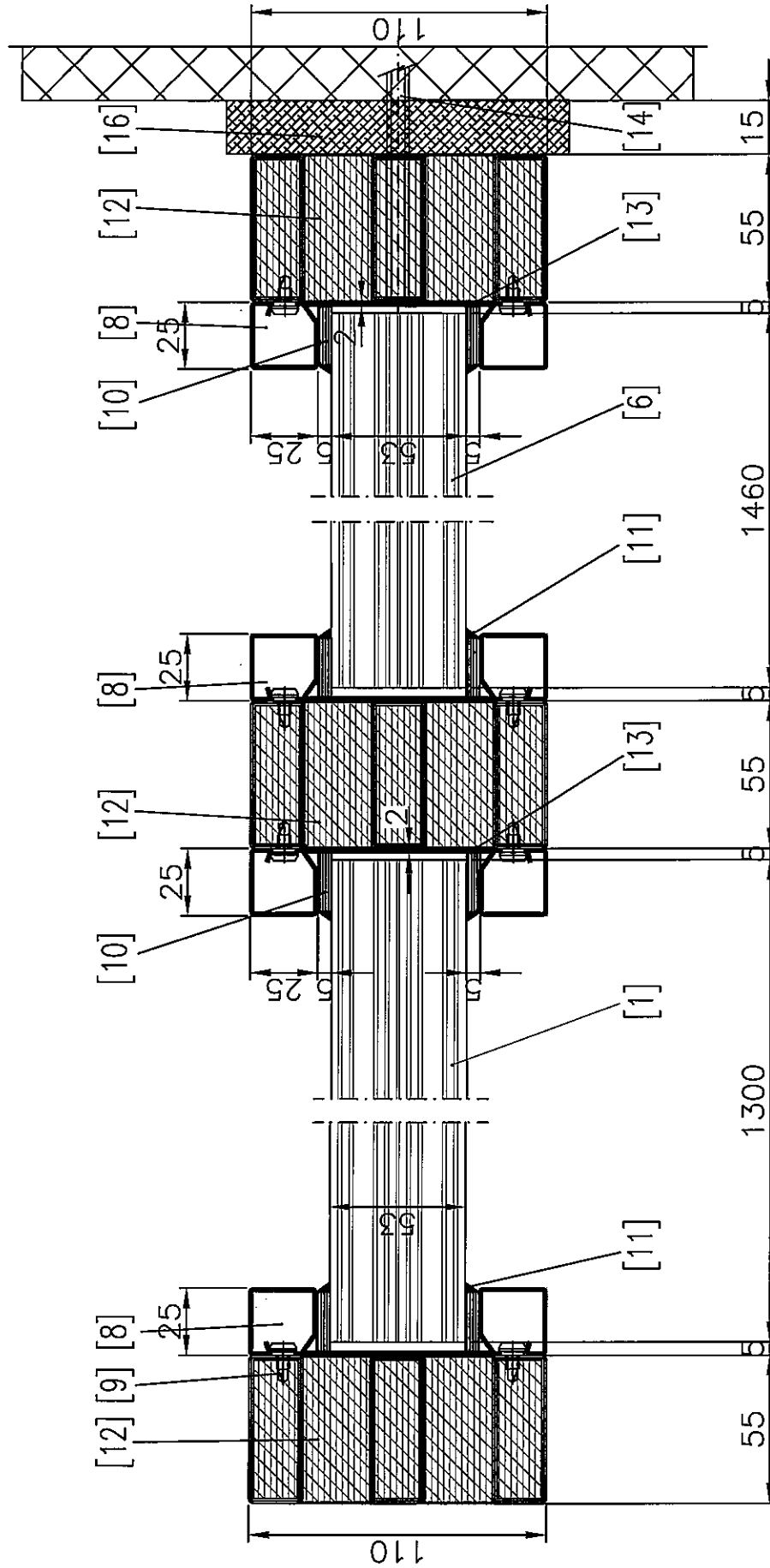


Section AA:



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Sections DD and EE:

