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FIRE RESISTANCE CLASSIFICATION REPORT No 14539B

Owner of the classification report:

AGC Glass Europe S.A.
166, Chaussée de la Hulpe
B-1170 BRUSSELS

Introduction:

This classification report defines the classification assigned to a glazed non-loadbearing wall – Pyrobel 16 IGU (16EG-air12-tempered 6mm)_Forster Fuego Light 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 eight pages and three 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 16 IGU (16EG-air12-tempered 6mm)_Forster Fuego Light 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 3.

Composition of the glazed wall:

The glazed wall consists of glass panes in a steel frame.

1.2.1 Glazing system:

The glazing system consists of glass panes [1]-[2], setting blocks [3], clip-on beads [4], bead fixings [5], glazing strips [6] and the sealants [7]. The exact composition of the glass panes is confidential and is communicated to the laboratory.

[1] Glass pane – brand and type: Pyrobel 16 IGU – composition: 16EG-air12-tempered 6mm – reference: CM19235-11-502 – thickness: 39 mm (MV) – nominal glass thickness: 39.1 mm ± 3 mm – dimensions: 2835 mm x 1400 mm – exposed dimensions: 2805 mm x 1370 mm.
- fixation: clasped between the frame and the glazing beads.
- orientation: the glass pane is asymmetrical; It is placed with the Pyrobel 16 EG-layer at the unexposed side.

[2] Glass pane – brand and type: Pyrobel 16 IGU – composition: 16EG-air12-tempered 6mm – reference: CM19235-11-501– thickness: 39 mm (MV) – nominal glass thickness: 39.1 mm ± 3 mm – dimensions: 2835 mm x 1400 mm – exposed dimensions: 2805 mm x 1370 mm.
- fixation: clasped between the frame and the glazing beads.
- orientation: the glass pane is asymmetrical; It is placed with the Pyrobel 16 EG-layer at the exposed side.

[3] Setting block – type: Promatect®-H – dimensions: 70 mm x 39 mm x 5 mm – density: 960 kg/m³ (NV).
- number: three per glass pane.
- position: under the glass panes.

[4] Clip-on bead – material: steel – type: Forster Fuego Light – reference: 901226 – outer dimensions: 20 mm x 15 mm – wall thickness: 1.5 mm (NV).
- position: at the unexposed side.
- fixation:
  - clipped on screws [5] – material: steel – diameter: 4 mm – length: 16 mm;
  - centre/centre distance: 200 mm.

[6] 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 and between the frame and the glass panes.

[7] Sealant – material: neutral silicone – brand and type: Dow Corning Firestop 700 grey.
- position: sealing between the frame and the glass panes and between the clip-on beads and the glass panes.

1.2.2 Framing system:

The framing system includes the frame components [8]-[10] and the fixing method [11]. The steel frame consists of vertical profiles [8], horizontal profiles [8] and a horizontal intermediate profile [9], so that the frame is divided in two equal parts.

[8] Profile – material: steel and calcium silicate – brand and type: Forster Fuego Light – reference: 735.851 – outside dimensions: 65 mm x 70 mm – composed of two tube profiles with a calcium silicate strip in between – outside dimensions of the first tube profile: 70 mm x 20 mm – outside dimensions of the second tube profile: 50 mm x 20 mm – wall thickness of both profiles: 1.5 mm – dimensions of the calcium silicate strip: 45 mm x 25 mm – density of the calcium silicate strip: 875 kg/m³.
- position: at the outer edges.
- fixation to the surrounding building structure:
  - with anchors [11] – material: steel – brand and type: Hilti 100 HT – diameter: 10 mm – length: 112 mm;
  - centre/centre distance: see annex 2.

- fixation: the horizontal and the vertical profiles are welded together.
- holes are provided in the profiles to make it able to fasten the profiles to the surrounding building structure; these holes are covered with a steel strip (section dimensions: 11 x 1.5 mm);

[9] Intermediate profile – material: steel and calcium silicate – brand and type: Forster Fuego Light – reference: 735.852 – outside dimensions: 65 mm x 90 mm – composed of two tube profiles with a calcium silicate strip in between – outside dimensions of the first tube profile: 90 mm x 20 mm – outside dimensions of the second tube profile: 50 mm x 20 mm – wall thickness of both profiles: 1.5 mm – dimensions of the calcium silicate strip: 45 mm x 20 mm – density of the calcium silicate strip: 875 kg/m³.

- position: between the vertical tube profiles [8] at mid-height.
- fixation: the intermediate profile and the vertical tube profiles [8] are welded together.

[10] Intumescent strip – type: Forster – reference: 948002 – section dimensions: 25 mm x 2 mm.

- number: one strip over the whole length of the profiles [8] and two strips over the whole length of the intermediate profile [9].
- fixation: self-adhesive.

[12] Setting block – type: Promatect-H – dimensions: 100 mm x 50 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: approximately 650 mm.

[13] 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.

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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.	14539A	AGC Glass Europe S.A.	16/10/2010	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 framing system is asymmetrical: the glazing beads at the unexposed side.
- The glazing system is asymmetrical, but the glass panes are tested in both directions.

One side exposed to the fire.
No load is applied.
One vertical edge is free, the other edges are fixed.

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2.2 Test results

Parameter	Results
Loadbearing capacity	Not applicable
Integrity	
Time of ignition of cotton pad	No failure at test termination
Time of occurrence of sustained flaming	No failure at test termination
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	35 minutes
Time after which the maximum temperature rise at the unexposed side exceeds 180 °C	34 minutes
Radiation	
Time after which the radiation exceeds 15 kW/m²	49 minutes
Mechanical action	
No impact test	Not applicable

The test duration was 50 minutes.

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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 only valid for the direction as described in clause 2.1: the glazing beads at the unexposed side.

EI 30, EI 20, EI 15
EW 30, EW 20
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.
- 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 after 30 minutes. The calculated values are shown in test report 14539A – Annex 8.

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.

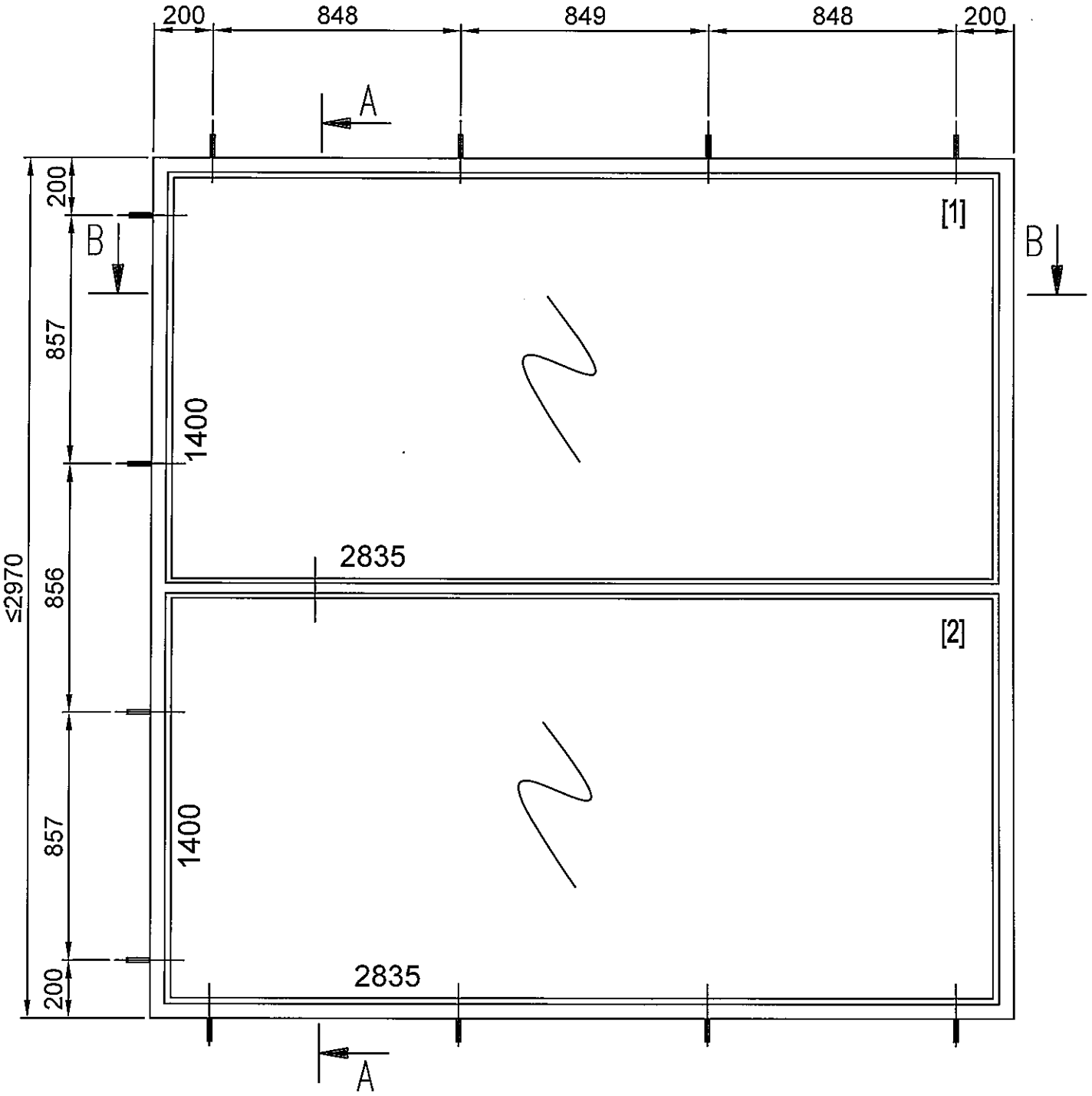
5 Warning

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

Report	Name	Signature*	Date
Prepared by	P. TACK		30 MAR 2011
Reviewed by	Dr. ir. Bart Sette		30 MAR 2011
* For and on behalf of WFRGENT N.V.			

This document is the original version of this classification report and is written in English.

Front view (unexposed side) - dimensions.



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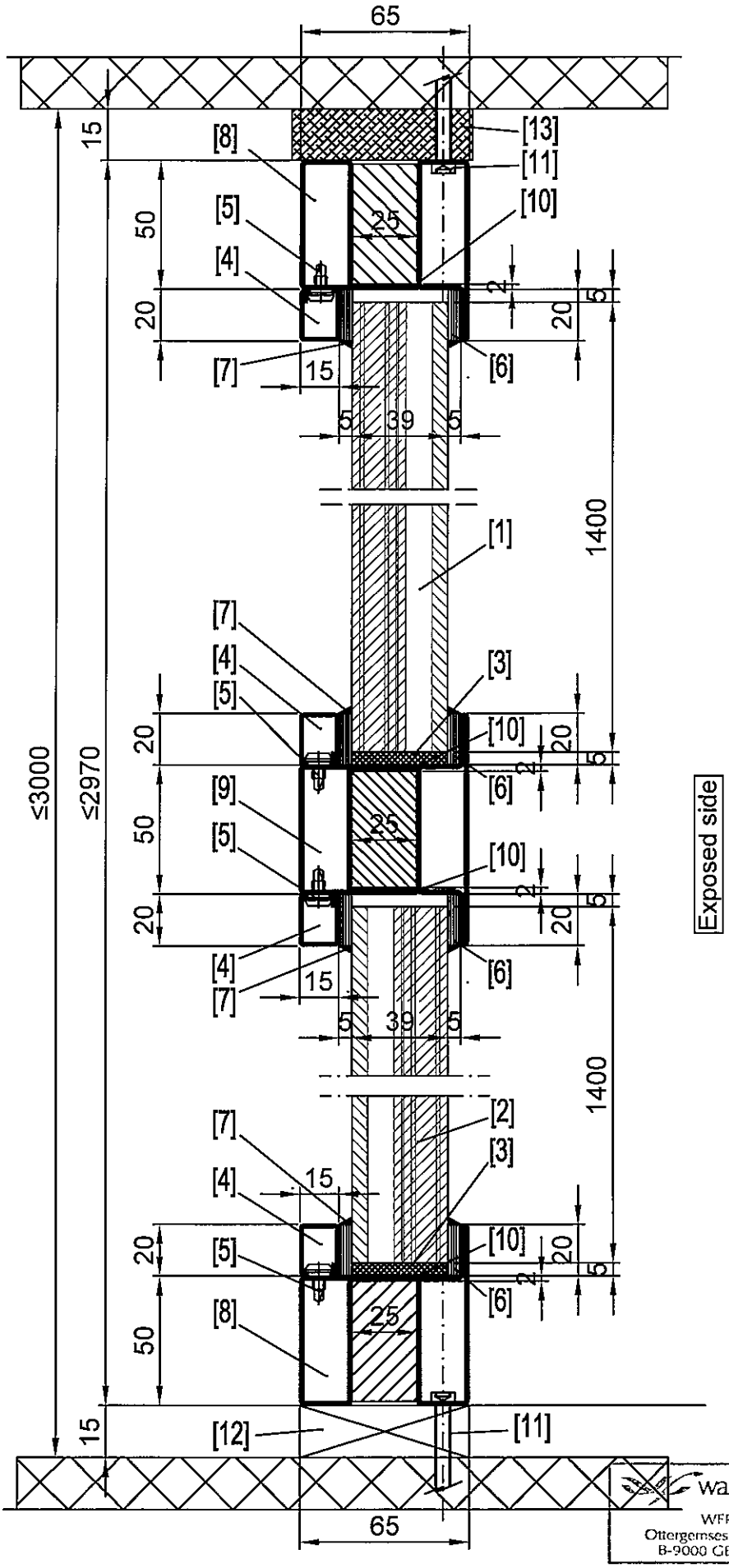
Section AA:



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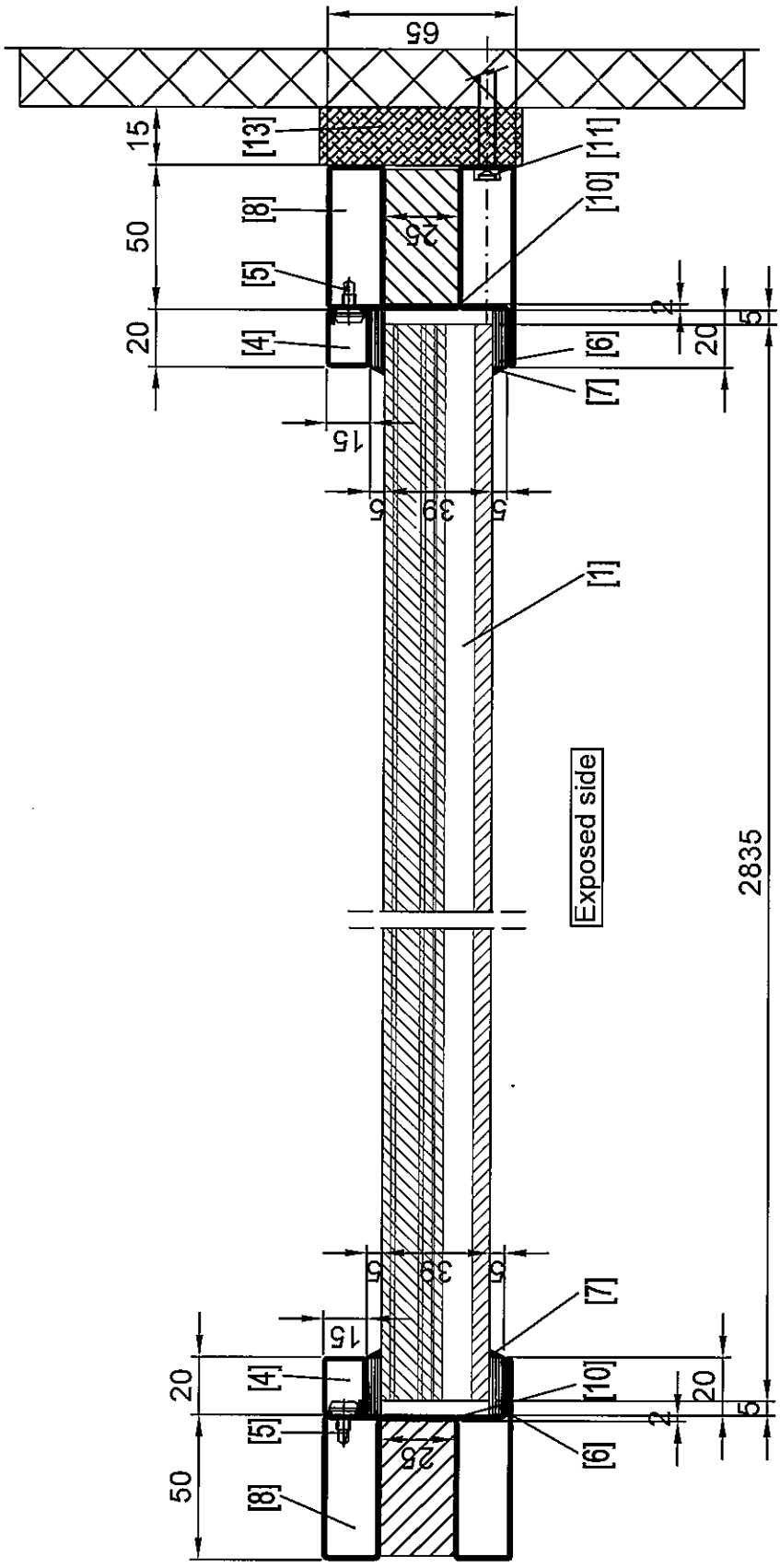
Section BB:



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