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FIRE RESISTANCE CLASSIFICATION REPORT No. 14390B

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 – Pyrobelite 12 EG (PVB Vanceva)_Timber 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.

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1 Details of classified product

1.1 General

The product is defined as a glazed non-loadbearing wall – Pyrobelite 12 EG (PVB Vanceva)_Timber 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 glazed wall:

The unloaded glazed wall consists of glass panes in a timber frame.

1.2.1 Glazing system:

The glazing system consists of glass panes [1]-[6], setting blocks [7], timber glazing beads [14], bead fixings [15], glazing strips [17] and the sealants [18]. The exact composition of the glass panes is confidential and is communicated with the laboratory.

[1]-[6] Glass pane – brand and type: Pyrobelite 12 EG Vanceva – measured thickness: 16 mm – nominal thickness: 16.1 mm ± 1.0 mm.

- fixation: clasped between the glazing beads.
- orientation: the panes are asymmetrical; each pane is placed with the PVB-layer (Polyvinyl butyral) at the exposed side.

	Dimensions of the panes: (Width x Height):	Dimensions of the exposed area: (Width x Height):	Reference:
[1]	977 mm x 956 mm	933 mm x 912 mm	CM18613-03-501
[2]	977 mm x 956 mm	933 mm x 912 mm	CM18613-03-502
[3]	650 mm x 956 mm	606 mm x 912 mm	CM18613-04-502
[4]	650 mm x 956 mm	606 mm x 912 mm	CM18613-04-501
[5]	1683 mm x 850 mm	1639 mm x 806 mm	CM18613-02-501
[6]	1100 mm x 2874 mm	1056 mm x 2830 mm	CM18613-01-501

[7] Setting block – type: Promatect®-H – dimensions: 70 mm x 16 mm x 5 mm – density: 960 kg/m³ (NV).
- number: two per glass pane.
- position: under the glass panes.

[14] Glazing bead – material: Meranti – outer dimensions: 30 mm x 27 mm – density: 505 kg/m³ (MV).
- position: on both sides of the glass panes.
- fixation:
  - with screws [15] – material: steel – diameter: 4 mm – length: 60 mm;
  - to the horizontal transoms and mullions;
  - centre/centre distance: 210 to 230 mm.

[17] Glazing strip – material: self-adhesive ceramic paper – type: Superwool X607 – dimensions: 20 mm x 5 mm.
- position: between the glazing beads and the glass panes.

[18] Sealant – material: neutral silicone – brand and type: Dow Corning Firestop 700.
- position: sealing between the glass panes and the glazing beads.

1.2.2 Framing system:

The framing system includes the frame components [8],[11]-[12] and the fixing method [9]-[10]. The timber frame is composed of two units screwed to one another. The first unit consists of mullions, transoms, intermediate mullions and intermediate transoms, so that the unit is divided in several parts. The second unit only consists of mullions and transoms so there is one part.

[8] Transoms and mullions – material: Meranti – section dimensions: 33 mm x 86 mm – density: 412 kg/m³ (MV).
- fixation to the surrounding building structure:
  - with concrete plugs [9] – material: steel – brand and type: Hilti 100 HT – diameter: 10 mm – length: 112 mm;
  - centre/centre distance: 450 mm.
- fixation of the units:
  - with screws [10] – material: steel – diameter: 5 mm – length: 60 mm;
  - centre/centre distance: 500 mm.

[11] Intermediate transoms and intermediate mullions – material: Meranti — section: 46 mm x 86 mm – density: 412 kg/m³ (MV).

- glued to the adjoining (intermediate) transoms and (intermediate) mullions.

[12] Cover lath – material: Meranti – outside dimensions of the section: 46 mm x 12 mm – density: 412 kg/m³ (MV).
- position: over the joints between the units.
- fixation:
  - with screws [13] – material: steel – diameter: 3.5 mm – length: 35 mm;
  - to the middle mullions;
  - centre/centre distance: 300 mm (alternating from edge).

[16] Setting block – type: Promatect-H – dimensions: 120 mm x 65 mm x 25 mm – density: 960 kg/m³ (NV).
- position: between the timber frame and the building structure at the lower horizontal edge.
- centre/centre distance: 500 mm.

[19] Mineral wool – type: Thermal insulation Insulfrax – initial density: 96 kg/m³ (NV).
- position: between the timber 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.	14390A	AGC Glass Europe S.A.	21/5/2010	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 asymmetrical: the PVB-layer at the exposed side;
- 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.

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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	59 minutes
Thermal insulation	
Time after which the mean temperature rise at the unexposed side exceeds 140 °C	29 minutes
Time after which the maximum temperature rise at the unexposed side exceeds 180 °C	28 minutes
Radiation	
Time after which the radiation exceeds 15 kW/m²	59 minutes
Mechanical action	
No impact test	Not applicable

The test duration was 60 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 of the glass pane as described in clause 2.1: the PVB-layer exposed to the fire.

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 mullions and horizontal transoms.
- 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 No 14390A – 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

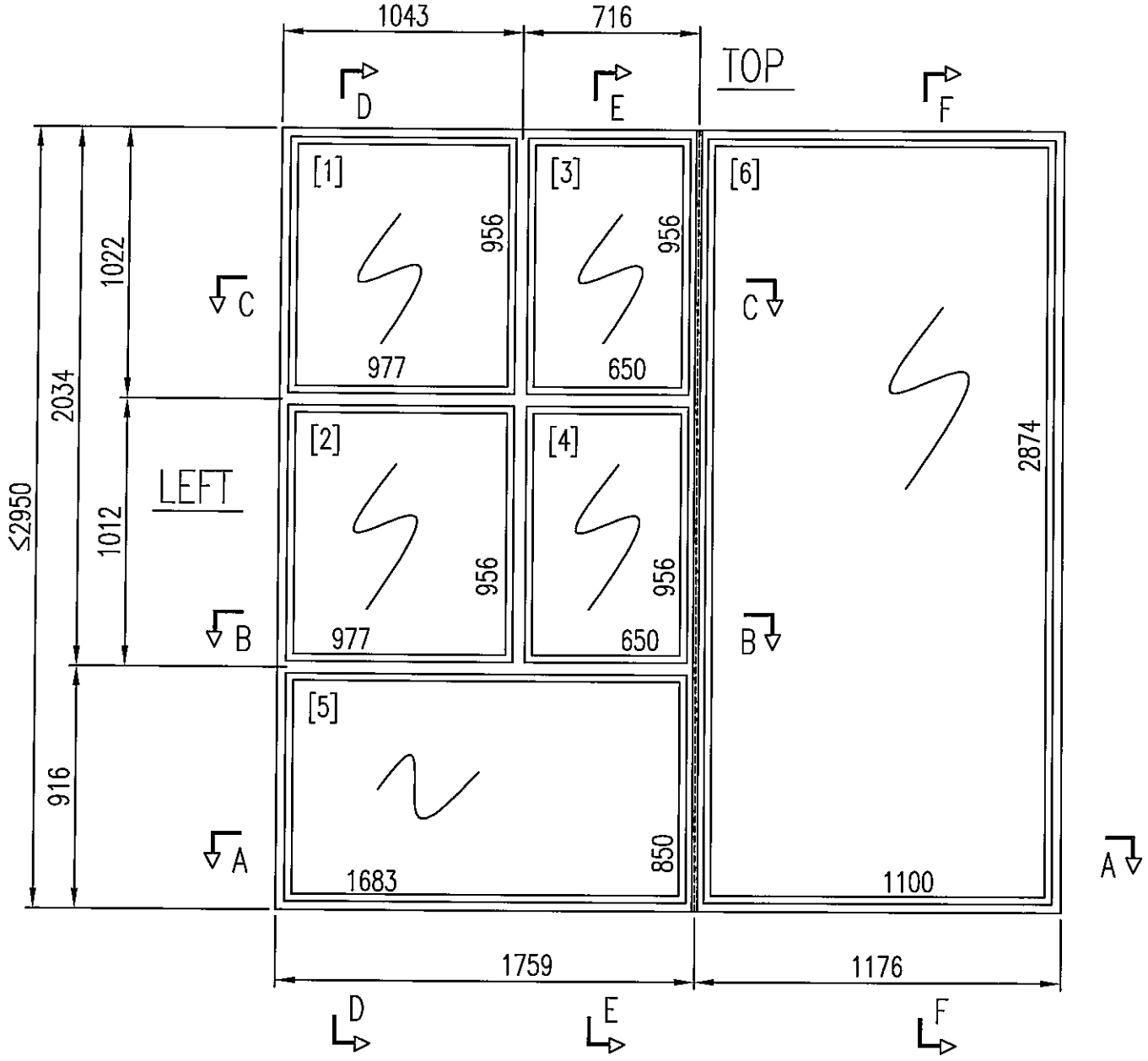
This classification document does not represent type approval nor certification of the product.

Report	Name	Signature*	Date
Prepared by	P. TACK		31 JAN 2011
Reviewed by	Prof. dr. ir. P. VANDEVELDE		31 JAN 2011
* For and on behalf of WFRGENT N.V.			

EN 13501-2 FSG REC 017 -version 1

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

Front view – dimensions.



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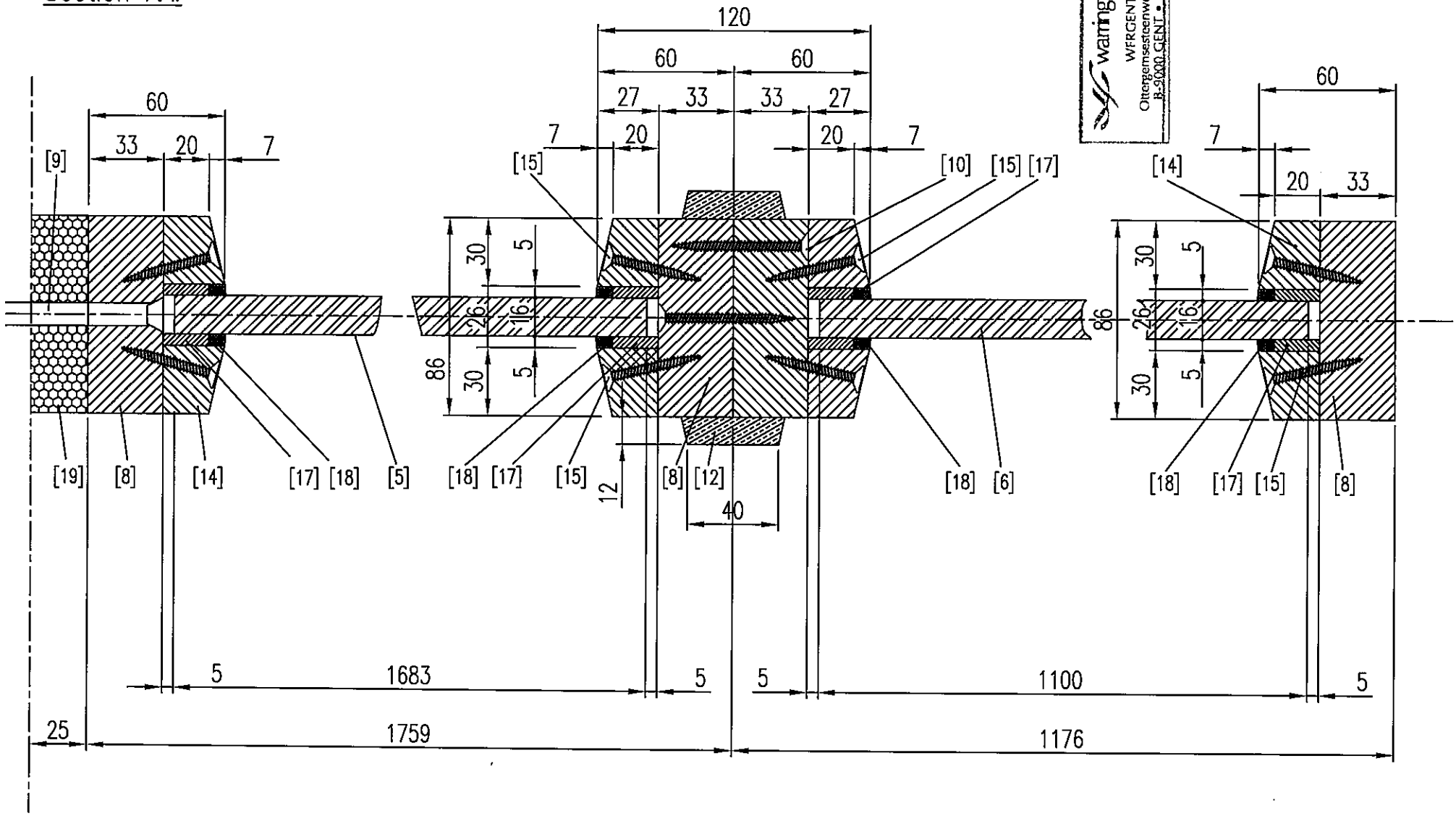
Section AA:



Sections BB and CC:

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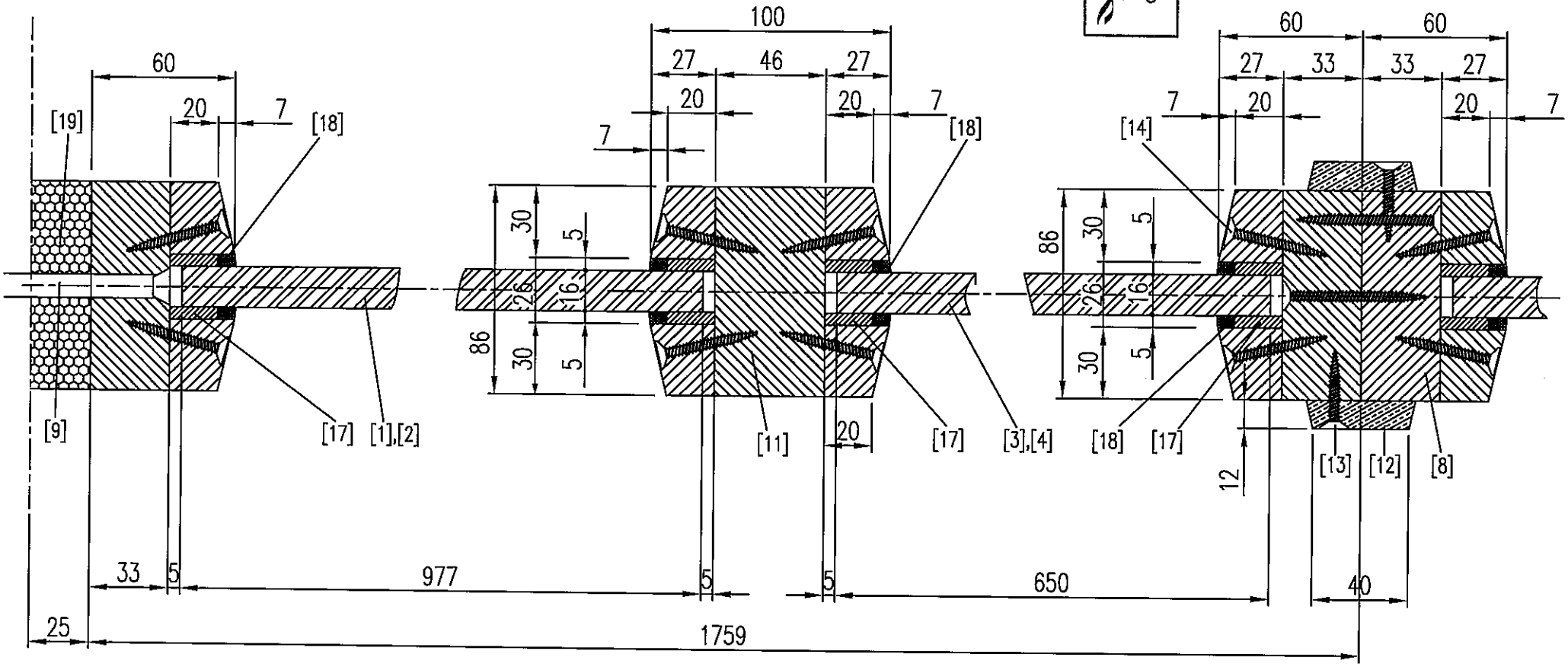

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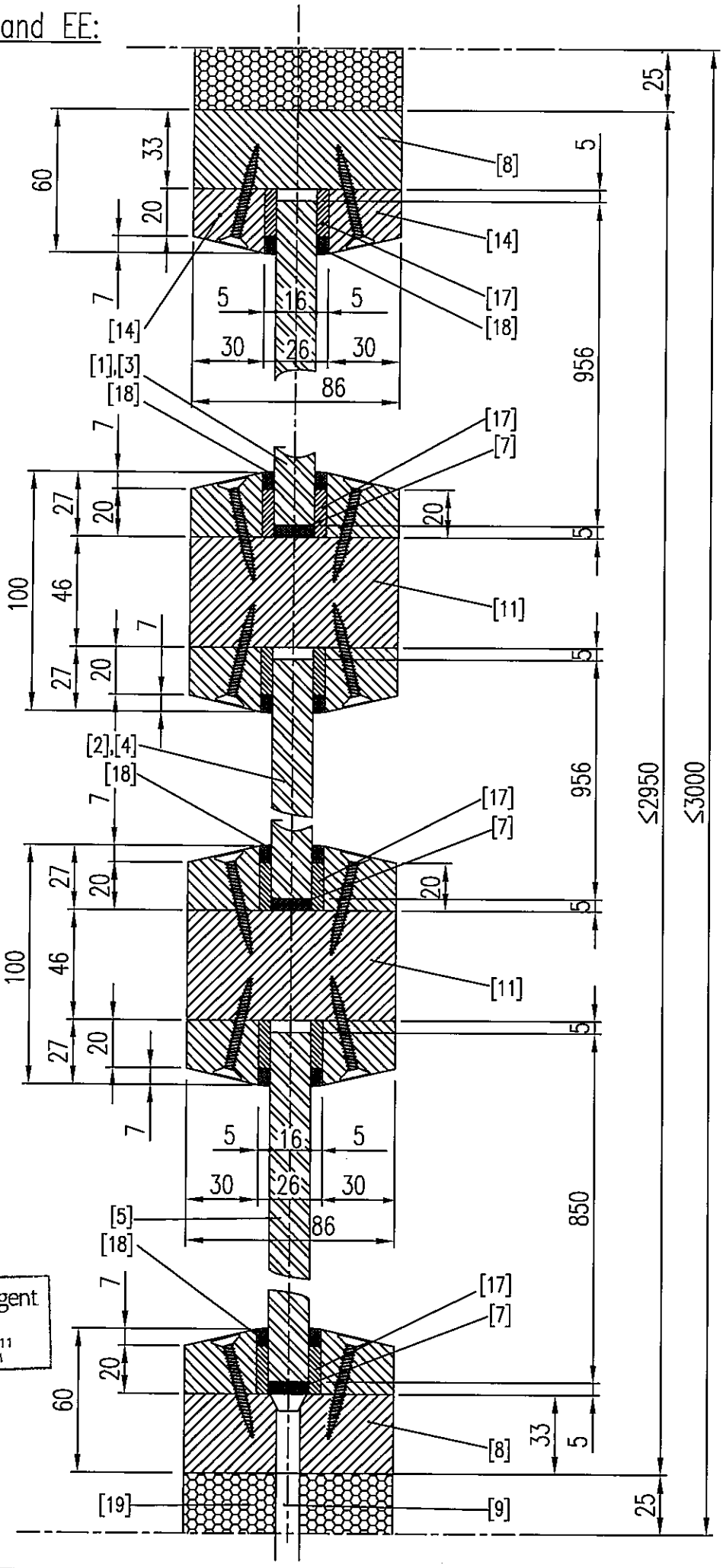

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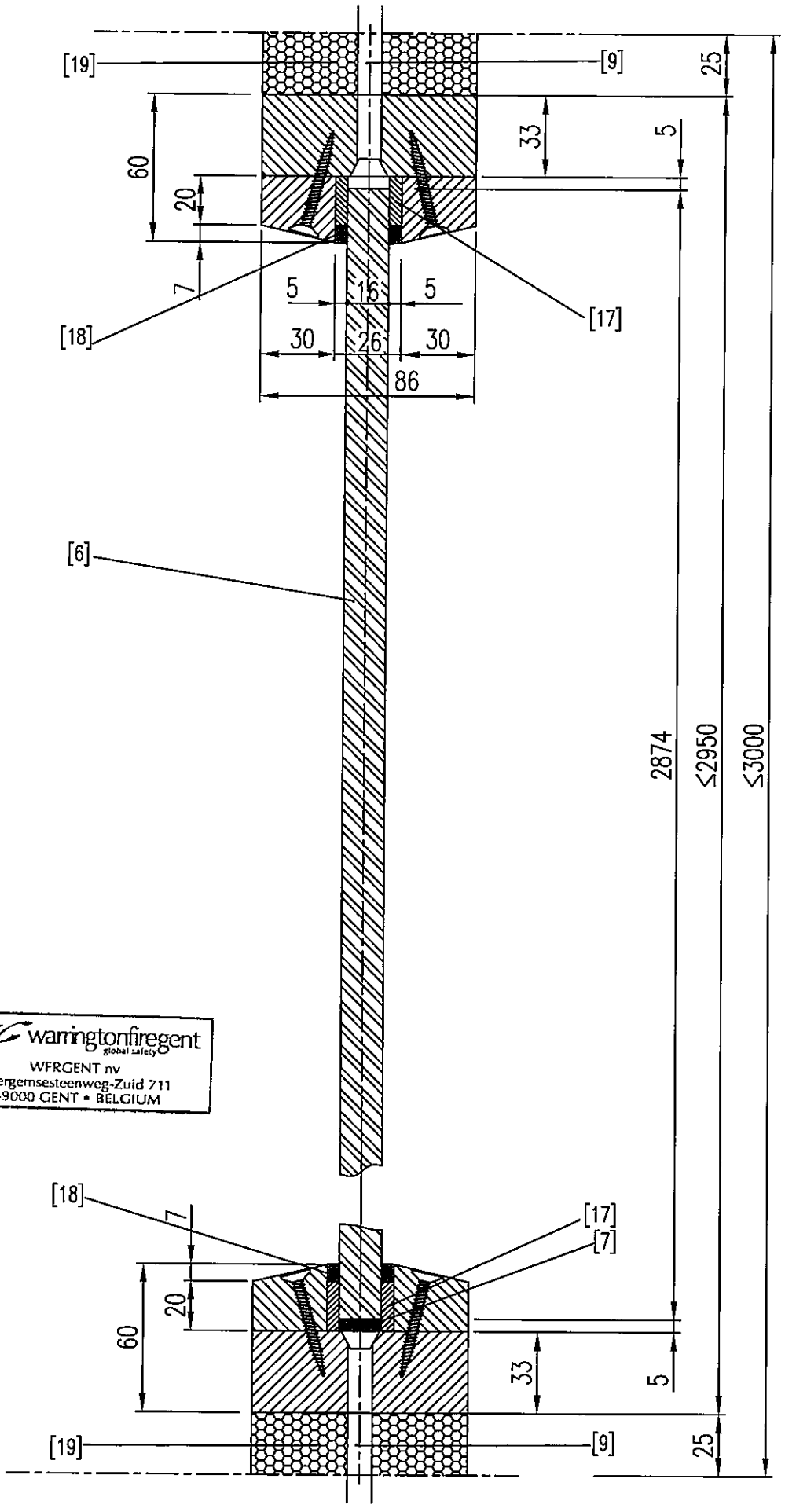
Section FF:



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