Evidence of Performance

Fire classification of construction products and building elements

Classification report

Nr.: 18-001427-PR04

(KB-F12-01-de-01)

Client	Pilkington Deutschland AG Haydnstr. 19 45884 Gelsenkirchen (Deutschland)
Prepared by the notified body	**ift** Rosenheim GmbH Theodor-Gietl-Straße 7-9 83026 Rosenheim (Germany)
Notified body No.	0757
Product name	"Pilkington **Pyrodur**® 30-185" (as described by the sponsor)
Classification	Classification of fire resistance according to EN 13501-2:2007+A1:2009 / EN 13501-2:2016
Issue No.	1

non-loadbearing glazing

Classification

E 30
EW 30
EI 15

ift Rosenheim
18.07.2018

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Basis

EN 13501-2:2007+A1:2009
EN 13501-2:2016
EN 1363-1:2012
EN 1364-1:2015

Instructions for use

This classification report for fire resistance defines the classification assigned to the building element according to its product name in conformity with the methods set out in EN 13501-2. This classification document does not represent type approval or certification of the product.

Validity

The data and results given relate solely to the tested and described specimen.

Notes on publication

The **ift** Guidance Sheet "Conditions and Guidance for the Use of **ift** Test Documents" applies.

Contents

The classification report consists of 15 pages and may only be used or reproduced in its entirety.

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1 Introduction

This classification report defines the resistance to fire classification assigned to element "Pilkington **Pyrodur**® 30-185" in accordance with the procedures given in EN 13501-2.

The building element is classified for the first time.

2 Details of classified product

2.1 General

The element "Pilkington **Pyrodur**® 30-185" is defined as an internal partition kit for use as non-loadbearing wall / glazed element in accordance with ETAG 003:2012.

Its function is to resist fire exposure on one face according to the fire performance characteristics set out in the case of fire in Clause 5 of EN 13501-2.

The exposer can be on each side of the construction.

2.2 Description

The element, "Pilkington **Pyrodur**® 30-185" (as described by the sponsor), is fully described in the test report(s) in support of classification listed in 3.1.

3 Test reports/extended application reports and test results in support of the classification

3.1 Test reports / extended application reports

The following test reports, test results and evaluations have been provided to justify this classification. If the owner of a test report is not the sponsor of this classification report, the test report holder has given written permission to use the results.

Name laboratory	Name of sponsor	Reference No. of report	Test standard and date/field of extended application standards and dates
ift Rosenheim	Pilkington Deutschland AG 45884 Gelsenkirchen (Deutschland)	18-001427-PR01 (PB-F12-01-en-01)	EN 1364-1:2015
ift Rosenheim	Pilkington Deutschland AG 45884 Gelsenkirchen (Deutschland)	18-001427-PR02 (PB-F12-01-en-01)	EN 1364-1:2015

3.2 Results

Test report number	Testing laboratory	Client	Test standard
18-001427-PR01 (PB-F12-01-en-01)	**ift** Rosenheim NB 0757	Pilkington Deutschland AG 45884 Gelsenkirchen (Deutschland)	EN 1364-1:2015
	Supporting construction	Standard supporting construction, rigid construction of low density (650 ± 200 kg/m³), with a thickness of 150 mm	
	Exposed face	Pyrodur®, glazing bead symmetrical	
	Criteria		**Test results**
	E - flame > 10 s		38 minutes
	E - gap gauge		38 minutes
	E - cotton pad		38 minutes
	I - insulation, average value		26 minutes
	I - insulation, maximum value		32 minutes
	W - radiation		npd

Test report number	Testing laboratory	Client	Test standard
18-001427-PR02 (PB-F12-01-en-01)	**ift** Rosenheim NB 0757	Pilkington Deutschland AG 45884 Gelsenkirchen (Deutschland)	EN 1364-1:2015
	Supporting construction	Standard supporting construction, rigid construction of low density (650 ± 200 kg/m³), with a thickness of 150 mm	
	Exposed face	laminated safety glass, glazing beads symmetrical	
	Criteria		**Test results**
	E - flame > 10 s		38 minutes
	E - gap gauge		38 minutes
	E - cotton pad		38 minutes
	I - insulation, average value		17 minutes
	I - insulation, maximum value		19 minutes
	W - radiation		37 minutes

4 Classification and field of application

4.1 Reference of classification

This classification has been carried out in accordance with Clause 7 of EN 13501-2.

4.2 Classification

The element "Pilkington **Pyrodur**® 30-185" is classified according to the example of the following combinations of performance parameters and classes as appropriate.

R	E	I	W		t	t	-	M	C	S	IncSlow	sn	ef	r	G	K

Fire resistance classification: E 30, EW 30, EI 15

4.3 Field of application

4.3.1 General

This classification is valid for the following end use applications:

Internal partition kit for use as non-loadbearing wall in accordance with ETAG 003:2012

4.3.2 Field of direct application of test results

(section and picture reference see EN 1364-1)

A.4 Field of direct application of test results

A.4.1 General

The test results are directly applicable to similar constructions where one or more of the changes in this A.4 are made and the construction continues to comply with the appropriate design code for its stiffness and stability. Other changes are not permitted.

The result of a test on a specimen with mixtures of different types of construction (e.g. different types of glass or different types of framing, etc.) is only applicable to that tested.

A.4.2 Field of direct application rules not requiring overrun time

A.4.2.1 Glazed Element

A.4.2.1.1 Installation angle

Test results on vertical glazed elements cover glazed elements sloped to a maximum angle of ± 10° from the vertical plane, provided the height of the glazed element is not larger than the maximum height tested.

A.4.2.1.2 Height of the glazed element

Test results cover rectangular glazed elements with a height increase of 10 % subject to a maximum increase of 0,3 m, above the height tested, provided that:

a) the maximum deflection (see Figure 14) of the test specimen did not exceed 100 mm;
b) the allowances for thermal expansion of the construction are increased pro-rata.

In case of elements intended to be classified for EW, the following additional provisions apply:

- the average temperature of the unexposed face of the glazed element as well as the average temperature of the unexposed face of the non-glazed area of the test specimen (see Figures 12 or 14) remained below 300 °C, or
- the heat radiation measured from the test specimen did not exceed 12,3 kW/m².

A.4.2.1.3 Width of the glazed element

Test results cover rectangular glazed elements of greater width by replication of the tested glazed element or parts thereof, provided:

a) the framing system is identical to the one tested;
b) the width of the specimen in the test was 2,8 m or greater with one vertical edge unrestrained;
c) the mullions within and/or connection joints between glazed elements have been tested.

In case of elements intended to be classified for EW, the following additional provisions apply:

- the average temperature of the unexposed face of the glazed element as well as the average temperature of the unexposed face of the non-glazed area of the test specimen (see Figures 12 or 14) remained below 300 °C, or
- the heat radiation measured from the complete and fully glazed test element with minimum size of 2,8 x 2,8 m did not exceed 12,3 kW/m².

A.4.2.2 Glazing system (see Figure 16)

A.4.2.2.1 Linear dimensions

The linear dimensions of panes may be decreased from the dimensions tested. Height and width may be considered independently.

A.4.2.2.2 Aspect ratio

If both portrait and landscape aspect ratio rectangular panes have been tested, then the height of the landscape pane may be increased and/or the width of the portrait pane may be increased, subject to:

- the area of the pane after increasing the linear dimensions shall be less or equal to the average area of the largest tested landscape and portrait panes, i.e

$$A \leq \tfrac{1}{2} * (A_{portrait,\ max} + A_{landscape,\ max}),$$

in which

A	area of assessed glass pane;
$A_{portrait,\ max}$	maximum area of tested glass pane oriented in “portrait” format
$A_{landscape,\ max}$	maximum area of tested glass pane oriented in “landscape” format

- all panes were tested in an identical framing and glazing system,
- the largest tested width as well as the largest tested height is not exceeded.

A.4.2.2.3 Glazing beads

Test results on 'clip-on' beads cover screwed-on glazing beads, applied with the same or smaller center to center distance.

Test results on timber beads fixed by nails/pins cover screw fixing of at least the same length, applied with the same or smaller center to center distance.

Test results for applications intended for EI classification on sloped or chamfered bead profiles also cover a flat bead of the same height (D in Figure 16), but not vice versa, and also cover a bead depth that is at least the same as tested (C in Figure 16).

Test results for applications intended for E and/or EW classification on non-combustible bead profiles also cover a bead depth that is at least the same as tested (C in Figure 16) with the height remaining the same as tested (D in Figure 16).

A.4.2.3 Framing system (see Figure 16)

The distance between mullions and/or transoms may be decreased from that tested.

The distance between fixing centers may be decreased from that tested.

The cross sectional dimensions of the frame profiles may be increased from the dimensions tested, under the following restrictions:

- For combustible framing intended to be used for E and/or EW classification, the depth of the frame profiles on the unexposed side is as tested.
- For framing systems intended to be used for EI classification, no increase in width is allowed in case no temperature measurements on the unexposed side of the profiles were made during the test.

A.4.2.4 Supporting constructions

A.4.2.4.1 General

For specimens tested in the test frame without any supporting construction, the result is applicable to high density rigid supporting constructions with at least the same fire resistance as the test specimen.

A.4.2.4.2 Standard supporting constructions

Test results obtained with flexible standard supporting constructions may be applied to high density rigid supporting constructions (in accordance with EN 1363-1) with at least the same fire resistance classification and an overall thickness equal to or greater than that of the element used in the tests.

Test results obtained with low density rigid standard supporting constructions may be applied to high density supporting constructions (in accordance with EN 1363-1) with at least the same fire resistance classification and an overall thickness equal to or greater than that of the element used in the tests.

Test results obtained with flexible standard supporting constructions do not cover sandwich panel constructions and flexible supporting constructions where the lining does not cover the studs on both sides.

Test results obtained with flexible standard supporting constructions cover alternative flexible constructions of the same fire resistance classification provided:

1) the construction is of a stud and board type construction, classified in accordance with EN 13501-2;
2) the construction has an overall thickness not less than the minimum thickness of the appropriate range given in EN 1363-1 for the standard flexible wall used in the test;
3) the number of board layers and the overall board layer thickness is equal or greater than that tested;
4) flexible wall constructions with timber studs are constructed with at least the same number of layers given in EN 1363-1 on the faces and at the interface between the glazed element and the supporting construction.

If the specimen was tested with a flexible standard supporting construction fixed along the vertical and/or horizontal edge (see Figure 17), the permitted flexible supporting constructions can only be interfaced along its tested edge-types (vertical and/or horizontal). The permitted rigid supporting constructions can be interfaced with all edge-types of the glazed element.

A.4.2.4.3 Non-standard supporting construction

The result of a test of fire resistant glazing tested in non-standard supporting constructions is only applicable to that construction.

A.4.3 Field of direct application rules requiring overrun time

A.4.3.1 General

For some rules to be applicable an overrun time in the fire test result compared to the intended classification period is required. The required overrun time is shown in Table A.1.

Table A.1 — Overrun time

Intended classification period (min)	Overrun time A (min)	Overrun time B (min)
≤ 20	not applicable	≥ 3
30, 45 and 60	≥ 3 and < 6	≥ 6
≥ 90	≥ 5% and < 10% of the intended classification period	≥ 10 % of the intended classification period

NOTE The rules given in A.4.3 may be used in addition to the rules in A.4.2.

A.4.3.2 Dimensions of the glazed element

A.4.3.2.1 Height

The test result of the glazed element covers the height up to a maximum of the tested height multiplied by a factor of 1,1 provided overrun time A is achieved. This is irrespective of the measured deflections.

The test result of the glazed element covers the height up to a maximum of the tested height multiplied by a factor of 1,2 provided overrun time B is achieved. This is irrespective of the measured deflections.

In case of elements intended to be classified for EW, the following additional provisions apply:

- the average temperature of the unexposed face of the glazed element as well as the average temperature of the unexposed face of the non-glazed area of the test specimen (Figure 12 or 14) remained below 300 °C, or
- the heat radiation measured from the complete and fully glazed element did not exceed 12,3 kW/m².

A.4.3.2.2 Width

The replication of the glazed element is covered based on rules described in A.4.2.1.3.
For glazed elements tested with a width smaller than 2,8 meter, the following rules apply.

The test result of the glazed element covers the width up to a maximum of the tested width multiplied by a factor of 1,1 provided overrun time A is achieved. This is irrespective of the measured deflections.

The test result of the glazed element covers the width up to a maximum of the tested width multiplied by a factor of 1,2 provided overrun time B is achieved. This is irrespective of the measured deflections.

In case of elements intended to be classified for EW, the following additional provisions apply:

- the average temperature of the unexposed face of the glazed element as well as the average temperature of the unexposed face of the non-glazed area of the test specimen (Figure 12 or 14) remained below 300 °C, or
- the heat radiation measured from the complete and fully glazed element did not exceed 12,3 kW/m².

A.4.3.3 Dimensions and area of individual rectangular glass panes

The test result of a pane covers dimensions up to a maximum of the tested dimensions multiplied by a factor 1,1 in width and/or height, provided overrun time A is achieved and the maximum tested area multiplied by a factor 1,1 is not exceeded.

The test result of a pane covers dimensions up to a maximum of the tested dimensions multiplied by a factor 1,2 in width and/or height, provided overrun time B is achieved and the maximum tested area multiplied by a factor 1,21 is not exceeded.

In case of elements intended to be classified for EW, the following additional provisions apply:

- the average temperature of the unexposed face of the glazed element as well as the average temperature of the unexposed face of the non-glazed area of the test specimen (see Figure 12 or 14) remained below 300 °C, or
- the heat radiation measured from the complete and fully glazed element did not exceed 12,3 kW/m².

In order to accommodate the increase in glass dimensions, it is permitted to increase the distance between mullions and/or transoms.

A.4.3.4 Aspect ratio

The calculation of permitted aspect ratio as defined in A.4.2.2.2 shall be conducted after any increase in glass dimensions based on overrun time has been established; i.e.

$$A \leq \tfrac{1}{2} * (A_{portrait,\ extended} + A_{landscape,\ extended}),$$

in which

A	area of assessed glass pane;
$A_{portrait,\ extended}$	extended area of glass pane oriented in “portrait” format
$A_{landscape,\ extended}$	extended area of glass pane oriented in “landscape” format

A.4.3.5 Area of individual circular, triangular and four side non-rectangular glass panes

The test result from individual circular, triangular and four sided non rectangular glass panes covers the area up to a maximum of the tested area multiplied by a factor 1,1 provided overrun time A is achieved.

The test result from individual circular, triangular and four sided non rectangular glass panes covers the area up to a maximum of the tested area multiplied by a factor 1,2 provided overrun time B is achieved.

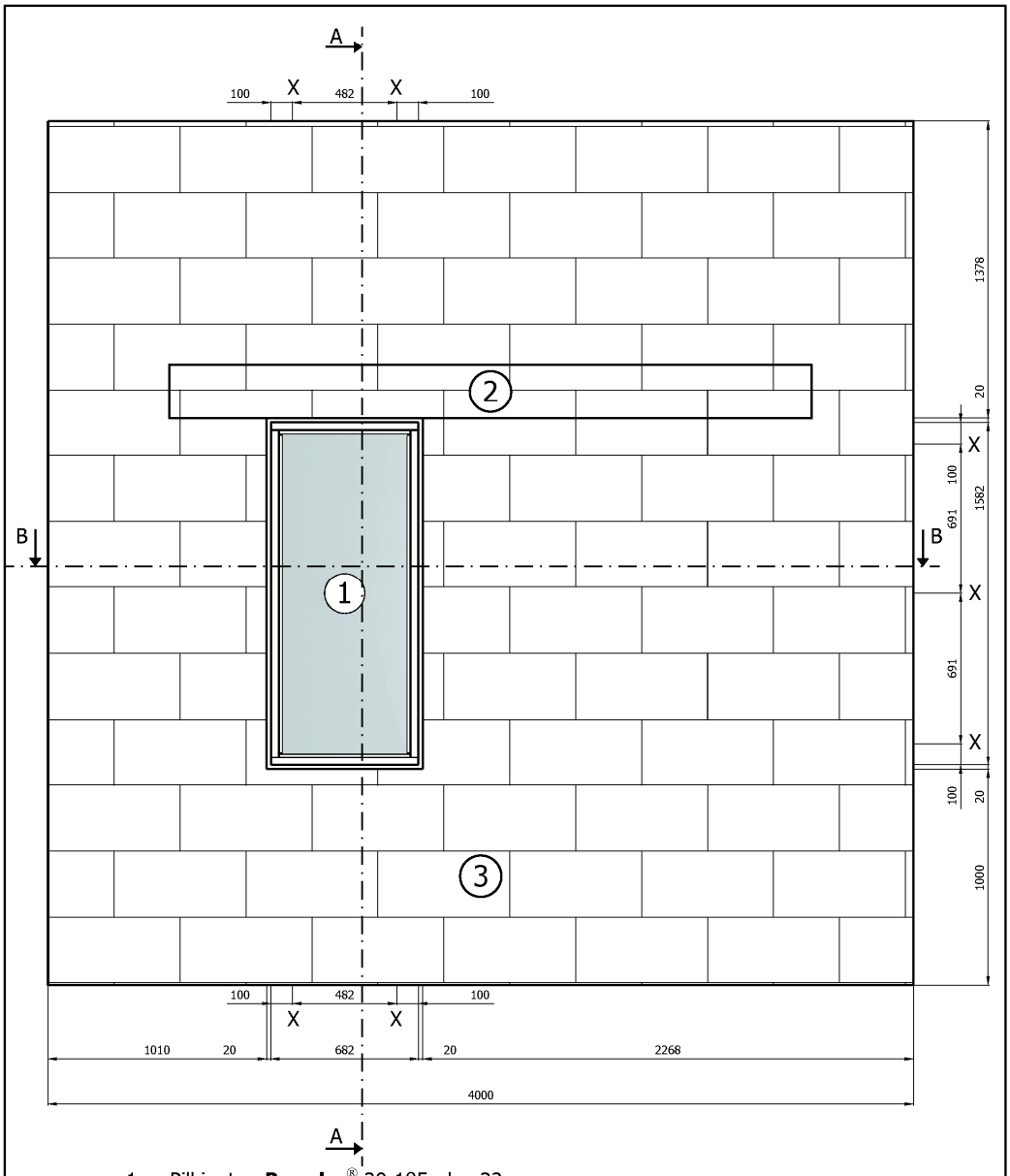
The pane shall be of the same orientation and shape (including maintaining internal angles) as the tested pane.

In order to accommodate the increase in glass area, it is permitted to increase the distance between mullions and/or transoms.

5 Limitations

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

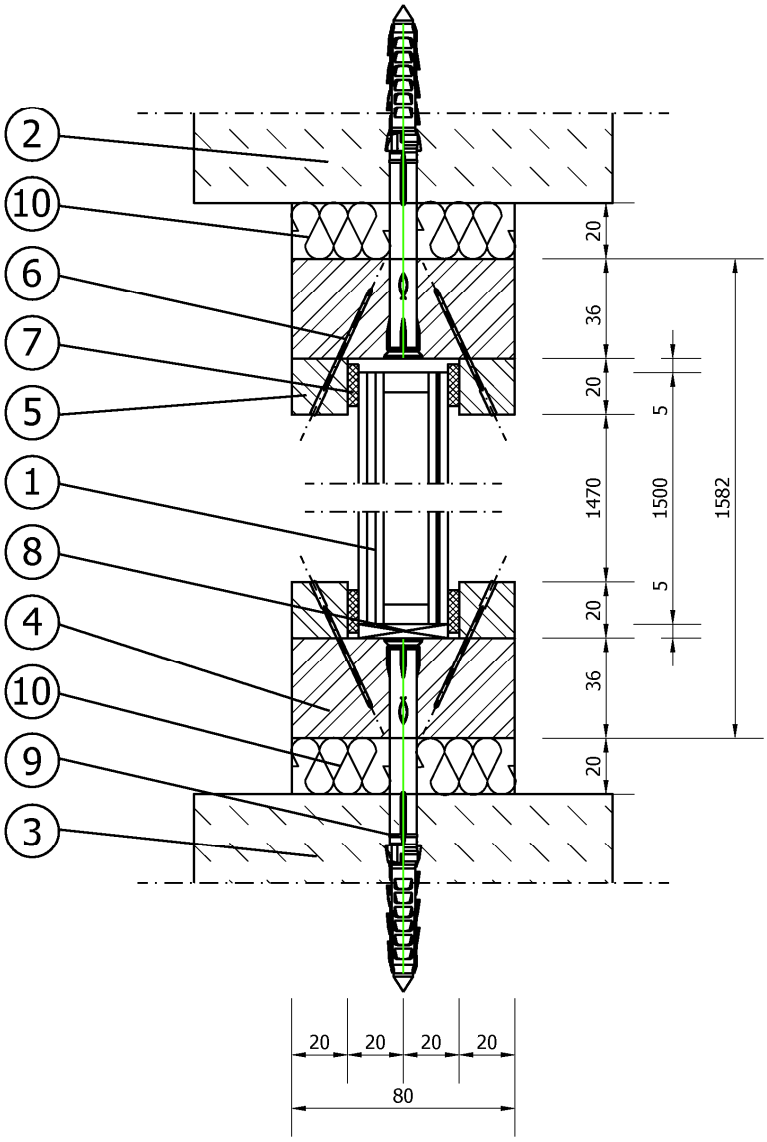
ift Rosenheim
18.07.2018



1 Pilkington **Pyrodur**® 30-185, d = 32 mm
2 Reinforced concrete beam
3 Aerated concrete, thickness 150 mm
X = Fixing screws Fischer SXR 10 x 120 T
Z = Setting blocks, 100 mm from each corner

[mm]

Pilkington **Pyrodur**® 30-185	Annex 1	NSG GROUP PILKINGTON
View	Scale: 1:25	



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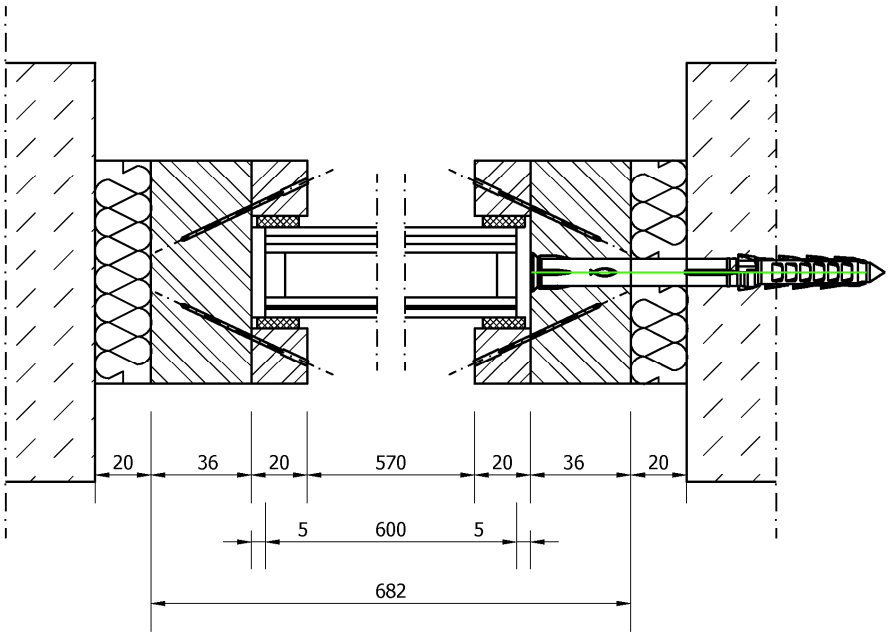
Pilkington **Pyrodur**® 30-185	Annex 2	NSG GROUP PILKINGTON
Vertical section A-A	Scale: 1:2	



[mm]

Pilkington **Pyrodur**® 30-185	Annex 3	NSG GROUP
Horizontal section B - B	Scale: 1:2	PILKINGTON

Schedule of Components

1 Pilkington **Pyrodur**® 30-185, 32 mm

2 Reinforced concrete beam

3 Aerated concrete brickwork, thickness 150 mm

4 Timber profile 36 x 80 mm (softwood, 450 kg/m³)

5 Timber glazing bead 20 x 20 mm (softwood, 450 kg/m³)

6 Pins 50 mm length*
Pins max. 40 mm from edges, otherwise max. 130 mm distance.

7 Glazing tape Kerafix 2000, 4 x 15 mm

8 Hardwood setting block 80 x 32 x 5 mm

9 Frame Screw Fischer SXR 10 x 120 T

10 Mineral wool (melting point ≥ 1000 °C)