

TRANSLATION
from French

FIRE RESISTANCE OF BUILDING ELEMENTS

According to the Decree of March 22nd, 2004 of the Ministry of the Interior

CLASSIFICATION REPORT nr. 07 – A - 009

Classification extensions can be referred to this report.
They are not cumulative except on the advice of the laboratory.

Term of validity:

This classification report and its possible extensions are valid till:

January 15th, 2012

Reference report:

EFFECTIS FRANCE 07 – A – 009

Concerning:

**A range of PREGYMETAL separation walls composed of two double or triple thickness
PREGYPLAC STD BA 13 gypsum board facings.**

Reference: PREGYMETAL S

Customer:

**LAFARGE PLATRES S.A.
500, rue Marcel Demonque
ZONE DU POLE TECHNOLOGIQUE AGROPARC
F-84915 AVIGNON CEDEX 9**

This report consists of 18 pages. It may only be reproduced in full

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1. ELEMENT SHORT DESCRIPTION AND INSTALLATION

Reference : PREGYMETAL S
Origin : LAFARGE PLATRES, F-84 AVIGNON

1.1 ASSEMBLY PRINCIPLE

Separation walls composed of two not connected metal half-frames.
Each facing is composed of two double or triple thickness 12,5 mm thick PREGYPLAC STD BA 13 gypsum boards.

The tested wall models range from S 120 wall to S 180 wall. Only the S 175 wall has triple thickness.

See Attachment 1: tables 1 to 9.

1.2 ELEMENT DESCRIPTION

Each of the seven types of wall is made up of common dispositions (specified at paragraph “Basic Principles”) and of specific dispositions specified at paragraphs 1.2.2 to 1.2.8.
Each wall is made up of 2 not connected metal half-frames and of two PREGYPLAC STD BA 13 gypsum board facings.

1.2.1 Basic Principle

Each wall is made up of two metal half-frames connected by acoustic connectors and of two PREGYPLAC STD BA 13 + PREGYPLAC STD BA 18 gypsum board facings.

1.2.1.1 Frame

The lower and upper tracks, in addition to the stud on the fixed edge side, are made up of PREGYMETAL tracks R 48 or 70 or 90 or 100 or of 35x30 metal angles fixed with Ø 5 x 50 mm screws and plastic dowels with about 500 mm spacing. Two 20 x 50 mm resilient strips (polyurethane closed cell foam) are glued under the lower track or metal angle, on the track/concrete interface.

The common disposition of the wall includes two PREGYMETAL M48, M70, M90 or M100 metal half-frames placed with at 600 mm centres. The studs can be single or double. In this case they are leaned back to back and fixed alternately with Ø 3,5 x 9,5 mm screws on both sides of the profiles, with about 500 mm spacing. The studs are placed 300 mm staggered in the tracks or in the metal angles and fixed at the top and the bottom with Ø 3,5 x 9,5 mm screws.

The studs are placed at the bottom of the lower tracks and at the top a range of 10 to 15 mm for dilation is left.

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1.2.1.2 Facings

The wall receives, on each side, a double or triple thickness PREGYPLAC STD BA 13 gypsum board facing placed with staggered joints between one side and the other.

The boards of the first layer are fixed to the frame with TF 212 x 25 mm screws with 500 mm spacing.

The boards of the second layer are fixed to the frame with TF 212 x 45 mm screws with 300 mm spacing in the case of a facing with double thickness of PREGYPLAC STD BA 13 gypsum boards and with a 500 mm spacing in the case of a facing with triple thickness.

The boards of the third layer are fixed to the frame with TF 212 x 55 mm screws with 300 mm spacing.

Note:

The PREGYPLAC STD BA 13 gypsum boards can be replaced by boards in the range PREGY (PREGYDUR BA 13, PREGYDUR M0 BA 13, PREGYROC BA 13, PREGYDRO BA 13, PREGYDRO BA 15, PREGYDRODECO BA 13, PREGYDRODECO M0 BA 13, PREGYDRODECO M0 BA 15, PREGYDECO BA 13, PLANODIS BA 13, SIGNA DECO 4 BA13, PREGYPLAC M0 BA 13, PREGYDUR DECO BA 13 o PREGYDURHYDRO)

The gypsum boards of the first layer (gap side of the wall) can be placed horizontally.

1.2.1.3 Acoustic insulation

The rock wool or glass wool is installed both in single and double panel between the studs and placed wave-shaped between the two lines of studs.

1.2.1.4 Electrical equipment

The wall can be equipped with electrical sockets and switches.

The protection of the electrical boxes can be made in two different ways according to the internal cavity of the wall.

Variant n. 1

In the case of the wall S 120, where the internal cavity is 70 mm, a pocket is made in order to install the boxes face to face.

The pocket is made by a track R70 bent "U" shaped 150 x 150 x 150 mm. It is fixed on each side through the boards by means of 5 TF 212 x 25 mm screws. After making the electrical connections, the electrical box is plunged into the pocket by level filling with Pregycolle 120.

Variant n. 2

For the walls with a cavity larger than 70 mm, the boxes on each face are staggered of minimum 200 mm and protected by two separated cases.

The case is made by a track R48 bent "U" shaped 150 x 150 x 150 mm.

The back of this case is closed with a Pregyplac std BA 13 board band.

The case, formed in this way, is fixed to the back of the wall facing by 5 TF 212 x 25 mm screws.

According to the depth of the case (60 mm) the rock wool which passes behind the case can be locally compressed of maximum 30% of its thickness. After making the electrical connections, the electrical box is plunged into the pocket by level filling with Pregycolle 120.

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Variant n. 3

After cutting the gypsum boards with the hacksaw and making the electrical cables pass through, a Firefly 129 cone is inserted in the hole previously made. Its fixing on the back of the internal board is ensured by a metal wire and its hook. The tightening of the cone is obtained by bending the two ends of the metal wire on the external ring; the excess wire is then cut. The electrical box is then installed into the cone, conventionally fixed and then equipped with the electrical outlet.

Variant n. 4

- *Installation of LEGRAND boxes with reference 89378*

The boxes are installed in a 127 mm hole placed at the maximum height of 1150 mm.

The fixing of the boxes on the facings is ensured by tightening hooks.

The electrical boxes are abundantly plastered at the bottom and on all the perimeter with the adhesive Pregycolle 120. After tightening the hooks on the wall, the internal crown of the electrical box is level filled with Pregycolle 120.

The finishing is made by a self-adhesive metal piece, covered by a glass fibre mesh endowed with an opening for the socket. The metal piece is then covered with plaster from the range PREGYLYS.

Variant n. 5

- *Installation of LEGRAND boxes with reference 89341*

The boxes are installed in a 67 mm hole placed at the maximum height of 1150 mm.

The fixing of the boxes on the facings is ensured by tightening hooks.

The peripheral finishing of the cut parts is made with the glue PREGYCOLLE 120.

1.2.1.5 Finishing

The treatment of the joints between the boards of the external facing are made according to the technique of joint tape in micro-perforated paper and plaster in the range PREGYLYS with a double coat.

The screw heads are equally covered with plaster in the range PREGYLYS.

The connection between the facing and the structures is made peripherally according to the previous principle.

1.2.2 Wall S 120

The description of the wall is similar to that given at paragraph 3.3.1 “basic principle” with the addition of the following details:

The peripheral frame is composed of R 70 guides, at the bottom and at the top, made of 5/10 mm thick galvanised steel sheet with section 30 x 70 x 30 mm or of PREGYMETAL 30 x 35 metal angle .

The vertical frame is made of coupled PREGYMETAL M 48-35 (or M 48-50) studs in 6/10 thick galvanised steel sheet, placed at centre-to-centre distance of 600 mm and staggered of 300 mm between one side and the other.

The acoustic insulation is composed of two 30 mm rock wood or glass wood panels placed between the studs.

The wall made in this way has a total thickness of 120 mm with a cavity of 70 mm.

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1.2.3 Wall S 140

The description of the wall is similar to that given at paragraph 3.3.1 “basic principle” with the addition of the following details:

The peripheral frame is composed of R 90 tracks, at the bottom and at the top, made of 5/10 mm thick galvanised steel sheet with section 30 x 90 x 30 mm or of PREGYMETAL 30 x 35 metal angle.

The vertical frame is made of double PREGYMETAL M 48-35 (or M 48-50) studs or of simple and double M 70-35 (or M 70-50) studs in 6/10 thick galvanised steel sheet, placed at a centre-to-centre distance of 600 mm and staggered of 300 mm between one side and the other.

The acoustic insulation is composed of two 30 or 45 mm rock wool or glass wool panels placed between the studs. Alternatively, a 60 mm simple rock wool panel or 60 or 70 mm simple glass wool panel can be placed between the two lines of studs.

The laying of the frame and of the rock wool or the glass wool is identical to that of the variant S 140.

The wall made in this way has a total thickness of 150 mm with a cavity of 90 mm.

1.2.4 Wall S 150

The description of the wall is similar to that given at paragraph 3.3.1 “basic principle” with the addition of the following details:

The peripheral frame is composed of PREGYMETAL R 100 tracks, at the bottom and at the top, made of 5/10 mm thick galvanised steel sheet with section 30 x 100 x 30 mm or of PREGYMETAL 30 x 35 metal angles.

The laying of the frame and of the rock wool or glass wool is identical to that of the variant S 140.

The wall made in this way has a total thickness of 150 mm with a cavity of 100 mm.

1.2.5 Wall S 160

The description of the wall is similar to that given at paragraph 3.3.1 “basic principle” with the addition of the following details:

The peripheral frame is composed of two PREGYMETAL 30 x 35 metal angles.

The laying of the frame and of the rock wool or glass wool is identical to that of the variant S 140.

The wall made in this way has a total thickness of 160 mm with a cavity of 110 mm.

Note:

The cavity can be increased.

For example, in the case of a cavity of 120 or 130 mm, the reference of the wall becomes respectively S 170 or S 180. The difference in the assembly described here below consists in the use of Pregymetal M48 or M70 studs and in the maximum heights of these studs.

It is also possible to realize cavities with larger size.

1.2.6 Wall S 170

The description of the wall is similar to that given at paragraph 3.3.1 “basic principle” with the addition of the following details:

The peripheral frame is composed of two PREGYMETAL 30 x 35 metal angles.

The vertical frame is made of simple or double PREGYMETAL M 70-35 or M 70-50 or M 90-35 studs in 6/10 thick galvanised steel sheet, placed at a centre-to-centre distance of 600 mm and staggered of 300 mm between one side and the other.

The acoustic insulation is composed of two 30 or 45 mm rock wool or glass wool panels placed between the studs. Alternatively, a 60 mm simple rock wool panel or 60 or 70 mm simple glass wool panel can be placed between the two lines of studs.

The wall made in this way has a total thickness of 170 mm with a cavity of 120 mm

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1.2.7 Wall S 175 with triple thickness facings

The description of the wall is similar to that given at paragraph 3.3.1 “basic principle” with the addition of the following details:

The peripheral frame is composed of R 48 tracks, at the bottom and at the top, made of 5/10 mm thick galvanised steel sheet with section 30 x 48 x 30 mm.

The vertical frame is made of double PREGYMETAL M 48-35 studs in 6/10 thick galvanised steel sheet, placed at a centre-to-centre distance of 600 mm and staggered of 300 mm between one side and the other.

For this type of wall the facings only are made of PREGYPLAC std BA 13 triple thickness gypsum boards.

The acoustic insulation is composed of a 45 mm ROKMUR 201 rock wool panel placed between the studs.

The wall made in this way has a total thickness of 175 mm with a cavity of 100 mm.

Note:

Also the Pregymetal M 70 and M 90 studs can be used in the same conditions.

The Pregymetal R70, R90 and R100 tracks like the M100 studs can be used provided that the cavity of the wall is increased.

The cavity of the wall can be increased. For example in the case of a 120, 140 or 160 mm cavity the reference of the wall becomes respectively S 195, S 215, S 235.

It is also possible to realize cavities with intermediate or larger thickness.

This larger size can possibly imply an increase in the thickness of the rock wool used.

Anyway, this rock wool will have a density included between 25 and 35 kg/m³ and a heat resistance R higher or equal to 1,25 m²K / W.

For this wall the first two board layers, on the gap side, can be placed horizontally.

1.2.8 Wall A 180

The description of the wall is similar to that given at paragraph 3.3.1 “basic principle” with the addition of the following details:

The peripheral frame is composed of two PREGYMETAL 30 x 35 mm metal angles.

The vertical frame is made of simple or double PREGYMETAL M 90-35 or M90-50 or M100-50 studs in 6/10 thick galvanised steel sheet, placed at a centre-to-centre distance of 600 mm and staggered of 300 mm between one side and the other.

The acoustic insulation is composed of two 30 or 45 mm rock wool panels or of a simple 70 mm glass wool panel placed between the studs.

The wall made in this way has a total thickness of 180 mm with a cavity of 130 mm.

Note:

It is also possible to realize cavities with larger thickness. In this case the denomination of the wall changes like at paragraphs 1.2.5 and 1.2.7

2. ELEMENT REPRESENTATIVENESS

The element installed during the reference test and in the conditions described by the Laboratory can be considered as representative of the current application.

3. FIRE RESISTANCE CLASSIFICATION

3.1 CLASSIFICATION REFERENCE

This classification has been realised in accordance with paragraph 7.5.2 of the standard NF EN 13501-2.

3.2 CLASSIFICATION

The element is classified according to the following combinations of the parameters of the characteristics and classes.

*** Case of the wall with double thickness facings**

R	E	I	W		t	-	M	C	S	G	K
#	E				60						
	E	I			60						

*** Case of the wall with triple thickness facings with or without electrical boxes according to the variant 3 and a maximum height of 1150 mm or according to the variants 1, 2 and 4.**

R	E	I	W		t	-	M	C	S	G	K
	E				120						
	E	I			120						

*** Case of the wall with triple thickness facings with or without electrical boxes according to the variant 3 and a maximum height of 1150 mm or according to the variant 5.**

R	E	I	W		t	-	M	C	S	G	K
	E				90						
	E	I			90						

4. VALIDITY CONDITIONS OF THE FIRE RESISTANCE CLASSIFICATION

4.1 MANUFACTURING AND INSTALLATION

The element and its assembly must be in compliance with the detailed description given in the reference report.

In the event of a dispute about the object of the present certificate, the reference report can be requested to its owner without obligation to document assignment.

4.2 FIRE DIRECTION

For the walls in the range PREGYMETAL S, since they are symmetrical, the fire direction is irrelevant.

4.3 VALIDITY RANGE

According to paragraph 13.2 and 13.3 of the standard NF EN 1364-1 the element has the following validity range:

Type of wall	Cavity	Facing	Glass or rock wool	Frame	Centres	Limit height	
						Simple studs	Double studs
# \$ 120	70	double	2 x 30 mm	M 48-35	600	-	2,75
				M 48-50		-	3,00
# \$ 140	90		2 x 30 o	M 48-35		-	2,75
			2 x 45 mm	M 48-50		-	3,00
			2 x 30 mm	M 70-35		2,90	3,45
			1 x 60 mm	M 70-50		3,10	3,70
# \$ 150	100		2 x 45 mm	M 48-35		-	2,75
			2 x 45 mm	M 48-50		-	3,00
			2 x 30 mm	M 70-35		2,90	3,45
			1 x 60 mm	M 70-50		3,10	3,70
# \$ 160	110		2 x 45 mm	M 48-35		-	2,75
			2 x 45 mm	M 48-50		-	3,00
		2 x (30 o 45)	M 70-35	2,90	3,45		
		o 1 x 60 mm	M 70-50	3,10	3,70		
# \$ 170	120	2 x 45 mm	M 70-35	2,90	3,45		
		2 x 45 mm	M 70-50	3,10	3,70		
		2 x 30 mm	M 90-35	3,35	4,00		
		1 x 60 mm	M 90-50	3,55	4,25		
# \$ 175	100	triple	1 x 45 mm	M 48-35		-	4,00
# \$ 180	130	double	2 x (30 o 45)	M 90-35		3,35	4,00
			2 x (30 o 45)	M 90-50		3,55	4,25
			2 x (30 o 45)	M 100-50		3,80	4,50

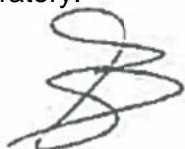
The above-mentioned dimensions as well as the composition of the element can't be modified without an extension of the classification issued by the Laboratory.

6. TERM OF VALIDITY OF THE FIRE RESISTANCE CLASSIFICATION

This classification report is valid 5 years from the date of issue of this document that is till:

JANUARY THE FIFTEENTH, TWO THOUSAND AND TWELVE

After this date, this classification report is no longer valid unless accompanied by a renewal issued by the Laboratory.



Sébastien BONINSEGNA
Engineer in charge of the Studies

Maizierès-les-Metz, January 15th, 2007

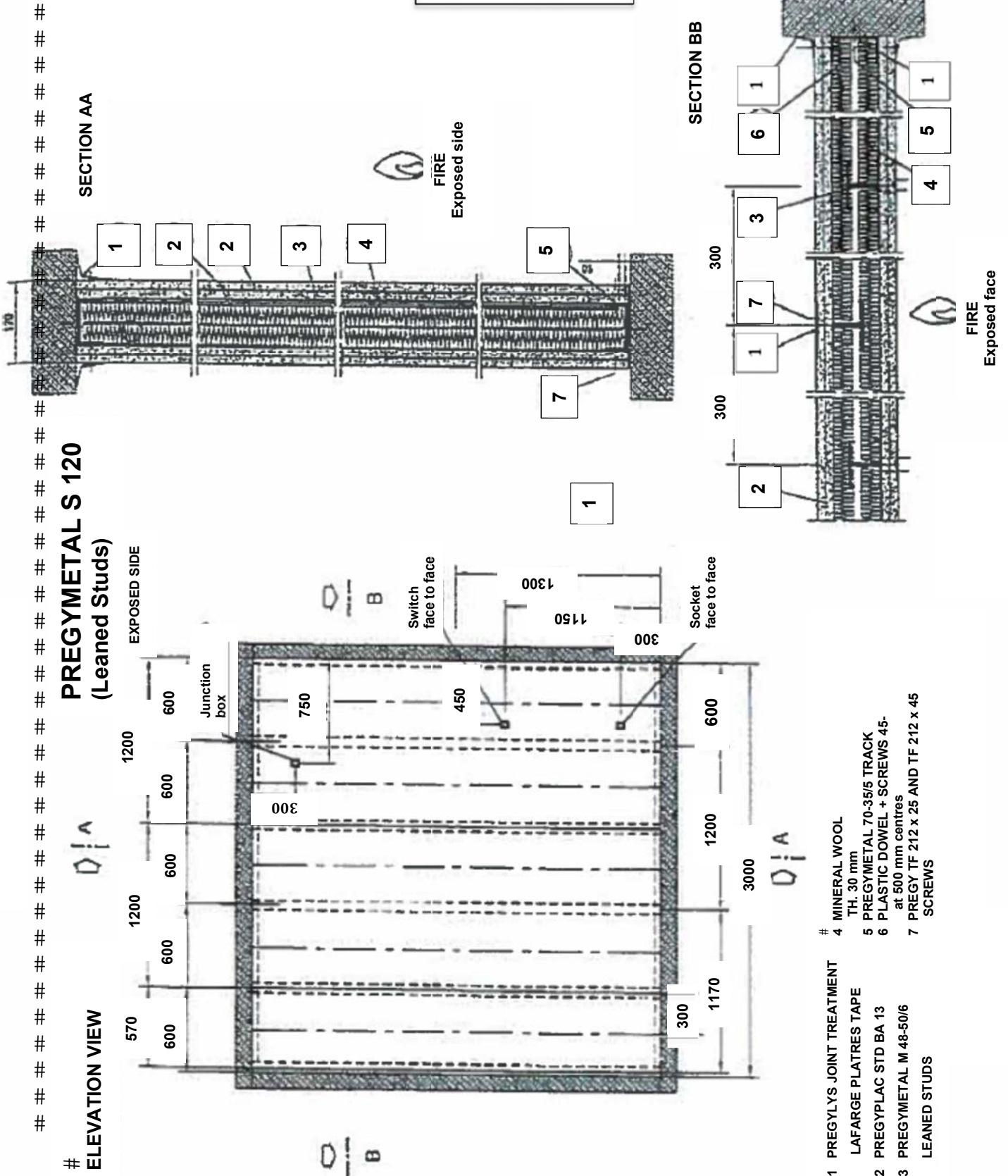


Régis KORYLUK
Chief of Advisory Service
Chief of Testing Service 2

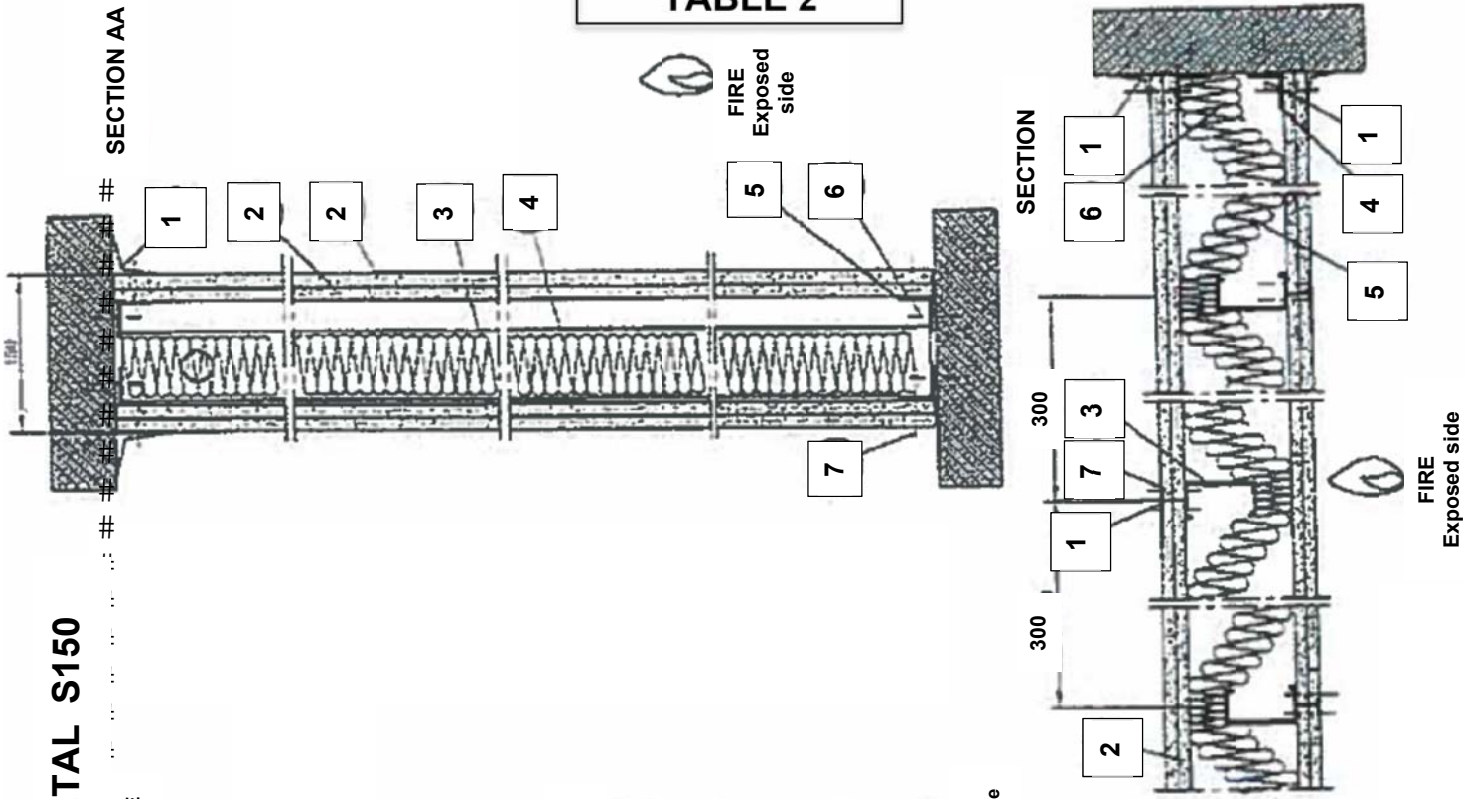
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Classification report nr. 07 – A – 009
(Decree March 22nd, 2004)

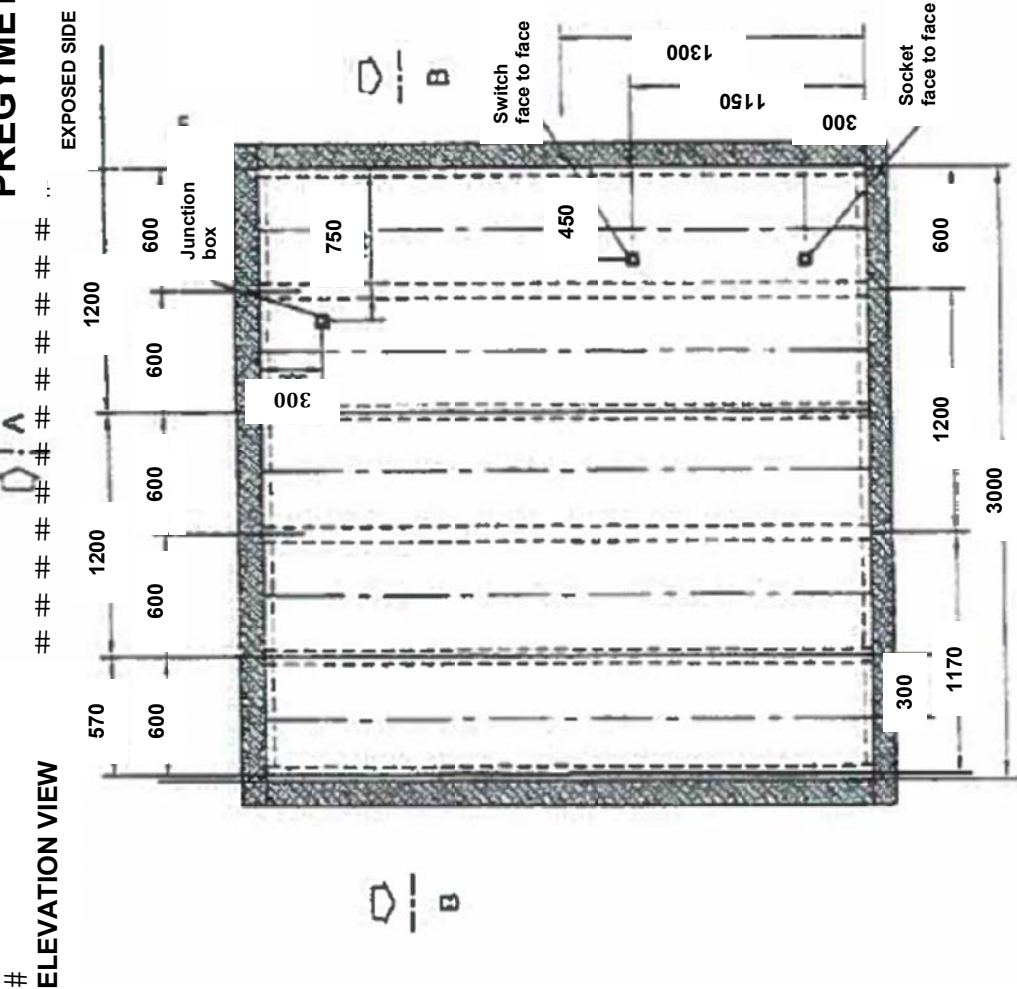
**ATTACHMENT 1
TABLE 1**



**ATTACHMENT 1
TABLE 2**



PREGYMETAL S150



ELEVATION VIEW

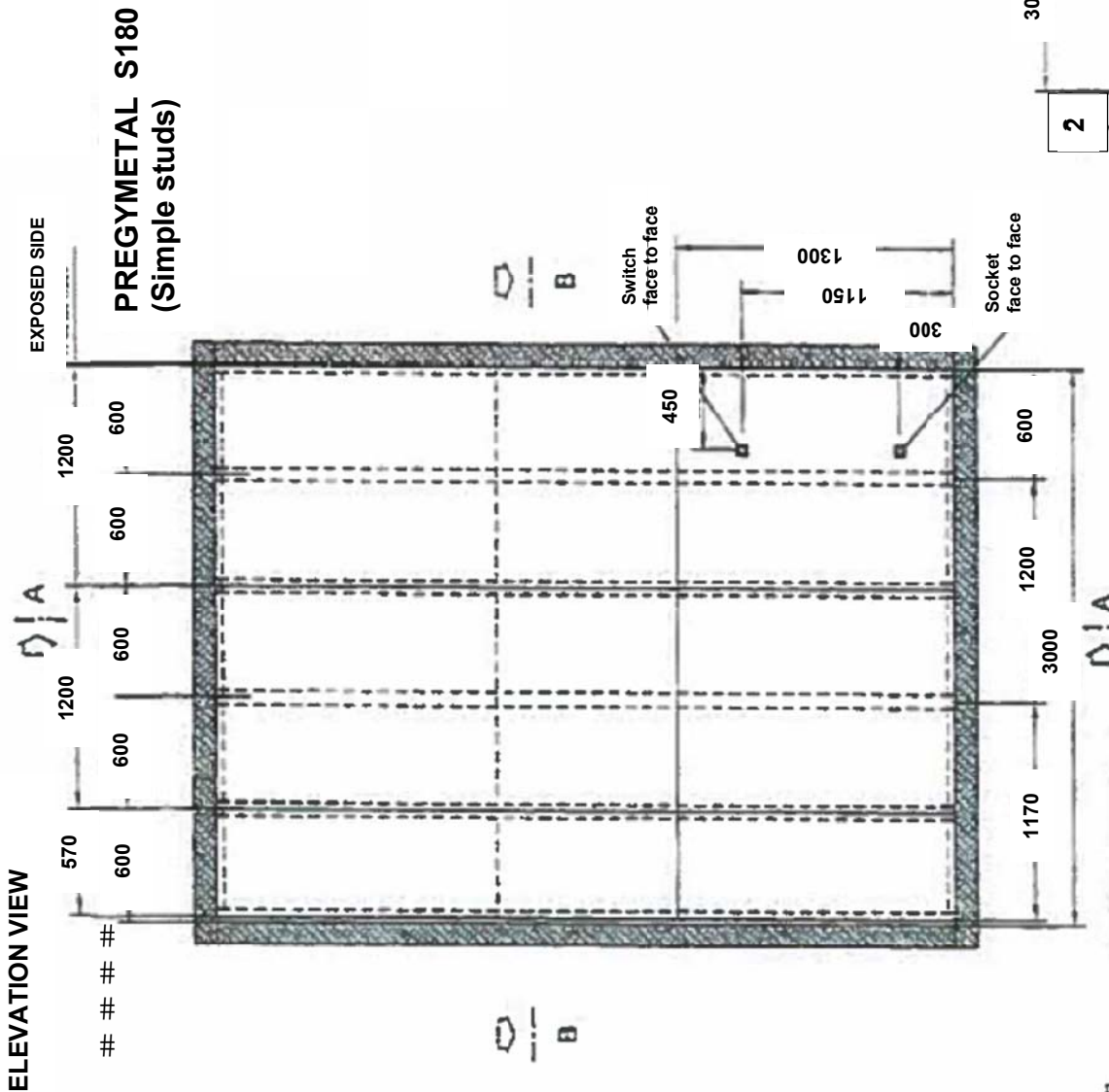
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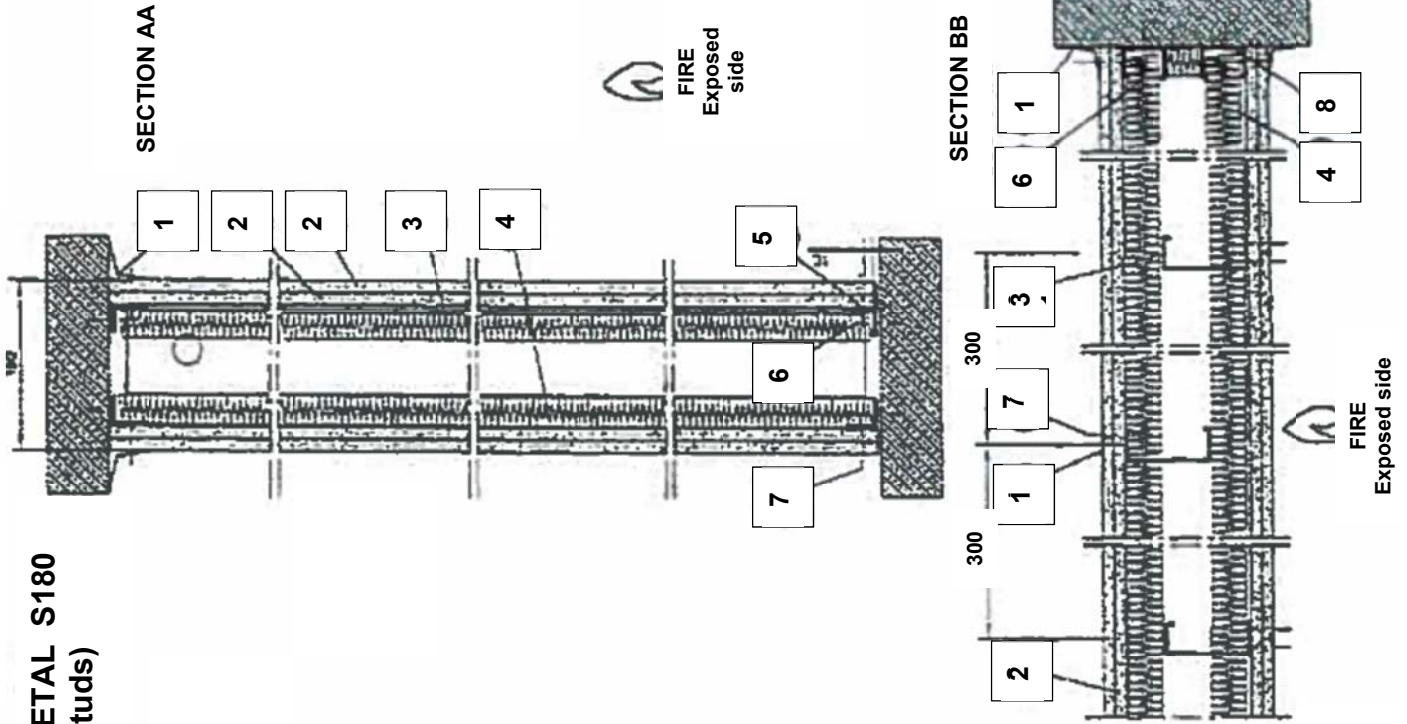
- 1 PREGYLYS JOINT TREATMENT
LAFARGE PLATRES TAPE
- 2 PREGYPLAC STD BA 13
- 3 PREGYMETAL M 70-35/6
LEANED STUDS
- 4 MINERAL WOOL
TH. 60 mm
- 5 PREGYMETAL 30-35/6 METAL ANGLE
- 6 PLASTIC DOWEL + SCREWS 45-
500 mm centres
- 7 PREGY TF 212 x 25 AND TF 212 x 45
SCREWS

#

**ATTACHMENT 1
TABLE 3**

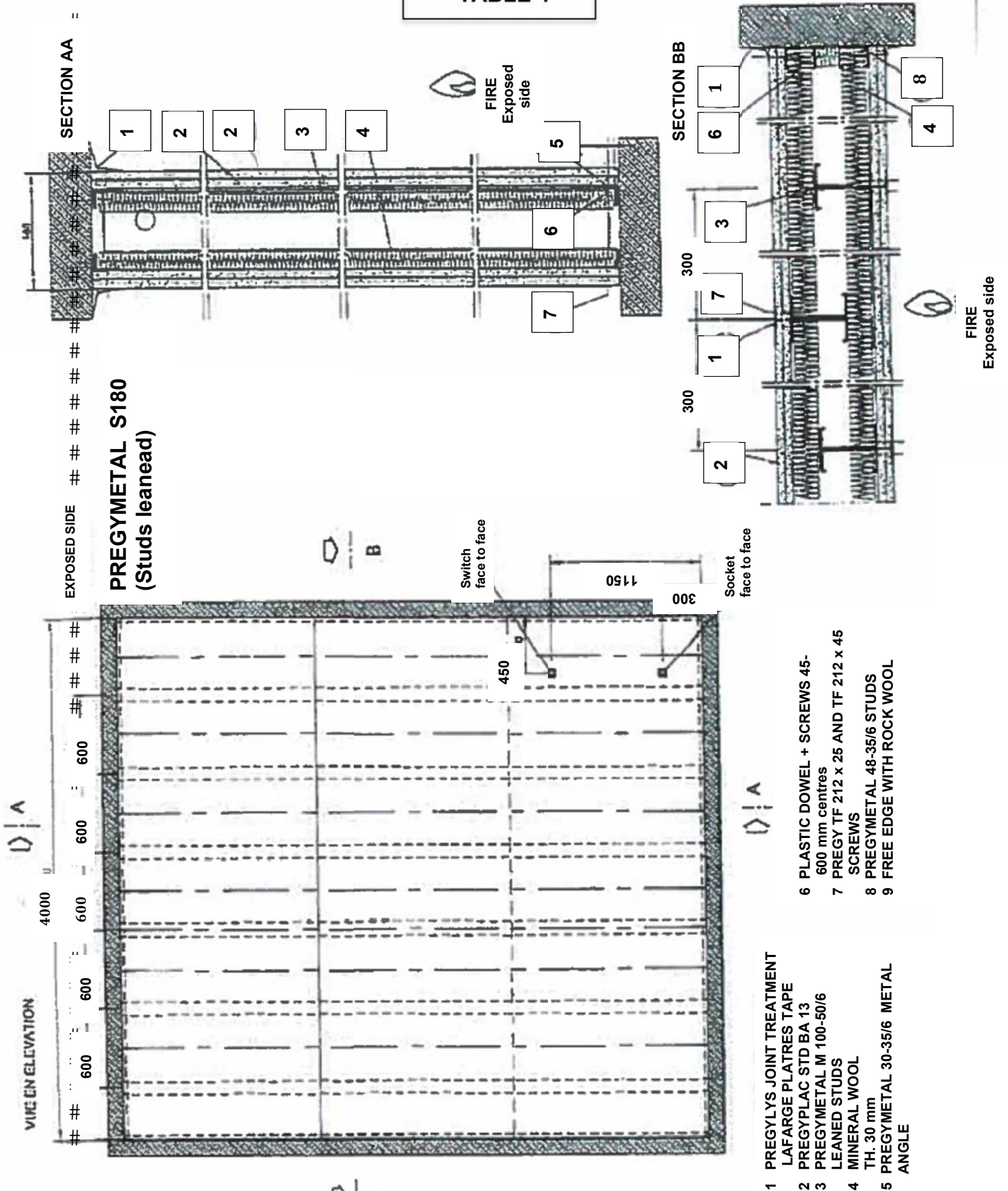


- 1 PREGYLS JOINT TREATMENT
- 2 LAFARGE PLATRES TAPE
- 3 PREGYMETAL STD BA 13
- 4 LEANED STUDS
- 5 MINERAL WOOL TH. 30 mm
- 6 PREGYMETAL 30-35/6 METAL ANGLE
- 6 PLASTIC DOWEL + SCREWS 45-600 mm centres
- 7 PREGY TF 212 x 25 AND TF 212 x 45 SCREWS
- 8 PREGYMETAL 48-35/6 STUDS
- 9 FREE EDGE WITH ROCK WOOL



 Classification report nr. 07 – A – 009
 (Decree March 22nd, 2004)
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**ATTACHMENT 1
 TABLE 4**

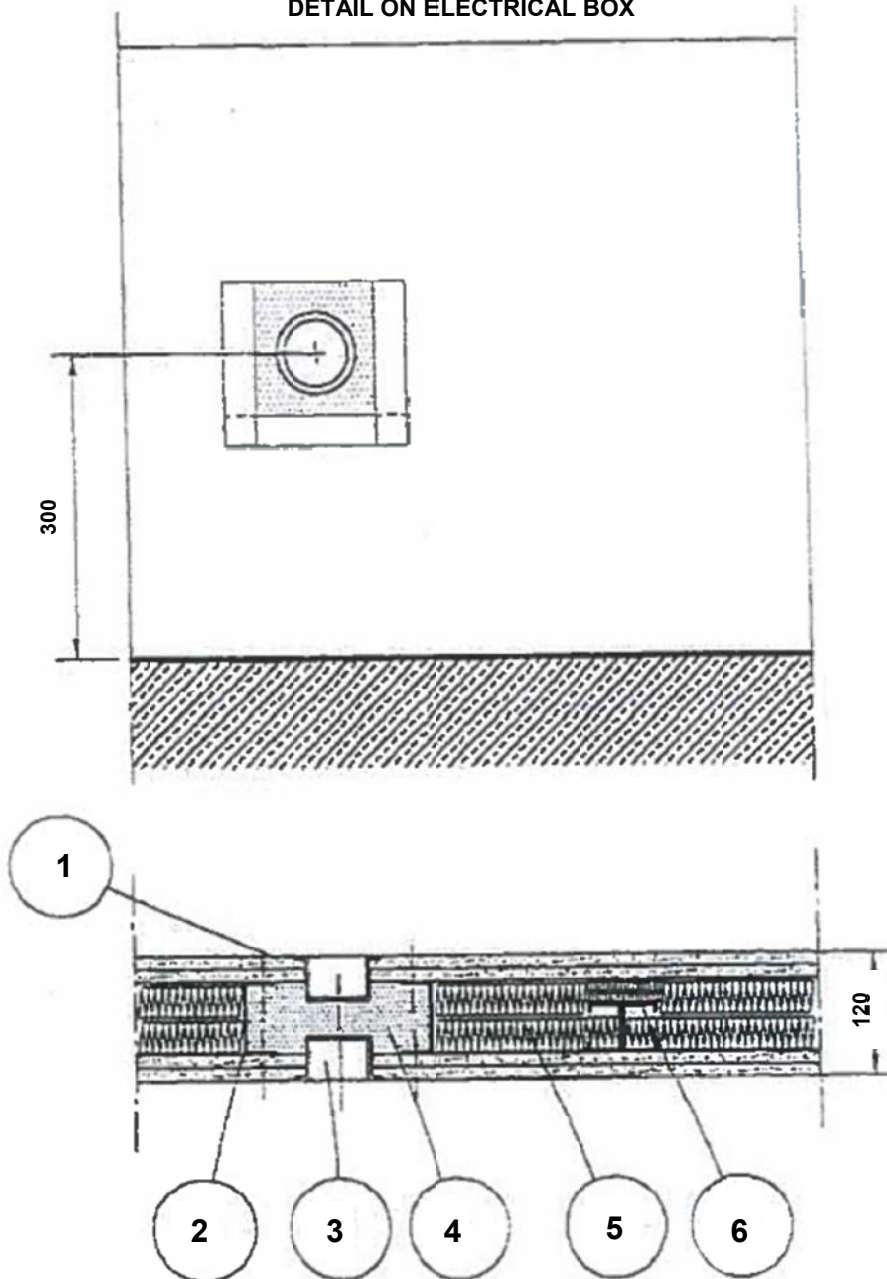


**PREGYMETAL S180
 (Studs leaned)**

- 1 PREGYLYS JOINT TREATMENT LAFARGE PLATRES TAPE
- 2 PREGYPLAC STD BA 13
- 3 PREGYMETAL M 100-50/6 LEANED STUDS
- 4 MINERAL WOOL TH. 30 mm
- 5 PREGYMETAL 30-35/6 METAL ANGLE
- 6 PLASTIC DOWEL + SCREWS 45-600 mm centres
- 7 PREGY TF 212 x 25 AND TF 212 x 45 SCREWS
- 8 PREGYMETAL 48-35/6 STUDS
- 9 FREE EDGE WITH ROCK WOOL

ATTACHMENT 1
TABLE 5

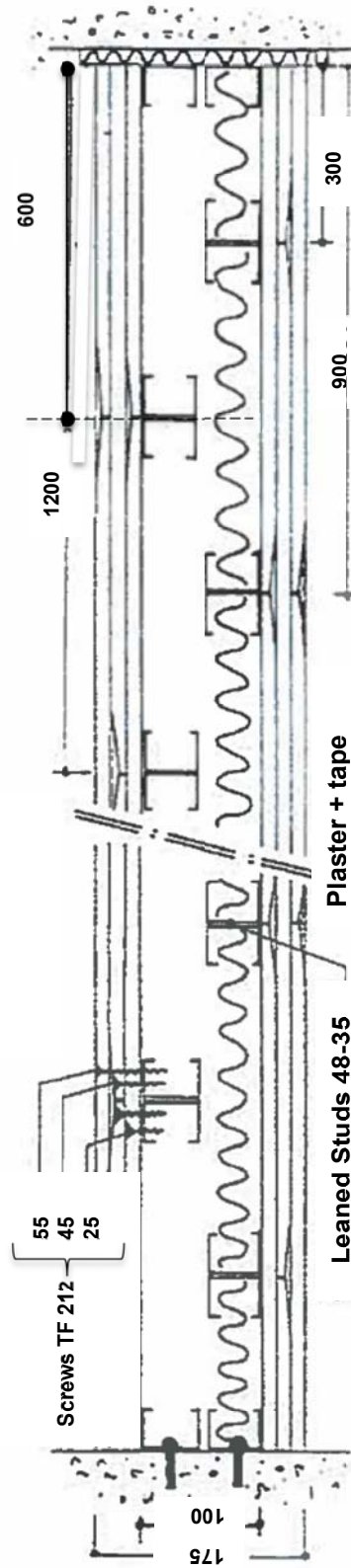
WALL PREGYMETAL S 120
DETAIL ON ELECTRICAL BOX



- 1 2 PREGYPLAC STD BA 13
- 2 PREGYMETAL 48-30 TH. 6/10 TRACK
- 3 ELECTRICAL BOX
- 4 PREGYPLAC STD BA 13
- 5 PREGYCOLLE 120 – ADHESIVE MORTAR
- 6 MINERAL WOOL
TH. 30 mm

#

ATTACHMENT 1
TABLE 8



TRANSLATION
from French

RENEWAL

RENEWAL n. 12/1
OF THE REPORT N. 07 – A – 009

According to the decree of March 22nd, 2004

Concerning	A range of PREGYMETAL separation walls composed of two double or triple thickness PREGYPLAC STD BA 13 gypsum board facings. - Reference: PREGYMETAL S
Customer	LAFARGE PLATRES S.A. 500, rue Marcel Demonque Zone du Pole Technologique AGROPARC F-84915 AVIGNON cédex 9
Renewed classification extensions	The classification renewals can refer to the reference test report. They can be combined with each other with the advice of EFECTIS - France . The classification renewals regarding the reference test report and bringing the following numbers are renewed: 07/1, 08/2, 08/3 and 09/4
Term of validity	The reference classification report and the above mentioned classification extensions as well as those issued after the date of issue of this document, are valid till: January 17th, 2017 After this date, the reference test report is no longer valid unless accompanied by a renewal issued by the Laboratory. This renewal is not valid if it is not accompanied by the reference classification report

Maizières-les-Metz, February 23rd, 2012

Baila GUISE
"Vertical walls"
Area Manager

Sébastien BONINSEGNA
Chief of Testing Service 2

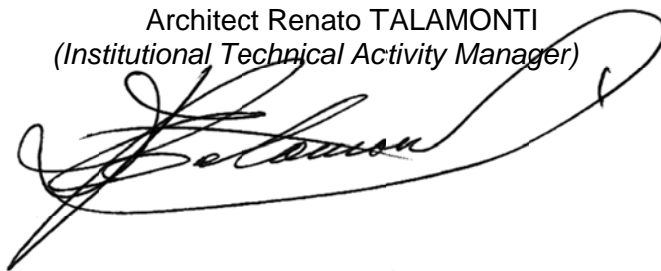
SELF-DECLARATION AFFIDAVIT

The undersigned Renato TALAMONTI as Institutional Technical Activity Manager of SINIAT S.p.A., domiciled for the office in via G.G. Winkelmann, 2 – 20146 Milan

DECLARES

the total accuracy of the translation, from French, of the Classification Report nr. 07-A_009 issued by the Laboratory EFECTIS on January 15th, 2007 and of the related Renewal of February 23rd, 2012

Architect Renato TALAMONTI
(Institutional Technical Activity Manager)



Milan, June 24th, 2013