



**RENEWAL nr 20/1
OF THE FRENCH "PROCES-VERBAL" nr EFR-15-002724 C**

According to the decree March 22nd 2004 amended by decree of March 14th 2011

Subject Suspended ceiling with visible framework and mineral fibre tiles:

- Framework: SAINT GOBAIN EUROCOUSTIC QUICK-LOCK CLIP-ON and QUICK-LOCK HOOK-ON
- Panel: SAINT GOBAIN EUROCOUSTIC TONGA A, ALIZE, ACOUSTISPORT, ACOUSTICHOC, ORCHESTRA, TONGA® ULTRA CLEAN A

Applicable beneath floors comprising:

- Joist: concrete, pre-stressed concrete, steel, cold formed steel, wood
- Slab: cellular concrete, pre-stressed concrete, concrete, steel-concrete composite, wood

Sponsor SAINT GOBAIN EUROCOUSTIC
Tour Saint-Gobain
12 place de l'Iris
F - 924 COURBEVOIE

Renewed technical assessments Technical assessments can relate to the reference French "procès-verbal". They can be combined together upon Efectis France's approval.
Are renewed the technical assessments issued according to the reference French "procès-verbal", and whose references are:
NONE

Validity The reference "procès-verbal" and the above-mentioned technical assessments and their possible revisions as well as those which could have issued after the date of publication of this document, will be valid until:
02 September 2025.
After this date, the reference "procès-verbal" is no more valid, except if another renewal delivered by Efectis France is enclosed to it.
This renewal is only valid if the reference "procès-verbal" is enclosed.

These conclusions only relate to the fire resistance performances of the elements covered by this document. They are without prejudice, in any case, to other performances related to their use in a structure.

Maizières-lès-Metz, 16 June 2020

X

Renaud FAGNONI

Project leader
Signé par : Renaud FAGNONI

X

Clifford CHINAYA

Supervisor
Signé par : Clifford CHINAYA

The duplication of this document is authorized on the condition that a full copy of the document is made.



CHARACTERISATION "PROCES-VERBAL" No. EFR-15-002724 C

Fire resistance of construction elements, as per amended Ministerial Order dated March 22, 2004 issued by the French Ministry of the Interior

| | |
|---|--|
| Period of validity | This "procès-verbal" and any extensions are valid until 02 September 2020 |
| Assessment of the reference laboratory | EFR-15-002724 |
| Concerning | <p>Suspended ceiling with visible framework and mineral fibre tiles:</p> <ul style="list-style-type: none">• Framework: SAINT GOBAIN EUROCOUSTIC QUICK-LOCK CLIP-ON and QUICK-LOCK HOOK-ON• Panel: SAINT GOBAIN EUROCOUSTIC TONGA A, ALIZE, ACOUSTISPORT, ACOUSTICHOC, ORCHESTRA, TONGA® ULTRA CLEAN A <p>Applicable beneath floors comprising:</p> <ul style="list-style-type: none">• Joist: concrete, pre-stressed concrete, steel, cold formed steel, wood• Slab: cellular concrete, pre-stressed concrete, concrete, steel-concrete composite, wood |
| Applicant | <p>SAINT GOBAIN EUROCOUSTIC 1 place Victor Hugo F - 92411 COURBEVOIE Cedex</p> |

1 PURPOSE OF THE PROCES-VERBAL

Determination, in compliance with the procedure indicated in standard EN 13381-1 "Test methods for determining the contribution to the fire resistance of structural members: Part 1: Horizontal protective membranes" and the decree, modified on 22 March 2004, of temperatures attained in the plenum and steel joists of a standard floor with steel joists and covering of cellular concrete slabs and protected on the underside by a suspended ceiling.

2 TEST LABORATORY

EFFECTIS France
Voie Romaine
F - 57280 MAIZIERES-LES-METZ

3 TEST APPLICANT

SAINT GOBAIN EUROCOUSTIC
Les Renardières - Bâtiment A Ilot Alsace
1 place Victor Hugo
F - 92411 COURBEVOIE Cedex

4 REFERENCE DOCUMENT

| Document number | Document date |
|-------------------------------------|-------------------|
| Laboratory assessment EFR-15-002724 | 02 September 2015 |

5 REFERENCE AND SOURCE OF ELEMENT TESTED

5.1 FRAMEWORKS

Reference : QUICK-LOCK CLIP-ON and QUICK-LOCK HOOK-ON

Source : SAINT GOBAIN EUROCOUSTIC or SAINT GOBAIN PLAFOMETAL
1 place Victor Hugo Route de Phades
F - 92411 COURBEVOIE Cedex F - 08800 MONTHERME

5.2 PANELS

Reference : TONGA A, ALIZE, ACOUSTISPORT, ACOUSTICHOC, ORCHESTRA (th = 40 mm)

Source : SAINT GOBAIN EUROCOUSTIC
1 place Victor Hugo
F - 92411 COURBEVOIE Cedex

6 DESCRIPTION OF THE ELEMENTS

6.1 GENERAL

The element is a suspended ceiling with visible framework and mineral slabs protecting a floor such as described in section 15 of standard EN 13381-1 and in sections 8 and 9 of the present document.

6.2 SCHEDULE OF COMPONENTS

Prepared from information provided by the applicant.

| Description | Reference | Material | Characteristics | Supplier |
|--------------------------|---|--|--|--------------------------|
| Load-bearing T-profile | QUICK-LOCK CLIP-ON | galvanized steel white pre-painted steel | 24 x 38 mm l: 3600 mm th: 0.35 / 0.17 mm | SAINT GOBAIN EUROCOUSTIC |
| | QUICK-LOCK HOOK-ON | | 24 x 38 mm l: 3600 mm th: 0.35 / 0.17 mm | |
| "T" crosspiece 1200 | QUICK-LOCK CLIP-ON | galvanized steel white pre-painted steel | 24 x 32 mm l: 1200 mm th: 0.35 / 0.17 mm | SAINT GOBAIN EUROCOUSTIC |
| | QUICK-LOCK HOOK-ON | | 24 x 32 mm l: 1200 mm th: 0.35 / 0.17 mm | |
| "T" crosspiece 600 | QUICK-LOCK CLIP-ON | galvanized steel white pre-painted steel | 24 x 25 mm l: 600 mm th: 0.35 / 0.17 mm | SAINT GOBAIN EUROCOUSTIC |
| | QUICK-LOCK HOOK-ON | | 24 x 32 mm l: 600 mm th: 0.35 / 0.17 mm | |
| Channel trim | 87926 87933 | white pre-painted steel | 19 x 40 x 19 mm l: 3000 mm th: 5/10 mm | SAINT GOBAIN EUROCOUSTIC |
| Adjustable hanger | 87559 / 87561 / 87563 / 87566 | steel | Ø: 4 mm | SAINT GOBAIN EUROCOUSTIC |
| Self-tapping screws | VPC5 | steel | Ø: 3.8 mm l: 55 mm | SAINT GOBAIN EUROCOUSTIC |
| Edge spring | AC 49 | "spring" steel | th: 5/10 mm | SAINT GOBAIN EUROCOUSTIC |
| Horizontal support clip | AC 84 | steel | w: 40 mm th: 1.1 mm | SAINT GOBAIN EUROCOUSTIC |
| Anti-lifting clip | Pin 87807 / AC 38 | steel | Ø: 2.4 mm | SAINT GOBAIN EUROCOUSTIC |
| | EUROCLIP | steel | | SAINT GOBAIN EUROCOUSTIC |
| | Staple 87798 / AC 254 | steel | | SAINT GOBAIN EUROCOUSTIC |
| | Clip 87805 / CA 115 | steel | | SAINT GOBAIN EUROCOUSTIC |
| Panel | TONGA A, ALIZE, ACOUSTISPORT, ACOUSTICHOC, ORCHESTRA, TONGA® ULTRA CLEAN A | Rock wool surfaced with a decorative white or coloured coat. | 595 x 595 x 40 mm ad = 4.6 kg/m ² | SAINT GOBAIN EUROCOUSTIC |
| Insulation | EUROLENE 603 | Rock wool | 1200 x 600 x 160 mm bd = 34 kg/m ³ | SAINT GOBAIN EUROCOUSTIC |
| Supplementary insulation | IBR | Glass wool | th = 0 to 200 mm bd = 11 kg/m ³ | ISOVER |
| Last panel fixing system | 87795 / CA 120 | | | PLAFOMETAL |

l = length --- h = height --- th = Thickness --- bd = bulk density --- ad = area density

6.3 DESCRIPTION OF THE CEILING

6.3.1 Channel trim

The channel trim is attached to the inside face of the peripheral walls by self-tapping screws 3.8 x 55 mm ($\varnothing \times l$) at maximum intervals of 300 mm.

6.3.2 Load-bearing framework

6.3.2.1 Load-bearing profiles

The load-bearing profiles QUICK-LOCK CLIP-ON or HOOK-ON are arranged longitudinally along the ceiling.

They are installed so as to create a plenum of at least 300 mm between the underside of the load-bearing floor and upper side of the ceiling, which may be defined as the upper face of the panels or the upper face of the insulation.

These profiles, which may comprise two elements snapped together, comprise a Fire Break for each length. The joint between two profiles is at 195 mm from the butt joint at a maximum of 1885 mm from the walls.

The profiles are in galvanized steel (core thickness = 35/100mm), pre-painted white (underside - thickness = 17/100 mm).

Load-bearing profiles are installed without any gap, i.e. butted up against the walls.

The profiles are installed so as to respect the following distances:

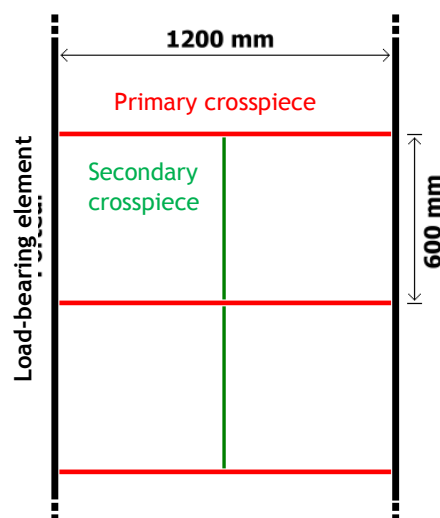
- Spacing from centre line:
 - Without secondary crosspiece: 600 mm
 - With primary crosspieces: 1200 mm
- Maximum distance between load-bearing elements and walls: 375 mm.

6.3.2.2 Crosspieces

Crosspieces are in galvanized steel (core thickness = 35/100mm), pre-painted white (underside - thickness = 17/100 mm).

Two types of crosspiece can be employed:

- Primary crosspieces, used between the load-bearing elements at 600 mm spacings;
- Secondary crosspieces, used between the primary crosspieces previously described and resting in the channel trim.



Example of implementation with secondary crosspieces

They are equipped at each end with a fixing system and are assembled into the notches formed in the load-bearing profiles and crosspieces or rest on the channel trim.

6.3.3 Hangers

Each load-bearing profile is supported by the fixing hangers. The hangers are used in order to create a plenum as defined in section 6.3.2.1.

The hangers are at intervals of:

- 900 mm with insulation on the back of the panels:
- 1200 mm without insulation on the back of the panels:

Each of these comprises:

- an adjustable hanger, two steel wire hooks \varnothing 4 mm;
- a horizontal support clip for IPE 160.

6.3.4 Ceiling panels

The ceiling panels are in rock wool surfaced with a decorative white or coloured coating.

| Reference | Dimensions | Thickness | Area density (kg/m ²): | Edges |
|---|------------|-----------|------------------------------------|----------|
| TONGA A ALIZE ACOUSTISPORT ACOUSTICOC ORCHESTRA TONGA® ULTRA CLEAN A | 595 x 595 | 40 mm | 4.6 kg/m ² | Straight |

The panels are fitted inside the metal framework formed by the load-bearing elements and cross-beams.

The anti-lifting clips are fitted onto each panel as it is installed.

The last complete panel is fitted with a locking system. This comprises two sheet metal profiles enclosing the sides of the panel, connected by two flats with steel screws. The end panel is locked by sliders running on the load-bearing framework that locks together the two profiles.

6.3.5 Thermal insulation

6.3.5.1 Insulation

Rock wool panels, reference EUROLENE 603, of dimensions 1200 x 600 x 160 mm (l x w x th) and bulk density 34 kg/m³ (5.44 kg/m²), can be installed on the back of the panels. They are installed one against the other with no gaps.

Supplementary glass fibre insulation IBR (ISOVER), of maximum thickness 200 mm and bulk density 11 kg/m³ (2.2 kg/m² maximum) can be implemented over the rock wool insulation. The glass fibre can be bare or covered with an aluminium vapour barrier.

6.4 NON-REMOVABILITY

Non-removability tests were performed in accordance with the Application Protocol of the old Ministry of the Interior decree of 3 August 1999 on the ceiling panels in the central part and on the last ceiling panel as indicated in the reference document.

Following these conclusive tests, the ceiling was considered non-removable.

7 REPRESENTATIVE NATURE OF ELEMENTS

The sample tested is considered representative of the applicant's current standard manufacture.

The conditions to be respected for installation are described in this "procès-verbal", and comply with those observed during installation for the test.

8 CONCLUSIONS

These classifications were produced in accordance with section 7.4.6.2. of NF EN 13501-2, and the report of CECMI dated 6 December 2005.

The element was classified using the following combinations of parameters and ratings.

No other classification is permitted.

8.1 WITH EUROLENE ROCK WOOL

| Construction material of beams and girders | Construction material of floor support | Reference temperatures (°C) | | Fixed periods to attain reference temperatures (min) | | Classifications | |
|--|--|-----------------------------|--------------------------------|--|--------------------------------|-----------------|------|
| | | In the plenum | In the load-bearing structures | In the plenum | In the load-bearing structures | R | REI |
| Pre-stressed concrete | Cellular concrete | 450 | - | 140 | - | 120* | 120* |
| | Pre-stressed concrete | 450 | - | 140 | - | 120* | 120* |
| | Concrete | 450 | - | 140 | - | 120* | 120* |
| | Mixed steel/concrete | 400 | 350 | 120 | 100 | 90* | 90* |
| Concrete | Cellular concrete | 600 | - | 150 | - | 120* | 120* |
| | Pre-stressed concrete | 450 | - | 140 | - | 120* | 120* |
| | Concrete | 600 | - | 150 | - | 120* | 120* |
| | Mixed steel/concrete | 400 | 350 | 120 | 100 | 90* | 90* |
| | Wood | 300 | - | 80 | - | 60* | 60* |
| Steel | Cellular concrete | 530 | 510 | 150 | 150 | 120* | 120* |
| | Pre-stressed concrete | 450 | - | 140 | - | 120* | 120* |
| | Concrete | 530 | 510 | 150 | 150 | 120* | 120* |
| | Mixed steel/concrete | 400 | 350 | 120 | 100 | 90* | 90* |
| | Wood | 300 | - | 80 | - | 60* | 60* |
| Cold formed steel | Cellular concrete | 370 | 350 | 110 | 100 | 90* | 90* |
| | Pre-stressed concrete | 370 | 350 | 110 | 100 | 90* | 90* |
| | Concrete | 370 | 350 | 110 | 100 | 90* | 90* |
| | Mixed steel/concrete | 370 | 350 | 110 | 100 | 90* | 90* |
| | Wood | 300 | - | 80 | - | 60* | 60* |
| Wood | Cellular concrete | 300 | - | 80 | - | 60* | 60* |
| | Pre-stressed concrete | 300 | - | 80 | - | 60* | 60* |
| | Concrete | 300 | - | 80 | - | 60* | 60* |
| | Mixed steel/concrete | 300 | - | 80 | - | 60* | 60* |
| | Wood | 300 | - | 80 | - | 60* | 60* |

*: these classifications are authorised subject to the ceiling presenting good semi-natural fire resistance and that the value $\sqrt{\lambda \cdot \rho \cdot c}$ of the ceiling is less than or equal to 550 S.I. units. (at 20°C, with λ : thermal conductivity, ρ : density and c : specific heat). In the absence of justification, the classification is limited to 30 minutes.

8.2 WITHOUT EUROLENE ROCK WOOL

| Construction material of beams and girders | Construction material of floor support | Reference temperatures (°C) | | Fixed periods to attain reference temperatures (min) | | Classifications | |
|--|--|-----------------------------|--------------------------------|--|--------------------------------|-----------------|-----|
| | | In the plenum | In the load-bearing structures | In the plenum | In the load-bearing structures | R | REI |
| Pre-stressed concrete | Cellular concrete | 450 | - | 40 | - | 30 | 30 |
| | Pre-stressed concrete | 450 | - | 40 | - | 30 | 30 |
| | Concrete | 450 | - | 40 | - | 30 | 30 |
| | Mixed steel/concrete | 400 | 350 | 40 | 40 | 30 | 30 |
| Concrete | Cellular concrete | 600 | - | 50 | - | 45* | 45* |
| | Pre-stressed concrete | 450 | - | 40 | - | 30 | 30 |
| | Concrete | 600 | - | 50 | - | 45* | 45* |
| | Mixed steel/concrete | 400 | 350 | 40 | 40 | 30 | 30 |
| | Wood | 300 | - | 20 | - | 20 | 20 |
| Steel | Cellular concrete | 530 | 510 | 40 | 50 | 45* | 45* |
| | Pre-stressed concrete | 450 | - | 40 | - | 30 | 30 |
| | Concrete | 530 | 510 | 40 | 50 | 45* | 45* |
| | Mixed steel/concrete | 400 | 350 | 40 | 40 | 30 | 30 |
| | Wood | 300 | - | 20 | - | 20 | 20 |
| Cold formed steel | Cellular concrete | 370 | 350 | 30 | 40 | 30 | 30 |
| | Pre-stressed concrete | 370 | 350 | 30 | 40 | 30 | 30 |
| | Concrete | 370 | 350 | 30 | 40 | 30 | 30 |
| | Mixed steel/concrete | 370 | 350 | 30 | 40 | 30 | 30 |
| | Wood | 300 | - | 20 | - | 20 | 20 |
| Wood | Cellular concrete | 300 | - | 20 | - | 20 | 20 |
| | Pre-stressed concrete | 300 | - | 20 | - | 20 | 20 |
| | Concrete | 300 | - | 20 | - | 20 | 20 |
| | Mixed steel/concrete | 300 | - | 20 | - | 20 | 20 |
| | Wood | 300 | - | 20 | - | 20 | 20 |

*: these classifications are authorised subject to the ceiling presenting good semi-natural fire resistance and that the value $\sqrt{\lambda \cdot \rho \cdot c}$ of the ceiling is less than or equal to 550 S.I. units. (at 20°C, with λ : thermal conductivity, ρ : density and c : specific heat). In the absence of justification, the classification is limited to 30 minutes.

9 FIRE RESISTANCE CLASSIFICATION VALIDITY CONDITIONS

9.1 DURING MANUFACTURE AND IN IMPLEMENTATION

The element and its assembly must conform to the detailed description appearing in the reference laboratory assessment, excluding:

- any contact between the upper faces of the installed slabs with structural or flammable elements;
- the presence of accessories lying on or suspended beneath the suspended ceiling;
- a mean height of the plenum less than 300 mm.

In the event of dispute regarding an element forming the subject of this "procès-verbal", the laboratory assessment may be requested from its owner, with no obligation to transfer the document.

9.2 DIRECTION OF FIRE

Fire **BENEATH** the suspended ceiling.

10 SCOPE OF VALIDITY OF "PROCÈS-VERBAL"

10.1 TYPES OF SUPPORT STRUCTURES PERMITTED

When the operating procedure described in the test method EN 13381-1 is performed on a standardised construction conforming to section 6.4.2 of standard EN 13381-1, the results obtained can be applied to horizontal structural elements conforming to combinations indicated in § 8 of the present "procès-verbal" and to the following prescriptions:

- Type of joist/beam:
 - Concrete
 - Pre-stressed concrete
 - Steel
 - Cold formed steel
 - Wood

- Type of floor:
 - Cellular concrete
 - Pre-stressed concrete
 - Concrete
 - Steel-concrete composite
 - Wood.

10.2 TYPES OF CONCRETE

In accordance with § 15.2 of the standard EN 13381-1, the performances indicated in § 8 of this "procès-verbal" are applicable to horizontal structural elements employing slab floors of:

- Cellular concrete of thickness greater than or equal to 125 mm and bulk density greater than or equal to 650 kg/m³;
- Normal concrete of thickness greater than or equal to 60 mm and bulk density greater than 2350 ± 150 kg/m³.

The authorised application concerning the plenum, according to section 10.6 of this "procès-verbal", must be possible in both cases.

10.3 TYPES OF STEEL BEAMS/JOISTS

In accordance with § 15.3 of the standard EN 13381-1, the performances indicated in § 8 of this "procès-verbal" are applicable to horizontal structural elements employing steel beams or joists

- irrespective of their section factor when the fire resistance is limited by the temperature measurement of the plenum;
- having a section factor less than $275 \pm 25 \text{ m}^{-1}$ when the fire resistance is limited by the temperature measurement of the surface of the lower flange of the steel beam employed during the test.

It must be possible in both cases to achieve the requirements of the authorised application with respect to the plenum, as per section 10.6 of this "procès-verbal".

10.4 TYPES OF MIXED FLOORS, CONCRETE WITH STEEL TROUGH DECKING

In accordance with § 15.4 of the standard EN 13381-1, the performances indicated in § 8 of the present "procès-verbal" are applicable to horizontal structural elements employing:

- steel beams and joists having a section factor less than 268.7 m^{-1} ;
- concrete floors incorporating steel trough decking having:
 - a thickness of concrete above the tops of the steel trough decking greater than 60 mm;
 - concrete having bulk density of at least 2350 kg/m^3 ;
 - concrete with a minimum resistance class of C25/30;
 - steel trough decking with thickness of at least 75/100 mm.

It must be possible to achieve the requirements of the authorised application with respect to the plenum, as per section 10.6 of this "procès-verbal".

10.5 TYPES OF WOODEN STRUCTURES

In accordance with § 15.5 of the standard EN 13381-1, the performances indicated in § 8 of the present "procès-verbal" are applicable to horizontal structural elements in wood, having:

- Thicknesses of particleboard /wood covering, greater than or equal to 21 mm;
- Particleboards installed perpendicularly to the joists assembled together by tongue and groove.
- Butted assemblies of panels located only above the joists.

The requirements of EN 1995-1-1 must also be satisfied.

It must be possible to achieve the requirements of the authorised application with respect to the plenum, as per section 10.6 of this "procès-verbal".

10.6 HEIGHT OF PLENUM

In accordance with § 15.6 of the standard EN 13381-1, the performances indicated in § 8 of this "procès-verbal" are applicable to horizontal structural elements protected by the same suspended ceiling as that described in this document but with a higher plenum height, i.e. a minimum of 300 mm.

10.7 PROPERTIES OF THE HORIZONTAL PROTECTIVE MEMBRANE

In accordance with § 15.8 of the standard EN 13381-1, the performances stated in § 8 of this "procès-verbal" and obtained using the suspended ceiling described in this document, are only valid for any other ceiling of the type having the same properties (same bulk density and same thickness $\pm 5\%$) and same framework components.

10.8 DIMENSIONS OF SUSPENDED CEILING TILES

In accordance with § 15.9 of the standard EN 13381-1, the performances indicated in § 8 of this "procès-verbal" are only valid for ceiling panels having identical dimensions to those described in this document.

10.9 ACCESSORIES AND FITTINGS

In accordance with §15.10 of the standard EN 13381-1, the performance indicated in § 8 of this "procès-verbal" and obtained on the ceiling tested without accessories or equipment are not applicable to suspended ceilings implemented with accessories and equipment which could influence their fire resistance performances.

An additional test including these accessories and fittings must be conducted.

10.10 FREE SPACE BETWEEN CEILING FRAMEWORK AND SURROUNDING WALLS

In accordance with §15.11 of the standard EN 13381-1, the performance indicated in § 8 of this "procès-verbal" and obtained on a suspended ceiling installed with no gaps between its framework and the surrounding walls of the test assembly, are transposable to in situ installations where such gaps are implemented, provided these do not exceed 5 mm.

11 VALIDITY PERIOD FOR FIRE RESISTANCE CLASSIFICATIONS

This "procès-verbal" is valid for FIVE years as of the date of delivery, i.e. until:

THE SECOND OF SEPTEMBER, TWO THOUSAND AND TWENTY

After this date, this "procès-verbal" is no longer valid unless it is accompanied by a re-issue supplied by EFECTIS France.

Maizières-lès-Metz, 02 September 2015



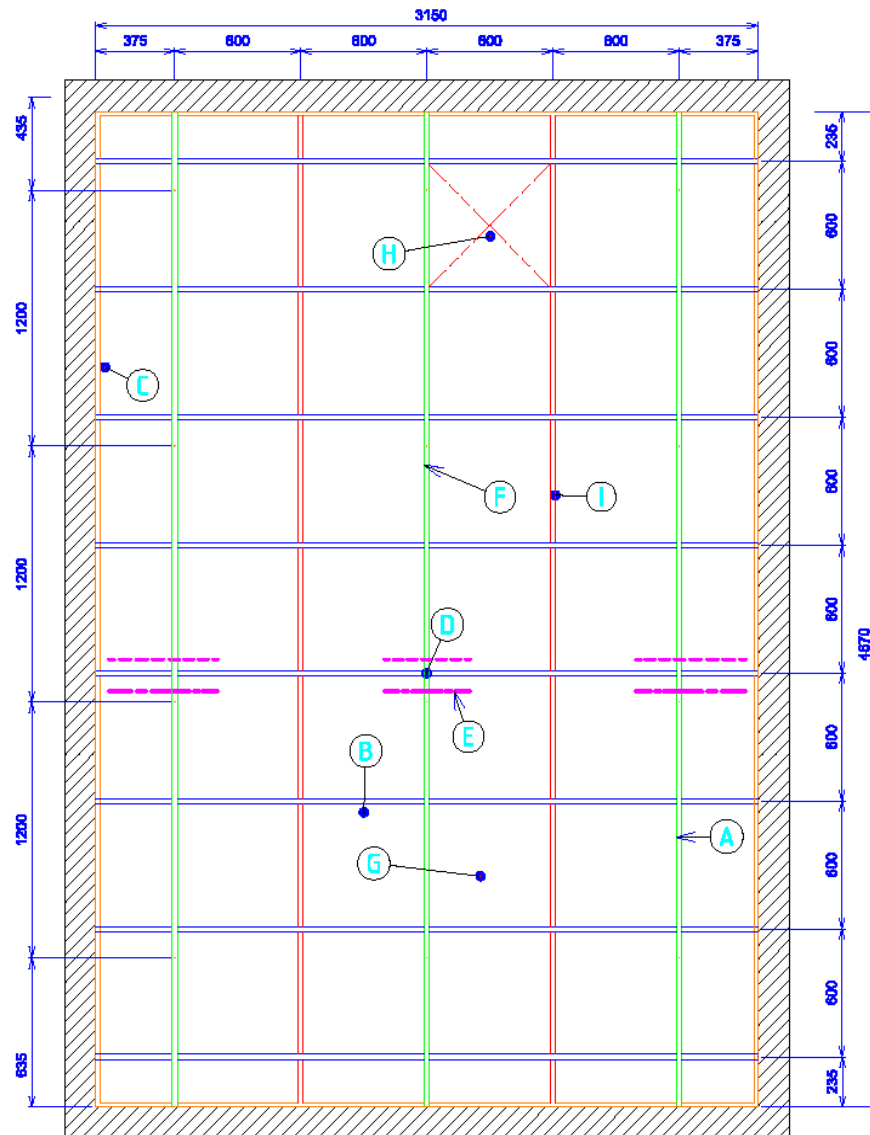
Alain DORKEL
Engineer Project Leader





Renaud SCHILLINGER
Head of Testing Department

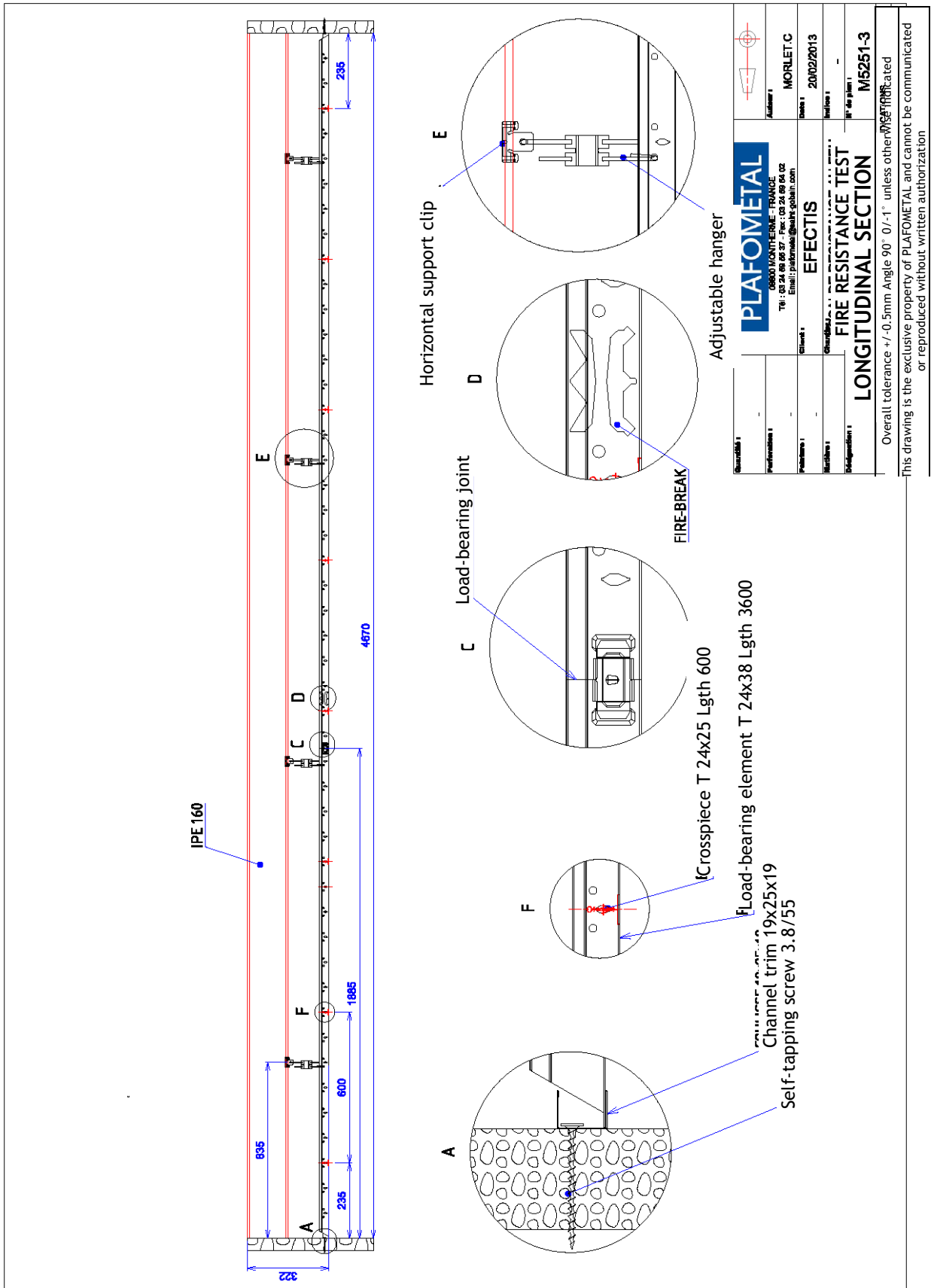
The indicated classification makes no assumptions regarding the compliance of commercial construction elements with the samples submitted for testing, and in no way may be considered as a qualification certification as defined by the law of 03 June 1994.

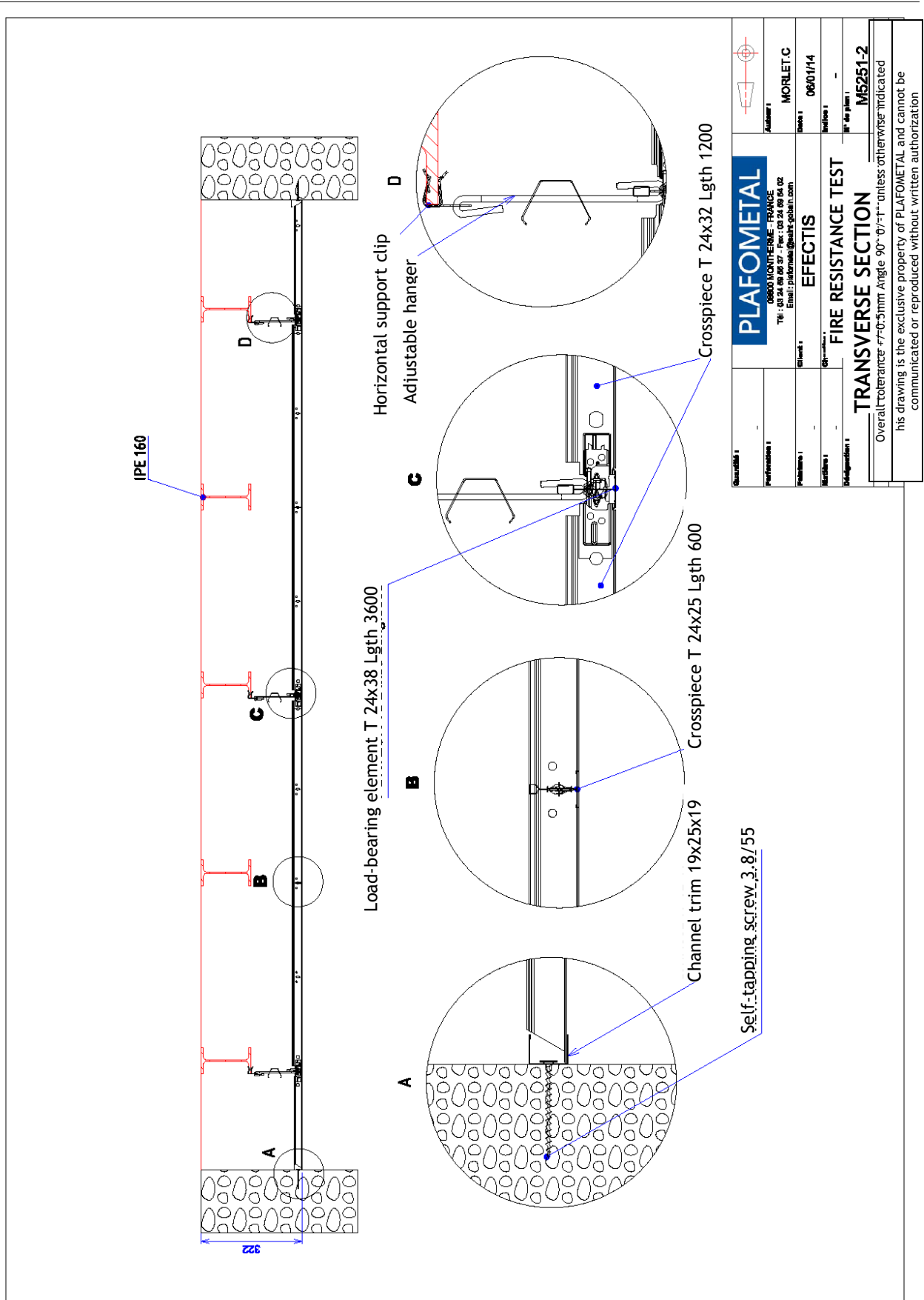
ILLUSTRATIONS APPENDIX

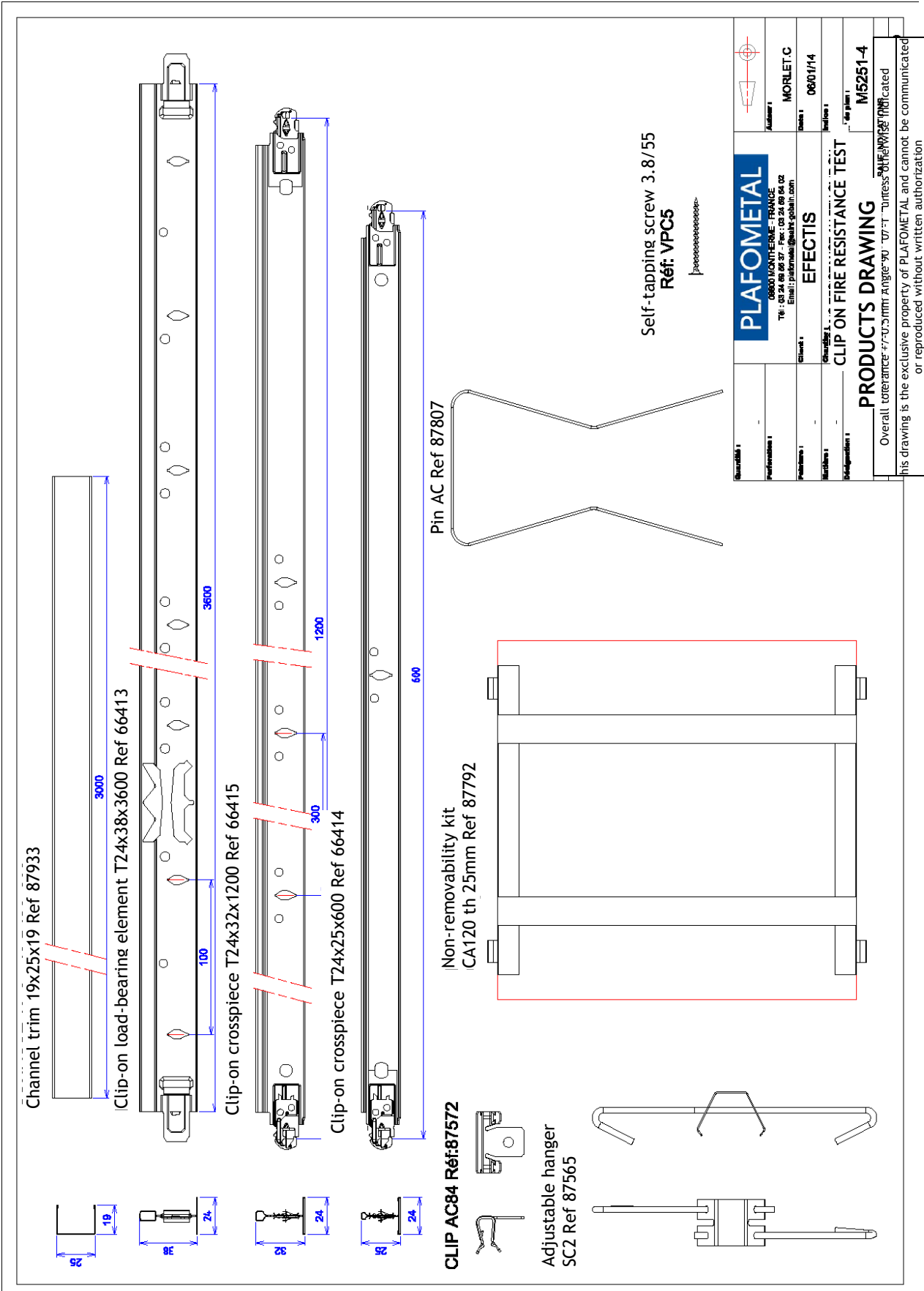


- A: Load-bearing profile
- B: Crosspiece length 1200
- C: Channel trim
- D: Fire-break
- E: Load-bearing butt-joint
- F: Suspension point on IPE
- G: Panel
- H: Last panel
- I: Crosspiece length 600

| | | | |
|---|---|--|---|
| Quantité : | - |  06900 MONTHERME - FRANCE Tél : 03 24 59 55 37 - Fax : 03 24 59 54 02 Email : plafometal@saint-gobain.com |  Référence : C4624137 |
| Perforation : | - | | |
| Polarisation : | - | Client : | Date : |
| Matériau : | - | EFFECTIS | |
| Modélisation : | - | FIRE RESISTANCE TEST | |
| LAYOUT | | N° de plan : M5251-1 | |
| Overall tolerance +/-0.5mm Angle 90° 0/-1° unless otherwise indicated | | | |
| This drawing is the exclusive property of PLAFOMETAL and cannot be communicated or reproduced without written authorization | | | |



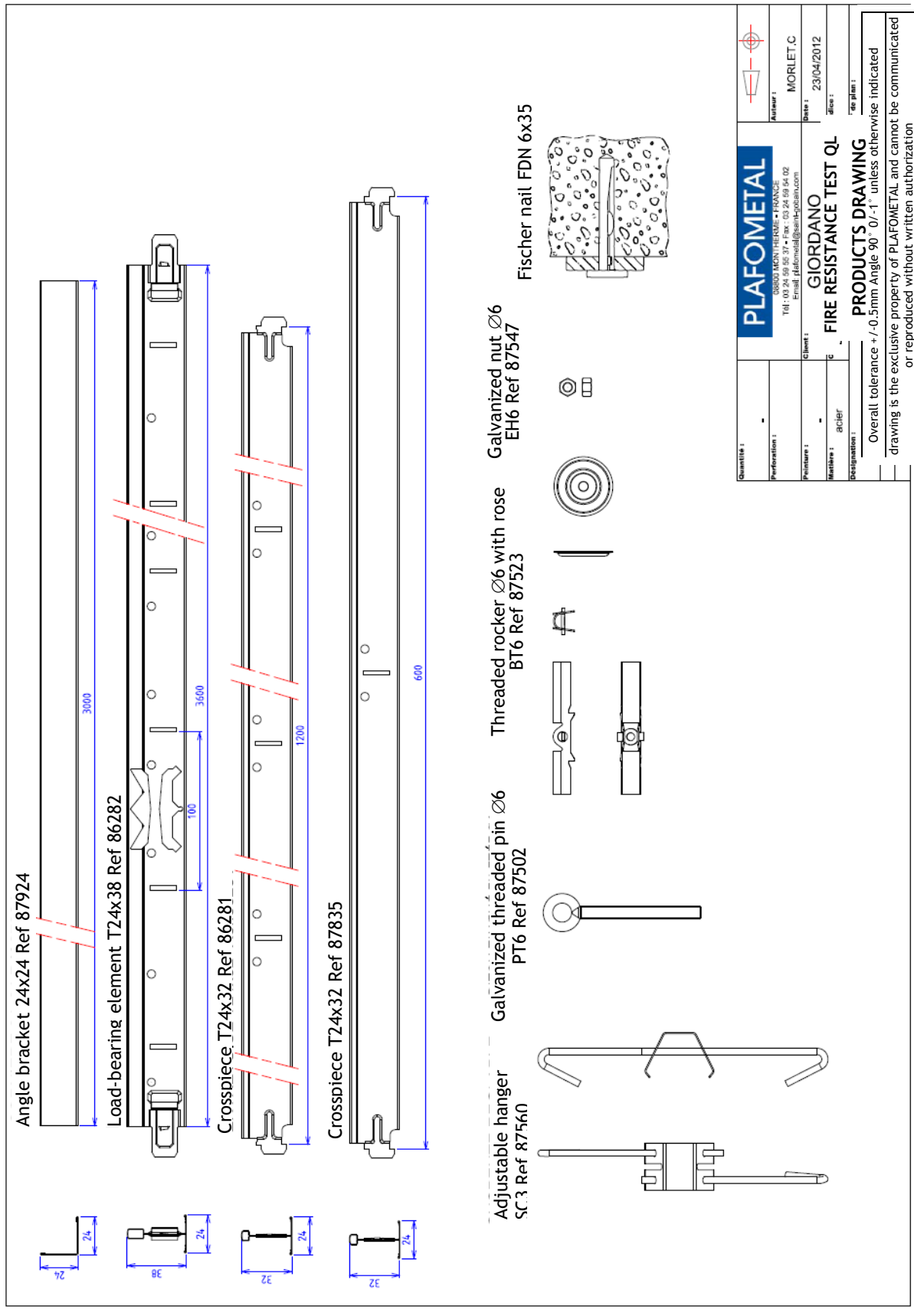




| | |
|---|---|
| Client 1 | PLAFOMETAL |
| Adresse 1 | 09000 MONTHERME - FRANCE |
| Telephone 1 | Tel : 03 24 69 89 37 - Fax : 03 24 69 64 02 |
| Mail 1 | Email: plafometal@stahls-plafain.com |
| Client 2 | EFFECTIS |
| Adresse 2 | |
| Telephone 2 | |
| Mail 2 | |
| Client 3 | CLIP ON FIRE RESISTANCE TEST |
| Adresse 3 | |
| Telephone 3 | |
| Mail 3 | |
| Client 4 | M5251-4 |
| Adresse 4 | |
| Telephone 4 | |
| Mail 4 | |
| Overall tolerance +/-0.5mm Angle 90° DT: unless otherwise indicated | |

PRODUCTS DRAWING

This drawing is the exclusive property of PLAFOMETAL and cannot be communicated or reproduced without written authorization



| | | | |
|--|--|---|---|
| Quantité : | | PLAFOMETAL |  |
| Perforation : | | 08000 MGNI HERME - FRANCE Tél : 03 24 59 55 37 • Fax : 03 24 59 54 02 Email : plafometal@giordano.com | Auteur : MORLET C |
| Partenaire : | | GIORDANO | Date : 23/04/2012 |
| Matériau : acier | | FIRE RESISTANCE TEST QL | Site : |
| Désignation : | | PRODUCTS DRAWING | Objet : |
| Overall tolerance +/- 0.5mm Angle 90° 0' / -1° unless otherwise indicated | | | |
| drawing is the exclusive property of PLAFOMETAL and cannot be communicated or reproduced without written authorization | | | |