CSTB
le futur en construction

Safety, Structures and Fire Department
Fire Studies and Tests Division

Reaction to fire tests report no. DSSF-24-35324

Valid 5 years from September 17th, 2024

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Only the French version is legally acceptable.

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ON BEHALF OF:

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PURPOSE

This report presents the Reaction to Fire tests according to the standards mentioned in the following paragraph.

REFERENCE TEXTS

Reference (No.)	Date	Titled
NF EN 13238	2012	Reaction to fire tests for building products - Conditionning procedure and general rules for selection of substrates
NF EN 13823+A1	2022	Reaction to fire tests for building products – Building products excluding floorings, exposed to the thermal attack by a single burning item

TESTING LOCATION

Address	CSTB – 84 avenue Jean Jaurès – 77420 Champs-sur-Marne – FRANCE
Contact name	Olivier BRAULT
Phone number	+33 (0)1 64 68 85 35
Laboratory's Email	reaction@cstb.fr
Laboratory's web	http://www.cstb.fr/fr/plateformes-essais/essais-au-feu

Prepared at : **Champs Sur Marne**

Function : Fire Studies and Tests Technical Referent

Signature : Signé numériquement par Nitro Software Belgium NV - Nitro Sign Premium pour le compte de Olivier BRAULT (olivier.brault@cstb.fr)
Date : 07/02/2025 16:26:13
Signé avec le mot de passe à usage unique envoyé par email : 091276

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OBJECT SUBMITTED FOR TESTING

Identification of samples tested

Unless otherwise stated (*L) and in accordance with the General Terms and Conditions on the Provision of Services, information relating to the description of products and associated data is provided by the applicant and under his only responsibility.
(*L): data measured by the laboratory.

File number	Designation	Trade name	Receipt date	Test performed
24-35324	Product subject of the report	MEDILAND M1 With fixing systems FASTMOUNT: female clips SL-FA-FR, SL-FB-FR (with aluminium rails SL-RLE), male clips SL-M18-FR (in the wood panel) and SL-SMT1 elements (cassettes in the rails)	06/06/2024	NF EN 13823+A1

Manufacturer of the wood panel:

FINSA FRANCE
40110 MORCENX LA NOUVELLE
FRANCE

Manufacturer of the fixing system:

FASMOUNT Ltd
Rosedale
1A/12 Saturn Place
0632 AUCKLAND
NEW ZEALAND

The tested products shall be considered by the applicant to be representative of the products of the range and shall be produced in accordance with its manufacturing requirements.

The samples were tested as received.

The test results relate only to the behaviour of the specimens of a product under the particular conditions of the test; they are not intended to be the only criterion for evaluating the fire danger presented by the product in use.

Description of the samples

- **DESCRIPTION**

Fire-retarded medium density wood fibres (MDF) MEDILAND M1 panels, tested with two implementations as follows:

Version 1: panels fixed on aluminium rails (profiles) referenced SL-RLE with a classic fixing system by screws.
The samples 1 and 2 in this report correspond to the version 1.

Version 2: panels fixed on aluminium rails (profiles) referenced SL-RLE with the fixing systems of the range STRATLOCK
as follows:

- Female clips SL-FA-FR and SL-FB-FR are inserted in the aluminium rails
- Male clips SL-M18-FR are fixed on the MDF panel
- MDF panels are clipped (male/female) on the rails

Additionally in the version 2, cassettes elements SL-SMT1 are inserted into the SL-RLE rails.
On the provided sample 3 in this report, the fixing clips SL-FA-FR are used in majority in the aluminium rails compared to SL-FB-FR clips and vice versa for the sample 4. The maximum number of clips is set up.

- **MAIN CHARACTERISTICS**

Medium density wood fibres panel (MDF):

Fire-retarding	With
Euroclass according to the standard EN 13501-1	B-s2,d0
Nature	Medium density wood fibres (MDF)
Measured weight per unit area	About 12,5 kg/m²
Provided nominal thickness	15 mm
Implementation	Edge to edge

Fixing clips:

Reference of the male clips	SL-M18-FR
Reference of the female clips	SL-FA-FR / SL-FB-FR
Composition of the female clips SL-FA-FR / SL-FB-FR (mobile part)	POLYAMIDE PA66_GRILON ASV0
Composition of the female clips SL-FA-FR (cage)	POLYAMIDE PA66/6 TECHNYL
Composition of the female clips SL-FB-FR (cage)	PBT DURANEX
Composition of the cassettes SL-SMT1	POLYAMIDE PA66_GRILON ASV0
Composition of the male clips SL-M18-FR	SHINITE PBT D202G30BK
Average nominal density of the content	About 1350 kg/m³

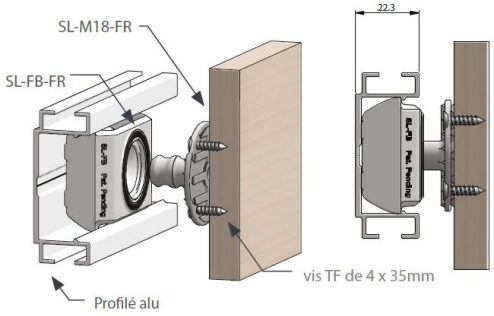
- **COMPLEMENTARY CHARACTERISTICS**

Detailled composition is listed on file.

The number of screws (26) and clips is the same on each panel. One screw on the samples 1) and 2) corresponds to one pair of clips SL-FA-FR + SL-M18-FR or SL-FB-FR + SL-M18-FR on samples 3) and 4).

Schemes of the manufacturer

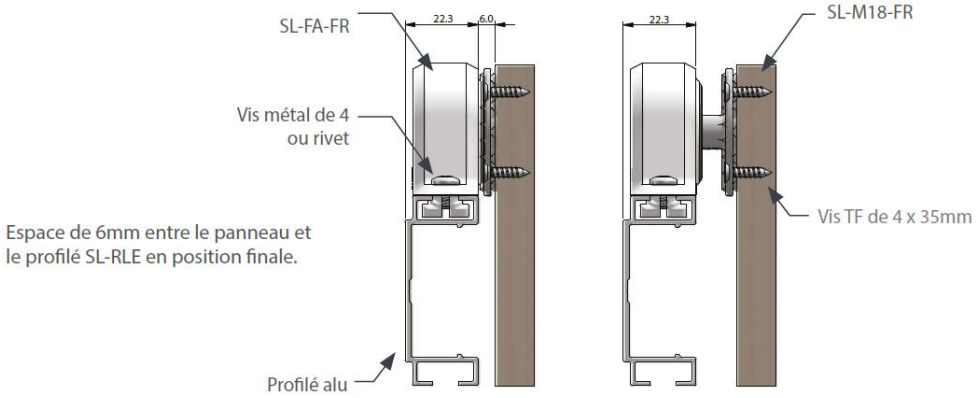
Fixings systems : SL-FB-FR female clip (front mounting) in the aluminium rail SL-RLE and SL-M18-FR male clip fixed in the wood panel MDF.



Espace de 6mm entre le panneau et le profilé SL-RLE en position finale.

Fixing systems : SL-FA-FR female clip (lateral mounting) in the aluminium rail SL-RLE and SL-M18-FR male clip fixed in the wood panel MDF.

View cut of the system:



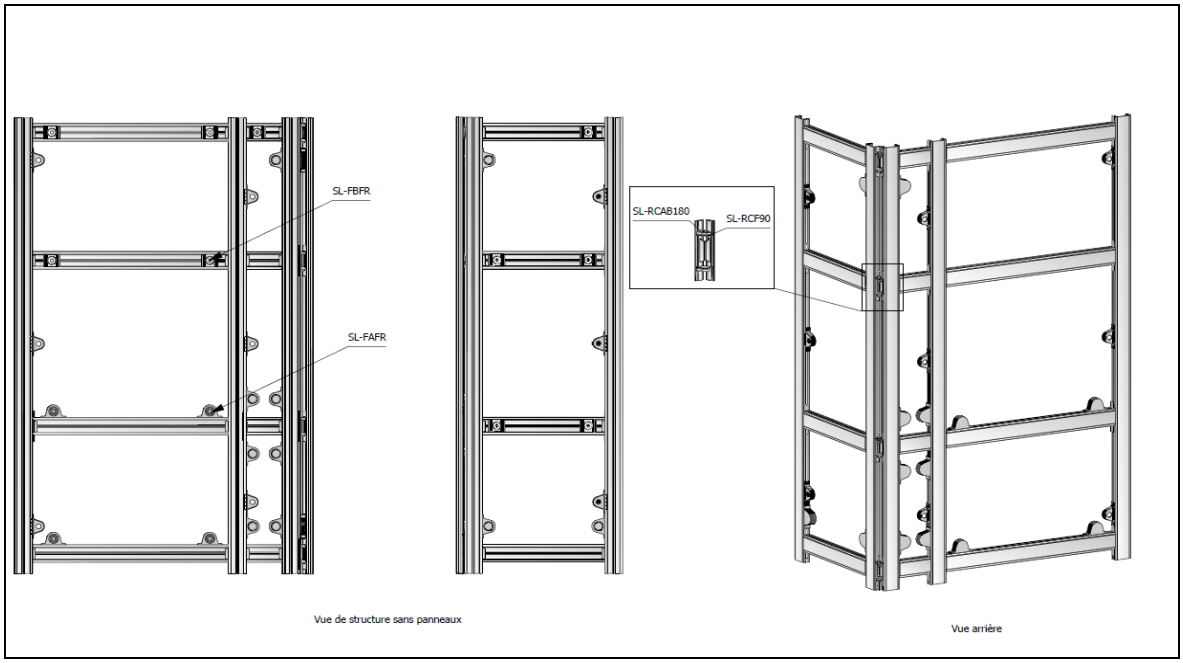
Female clip SL-FA-FR:

Additional data on the components of the system:

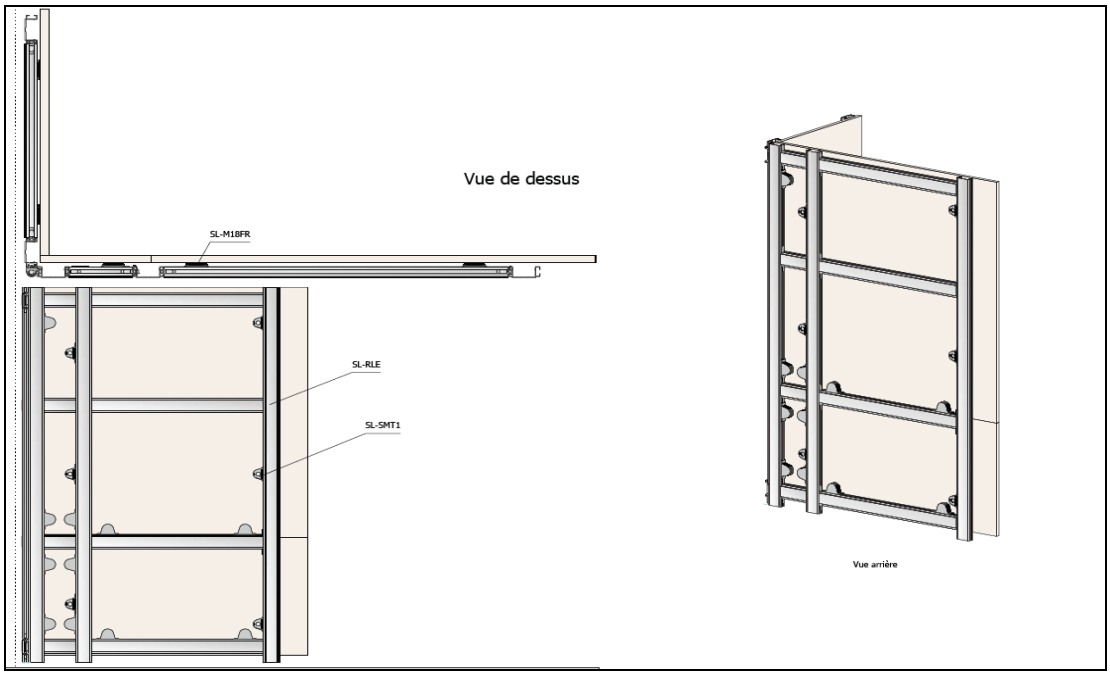
Component	Manufacturer	Reference
Wood facing (MDF)	FINSA FRANCE SAS	MEDILAND M1
Cassette	FASTMOUNT	SL-SMT1
Aluminium profiles	FASTMOUNT	SL-RLE
Male fixing clips	FASTMOUNT	SL-M18-FR
Female fixing clips	FASTMOUNT	SL-FA-FR SL-FB-FR
Cassette	FASTMOUNT	SL-SMT1

Illustrations/Pictures/Mountings

Sample no. 3:



Number of male clips SL-M18-FR on the samples no. 3 and 4 : 26.
Number of cassettes SL-SMT1 on the samples no. 3 and 4 : 9.
Number of female clips SL-FA-FR on the sample no. 3 : 20.
Number of female clips SL-FB-FR on the sample no. 3 : 6.
Number of female clips SL-FA-FR on the sample no. 4 : 8.
Number of female clips SL-FB-FR on the sample no. 4 : 18.



Preparation-assembly

Mountings performed by the owner in the premises of the CSTB fire laboratory from June 12th to 13th, 2024.
The assemblies are described on page 10 in the presentation of the SBI tests.

Conditionning

The samples were conditioned at temperature of 23 ± 2 °C and relative humidity 50 ± 5 % in accordance with standard NF EN 13238 :

- For a minimum period of 14 days.

TEST RESULTS

Description method : tests for building products exposed to the thermal attack by a single burning item (OIF or SBI) (NF EN 13823+A1)

The test uses a test apparatus consisting of a trolley, a frame, burners, a hood… A test specimen, consisting of two vertical wings forming a right angle, is exposed to the flame of a burner placed at the foot of the angle formed by the two wings (“main burner”). The flame comes from the combustion of propane gas injected through a bed of sand so as to produce a heat release of (30.7 ± 2.0) kW. The performance of the test specimen is assessed over a duration of 20 minutes. The performance criteria are as follows: heat production, smoke production, lateral flame spread and falling of flaming droplets or debris.
A short period before igniting the main burners is necessary to measure the heat release of the burner by itself; this measurement is carried out by using an identical burner, positioned at a distance from the test specimen (“auxiliary burner”).
Certain measurements are carried out automatically, others result from visual observation. The exhaust duct is equipped with sensors designed to measure the temperature, the light attenuation, the O2 and CO2, mole fractions as well as a differential pressure produced by the flow of gaseous effluents which flow in the exhaust duct. These magnitudes are automatically recorded and are used to calculate the volume flow rate, the rate of heat release (RHR) and the smoke production rate (SPR).
The lateral flame spread and the falling of flaming droplets or particles are visually observed and are noted on the recording sheet.
Complementary definitions:
THR_{600s}: total heat release from the specimen in the first 600 seconds of exposure to the main burner flames
LFS_{edge}: lateral flame spread on the long specimen wing as far as the latter’s outside edge at a height of from 500 to 1000 mm during the first 1500 seconds
TSP_{600s}: total smoke production from the specimen in the first 600 seconds of exposure to the main burner flames
FDP: falling to the floor of droplets / flaming particles outside the burner’s zone
FIGRA: Fire growth speed index
SMOGRA: Smoke growth rate index
Note: the TSP_{600s} and SMOGRA values mentioned in the associated results tables take into account the smoke correction linked to the secondary burner (§A.6.1.2 of the standard).

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Results : SBI tests (NF EN 13823+A1)

Test conditions

The tests were carried out in a test room with a temperature of (20 ± 10) °C and a relative humidity of (50±30) %.

Summary of tests

Laying method	Mechanically fixed on aluminium rails SL-RLE
Counter wall	A2-s1,d0 class calcium silicate with a thickness of 11 ± 2 mm

Assembly of specimens carried out according to NF EN 13823+A1, paragraph 5.2.2.

Test no.	Sample no.	Reference Layers	Date of test	Operator	Measured caracteristics (*L)	Joint on large wing	Air gap	Colours
1	1	MEDILAND M1 Classic fixing system by screws	17/09/2024	C. FAVEREAU	15 (panel) *	Horizontal to 500 mm Vertical to 200 mm	40 mm between the aluminium rails and the counter wall)	Brown
2	2				15 (panel) *			Brown
3	3	MEDILAND M1 System with SL-FA-FR fixings in majority			15 (panel) *			Brown
4	4	MEDILAND M1 System with SL-FB-FR fixings in majority			15 (panel) *			Brown

* air gap of 6 mm *(*L)* between the wood panel and the aluminium rails SL-RLE.

Additional pictures:

Metal substructure (aluminium rails SL-RLE):

View to the back side of the wood panel of the substructure with the fixing systems:

Samples 1 and 2 (classic fixing):

Sample 3 (with fixing SL-FA-FR + cassettes SL-SMT1):

Details of the samples no. 1 and 2:

Aluminium profiles (6060 T6) FASTMOUNT with the reference SL-RLE.
This reference constitutes the substructure with load-bearing profiles and spacers.
The spacers are supported by connectors (aluminium cast) FASTMOUNT referenced SL-RCF90.
The two vertical substructures are assembly to 90° with 4 sets of 2 orientable connectors made of aluminium cast referenced SL-RCF90 + SL-RCAB180.
The panels are fixed with visible screws leaving an air gap of 6 mm between the panel and the substructure (air gap corresponding to the using of the FASMOUNT clips).
The cassettes SL-SMT1 are distributed on the load-bearing profiles in order to be tested with the clips.

Details of the sample no. 3:

Aluminium profiles (6060 T6) FASTMOUNT with the reference SL-RLE.
This reference constitutes the substructure with load-bearing profiles and spacers.
The spacers are supported by connectors (aluminium cast) FASTMOUNT referenced SL-RCF90.
The two vertical substructures are assembly to 90° with 4 sets of 2 orientable connectors made of aluminium cast referenced SL-RCF90 + SL-RCAB180.The panels are fixed with a majority of SL-FA-FR female clips on the aluminium substructure and SL-M18-FR male clips on the panels. An air gap of 6 mm is present between the panel and the substructure.

Details of the sample no. 4:

Aluminium profiles (6060 T6) FASTMOUNT with the reference SL-RLE.
This reference constitutes the substructure with load-bearing profiles and spacers.
The spacers are supported by connectors (aluminium cast) FASTMOUNT referenced SL-RCF90.
The two vertical substructures are assembly to 90° with 4 sets of 2 orientable connectors made of aluminium cast referenced SL-RCF90 + SL-RCAB180.
The panels are fixed with a majority of SL-FB-FR female clips on the aluminium substructure and SL-M18-FR male clips on the panels. An air gap of 6 mm is present between the panel and the substructure.

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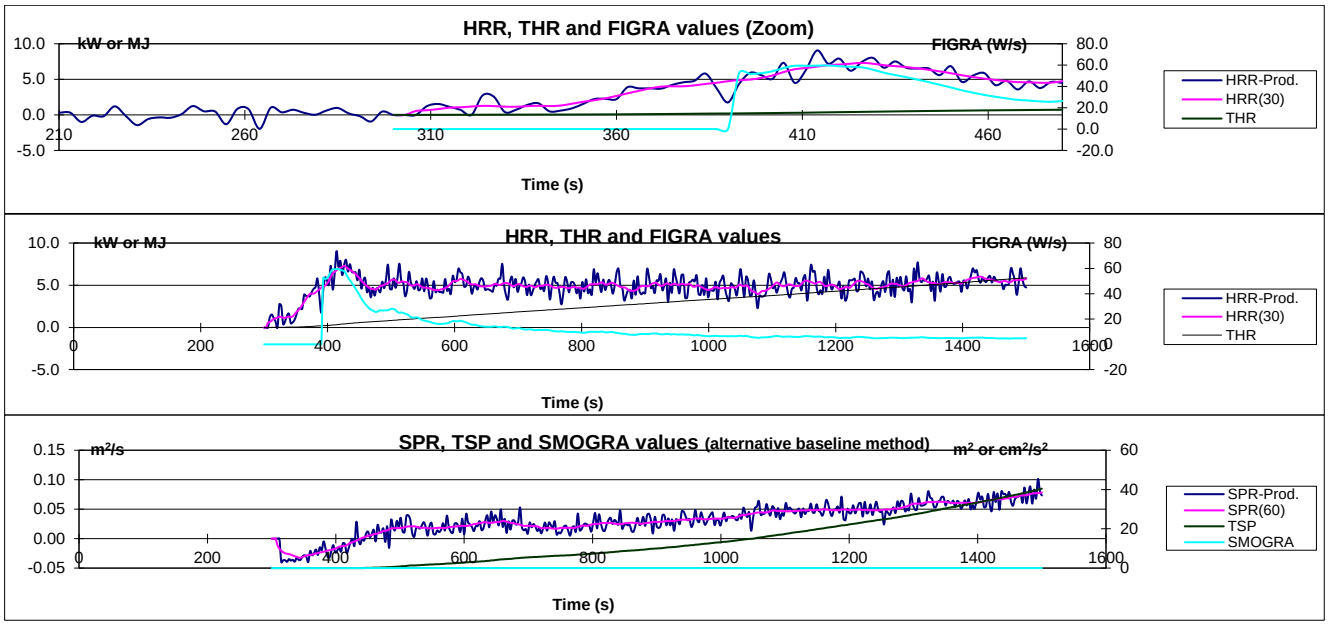
Test 1: MEDILAND M1 with classic fixing system (screws)

Test identification	FIGRA 0,2 W/s	FIGRA 0,4 W/s	THR_{600s} MJ	LFS edge / FDP	SMOGRA m^2/s^2	TSP_{600s} m^2
24090010	59,7	58,4	2,8	Not reached / Without	0,0	10,0

Time (s)	Comments, from main burner ignition time (t = 300 s)						
	Description	Area concerned			Height		
		Short wing	Large wing	Angle	< 500 mm	<1000 mm	<1500 mm
350	Progressive inflammation + carbonization			X		X	
600	Deformation of the wood in the joints		X	X		X	



Before test

After test

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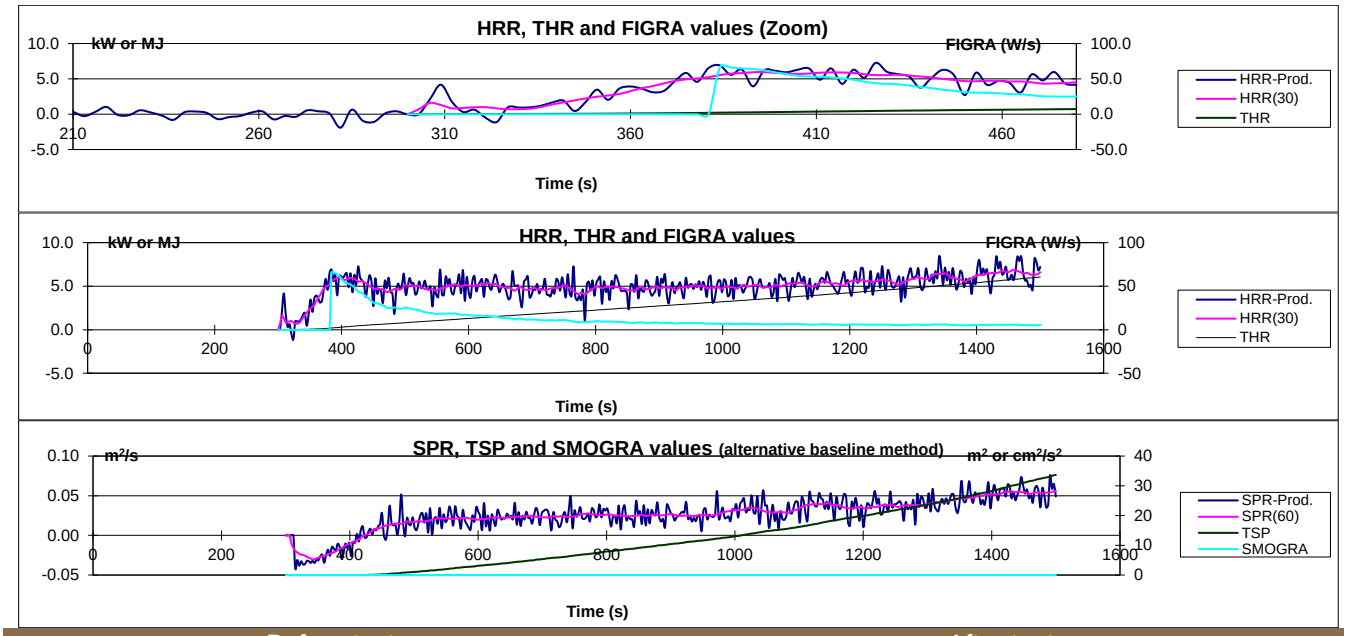
Test 2: MEDILAND M1 with classic fixing system (screws)

Test identification	FIGRA 0,2 W/s	FIGRA 0,4 W/s	THR_{600s} MJ	LFS edge	SMOGRA m^2/s^2	TSP_{600s} m^2
				FDP		
24090011	66,0	48,7	2,7	Not reached	0,0	10,4
				Without		

Time (s)	Comments, from main burner ignition time (t = 300 s)						
	Description	Area concerned			Height		
		Short wing	Large wing	Angle	< 500 mm	<1000 mm	<1500 mm
390	Progressive inflammation + carbonization			X		X	
600	Deformation of the wood in the joints		X	X		X	



Before test

After test

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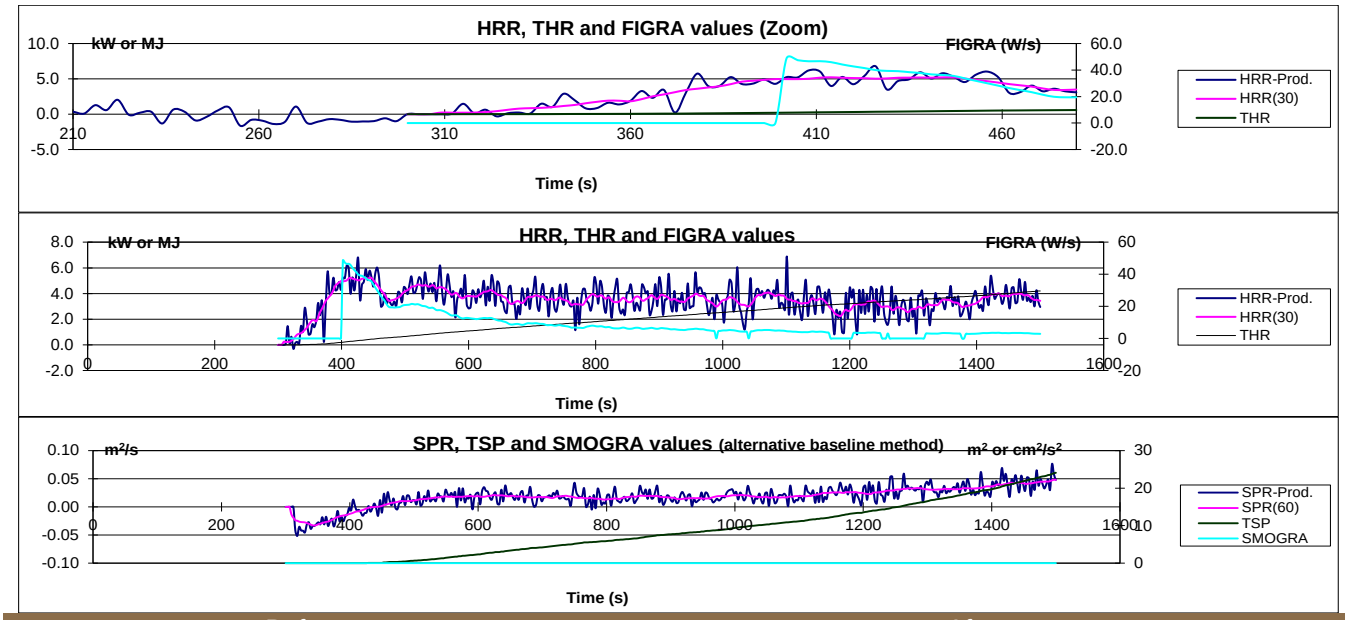
Test 3: MEDILAND M1 with FASTMOUNT fixing system (SL-FA-FR female clips in majority)

Test identification	FIGRA 0,2 W/s	FIGRA 0,4 W/s	THR_{600s} MJ	LFS edge / FDP	SMOGRA m^2/s^2	TSP_{600s} m^2
24090012	48,8	36,7	2,2	Not reached / Without	0,0	7,7

Time (s)	Comments, from main burner ignition time (t = 300 s)						
	Description	Area concerned			Height		
		Short wing	Large wing	Angle	< 500 mm	<1000 mm	<1500 mm
350	Progressive inflammation + carbonization			X		X	
600	Deformation of the wood in the joints		X	X		X	



Before test

After test

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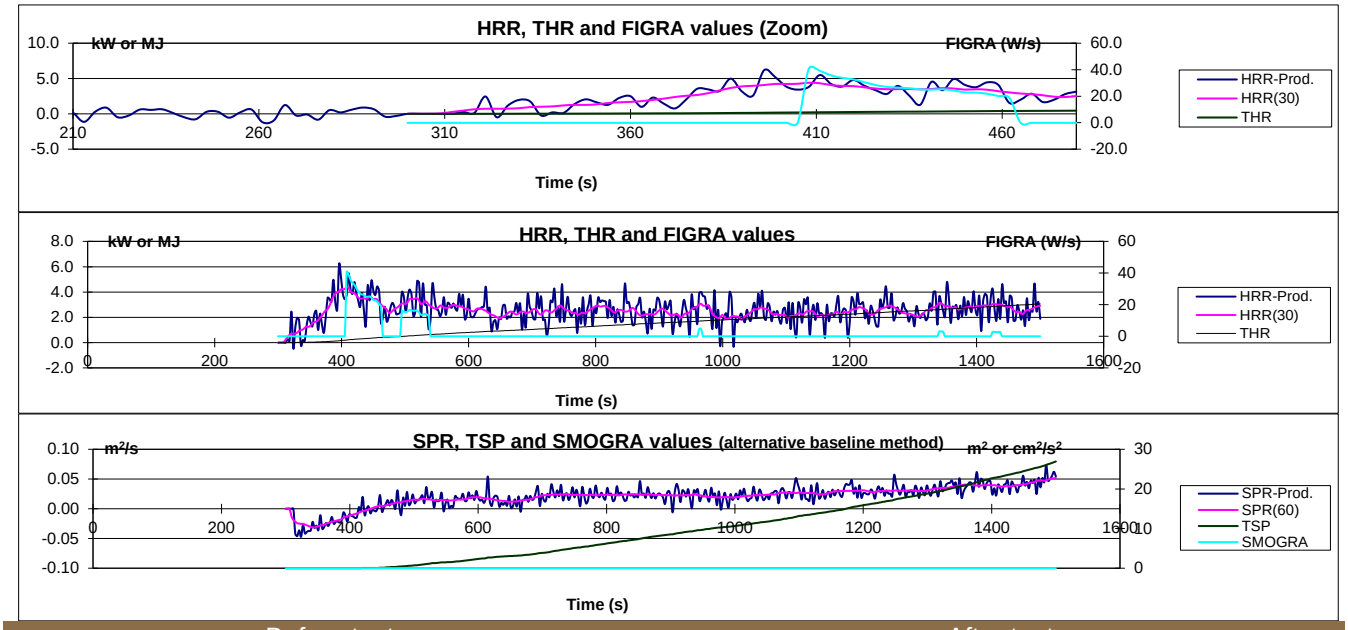
Test 4: MEDILAND M1 with FASTMOUNT fixing system (SL-FB-FR female clips in majority)

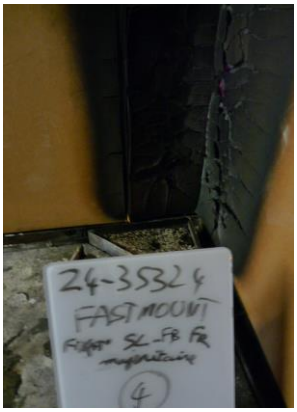
Test identification	FIGRA 0,2 W/s	FIGRA 0,4 W/s	THR_{600s} MJ	LFS edge / FDP	SMOGRA m^2/s^2	TSP_{600s} m^2
24090013	40,8	20,1	1,6	Not reached / Without	0,0	8,6

Time (s)	Comments, from main burner ignition time (t = 300 s)						
	Description	Area concerned			Height		
		Short wing	Large wing	Angle	< 500 mm	<1000 mm	<1500 mm
350	Progressive inflammation + carbonization			X		X	
600	Deformation of the wood in the joints		X	X		X	



Before test

After test



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Results synthesis

Average of the different parameters on 2 tests (tests 1, 2)

DESIGNATION	FIGRA 0,2 W/s	FIGRA 0,4 W/s	THR_{600s} MJ	FDP / LFS edge	SMOGRA m^2/s^2	TSP_{600s} m^2
MEDILAND M1 with classic fixing system (screws)	**62,9**	**53,6**	**2,8**	**Without / Not reached**	**0,0**	**10,2**

Synthesis table for the complementary test (test 3)

DESIGNATION	FIGRA 0,2 W/s	FIGRA 0,4 W/s	THR_{600s} MJ	FDP / LFS edge	SMOGRA m^2/s^2	TSP_{600s} m^2
MEDILAND M1 with FASTMOUNT fixing system (SL-FA-FR female clips in majority)	**48,8**	**36,7**	**2,2**	**Without / Not reached**	**0,0**	**7,7**

Synthesis table for the complementary test (test 4)

DESIGNATION	FIGRA 0,2 W/s	FIGRA 0,4 W/s	THR_{600s} MJ	FDP / LFS edge	SMOGRA m^2/s^2	TSP_{600s} m^2
MEDILAND M1 with FASTMOUNT fixing system (SL-FB-FR female clips in majority)	**40,8**	**20,1**	**1,6**	**Without / Not reached**	**0,0**	**8,6**

End of report