



Classification Report

Fire Resistance Laboratory

APPLICANT:



**CLASSIFICATION OF FIRE RESISTANCE ACCORDING
TO THE STANDARD EN 13501-2:2016**

- Standard EXAP:..... EN 15269-3:2012
- Product: **hinged timber single leaf doorset**
 - Manufacturer: IRMADE, S.A.
 - Reference:..... "FLAM 44"



**CLASSIFICATION OF FIRE RESISTANCE ACCORDING TO
EN 13501-2:2016**

Applicant: **IRMADE, S.A.**
Indústrias de Revestimento de Madeiras, S.A.
Vale Travesso – Apartado 23
2494-909 Ourém - Portugal

Issuing laboratory: **AFITI-LICOF**
Notified Body nr.: 1168

Building element: **Hinged timber single leaf doorset**

The information marked with this symbol (⊙) has been provided by the applicant.

Manufacturer: ⊙ IRMADE, S.A.

Reference: ⊙ “FLAM 44”

Classification report nr: **10030/21**
Date of issue: 30th June 2021



Report Contents

1.- Aim of the report	.....	Page	3
2.- Details of the classified element	.....	Page	3
3.- Test reports and results in support of this classification.i	.....	Page	3
4.- Classification and field of direct application	.....	Page	9
5.- Limitations	.....	Page	15

The information held in this classification report is of a confidential nature, meaning the laboratory shall not provide information in relation to this report to third parties, except with the authorisation of the applicant.

It is not allowed to reproduce partially this classification report without laboratory's written approval.



1.- AIM OF THE REPORT

This classification report defines the classification of the fire resistance assigned to a pivot timber double-leaf door with fixed over panel, designated by the applicant as “FLAM 44”, in accordance with the procedures given in the standard EN 13501-2:2016 “*Fire classification of construction products and building elements - Part 2: Classification using data from fire resistance tests, excluding ventilation services*”.

2.- DETAILS OF THE CLASSIFIED ELEMENT

2.1.- TYPE OF FUNCTION

The element “FLAM 44” is defined as “fire door”. Its function is to resist the fire with regard to the characteristics of the fire performance given in the clause 5 of the standard EN 13501-2:2016.

2.2.- DESCRIPTION

The product “FLAM 44” is completely described in the test report no. **248586.01** issued by ENSATEC, S.L.U., the test report in which this classification report is based on. In general terms, the specimen described in this report consists on the following:

- Description: hinged timber single leaf doorset
- Total dimensions: 2,125 x 970 mm
- Leaf dimensions: 2,100 x 925 mm
- Lights dimensions: 2,090 x 900 mm
- Leaf thickness: 44 mm

3.- TEST REPORTS AND RESULTS IN SUPPORT OF THIS CLASSIFICATION

3.1.- TESTS PERFORMED

Test reports			
Issuing laboratory	Applicant	Report	Test method
ENSATEC, S.L.U. P.I. Lentiscales Avda. Lentiscales nº 4-6 26370 Navarrete (La Rioja)	IRMADE, S.A. Indústrias de Revestimento de Madeiras, S.A. Vale Travesso – Apartado 23 2494-909 Ourém - Portugal	Nr.: 248586.01 Test date: 04 th -Sep-19	EN 1634-1:2014 +A1:2018



Exposure conditions

Temperature curve / time:	Standard
Direction of exposure:	Opening towards the inside of the furnace.
No. of exposed sides:	One

Test results

Integrity (E)	38 minutes^(F)
Cotton pad	38 minutes ^(F)
Gap gauges Ø 6 mm	38 minutes ^(F)
Gap gauges Ø 25 mm	38 minutes ^(F)
Sustained flames > 10 s	38 minutes ^(F)
Thermal Insulation (I₂)	38 minutes^(F)
Average temperature	38 minutes ^(F)
Maximum temperature of the leaf	38 minutes ^(F)
Maximum temperature of the frame	38 minutes ^(F)
Thermal Insulation (I₁)	30 minutes
Average temperature	38 minutes ^(F)
Maximum temperature	30 minutes

^(F): End of the test without failure in this criterion.

3.2.- EXTENDED FIELD OF APPLICATION OF RESULTS
EXAP reports

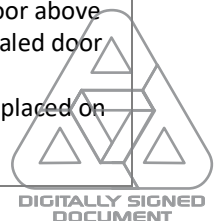
Issuing laboratory	Applicant	Report	Standard
AFITI-LICOF Camino del Estrechillo, 8 <u>28500 – ARGANDA DEL REY</u> (Madrid)	IRMADE, S.A. Indústrias de Revestimento de Madeiras, S.A. Vale Travesso – Apartado 23 2494-909 Ourém – Portugal	Nr.: EXAP 10030/21 Issuing date: 30 th -Jun-21	EN 15269-3:2012



Extended field of application of test results

The parameters for the variation applicable to the doorset subject to the extension are shown below:

Variation	Results	Conditions for variation
Use of alternative hinges: - RT RATMAN References: H101, H102, H102-0, H102-1, H102-5, H103, H201, H208 - INTHER Reference: 1086 CR - VIER References: VHP243, VHP243R, VHC243, VHC243R, VLHL243R, VLHR243R, VSLHL43R, VSLHR43R - HAFELE References: DHB 3122, DHB 3222, DHB 3221, DHB 3322, 926.90.227 - ZOO References: ZHSS243, ZHSS243R - ARNONE References: AR8180, AR8382, AR8182 - FREELAN Reference: J9500 - JNF References: IN.05.020.100.R.ECO, IN.05.020.S.R.ECO - EUROSPEC Reference: Eurospec Enduro HIN 1433/13	Integrity (E) \geq 36 min Thermal insulation (I_2) \geq 36 min Thermal insulation (I_1) 30 min	Alternative hinges should be placed as tested (fixings, intumescent material, position) The hinges must be protected with ODICE Interdens® 15, 1 mm thick
Decrease of the number of hinges from 4 to 3	Integrity (E) 38 min Thermal insulation (I_2) 38 min Thermal insulation (I_1) 30 min	The arrangement of the 3 hinges should be: - From bottom edge to the centre of the hinge: 150 mm / 1050 mm / 1950 mm - From the upper edge to the centre of the hinge: 150 mm
Use of alternative overhead surface mounted door closers: - SYNERGY Reference: S3500, S800 - VIER Reference: VDC003, VDC0025 - INTHER Reference: CTB 69 - JNF Reference: ML.21.775.BA - ARNONE References: AR1500, AR 6800, AR 6900, AR 8200 - RUTLAND References: TS5204, TS3204, TS9205, TS11204, TS11205 - Carlisle Brass References: DCF 2003, DCS 2024, DCS 2025, DCS 2026, DCT 2024, CDG 420, CDG 025, CDG 003 - Dorma References: TS68, TS71, TS83	Integrity (E) 38 min Thermal insulation (I_2) 38 min Thermal insulation (I_1) 30 min	The force of the door closer in accordance with EN 1154 must be consistent with the mass of the door where it is intended to be installed.
Use of alternative overhead concealed door closers: - RUTLAND Reference: ITS 11204.2.5.SE	Integrity (E) 34 min Thermal insulation (I_2) 34 min Thermal insulation (I_1) 30 min	The door closer must be protected with: - Rutland IP.114 with Standard Rail, 2 mm, placed on the frame and on the top the door above the case of the concealed door closer - Interdens 15, 1 mm placed on the leaf/ 3 sides



Variation	Results	Conditions for variation
Use of alternative overhead concealed door closers: - ASSA ABLOY Reference: Union SC-CE3F	Integrity (E) 35 min Thermal insulation (I ₂) 35 min	The door closer must be protected with: - body of door closer incorporate a concealed door closer protection kit made of intumescent seal reference Mono-Ammonium Phosphate by Lorient, 1 mm thick . - upper side of the body (facing the frame), incorporates a PVC casing, reference KP4016W-STF by Lorient.
Change of the location of the lateral concealed door closer	Integrity (E) 38 min Thermal insulation (I ₂) 38 min Thermal insulation (I ₁) 30 min	The door closer can be moved downwards but the minimum tested distance between closer and hinge may not be decreased (300 mm).
Use of alternative locks: - ZOO References: ZDL7260R, ZDL7260, ZDL7255R, ZDL7255, ZDL0060LR, ZDL0060L, ZDL0055LR, ZDL0055L - INTHER Reference: MEGA 349 PANIC - EUROSPEC References: BAE5030R, BAE50325R, ESE 5025, ESE 5030, LSE 5230, LSE 5225, LSE 5325, LSE 5330, LDE 5330, ULE 5025 and ULE 5230 - APE References: AC3LSL25, AC3LSL30, AC3LBL25, AC3LBL30, AC3LUL25 and AC3LUL30 - SALTO: Reference: LE7S	Integrity (E) 38 min Thermal insulation (I ₂) 38 min Thermal insulation (I ₁) 30 min	- The amount of material removed from the door leaf shall be as tested in the original doorset or less. - The lock must be protected with ODICE Interdens® 15, 1 mm thick
Use of alternative electronic lock handles: - ARNONE Reference: AR/D-515 - ONITY Reference: KAC-ON/TRILLIUM RFID - SALTO References: XS4 Original and XS4 One	Integrity (E) 38 min Thermal insulation (I ₂) 38 min Thermal insulation (I ₁) 30 min	---
Addition of a panic bar: - BRITON Reference: 379N	Integrity (E) 38 min Thermal insulation (I ₂) 38 min Thermal insulation (I ₁) 30 min	---
Addition of a threshold drop seal: - NORSEAL / NORSOUND Reference: NOR 810	Integrity (E) ≥ 36 min Thermal insulation (I ₂) ≥ 36 min Thermal insulation (I ₁) 30 min	The threshold drop seal must be protected with intumescent – ODICE – Interdens 15
Addition of a threshold drop seal: - LORIENT Reference: LA8000Si	Integrity (E) ≥ 35 min Thermal insulation (I ₂) ≥ 35 min	The body of the drop down seal incorporates a drop seal protection kit made of intumescent seal reference Mono-Ammonium Phosphate by Lorient, 1 mm thick.
Addition of electrically powered hold open devices - JNF Reference: IN.28.701 - SECUREFAST References: AEM0351, AEM0352, AEM0362, AEM0363	Integrity (E) ≥ 36 min Thermal insulation (I ₂) ≥ 36 min Thermal insulation (I ₁) 30 min	---

Variation	Results	Conditions for variation
Use of alternative intumescent seals: - Palusol® PM -> LORIENT: Fire seals, (LP1004, LP1504, LP2004+LP2504), TS Acoustics smoke + Fire door seal (LP1004TS, LP1504TS, LP2004TS+LP2504T), MANN MACGOWAN: Pyrostrip 100P, Pyrohinge Intumescent Kit, Pyrolock Intumescent Kit and PYROPLEX: 8700 - Interdens® -> MANN MACGOWAN: Pyrohinge Intumescent Kit, Pyrolock Intumescent Kit	Integrity (E) 38 min Thermal insulation (I ₂) 38 min Thermal insulation (I ₁) 30 min	---
Omission of the draught/acoustic seal	Integrity (E) 33 min Thermal insulation (I ₂) 33 min	---
Use of alternative facings material - MDF from Sonae (density 840 ± 30 kg/m ³) - MDF from Finsa (825/850 kg/m ³)	Integrity (E) 38 min Thermal insulation (I ₂) 38 min Thermal insulation (I ₁) 30 min	---
Use of alternative internal framing and/or addition of lippings: - 38 x 45 mm Okume timber (density ≥ 420 kg/m ³ ±30 kg/m ³) - 38 x 45 mm Pinus Pinaster (density ≥ 450 kg/m ³ ±30 kg/m ³) + 38 x 6 mm solid timber (density ≥ 420 kg/m ³ ± 30 kg/m ³)	Integrity (E) 38 min Thermal insulation (I ₂) 38 min Thermal insulation (I ₁) 30 min	---
Use of alternative internal framing and/or addition of lippings: - 38 x 45 mm solid timber (≥450 ± 30 kg/m ³ density) + 44 x 6 mm solid timber (≥420 ± 30 kg/m ³ density)	Integrity (E) 33 min Thermal insulation (I ₂) 33 min	---
Addition of mouldings in the facings of the leaf	Integrity (E) 38 min Thermal insulation (I ₂) 38 min Thermal insulation (I ₁) 30 min	Timber based mouldings can be placed as long as 25% of the leaf mass is not exceeded
Addition of grooves in the facings of the leaf: - groove of 6 (width) x 1.5 (deep) mm made directly on the 3 mm MDF facings on both sides of the leaf - groove of 7 (width) x 3 (deep) mm made by means of a ⊙ SAMBA timber inserts (Ayoux/Obeche) 390 kg/m ³ density of 12 (width) x 6 (thickness) mm - groove of 8 (width) x 3 (deep) mm made by means of a ⊙SAMBA timber inserts (Ayoux/Obeche) 390 kg/m ³ density of 12 (width) x 6 (thickness) mm - groove of 8 (width) x 1.5 (deep) mm made directly on the 3 mm MDF facings on both sides of the leaf to apply a 8 (width) x 1.4 (deep) mm ⊙ extruded aluminium profile composed of cellulose acetobutyrate, on both sides of the leaf.	Integrity (E) 36 min Thermal insulation (I ₂) 36 min Thermal insulation (I ₁) 30 min	- The surface affected by the grooves should not imply more than 25% of the surface of the leaf. - When adding inserts, the increase of the leaf shall not be more than 25% with respect to the mass of the tested leaf mass. - Density of inserts material: ≤390 kg/m ³ - Distance to edges of the leaf: ≤120m - Distance between grooves: ≤40m - The amount of removed material for each groove shall remain equal or less than tested. - It may be allowed to add decorative plastics up to 2 mm.



Variation	Results	Conditions for variation
Addition of decorative finishes on the face of the leaf and frame	Integrity (E) 38 min Thermal insulation (I ₂) 38 min Thermal insulation (I ₁) 30 min	Timber veneers up to 3 mm thick and 2 mm thick for other materials such as, laminate, plastic, cloth, leather etc., but not metals, on each face but not the edges
Addition of protective finishes on the edges of the leaf: - PVC less than 3 mm thickness	Integrity (E) 38 min Thermal insulation (I ₂) 38 min Thermal insulation (I ₁) 30 min	- The leaf to frame gaps remains as tested; - The intumescent seals as the same as the tested door. -The leaf size is not to be increased.
Use of alternative door frame material: - Solid timber (density > 350-380 kg/m ³)	Integrity (E) 33 min Thermal insulation (I ₂) 33 min Thermal insulation (I ₁) 30 min	---
Use of alternative fixings between the frame and the supporting construction: - Claws	Integrity (E) 38 min Thermal insulation (I ₂) 38 min Thermal insulation (I ₁) 30 min	Steel claws will have to enter into wall with a minimum depth like that of the tested screw with plugs or greater.
Use of alternative sealing of the gap between door frame and wall: - Blue60	Integrity (E) 36 min Thermal insulation (I ₂) 36 min Thermal insulation (I ₁) 30 min	---
Omission of the architraves	Integrity (E) 36 min Thermal insulation (I ₂) 36 min Thermal insulation (I ₁) 30 min	---
Addition of intumescent silicon in the meeting between door frame and wall: - ODICE – Lorient	Integrity (E) 36 min Thermal insulation (I ₂) 36 min Thermal insulation (I ₁) 30 min	---
Use of alternative type of glass: - Pyroguard EI30 INT	Integrity (E) 42 min Thermal insulation (I ₂) 42 min Thermal insulation (I ₁) 30 min	---
Use of alternative type of glass: - Pyranova EW30	Integrity (E) 32 min	---
Glazing layout changes	Integrity (E) 38 min Thermal insulation (I ₂) 38 min Thermal insulation (I ₁) 30 min	- Max. height: 1,500 mm (453 mm width). - Max. width: 502 mm (1,354 mm height). - Max. area: 0.76 m ² . - Min. margins: 130 mm from the perimeter edge, and 130 mm between panels. - No. of panels: 1 or more, providing the maximum area is not to be exceeded, and the distance between panels is not reduced. - Possible to move the glass up to minimum 50 mm away from any hardware cut-outs and provided the minimum margins is not to be exceeded.
Use of alternative timber type of beading: - Solid timber density ≥ 420 kg/m ³	Integrity (E) 38 min Thermal insulation (I ₂) 38 min Thermal insulation (I ₁) 30 min	---

4.- CLASSIFICATION AND FIELD OF APPLICATION

4.1.- CLASSIFICATION STANDARD

This classification has been carried out in accordance with the paragraph 7 of the standard EN 13501-2:2016.

4.2.- CLASSIFICATION

The element “FLAM 44” is classified according to the following combination of performance parameters and classes.

Fire resistance classification

EI₂ 30 / EI₁ 30

The following classifications are allowed:

E	15	20	30
EI ₁	15	20	30
EI ₂	15	20	30
EW	-	20	30

4.3.- FIELD OF APPLICATION

The field of direct application defines the allowable changes to the test specimen following a successful fire resistance test. When combining several parameters, the limitations imposed on each variation shall be taken into account individually, in order to verify that all the conditions corresponding to the variations in combination are met. The result of the application extension may result in changes in the classification obtained.

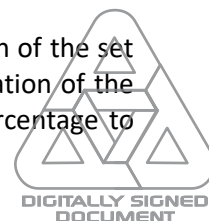
According to the standard UNE-EN 1634-1:2016+A1:2018 and the modifications evaluated in the extended application test report no. EXAP-10030/21, the element “FLAM 44”, has the following field of application.

The allowed levels for resizing the doorset are shown below:

Parameter	Reference value	Level and allowed variation
Dimensions	2,100 mm x 925 mm x 44 mm (leaf Dimensions)	Category A Unlimited dimensional decrease No dimensional increases
		Category B Unlimited dimensional decrease The dimensional increase to 15% in height and width is allowed if 20% is not exceeded in the area.

For smaller sizes of doors:

- The relative position of the elements (locks, hinges, etc.) that make possible the action of the set and that are present in the specimen tested will be kept; or there may be a modification of the distance between these elements by applying dimensional reduction in identical percentage to the specimen tested.



For bigger sizes of doors:

- The height of the mid-point of the latch from the floor level shall be equal to or higher than the tested. The increase will be proportional to the applied height increase of the leaf.
- The distance from the upper part of the upper hinge to the upper part of the door shall be lower than of equal to the tested.
- The distance from the upper part of the lower hinge to the lower part of the leaf shall be equal to or lower than the tested.

The following table shows the other variations allowed, both by the direct application field and by the extended application field

Parameter	Allowed variation	Classification
Thickness and density of the leaf components.	Increase in the thickness and density up to 25% of weight increase. Max. weight: 60 kg 44 mm thickness	EI ₂ 30 (category B) EI ₁ 30 (category A)
Facings	Facings: 3 mm Fibreboard (MDF type) The following manufacturers are allowed: <ul style="list-style-type: none"> • MDF from KRONOSPAN (density 840 ± 30 kg/m³) • MDF from SONAE (density 840 ± 30 kg/m³) • MDF from Finsa (825/850 kg/m³) 	EI ₂ 30 (category B) EI ₁ 30 (category A)
Core	38 mm Flaxboard SANOPAN (density 350 kg/m ³)	EI ₂ 30 (category B) EI ₁ 30 (category A)
Internal framing and/or addition of lippings	The following settings are allowed: <ul style="list-style-type: none"> • 38 x 45 mm solid timber (density ≥ 420 kg/m³ ± 30 kg/m³) • 38 x 45 mm solid timber (density ≥ 450 kg/m³ ± 30 kg/m³) + 38 x 6 mm solid timber (density ≥ 420 kg/m³ ± 30 kg/m³) 	EI ₂ 30 (category B) EI ₁ 30 (category A)
	The following settings are allowed: <ul style="list-style-type: none"> • 38 x 45 mm solid timber (≥ 450 ± 30 kg/m³ density) + 44 x 6 mm solid timber (≥ 420 ± 30 kg/m³ density) 	EI ₂ 30 (category A)
Decorative finishes	It is allowed the application of paint to the leaves and/or frames that does not improve fire resistance of the door	EI ₂ 30 (category B) EI ₁ 30 (category A)
	It is allowed to add a decorative finishes of timber veneer up to 3 mm thick and 2 mm thick for other materials such as, laminate, plastic, cloth, leather etc., but not metals, on each face of the leaf and/or the frame but not the edges.	EI ₂ 30 (category B) EI ₁ 30 (category A)
	It is allowed to add PVC protective finishes on the edge of the leaf, less than 3 mm With the following conditions: The intumescent seals and the leaf to frame gaps as the same as the tested door, and the size of the door is not increased	EI ₂ 30 (category A) EI ₁ 30 (category A)
Mouldings	Timber based mouldings can be placed as long as 25% of the leaf mass is not exceeded	EI ₂ 30 (category B) EI ₁ 30 (category A)



Parameter	Allowed variation	Classification
Grooves	<p>The addition of the following grooves in the facings of the leaf is allowed:</p> <ul style="list-style-type: none"> • groove in “V” of 6 mm wide x 1,5 mm deep by means of MDF or hardwood timber insert of 12 (width) x 6 (thickness) mm • groove in “U” 5 mm wide x 1,2 mm deep by means of MDF or hardwood timber insert of 12 (width) x 6 (thickness) mm • groove of 6 (width) x 1.5 (deep) mm made directly on the 3 mm MDF facings on both sides of the leaf • groove of 7 (width) x 3 (deep) mm made by means of a ☉ SAMBA timber inserts (Ayoux/Obeche) 390 kg/m³ density of 12 (width) x 6 (thickness) mm • groove of 8 (width) x 3 (deep) mm made by means of a ☉SAMBA timber inserts (Ayoux/Obeche) 390 kg/m³ density of 12 (width) x 6 (thickness) mm • groove of 8 (width) x 1.5 (deep) mm made directly on the 3 mm MDF facings on both sides of the leaf to apply a 8 (width) x 1.4 (deep) mm ☉ extruded aluminium profile composed of cellulose acetobutyrate, on both sides of the leaf. <p>The following condition should be met:</p> <ul style="list-style-type: none"> - The surface affected by the grooves should not imply more than 25% of the surface of the leaf. - When adding inserts, the increase of the leaf shall not be more than 25% with respect to the mass of the tested leaf mass. - Density of inserts material: ≤390 kg/m³ - Distance to edges of the leaf: ≤120m - Distance between grooves: ≤40m - The amount of removed material for each groove shall remain equal or less than tested. - It may be allowed to add decorative plastics up to 2 mm. 	E _{l2} 30 (category B) E _{l1} 30 (category A)
Frame material	<p>The following settings are allowed:</p> <ul style="list-style-type: none"> • MDF MOISTURE RESISTANCE FIBRAPAN from FINSA, density 700/680 kg/m³ • Solid timber (density ≥ 350 kg/m³) 	E _{l2} 30 (category B) E _{l1} 30 (category A)
Cross section of the frame	<p>Section: 70 x 35 x 20 mm</p> <p>It is allowed to increase the cross section (rebates included)</p>	E _{l2} 30 (category B) E _{l1} 30 (category A)

Parameter	Allowed variation	Classification
Fixings of the frame	<p>By screws with plug or steel claws will have to enter into wall with a minimum depth like that of the tested screw with plugs or greater.</p> <p>Tested with 4no fixings on each side M4 x50, 600 mm between axis. The number of fixings per unit length used to attach doorsets to supporting constructions may be increased, but shall not be decreased and the distance between fixings may be reduced but shall not be increased.</p> <p>The gap between door frame and wall can be sealed by Firefoam flame retardant or Blue60.</p> <p>Addition of ODICE – Lorient intumescent silicon in the meeting between door frame and wall is allowed.</p>	E _{l2} 30 (category B) E _{l1} 30 (category A)
Architraves	The doorset can be installed with or MDF adjustable architraves or without them	E _{l2} 30 (category B) E _{l1} 30 (category A)
Intumescent seals	<p>It is allowed to exchange the tested Palusol® intumescent seal tested for the followings:</p> <ul style="list-style-type: none"> Palusol® PM -> LORIENT: Fire seals, (LP1004, LP1504, LP2004+LP2504), TS Acoustics smoke + Fire door seal (LP1004TS, LP1504TS, LP2004TS+LP2504T), MANN MACGOWAN: Pyrostrip 100P, Pyrohinge Intumescent Kit, Pyrolock Intumescent Kit and PYROPLEX: 8700 Interdens® -> MANN MACGOWAN: Pyrohinge Intumescent Kit, Pyrolock Intumescent Kit 	E _{l2} 30 (category B) E _{l1} 30 (category A)
Draught/acoustic seals	It is allowed to remove the FLEXILODICE EF BI GW QS seal	E _{l2} 30 (category A)
Hinges	<p>It is allowed to install one of the following devices:</p> <ul style="list-style-type: none"> JNF References: IN.05.019.100.R.ECO, IN.05.020.100.R.ECO, IN.05.020.S.R.ECO RT RATMAN References: H101, H102, H102-0, H102-1, H102-5, H103, H201, H208 INTHER Reference: 1086 CR VIER References: VHP243, VHP243R, VHC243, VHC243R, VLHL243R, VLHR243R, VSLHL43R, VSLHR43R HAFELE References: DHB 3122, DHB 3222, DHB 3221, DHB 3322, 926.90.227 ZOO References: ZHSS243, ZHSS243R ARRONE References: AR8180, AR8382, AR8182 FREELAN Reference: J9500 EUROSPEC Reference: Eurospec Enduro HIN 1433/13 <p>The hinges must be protected with ODICE Interdens® 15, 1 mm thick</p> <p>It is allowed to increase the number of hinges over 4 hinges (as tested) and to reduce the number of hinges to 3.</p> <p>The arrangement of the 3 hinges should be:</p> <ul style="list-style-type: none"> - From bottom edge to the centre of the hinge: 150 mm / 1050 mm /1950 mm - From the upper edge to the centre of the hinge: 150 mm 	E _{l2} 30 (category B) E _{l1} 30 (category A)

Parameter	Allowed variation	Classification
Door closer	The doorset can be installed with or without a door closer device. When installed, it is allowed to install one of the following devices. In all cases, the force of the door closer in accordance with EN 1154 must be consistent with the mass of the leaf.	
	Overhead surface mounted door closers <ul style="list-style-type: none"> • JNF Reference: ML.21.610.BS, ML.21.775.BA • SYNERGY Reference: S3500, S800 • VIER Reference: VDC003, VDC0025 • INTHER Reference: CTB 69 • ARNONE References: AR1500, AR 6800, AR 6900, AR 8200 • RUTLAND References: TS5204, TS3204, TS9205, TS11204, TS11205 • Carlisle Brass References: DCF 2003, DCS 2024, DCS 2025, DCS 2026, DCT 2024, CDG 420, CDG 025, CDG 003 • Dorma References: TS68, TS71, TS83 	El ₂ 30 (category B) El ₁ 30 (category A)
	Overhead concealed door closers: <ul style="list-style-type: none"> • RUTLAND Reference: ITS 11204.2.5.SE <p>The door closer must be protected with:</p> <ul style="list-style-type: none"> - Rutland IP.114 with Standard Rail, 2 mm, placed on the frame and on the top the door above the case of the concealed door closer - Interdens 15, 1 mm placed on the leaf/ 3 sides 	El ₂ 30 (category A) El ₁ 30 (category A)
	Overhead concealed door closers: <ul style="list-style-type: none"> • ASSA ABLOY Reference: Union SC-CE3F <p>The door closer must be protected with:</p> <ul style="list-style-type: none"> - body of door closer incorporate a concealed door closer protection kit made of intumescent seal reference Mono-Ammonium Phosphate by Lorient, 1 mm thick . - upper side of the body (facing the frame), incorporates a PVC casing, reference KP4016W-STF by Lorient. 	El ₂ 30 (category A)
	Lateral concealed door closer: <ul style="list-style-type: none"> • ASTRA Series 4003 SFR <p>The door closer can be moved downwards but the minimum tested distance between closer and hinge may not be decreased (300 mm)</p>	El ₂ 30 (category B) El ₁ 30 (category A)
Lock	It is allowed to install one of the following devices: <ul style="list-style-type: none"> • ZOO References: ZDL7260R, ZDL7260, ZDL7255R, ZDL7255, ZDL0060LR, ZDL0060L, ZDL0055LR, ZDL0055L • INTHER Reference: MEGA 349 PANIC • EUROSPEC References: BAE5030R, BAE50325R, ESE 5025, ESE 5030, LSE 5230, LSE 5225, LSE 5325, LSE 5330, LDE 5330, ULE 5025 and ULE 5230 • APE References: AC3LSL25, AC3LSL30, AC3LBL25, AC3LBL30, AC3LUL25 and AC3LUL30 • SALTO: Reference: LE7S <p>The amount of material removed from the door leaf shell be as tested in the original doorset or less. The lock must be protected with ODICE Interdens® 15, 1 mm thick</p>	El ₂ 30 (category B) El ₁ 30 (category A)

Parameter	Allowed variation	Classification
Handles	It is allowed to install one of the following devices: <ul style="list-style-type: none"> • JNF Ref. IN.00.028.RC08M • ARNONE Reference: AR/D-515 • ONITY Reference: KAC-ON/TRILLIUM RFID • SALTO References: XS4 Original and XS4 One 	EI ₂ 30 (category B) EI ₁ 30 (category A)
Panic bar	It is allowed the addition the following device: BRITON Reference: 379N	EI ₂ 30 (category B) EI ₁ 30 (category A)
Threshold drop seal:	It is allowed to install one of the following devices: <ul style="list-style-type: none"> • NORSEAL / NORSOUND Reference: NOR 810 The threshold drop seal must be protected with intumescent – ODICE – Interdens 15	EI ₂ 30 (category B) EI ₁ 30 (category A)
	<ul style="list-style-type: none"> • LORIENT Reference: LA8000Si The body of the drop down seal incorporates a drop seal protection kit made of intumescent seal reference Mono-Ammonium Phosphate by Lorient, 1 mm thick.	EI ₂ 30 (category A)
Electrically powered hold open devices	It is allowed to install one of the following devices: <ul style="list-style-type: none"> • JNF Reference: IN.28.701 • SECUREFAST References: AEM0351, AEM0352, AEM0362, AEM0363 	EI ₂ 30 (category B) EI ₁ 30 (category A)
Type of glass	It is allowed to install one of the following type of glasses:	
	<ul style="list-style-type: none"> • Pyranova EI30 S3.0 • Pyroguard EI30 INT 	EI ₂ 30 (category B) EI ₁ 30 (category A)
	<ul style="list-style-type: none"> • Pyranova EW30 	EW 30 (category A)
Glazing layout changes	It is possible an alternative glazing layout with the following conditions: <ul style="list-style-type: none"> - Max. Height: 1500 mm (453 mm width) - Max. Width: 502 mm (1354 mm height) - Max. Area: 0.76 m² - Min. Margins: 130 mm from the perimeter edge, and 130 mm between panels - No of panes: 1 or more, providing the maximum area is not to be exceeded, and the distance between panels is not be reduced - Possible to move the glass up to minimum 50 mm away from any hardware cut-outs and provided the minimum margins is not to be exceeded - The glazing element may be removed 	EI ₂ 30 (category B) EI ₁ 30 (category A)
Glass beadings	Fixation technique: Okume timber beading of 23 x 21,5 x 7 mm (density 420 Kg/m ³ ±30), fixed using 20no countersunk chipboard screw 4 x 50 mm (8no in hinges side+12no hinges opposite side), and sealed with flame retardant silicone Elastic Fire-Retardant Sealant B1 from Würth The edge fixing technique cannot be changed. The number of fixings per unit length used may be increased, but shall not be decreased and the distance between fixings may be reduced but shall not be increased. Solid timber beading with a density ≥ 420 kg/m ³ , are allowed.	EI ₂ 30 (category B) EI ₁ 30 (category A)

Parameter	Allowed variation	Classification
Gaps	Maximum allowed gaps for door installation: <ul style="list-style-type: none"> •Hinges side: 3,7 mm •Lock side: 5,9 mm •Top: 5,5 mm •Bottom: 6,6 mm Gaps less than the maximum allowable	EI ₂ 30 (category B) EI ₁ 30 (category A)
Supporting construction	Valid for: <ul style="list-style-type: none"> •Rigid standard supporting constructions, density ≥ 900 kg/m³ and thickness ≥ 150 mm •Flexible standard supporting constructions 	EI ₂ 30 (category B) EI ₁ 30 (category A)
Opening direction	Valid for both opening directions	EI ₂ 30 (category B) EI ₁ 30 (category A)

5.- LIMITATIONS

This report does not represent type approval of certification of the element

Arganda del Rey, 30th June 2021



Digitally Signed Document

Signed: Sergio Nogueras Perona
 Laboratory technician
 Fire resistance laboratory



Digitally Signed Document

Signed: Carlos Burón Alonso
 Technical director
 Fire resistance laboratory

