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## REPORT No. 080645-001-2 M2-a

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<b>PURPOSE</b>	FIRE RESISTANCE TEST ACCORDING TO STANDARD EN 1364-2:2018
<b>TESTED SAMPLE</b>	FALSE SUSPENDED CEILING  REF. “Techo acústico (SENOR + CHOVA) EI120”
<b>RECEPTION DATE</b>	10.09.2019
<b>TEST DATE</b>	28.11.2019
<b>ISSUE DATE</b>	21.10.2020
<b>TRANSLATION DATE</b>	21.10.2020



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## 1.- INTRODUCTION

This classification report defines the fire resistance rating assigned to a non-loadbearing wall referenced as **“Techo acústico (SENOR + CHOVA) EI120”** in accordance with the procedures established in [C].

### 1.1. REFERENCE STANDARDS

- [A] *EN 1363-1:2012 “Fire resistance tests – Part 1: General Requirements”.*
- [B] *EN 1364-2:2018 “Fire resistance tests for non-loadbearing elements - Part 2: Ceilings”.*
- [C] *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 CLASSIFIED ELEMENT

### 2.1. GENERAL INFORMATION

The sample referenced as **“Techo acústico (SENOR + CHOVA) EI120”** is defined as a non-loadbearing, fire resistant ceiling as stated in [C] 7.5.4.

### 2.2. SAMPLE CHARACTERISTICS

The element, a non-loadbearing suspended ceiling referenced as **“Techo acústico (SENOR + CHOVA) EI120”** is fully described below or in the test reports supporting this classification listed in Section 3.1.

The verification of the sample was carried out during its assembly.

The data of the samples verified by the laboratory are the following:

#### Materials used

##### - Framing:

Designation	Make, model	Material	Cross-section (mm)	Thickness (mm)
U Profile	U-frame 30x30	DX51D Z140 Galvanised steel	28x28x28	0.55
Master	Master CD 60x27x0.6	DX51D Z140 Galvanised steel	27x60x27	0.60

**- Bolts:**

Designation	Make, model	Material	Diameter (mm)	Length (mm)
Fixing screw 1st panel	-	Steel	3.5	45
Fixing screw 2nd panel	-	Steel	4.5	70
Self-drilling bolt	DIN 7504-K	Steel	4.8	19

**- Board:**

Designation	Make, model	Material	Dry density (kg/m <sup>3</sup> )	Dimensions (mm)
Fire-resistant laminated gypsum board (fireproof/firebreak)	-	Laminated gypsum board + fibreglass + additives	820 kg/m <sup>3</sup>	1200x2000 Thickness = 25 mm

**- Sealant:**

Designation	Make, model	Material	Characteristics
Jointfiller	-	Powdered gypsum + additives	20 kg bag

**- Joint strips:**

Designation	Make, model	Material	Characteristics
Joint strip	-	Micro-perforated paper	Width: 52 mm

**- Acoustic membrane:**

Designation	Make, model	Material	Dry density (kg/m <sup>3</sup> )	Thickness (mm)
CHOVA acoustic membrane	CHOVA ViscoLAM® Self-adhesive	Viscoelastic high-density sheet	1600 kg/m <sup>3</sup>	4 mm

**- Insulation:**

Designation	Make, model	Material	Characteristics
EPDM CR-130 SENIOR micro-cellular acoustic strip	SENIOR SE-BEC-5x90	EPDM + CR-130 micro-cellular rubber	Thickness: 5 mm Width: 90 mm

**- Others:**

Designation	Make, model	Material	Characteristics
Suspension accessories. SENIOR	SENIOR SE-6025-V/M6DS	Galvanised steel casing DX51D+Z275 MAC 2 mm thick + polymeric top and bottom cap (TPE) TC-4/GPN + metal helical spring in phosphate-coated steel EN 10270-1 SH + locking device (DS) DX51D+Z275 MAC 1 mm thick.	See technical datasheet
Clamping fixture to metal beam. SENIOR	SENIOR SE-SRC-M6	Sole R (manufactured in cold-rolled steel DC04) 2 mm thick + Rubber (EPDM CR-130 micro-cellular)	See technical datasheet
Fittings for joining profiles (trestle) SENIOR	SENIOR SE-F-RAPID 60/DS	Galvanised steel DX51D+Z275 MAC 1.5 mm thick + locking device (DS) DX51D+Z275 MAC 1 mm thick.	See technical datasheet
Connecting rods linking suspension and clamping	VARILLA M6	Galvanised steel	Diameter 6 mm.
Levelling cup. SENIOR	SENIOR SE-CN-M6	Cold-rolled steel DC03 with edge thickness of 1.5 mm.	See technical datasheet

**Definition of the sample**

Suspended ceiling EI120 made up of two fire-resistant laminated gypsum boards (fireproof/firebreak) 25 mm thick, and one intermediate acoustic membrane 4 mm thick located between the two panel layers. These elements are screwed to a galvanised steel metal structure formed by primary and secondary masters of 60/27/0.6 mm suspended from the supporting construction made with IPE 140 profiles (placed every 700 mm) using clamping fixtures (SE-SRC-M6) and M6 rod. These primary and secondary masters are fixed perpendicularly to each other using the joining accessories. A 28/28/28 U-profile is fixed to the perimeter with self-drilling fastenings every 600 mm approximately and an acoustic strip in the back of the whole profile. For the first panel layer fastenings, self-tapping 3.5 x 45 mm screws are used (every 170 mm approx.). After fastening the first layer of panels the 4 mm thick acoustic layer was fixed. For the second panel layer fastenings, self-tapping 4.5 x 70 mm screws are used (every 170 mm approx.). All the joints between boards are fixed in each of the layers with filler and joint strips put in place. The heads of the screws of all the boards have also been filled.

The sample is tested with the following dimensions: 4000 x 3000 mm.

**Assembly**

Sample assembly was entirely performed by the customer.

No additions were made to the sample subsequent to the laboratory review.

For further information, refer to the construction details in Annex 1 and Annex 4 of the test report included in Section 3.1 of this report.

### 3.- TEST REPORT AND TEST RESULTS SUPPORTING THE CLASSIFICATION

#### 3.1 TEST REPORTS

Laboratory name	Applicant's name	Report reference No.	Test method	Direction of test	Test date
TECNALIA RESEARCH & INNOVATION	SUSPENSIONES ELÁSTICAS DEL NORTE, S.L.	080645-001-1 M1-a	[B]	False ceiling exposed from below	28.11.2019

#### 3.2 RESULTS

##### Test results

“Techo acústico (SENOR + CHOVA) EI120”		
<b>Integrity (E)</b>		<b>171 min</b>
Performance criterion		
Cotton pad	Flaming or glowing of the cotton pad.	171 min <sup>(2)</sup>
Gauge Ø 6 mm	Openings in the sample which allow the gauge to move more than 150 mm along the opening.	171 min
Gauge Ø 25 mm	Openings in the sample which allow the gauge to pass through.	171 min <sup>(2)</sup>
Sustained flaming > 10 s	Sustained flaming on the unexposed side of the sample for more than 10 s.	171 min <sup>(2)</sup>
<b>Insulation (I)</b>		<b>147 min</b>
Performance criterion		
Maximum temperature	Not exceeding the initial temperature of each thermocouple by 180 °C.	147 min
Average temperature	Not exceeding the initial average temperature at thermocouples TR1 to TR5 by 140 °C.	147 min <sup>(1)</sup>

(1): Measurement for this criterion was interrupted due to lack of insulation, maximum temperature.

(2): Measurement not completed due to integrity failure, 6 mm Ø gauge.



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## 4.- CLASSIFICATION AND FIELD OF APPLICATION

### 4.1. CLASSIFICATION REFERENCE

This classification was carried out in accordance with [C] Chapter 7.

### 4.2. CLASSIFICATION

According to [C], the division referenced as “**Techo acústico (SENOR + CHOVA) EI120**” is classified as:

EI							120		
E							120		

**Fire Resistance Classification: EI30 E30**

**Fire Resistance Classification: EI60 E60**

**Fire Resistance Classification: EI90 E90**

**Fire Resistance Classification: EI120 E120**



#### 4.3 DIRECT FIELD OF APPLICATION

The direct field of application of the test results refers to those changes that can be carried out on a sample after a fire resistance test with a satisfactory result. These variations can be entered automatically without the need for the applicant to obtain additional evaluations, calculations or approvals.

Parameter	Permitted variation	Tested sample
General dimensions.	To increase indefinitely provided that the distance between the suspension elements is not increased.	(4000x3000) mm  Distance between primary masters: 420-795 mm.  Distance between secondary masters: 295-475 mm.  Distance between hangers: 700 mm
Accessories	Do not reduce the distribution per surface area unit tested.	2.0 hanging elements per square metre of suspended ceiling (24 units / 12 m <sup>2</sup> ).
Cavity.	Vary the height of the cavity.	196 mm

*Any modifications that have not been expressly included in the sections above will not be considered for the purpose of possible changes without due additional express approvals.*

#### 5.- LIMITATIONS

This classification document does not represent any sort of product approval or certification.