

HEALTH AND COMFORT DEPARTMENT

Acoustic tests laboratory

**TEST REPORT NO AC13-26047682/9
CONCERNING A DOOR UNIT**

SPECIMEN

The accreditation of the Laboratory section of COFRAC attests to the competence of the laboratories solely for the tests covered by the accreditation.

This Test Report attests only to the characteristics of the item submitted for testing and does not prejudice the characteristics of similar products. It does not constitute certification of products within the meaning of Articles L 115-27 to L 115-33 and R115-1 to R115-3 of the French Consumer Code.

In the event of the issuance of this report by electronic means and/or on physical electronic media, only the paper form of the report signed by CSTB shall be deemed valid in case of dispute. This report in its paper form is kept at the CSTB for a minimum period of 10 years.

Copying of this test report is only allowed in its full form.

It contains eight pages of which 12 pages of annexes.

Only the French version of the report is authentic.

**AT THE REQUEST OF: JELD WEN France
35 avenue de la Ténarèze
BP 6
32800 EAUZE**

Our Ref.: : BR-70040428
260047682
EK/VG

PURPOSE

Determine the sound reduction index R of a door unit.

REFERENCE TEXTS

Measurements are taken according to standards NF EN ISO 10140-1 (2013), NF EN ISO 10140-2 (2013), NF EN ISO 10140-4 (2013), NF EN ISO 10140-5 (2013) and NF EN 20140-2 (1993) supplemented by standard NF EN ISO 717/1 (2013) and related amendments.

ITEM TESTED:

Date received at the laboratory: 5 December 2013
Origin: requestor
Implementation: requestor and CSTB

SUMMARY LISTING OF THE TESTS

Tests no. Items tested

- 1 Wooden door unit with one leaf, (res. on leaf frame), ref. Acou 30 29 – 2040 x 1230 with HUTCHINSON seal

Done at Marne-la-Vallée, on 15 April 2014

Person in charge of the test:

Elias Katri

Laboratory Manager



Alexandre Cancian

**DESCRIPTION
OF A DOOR UNIT**

Test 1
Date 10/12/13
Item MEGA

REQUESTOR, MANUFACTURER JELD WEN FRANCE
COMMERCIAL NAME Acou 30 29 - 30
CONFIGURATION Resinous wood frame with HUTCHINSON seal

MAIN CHARACTERISTICS

Dimensions of the leaf (H x l) in mm: 2040 x 1000

Thickness of the leaf in mm: 40

Weight of the leaf in kg: 48.7

DESCRIPTION (The dimensions are given in mm)

Frame	
Uprights and cross member	Made from abutted and glulam resinous wood with a density of 430 kg/m ³ , overall section of 66 x 50, comprising a rebate with a section of 46 x 15 provided with a groove with a section of 6 x 3.
Leaf	
Frame (*)	Made from abutted resinous wood with a density of 430 kg/m ³ , overall section of 25 x 33.7.
core	Made from wooden panels ref. Normaportes (LINEX) 33.5 thick and nominal density of 400 kg/m ³ .
Cladding	Made from MDF ref. JF25 (KRONOSPAN) 2.5 thick and nominal density of 800 kg/m ³ .
Assembly	<ul style="list-style-type: none"> - Of the frame: by stapling - Of the panel of the core: by full glue-down installation on the cladding panels with glue ref. DORUS MD072 (HENKEL) at a rate of 120 g/m².
Tightness	<ul style="list-style-type: none"> - Polychloroprene lip seal ref. 1K911 (HUTCHINSON) on the frame. - TPE brush strip ref. DV163 (INDOPLAST), on the bottom cross member of the leaf clipped into a double groove.
Iron work - locking	<ul style="list-style-type: none"> - Holding: Four steel hinges ref. 130 Universal (JW) - Closure: 1-point steel safety lock ref. 900 series (BRICARD).
Operating clearances	<ul style="list-style-type: none"> - For top cross member: 2 ± 2 - For the bottom part: 5 ± 5 - Lock side: 2 ± 2 - Hinge side: 1 ± 1

(*) The composition of the leaf frame is confidential, it is kept in the technical dossier.

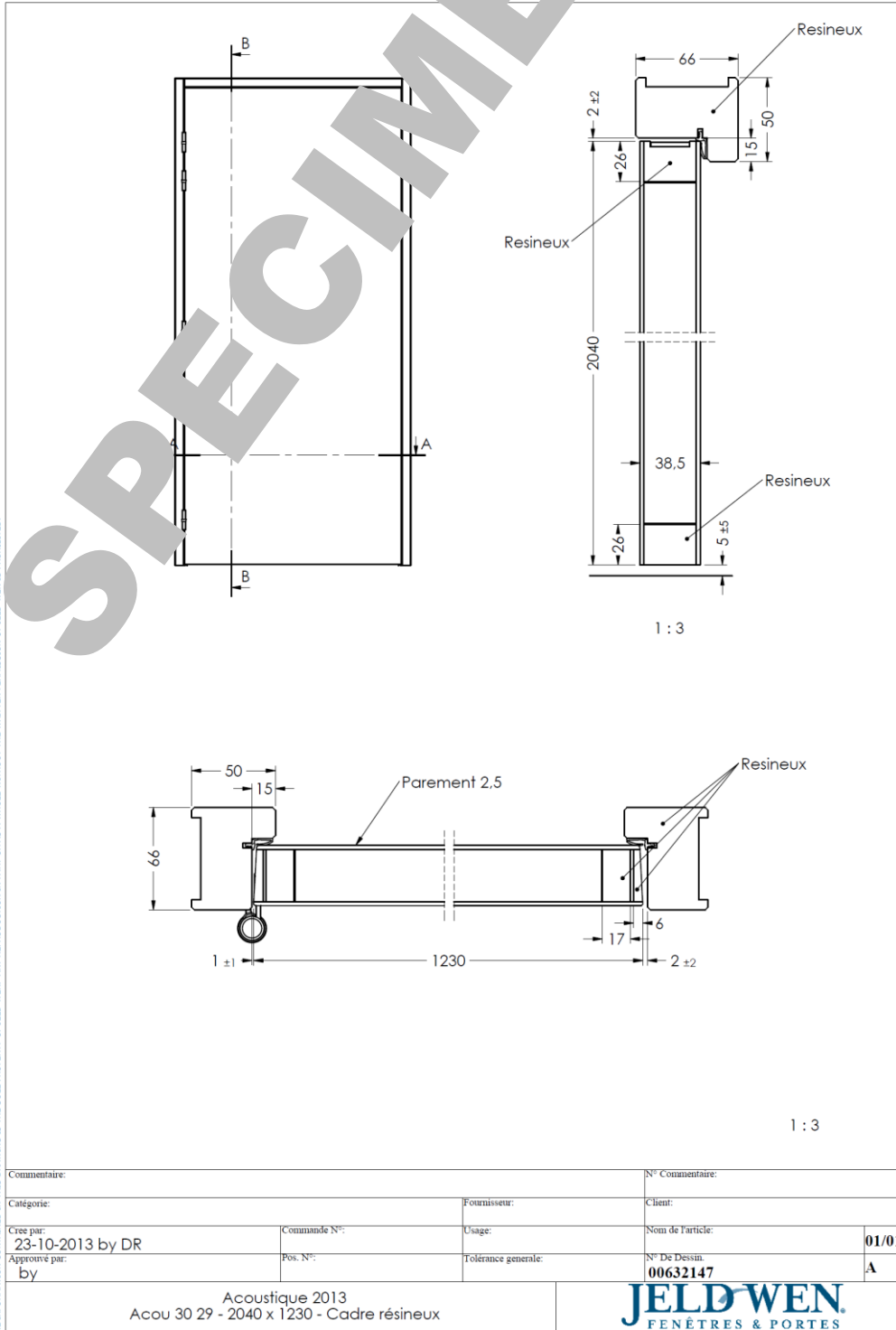
IMPLEMENTATION

The frame is sealed to the mortar in a reinforced concrete frame 360 thick.

**DRAWINGS
OF A DOOR UNIT**

Test Date 1
Item 10/12/13
MEGA

REQUESTOR, MANUFACTURER JELD WEN FRANCE
COMMERCIAL NAME Acou 30 29 - 2040 x 1230
CONFIGURATION Resinous wood frame with HUTCHINSON seal



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THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF JELD-WEN. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF JELD-WEN IS PROHIBITED.

Commentaire:		N° Commentaire:	
Catégorie:		Fournisseur:	
Client:		Nom de l'article:	
Crée par: 23-10-2013 by DR	Commande N°:	Usage:	01/01
Approuvé par: by	Pos. N°:	Tolérance générale:	N° De Dessin: 00632147 A
Acoustique 2013 Acou 30 29 - 2040 x 1230 - Cadre résineux		JELD WEN FENÊTRES & PORTES	

**SOUND REDUCTION INDEX R
OF A DOOR UNIT**

AD31 | **Test 1**
Date 11/12/13
Item MEGA

REQUESTOR, MANUFACTURER JELD WEN FRANCE
COMMERCIAL NAME Acou 30 29 - 2040 x 1230
CONFIGURATION Red exterior wood leaf frame with HUTCHINSON seal

MAIN CHARACTERISTICS

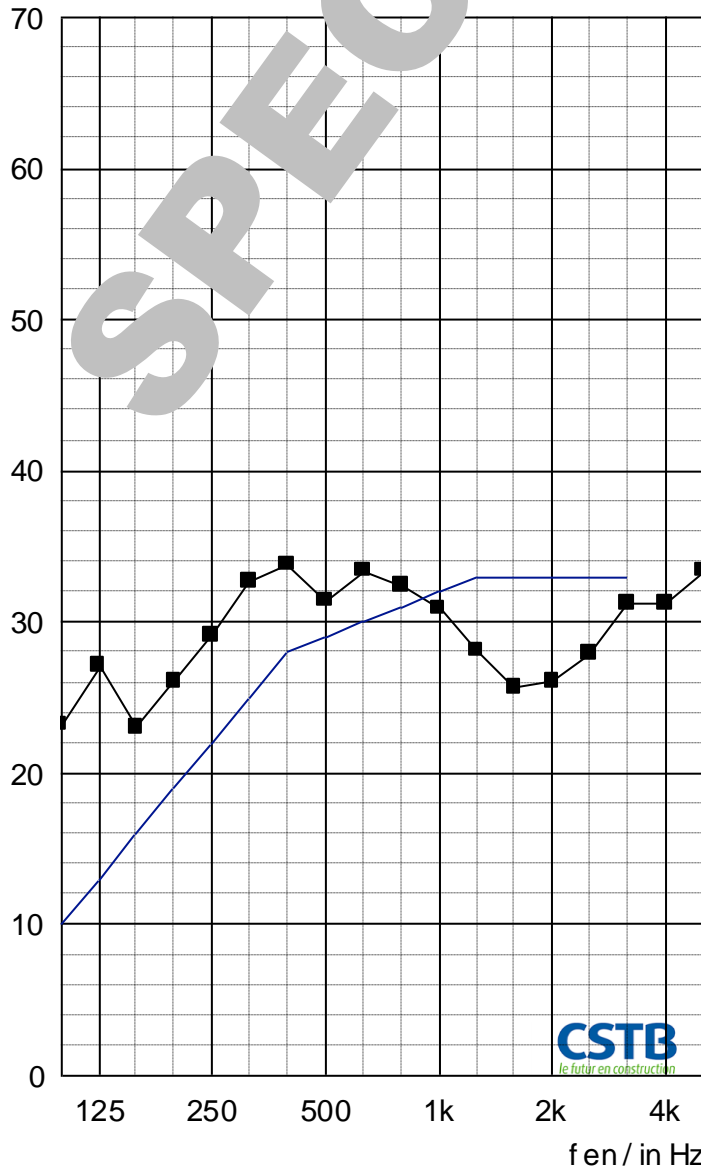
Dimensions of the leaf (H x l) in mm: 2040 x 1230
Thickness of the leaf in mm: 40
Weight of the leaf in kg: 48.7

MEASUREMENT CONDITIONS

Emission room: Temperature: 20 °C
Relative humidity: 29 %
Reception room: Temperature: 20 °C
Relative humidity: 30 %

RESULTS

■ R en / in dB — Courbe de référence / Reference curve



f	R
100	23,2
125	27,1
160	23,0
200	26,1
250	29,1
315	32,7
400	33,8
500	31,4
630	33,4
800	32,4
1000	30,9
1250	28,1
1600	25,7
2000	26,1
2500	27,9
3150	31,2
4000	31,2
5000	33,4
Hz	dB

(*) : valeur corrigée/corrected value. (+) : limite de poste/station limit.

$R_w (C;C_{tr}) = 29(-1;0) \text{ dB}$

Pour information / For information:

$R_A = R_w + C = 28 \text{ dB}$

$R_{A,w} = R_w + C_s = 29 \text{ dB}$

ANNEX 1 METHOD FOR EVALUATING AND EXPRESSING THE RESULTS

AIRBORNE SOUND REDUCTION INDEX R

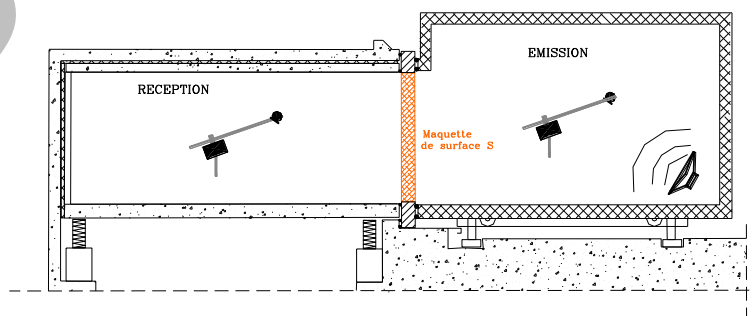
➤ **Evaluation method: NF EN ISO 10140-2 (2013)**

Standard NF EN ISO 10140-2 (2013) is the method for evaluating the airborne sound insulation of construction elements such as walls, floors, doors, windows and façade elements, façades, etc.

Measuring must be done in a test laboratory without any flanking emissions. The test station is comprised of two rooms: a laboratory room against which we attach the support frame of the sample to be tested and a measurement room which thus creates an "emission room – reception room" pair. These rooms and the frame are entirely separated from each other (neoprene seals) and are compliant with standard NF EN ISO 10140-5 (2013). The design of the rooms (box in a box) provides strong sound insulation with respect to the exterior and makes it possible to measure very low levels of background noise.

Measurement in third-octave, from 100 to 5,000 Hz:

- of the level of background noise in the reception room L_{BdF}
- of the crude insulation: L_E
- of the reverberation time of the reception room T



Calculation of the sound reduction index R in dB for each third-octave:

$$R = L_E - L_R + 10 \log(S/A)$$

L_E : Sound level in the emission room in dB

L_R : Sound level in the reception room, corrected for background noise in dB

S: surface of the model to be tested in m^2

A: Equivalent absorption area in the reception room in m^2

$$A = (0.16 \times V)/T \quad \text{where } V \text{ is the volume of the reception room in } m^3 \text{ and } T \text{ is the reverberation time of the same room in s.}$$

The higher R is, the higher the performance of the tested element is.

➤ **Expression of the results: Calculation of the weighted single index $R_w(C; C_{tr})$ according to standard NF EN ISO 717-1 (2013)**

The values of R are taken into account by third-octaves between 100 and 3150 Hz with an accuracy of 1/10 of a dB.

Vertical movement of a reference curve in 1 dB increments until the sum of the unfavourable differences is as high as possible while still remaining less than or equal to 32.0 dB.

R_w in dB is then the value given by the reference curve at 500 Hz.

The terms for adapting to a spectrum (C and C_{tr}) are calculated using reference spectra in order to obtain:

- The insulation regarding noise from the surroundings, industrial or airport activities:
 $R_A = R_w + C$ in dB
- The insulation regarding land transport infrastructure noise: **$R_{A,tr} = R_w + C_{tr}$ in dB**

ANNEX 2 – EQUIPMENT

MEGA STATION

Emission room: MEGA 3

DESIGNATION	BRAND	TYPE	CSTB NO.
Microphone network	Bruël & Kjær	Microphone 4190	CSTB 01 0218
	Bruël & Kjær	Pre-amplifier 2669	
Rotating arm	Bruël & Kjær	3923	CSTB 81 0004
Amplifier	LAB GRUPPEN	LAB1000	CSTB 97 0198
Speaker	CSTB-PHL AUDIO	Cube	CSTB 97 0190
Speaker	CSTB-PHL AUDIO	Cube	CSTB 97 0192

Reception room: MEGA 1

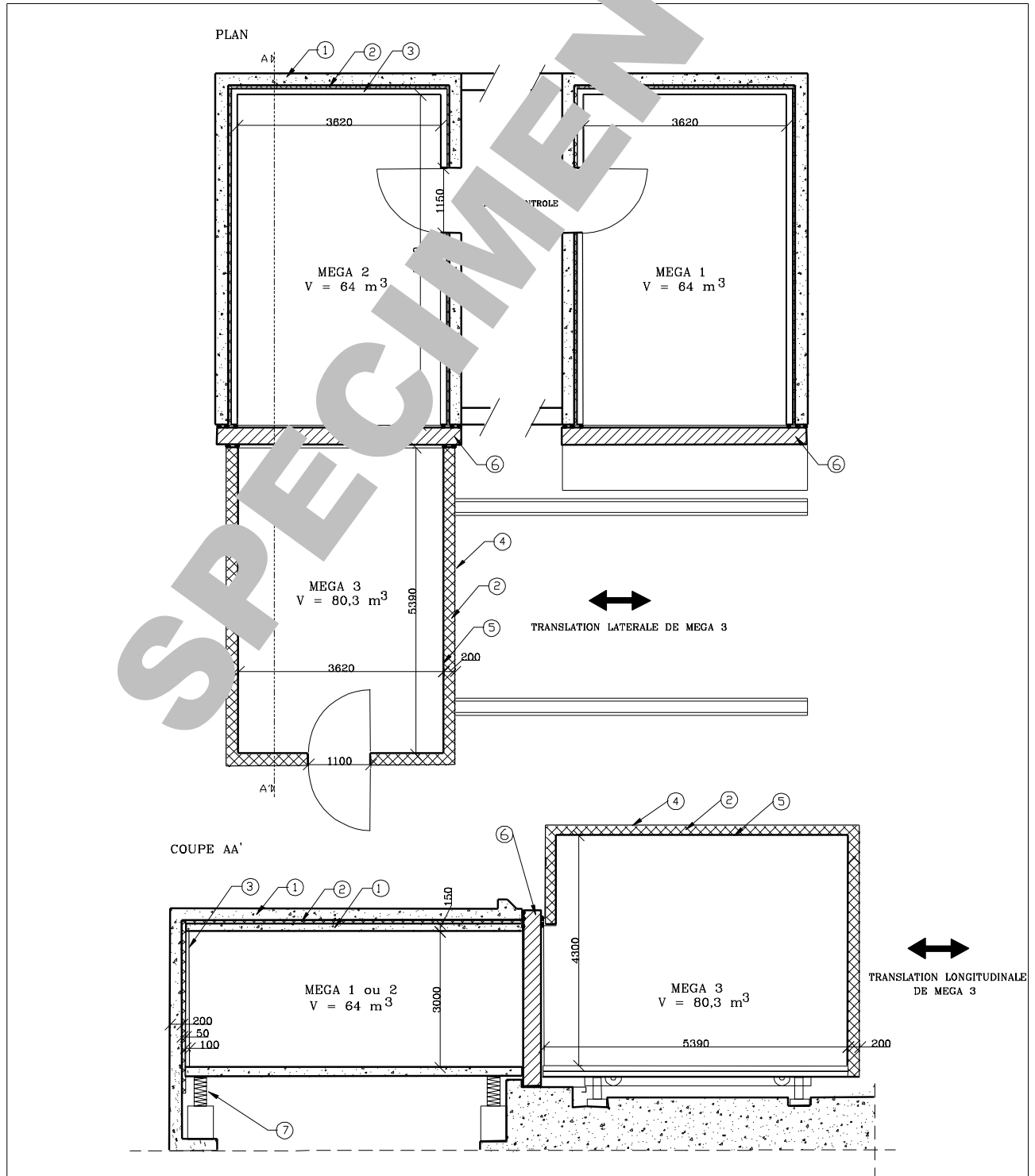
DESIGNATION	BRAND	TYPE	CSTB NO.
Microphone network	Bruël & Kjær	Microphone 4190	CSTB 01 0216
	Bruël & Kjær	Pre-amplifier 2669	
Rotating arm	Bruël & Kjær	3923	CSTB 97 0161
Amplifier	CARVER	PM600	CSTB 91 0118
Speaker	CSTB-ELECTRO VOICE	Pyramid	CSTB 97 0201

Control room

DESIGNATION	BRAND	TYPE	CSTB NO.
Real time analyser	Bruël & Kjær	2144	CSTB 97 0163
Microcomputer	DELL	OPTIPLEX GX 270	
Calibrator	Bruël & Kjær	4231	CSTB 04 1839

ANNEX 3 – LAYOUT OF THE TEST STATION

MEGA STATION



dimensions en mm

7	Boîte à ressort
6	Surface de l'ouverture S=10.5 m²
5	Tôle acier 6mm
4	Tôle acier 2mm
3	Bloc de béton plein e=100 mm
2	Laine minérale
1	Béton e=200 mm
REP	DESIGNATION

échelle:	1/100
	POSTE MEGA
	ACOUSTIQUE

END OF REPORT

HEALTH AND COMFORT DEPARTMENT

Acoustic tests laboratory

**SOUND REDUCTION INDEX R
OF DOOR UNITS**

MULTIPLE EXTENSION OF RESULTS no. 16/1-Rev.01

**This extension cancels and replaces the extension bearing number 16/1
dated 15 July 2016**

Only the French version of the report is authentic.

REQUESTOR: JELD WOOD
35 YERRES LA TENAREZE
37000 SAUZE

PURPOSE OF THE TESTS

- Wooden door unit with one leaf, ref. PAL ½ 30 S Raid, report no. AC10-26025948/11
- Wooden door unit with one leaf, ref. AC 30 29, report no. AC13-26047682/9
- Wooden door unit with one leaf, ref. AC 30 35, report no. AC15-26058603/8
- Wooden door unit with one leaf, ref. AC 30 36, report no. AC15-26058603/9
- Wooden door unit with one leaf, ref. AC ½ 30 EM, report no. AC10-26025948/1
- Wooden door unit with one leaf, ref. AC 60 31, reports no. AC10-26025948/4 and /5
- Wooden door unit with one leaf, ref. AC 60 30 GH GL, report no. AC10-26025948/6
- Wooden door unit with one leaf, ref. P ½ 39 S Raid, report no. AC06-016/1, test no. 3 and AC16-26065439/3
- Wooden door unit with one leaf, ref. PAL ½ 39 S Raid, reports no. AC10-26025948/12 and AC16-26065439/2.
- Wooden door unit with one leaf, ref. SERENA, report no. AC15-26058603/5
- Wooden door unit with one leaf, ref. P ½ 38 S1, report no. AC10-26025219/3
- Wooden door unit with one leaf, ref. PAL ½ 42 S, reports no. AC10-26025948/13, AC10-26025948/14 and AC16-26065439-1
- Wooden door unit with one leaf, ref. TX2 ½ 35, report no. AC10-26025219/5
- Wooden door unit with one leaf, ref. TX6 ½ 41, report no. AC10 26025219/7
- Wooden door unit with one leaf, ref. Tubular, reports no. AC16-26065439/10 and AC16-26065439/11.
- Wooden door unit with one leaf, ref. AC 60 41, reports no. AC16-26065439/4 and AC16-26065439/6.
- Wooden door unit with one leaf, ref. AC 30 39 EM, reports no. AC16-26065439/9 and FCBA 4579-10a.

PURPOSE OF THE EXTENSION: Dimensional variations of the leaves.

- VALIDITY:**
- 1 - This extension of the results is valid only when accompanied by the reference test report.
 - 2 - It can be combined with other extensions that pertain to the same test report, after opinion from the approved laboratory.

This extension comprises: - 5 pages	Only complete reproduction of the reference test report and this extension allows for use of the results for the compliance verification required for the validity of the object.
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SPECIMEN

DESCRIPTION OF THE MODIFICATION

Modification no. 1: Dimensions allowed on the single leaf door unit PAL ½ 30 S Raid (report no. AC10-26025948/11), AC 30 29 (report no. AC13-2604768/2), AC 30 35 (report no. AC15-26058603/8), AC 30 36 (report no. AC15-26058603/9), AC ½ 30 M (report no. AC10-26025948/1), AC 60 31 (reports no. AC10-26025948/4 and /5), AC 60 30 G (report no. AC10-26025948/6).

		Height			
		1840	2040	2240	2450
Width	730	OK	OK	OK	OK
	830	OK	OK	OK	OK
	930	OK	OK	OK	OK
	1030	OK	OK	OK	OK
	1130	OK	OK	OK	X
	1230	OK	OK	OK	
	1330	OK	OK	OK	

Modification no. 2: Dimensions allowed on the single leaf door unit PAL ½ 39 S (reports no. AC10-26025948/12 and AC16-26065439/2), SERENA (report no. AC15-26058603/5) and P ½ 38 S1 (report no. AC10-26025948/19/3).

		Height				
		1840	2040	2240	2500	2700
Width	730	OK	OK	OK	OK	OK
	830	OK	OK	OK	OK	OK
	930	OK	OK	OK	OK	OK
	1030	OK	OK	OK	OK	OK
	1130	OK	OK	OK	X	
	1230	OK	OK	OK		
	1330	OK	OK	OK		

Multiple extension of results no. 16/1-Rév01

Modification no. 3: Dimensions allowed on the single leaf door unit PAL ½ 39 S Raid (reports no. AC06-016/1 test no. 3 and AC1626065439/3).

		Height					
		1840	2040	2240	2440	2500	2700
Width	730	OK	OK	OK	OK	-2 dB	-2 dB
	830	OK	OK	OK	OK	-2 dB	-2 dB
	930	OK	OK	OK	OK	-2 dB	-2 dB
	1030	OK	OK	OK	OK	-2 dB	-2 dB
	1130	OK	OK	OK	X		
	1230	OK	OK	OK			
	1330	OK	OK	OK			

Modification no. 4: Dimensions allowed on the single leaf door unit PAL ½ 42 S (reports no. AC10-26025948/13, AC10-26025948/14 and AC16-26065439/1).

		Height					
		1840	2040	2240	2450	2650	2700
Width	730	OK	OK	OK	OK	OK	-1 dB
	830	OK	OK	OK	OK	OK	-1 dB
	930	OK	OK	OK	OK	OK	-1 dB
	1030	OK	OK	OK	OK	OK	-1 dB
	1130	OK	OK	OK	X		
	1230	OK	OK	OK			
	1330	OK	OK	OK			

Modification no. 5: Dimensions allowed on the single leaf door unit TX2 ½ 35 (report no. AC10-26025219/5), TX6 ½ 41 (report no. AC10-26025219/7), Tubular (AC16-26065439/10 and AC16-26065439/11), AC 60 41 (AC16-26065439/4 and AC16-26065439/6), AC 30 39 EM (AC16-26065439-9 and FCBA 404/16/390/7) and AC 30 39 EM (FCBA 404/16/390/3).

		Height		
		1840	2040	2440
Width	730	OK	OK	OK
	830	OK	OK	OK
	930	OK	OK	OK
	1030	Ok	Ok	ok

JUSTIFICATION OF THE EXTENSION

ACOTHERM Certification and based on reports AC04-009/5, AC15-26058603/5, AC06-016/1 test no. 1, AC10-26025219/5 and AC10-26025948/11, AC10-26025948/12, AC10-26025948/13, AC10-26025948/14, AC10-26025948/16, AC13-26047682-7, AC13-26047682-9.

CONCLUSION

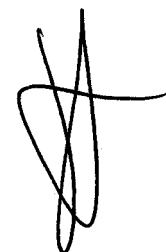
The modifications mentioned hereinabove are not of a nature that would degrade (unless mention is stipulated in the samples) the acoustic performance of the door units that are the object of the test reports mentioned in reference.

Done at Marne-la-Vallée, on 23 March 2017

Person in charge of the tests :

Alexandre Cancian

Head of the Division



Jean-Baptiste Chéné