

Test Report

CONFIDENTIAL

Report: BMT/MTP/F14369

Report on testing of a doorset to relevant clauses of BS 6375 Part 2 and BS 6375 Part 3

Issue date: February 2015



1762

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Results of Test: BMT/MTP/F14369

Yildiz Entegre Ağaç Sanayi ve Ticaret A.Ş.
Arslanbey O.S.B. Mah.
1. Cadde No:13
Kartepe
41285 Kocaeli
Türkiye

This document confirms that performance testing was conducted on 18 December 2014. Testing was conducted to the following standards:

- BS 6375 Part 2: 2009 Performance of windows and doors – Part 2 Classification for operation and strength characteristics and guidance on selection and specification
- BS 6375 Part 3: 2009 Performance of windows and doors – Part 3 Classification for additional performance characteristics and guidance on selection and specification

The following results were achieved:

Product tested	VarioDor single leaf doorset (inward opening)		
Summary of testing procedure			Result
	Test Standard	Classification Standard	
Resistance to vertical load test	EN 947: 1999	BS EN 1192: 1999	Class 2
Resistance to static torsion test	EN 948: 1999	BS EN 1192: 1999	Class 2
Resistance to soft and heavy body impact test	BS EN 949: 1999	BS EN 1192: 1999	Class 2
Resistance to hard body impact test	BS EN 950: 1999	BS EN 1192: 1999	Class 2
Operating forces	BS EN 12046-2: 2000	BS EN 12217: 2003	Class 2
BS 6375 Part 3: 2009 Annex A Basic security test			Pass

The results relate only to the specimens tested, as detailed in the technical specification



Lee Grant-Riach - Technical Officer

Vincent Kerrigan - Technical Manager
Issue date: 9th February 2015

BM TRADA

Chiltern House, Stocking Lane, Hughenden Valley, High Wycombe, HP14 4ND, UK

Tel: 01494 569800 Fax: 01494 564895

Web: www.bmtradagroup.com Email: testing@bmtrada.com

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Technical specification

Report: BMT/MTP/F14369

Test For: Yıldız Entegre Ağaç Sanayi ve Ticaret A.Ş., Arslanbey O.S.B. Mah., 1. Cadde No:13, Kartepe, 41285 Kocaeli, Türkiye.

Performance testing to relevant clauses of BS 6375 Part 2: 2009 and BS 6375 Part 3: 2009 was conducted on your doorset on 18 December 2014. The technical specification is detailed below. The specimen was delivered to BM TRADA laboratory on 16 December 2014.

Description of construction

The specimen was identified as a VarioDor Single leaf doorset (inward opening). The overall frame dimensions were 866mm wide x 2025mm high x 107mm deep and leaf dimensions were 800mm wide x 1982mm high x 35mm thick. The specimen was locked with a removable key.

Door leaf

		Material/type	Dimensions (mm)	Density (kg/m ³)
Stiles and rails		None present	-	-
Core		Monoblok MDF*	34 thick	550*
Facings	Internal	Melamine paper*	0.5 thick	-
	External	Melamine paper*	0.5 thick	-
Lippings		PVC*	1 thick	-
Adhesive	Facings	PUR*		
	Lippings	PUR*		

* As stated by client, not checked by laboratory

Door frame

		Material/type	Dimensions (mm)	Density (kg/m ³)
Head and jambs		Monoblok MDF*	107 x 40	866*
Rebate		Single type	41 x 10	-
Joints		90° Straight jointed fixed with 2No. 4 x 70 screws	-	-

* As stated by client, not checked by laboratory

Hardware

	Make/type	Size (mm)	Fixing details (dimensions in mm)
Hinges	3No. Sofuoglu Hinges stainless steel hinges (Ref. Steel okka)*	25 x 100 blade size	4No. 5.5 x 40 screws** into frame 4No. 5.5 x 40 screws into leaf
Locking mechanism	Kale Lock (Ref. 166 AR)*	25 x 240	2No. 3.7 x 22 screws
Keep	Kale Lock (Ref. 166 AR)*	32 x 195	2No. 3 x 20 screws
Handle	Hafele (Ref. StarTec Mina)*	110 lever length	4No. 3 x 20 screws into internal face and 4No. 3 x 20 screws into external face

* As stated by client, not checked by laboratory

**screw fixed through frame and into subframe

Perimeter sealing details

	Make/type	Size (mm)	Location
Leaf edges	None present	-	-
Frame reveal	Elastomer (Ref. Silicone)*	10 wide	On rebate upstand
Seal continuity	Uninterrupted by hardware	-	-

* As stated by client, not checked by laboratory

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testing@bmtrada.com



bmtradagroup.com



+44 (0) 1494 569800

Performance of Windows and Doors

Following the principles of BS 1191: 2012 Windows and Doors- Resistance to repeated opening and closing

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Report reference: CW19098

Issue date: 2nd September 2019

Project: Single leaf doorset

Prepared for: Yildiz Entegre Romania SA
1 Yildiz Street ,
Oarja117545 ,
Arges Count / Romania

Test Engineer(s): Dennis Humm

Build Check Ltd
Montrose House
Lancaster Road
Cressex Business Park
High Wycombe
Bucks HP12 3PY

Tel: 01494 452713 Fax: 0870 210 1013
E-mail: info@buildcheck.co.uk

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The results contained in this report relate only to the specimens tested and do not necessarily relate to samples from the production line of the above named company. This report does not constitute in any way a warranty or representation to the performance or quality of the said product. The above named company has supplied all technical specifications. Build Check Ltd and its representatives accept no liability for misuse of this report.

The legal validity of this report can only be claimed on presentation of the complete report.

1 Introduction

This document describes the testing on the Single leaf doorset, conducted in accordance with BS EN 1191: 2012 and BS EN 12046-1.

The testing was commissioned by Ahmet Kocat on behalf of Yildoz Entegre A.S. All specimens were selected and supplied by the client.

The testing was carried out by Build Check Ltd test laboratory at Unit 3 Lincoln Business Centre, Lincoln Road, High Wycombe, HP12 3RD. The testing was conducted from 17 March. The testing was not witnessed.

This report is only valid for the conditions under which the test was conducted. All measurement devices, instruments and other relevant equipment are calibrated and traceable to National Standards.

2 Summary of Results

The following summarises the results of testing carried out, in accordance with the relevant test methods and classification standards (see section 5 for more details).



Operating Forces	Test Method Ref	Classification Ref	Classification Achieved
Operating Forces	BS EN 12046-1	BS EN 12217	2

Mechanical Strength	Test Method Ref	Classification Ref	Classification Achieved
Resistance to repeated opening and closing	BS EN 1191	BS EN 12400:2002	5

The doorset range covered by this report is only applicable to the size and configuration tested.

The legal validity of this report can only be claimed on presentation of the complete report.

3 Authorisation

	Issued by:	Checked by:
Signature:		
Name:	Dennis Humm	Richard Bate
Title:	Test Engineer	Technical Director

4 Test Details

Configuration: Single leaf doorset

Nominal Overall Dimensions:
 Outer frame (w x h): 865mm x 2025mm
 Door leaf (w x h): 800mm x 1980mm

The specimen(s) were received on: 17/03/2019

The test sample(s) were selected and provided direct from the client.

The specimen was conditioned in the laboratory for at least four hours, at a temperature between 15 to 30°C and a relative humidity between 25 to 75%.

The laboratory ambient air temperature at the start of test was 16°C

The doorset specimens were supplied in good condition, mounted into a nominally 50mm x 100mm sub-frame in accordance with the manufacturer's installation requirements. They were secured into the test rig by the responsible engineer.

The legal validity of this report can only be claimed on presentation of the complete report.

4.1 Description of Specimen

Description of specimen was supplied by the client and not verified by Build Check – for further information see drawings.

Frame Profiles	Ref. No.	Material Type, Manufacturer's Name, Density (timber only) & Surface Treatment	Dimensions (Height & Width)
Outer Frame	-	Monoblok Mdf / Yildiz entegre SA	865mm x 2025mm
Door leaf	-	Monoblok Mdf / Yildiz entegre SA	800mm x 1980mm
Joint Type	Screw Jointing		

Weather Seals	Ref. No.	Material Type/ Manufacturer's Name	Continuous or Joined @ Corners
Frame Rebate	-	Monoblok Mdf / Yildiz entegre SA	Joined

Hardware	Ref. No.	Manufacturer's and Product Name	Fixings
Lock	221	Kale kilit	2No. Kale 3.8x18mm Chipboard screws
Lock Keeps	-	Kale Kilit	2No. Kale 3.8x18mm Chipboard screws
Handles	-	Hafele	4No. Sofuoğlu 3.5x18mm chipboard screws.
Hinges/ Friction Stays	-	3No. Variodor, Lift off Hinges	4No. Sofuoğlu 5.7x40mm Chipboard Screws into frame. 4No. Sofuoğlu 5.7x40mm into leaf each.

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5 Performance Requirements and Results

5.1 Resistance to repeated opening and closing

Primary sash Initial measurements

Description	Test 1	Test 2	Test 3	Average	Stroke of moving component
Disengage Latch (Measured on handle in N)	31.0	29.6	30.8	30.47	45°
Commence Opening (Measured on handle in N)	9.9	5.9	3.6	6.47	90°
Commence Closing (Measured on handle in N)	13.2	5.9	3.7	7.6	90°

Final measurements

Description	Test 1 (N)	Test 2 (N)	Test 3 (N)	Average (N)	Stroke of moving component
Disengage Latch (Measured on handle in N)	20.1	23.2	19.8	21.03	45°
Commence Opening (Measured on handle in N)	7.2	11.1	10.2	9.5	90°
Commence Closing (Measured on handle in N)	14.1	9.8	10.1	11.33	90°

Variation in performance

Description	Variation in performance %
Handle down force	31%
Leaf opening force	46.8%
Leaf closing force	49.1%

The number of cycles completed by the opening leaf was 100,000, as required by class 5 of the standard. Lubrication and maintenance was not performed. The stroke of the leaf was 90 degrees with a casement weight of 37kg and a dead load of 0.2kg. The fastening system was operated. No signs of excessive wear were apparent.

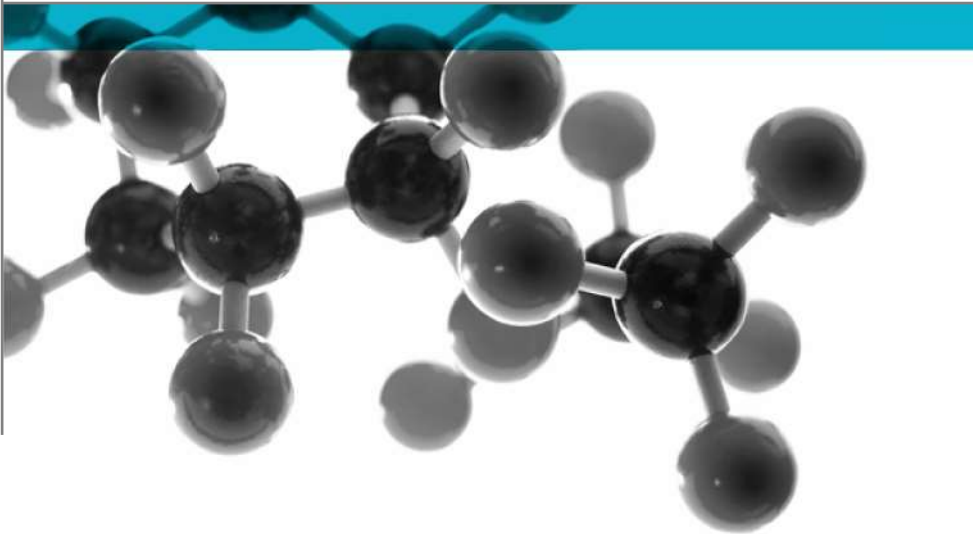
The legal validity of this report can only be claimed on presentation of the complete report.

Figure 1 – Photograph of Specimen



The legal validity of this report can only be claimed on presentation of the complete report.

BS EN ISO 10140-2:2010



Test of: Monoblok MDF Single leaf doorset

Acoustics - Laboratory measurement of sound insulation of building elements. Measurement of airborne sound insulation

A Report To:
Yildiz Entegre Romania
No.1 Yildiz Street
Oarja
Arges County
Romania
Zip 117545

Document Reference:
WYC412492

Date: 03/07/2019

Copy: 1

Issue No.: 1

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Summary of Performance

The following performance was achieved from the specimens tested. Full details of the testing and specimen construction are described in the report.

Test No.	Product Name	Product Type	Caulked	Test Result (R_w (C;C _{tr}))
1	Monoblok MDF	Single leaf doorset	Yes	34 (-1;-2) dB
2	Monoblok MDF	Single leaf doorset	No	30 (-1;-1) dB

1 Introduction

The test specimen was supplied by the sponsor and delivered to WARRINGTONFIRE on 19 March 2019. The specimen was installed into a timber stud partition within the test chamber by Warringtonfire.

Test Details

The specimen was tested to BS EN ISO 10140-2:2010 Acoustics - Laboratory measurement of sound insulation of building elements. Measurement of airborne sound insulation

Testing was conducted at Warringtonfire, Chiltern House, Stocking Lane, Hughenden Valley, Buckinghamshire. HP14 4ND on the 22 March 2019.

For details of the testing, please see Section 3, Methodology.

Supporting Construction Description

The partition consisted of two wall leaves separated by a 400mm air gap. Each wall leaf was constructed of nominal 45mm x 90mm softwood studs at 600mm centres with three layers of 15mm plasterboard on each face. The stud wall cavities were filled with 100mm thick Rockwool insulation.

Laboratory Construction Details

The laboratory consists of a source room and a receive room that are completely separated by a 50mm gap filled with mineral wool. Intersections of the floor, wall and ceiling planes are all perpendicular. The rooms have opposite openings for the installation of the test specimen formed by masonry piers and lintels. The depth of the piers is greater in the source room than the receive room.

The walls are of timber frame construction, approx. 190mm thick, symmetrical through the thickness. Studs are 90mm deep at 600mm centres with mineral wool insulation between them. Resilient bars approx. 20mm deep are fixed to the studwork. Two layers of 15mm gypsum board are fixed to the bars on both the inner and outer face.

The ceilings consist of 150mm deep timber joists with mineral wool insulation installed between joists. Resilient bars approx. 20mm deep are fixed to the lower edge of the joists. Two layers of 15mm gypsum board are fixed to the bars on the inner face only.

The floors are assembled from sound absorbing boards on a rubber underlay.

Dimensions:

	Volume	Width	Length	Height
	m ³	m	m	m
Source room	82.4	5.49	6.03	2.49
Receive room	69.6	5.49	5.09	2.49

2 Test Specimen Details

Product Name	Monoblok MDF
Product Manufacturer	Yildiz Entegre Romania
Product Type	Single leaf doorset
Material Type	Timber
Overall Dimensions	852mm wide x 2010mm high x 206mm deep
Leaf Dimensions	800mm wide x 1980mm high x 36mm deep

Door Leaf

	Material/type	Dimensions (mm)	Density (kg/m³)
Core	Monoblok MDF (Manufacturer Yildiz Entegre)*	800 x 1980*	620*
Decorative Facings	Melamine paper (Manufacturer Yildiz Entegre)*	0.10 thick*	-
Adhesive	Pollyuretone*	-	-

* As stated by sponsor, not checked by laboratory

Door Frame

	Material/type	Dimensions (mm)	Density (kg/m³)
Head & jambs	Melamine faced Monoblok MDF (Manufacturer Yildiz Entegre)	206 x 40	640*
Rebate	Single type	40 x 10*	-
Joints	Screwed Joint Fixed by 2No. 5 x 70 screws in each corner*	-	-

* As stated by sponsor, not checked by laboratory

Hardware

	Make/type	Size (mm)	Fixing details (dimensions in mm)
Hinges	3No. Varidor hinges (Ref. Lux Yuvali Okka)*	100 x 30 blade size	3No. 6 x 40 screws
Locking mechanism	Varidor (DAF KILIT Locks & Handles CO.Inc)*	240 x 23 (overall size)	2No. 3 x 18 screws
Keep	Kale Kilit*	200 long	3No. 3 x 18 screws
Handles	Houfele (Ref. 903.78.784)*	120 x 52 (Footprint size)	3No. 3 x 18 screws

* As stated by sponsor, not checked by laboratory

Perimeter Sealing details

	Make/type	Size (mm)	Location
Threshold	Marble*	175 x 780*	-
Frame reveal	Silicone seal, USKA Kauçuk /Istanbul, model D*	9 x 9	Fitted within upstand of stop
Seal continuity	Seals uninterrupted by hardware	-	-

* As stated by sponsor, not checked by laboratory

3 Methodology

Airborne Sound Insulation Test

- The loudspeakers were placed in the corners of the source room
- The sound level meter was calibrated prior to testing.
- 5 measurements were taken in the source room, at fixed positions.
- 5 measurements were taken in the receive room at fixed positions.
- Background measurements were taking at each third octave frequency between 50Hz and 5000Hz.
- 6 Reverberation measurements were taken in the receive room, in accordance with BS EN ISO 3382-2:2008 interrupted, engineering method.
- Calculations, including C & C_{tr}, were carried out in accordance with BS EN ISO 717-1
- The sound reduction index was calculated using the following formula from BS EN ISO 10140-2:2010:

$$R_w = L1 - L2 + 10\text{Log}\left(\frac{S}{A}\right) \text{ dB}$$

Where:

L1 is the logarithmic average of the source room measurements
L2 is the logarithmic average of the receive room measurements
S is the area of the test specimen

A is the equivalent absorption area, where $A = \frac{0.16V}{T}$

Where:

V = The volume of the receive room
T = the reverberation time measured in seconds

1. Logarithmic average of 5 Measurements (L1 & L2)
2. Deduction of L1s from L2s
3. Area of test specimen (S) divided by equivalent sound absorption area (A)
4. Weighted Final Result R_w dB

Test Equipment

Equipment	Equipment reference number
Bruel & Kjaer Sound Level Meter (Type 2270)	ACT-009
Bruel & Kjaer Microphones (Type 4189)	ACT-010 & ACT-016
Bruel & Kjaer Calibrator (Type 4231)	ACT-011
Amplifiers	ACT-007 & ACT-049
Noise Generators	ACT-008
Loudspeakers (EV ZX1-90PA)	ACT-006, ACT-021, ACT-022
Graphic Equaliser (DBX Dual Channel)	ACT-023

4 Parameters & Limitations

Parameters



The test fulfilled all criteria required of ISO 10140-2, including:

- Sound level meter (microphone) was located as required
- Sound sources (loudspeakers) were located as required
- Reverberation Time readings were greater than 20dB but not so large that the observed decay cannot be represented by a straight line.
- Background noise measurements were 10dB below L2 measurements.
- Temperature was reported to within $\pm 0.1^{\circ}\text{C}$
- Barometric pressure was reported to within ± 0.01 Mbar (± 1 Pa)
- Humidity was reported to within $\pm 1\%$
- Frequencies 50Hz, 63Hz and 80Hz are outside of our UKAS accreditation, and are for reference only. These frequencies do not affect the over R_w figure.
- R_{max} of the test chambers was measured to be 65dB
- The test chambers are two cuboid rooms 5.49m wide and a ceiling height of 2.58m, volumes of chambers for testing are reported with the individual test data

Limitations

- The results only relate to the behaviour of the specimen submitted for test, as described in the Technical Specification (Section 2), and under the particular conditions of test.
- The results are not intended to be the sole criteria for assessing the acoustic performance of the element in use nor do they necessarily reflect the actual behaviour once installed on site.
- The specification and interpretation of test methods are the subject of ongoing development and refinement. Changes in associated legislation may also occur. For these reasons it is recommended that the relevance of test reports over 5 years old should be considered by the user. WARRINGTONFIRE will be able to offer a review of the procedures adopted for a particular test to ensure that they are consistent with current practices.
- The results are solely for use by the sponsor and the stated purpose.
- The sponsor cannot rely on information provided without consent from WARRINGTONFIRE.
- Any recommendations are specific to the assignment and the sponsor.
- Extracts from the report are not permitted.

5 Authorisation

	Issued by:	Authorised by:
Signature:		
Name:	Jamie Nelson	Lee Grant-Riach
Title:	Technical Officer	Lead Technical Officer
Date of Issue	3 rd July 2019	

Appendix 1 – Summary of Results & Test Data Sheets (2 Pages)

Product Name	Monoblok MDF
Product Type	Single leaf doorset

Data Sheet Ref.	Variations		Test Result $R_w (C;C_{tr})$
WYC412492/P001	Caulked	Yes	34 (-1;-2) dB
WYC412492/P002	Caulked	No	30 (-1;-1) dB

Sponsor:	Yildiz Entegre Romania
Product Name/Desc.	Monoblok MDF
Product Type	Single leaf doorset
Material Type	Timber
Variations:	
Caulked	Yes

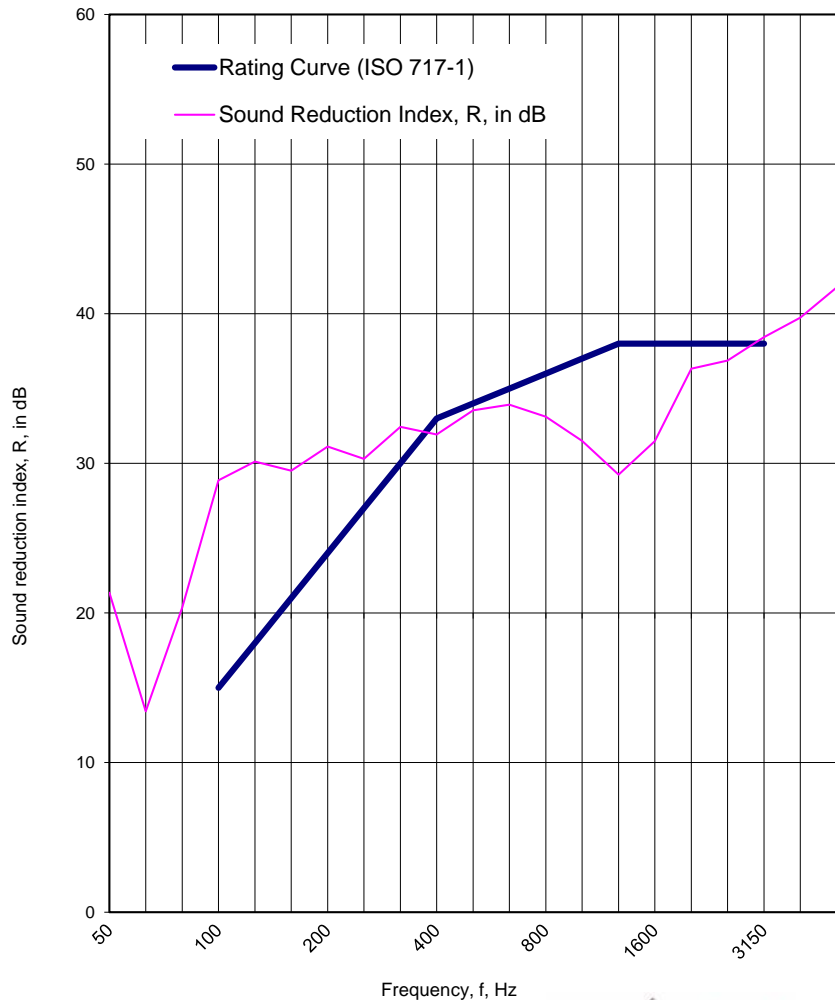
For detailed technical specification, please refer to Section 2 of the report

Data sheet Ref. WYC412492/P001
Date of Test: 22/03/2019

Source Room Volume:	82.40 m ³
Receive Room Volume:	69.60 m ³
Specimen Installed By:	Warringtonfire
Area of Specimen (S):	1.72 m ²
	<u>Sour.</u> <u>Rec.</u>
Temp. in Test Rooms:	17.1 17.2 °C
Static Pressure:	10102.0 10100.0 Pa
Humidity in Test Rooms:	49.9 48.9 %

f, Hz	R, dB
50 ⁺	21.4
63 ⁺	13.4
80 ⁺	20.4
100	28.9
125	30.1
160	29.5
200	31.1
250	30.3
315	32.4
400	31.9
500	33.5
630	33.9
800	33.1
1000	31.5
1250	29.2
1600	31.5
2000	36.3
2500	36.9
3150	38.4
4000	39.7
5000	41.8
AAD	-29.1

Frequency range for rating in accordance with ISO 717-1



$R_w = 34$ dB	$C_{(50-3150)} = -1$ dB	$C_{tr(50-3150)} = -4$ dB
$R_w+C = 33$ dB	$C_{(50-5000)} = 0$ dB	$C_{tr(50-5000)} = -4$ dB
$R_w+C_{tr} = 32$ dB	$C_{(100-5000)} = 0$ dB	$C_{tr(100-5000)} = -2$ dB

Lee Grant-Riach
Lead Technical Officer

⁺ indicates that the frequency is outside of our UKAS accreditation and is for information only

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Sponsor:	Yildiz Entegre Romania
Product Name/Desc.	Monoblok MDF
Product Type	Single leaf doorset
Material Type	Timber
Variations:	
Caulked	No

For detailed technical specification, please refer to Section 2 of the report

Data sheet Ref. WYC412492/P002

Date of Test: 22/03/2019

Source Room Volume: 82.40 m³

Receive Room Volume: 69.60 m³

Specimen Installed By: Warringtonfire

Area of Specimen (S): 1.72 m²

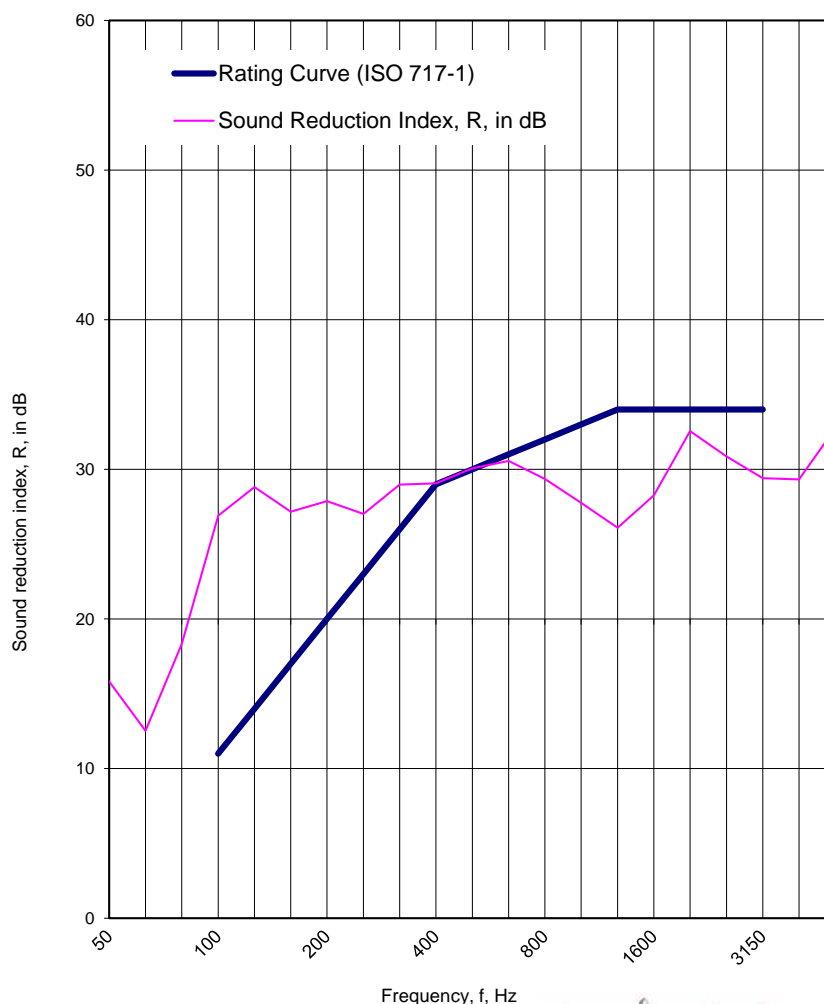
	<u>Sour.</u>	<u>Rec.</u>	
Temp. in Test Rooms:	17.1	17.2	°C

Static Pressure:	10102.0	10100.0	Pa
------------------	---------	---------	----

Humidity in Test Rooms:	49.9	48.9	%
-------------------------	------	------	---

f, Hz	R, dB
50 ⁺	15.8
63 ⁺	12.5
80 ⁺	18.3
100	26.9
125	28.8
160	27.2
200	27.9
250	27.0
315	29.0
400	29.1
500	30.1
630	30.6
800	29.4
1000	27.8
1250	26.1
1600	28.3
2000	32.6
2500	30.9
3150	29.4
4000	29.3
5000	32.8
AAD	-31.1

Frequency range for rating in accordance with ISO 717-1



R_w = 30 dB	C _(50 - 3150) = -1 dB	C _{tr (50 - 3150)} = -3 dB
R_w+C = 29 dB	C _(50 - 5000) = 0 dB	C _{tr (50 - 5000)} = -3 dB
R_w+C_{tr} = 29 dB	C _(100 - 5000) = 0 dB	C _{tr (100 - 5000)} = -2 dB

Lee Grant-Riach
Lead Technical Officer

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Report for: Yildiz Entegre Romania

Report Ref: WYC412492