BM TRADA

Acoustic Test Report

Sponsor:
Sentry Panel Products Ltd
Muirhouses
Bo'ness
Edinburgh
EH51 9SS

CONFIDENTIAL

Report: BMT/MTP/F14235/01

Report on the testing of single leaf 44mm Sentry Protech doorsets for acoustic performance to BS EN ISO 10140-2:2010

Issue date: November 2014

1762

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1 Introduction

The test specimens were supplied by the client and delivered to BM TRADA on 22 August 2014. The specimens were installed into a timber stud partition within the test chamber by BM TRADA.

Test Details

The specimens were 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 BM TRADA, Chiltern House, Stocking Lane, Hughenden Valley, Buckinghamshire. HP14 4ND on the 22 August 2014.

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

Supporting Construction Description

The partition consisted of two wall leaves separated by a 150mm air gap. Each wall leaf was constructed of nominal 45mm x 90mm softwood studs at 600mm centres with two layers of 15mm plasterboard on each face. The stud wall cavities were filled with 100mm thick Rockwool insulation.

2 Test Specimen Details

Product Names	SENTRY ProTech 44mm Plywood faced SENTRY ProTech 44mm MDF faced
Product Type	Single leaf doorsets
Material Type	Timber
Overall Dimensions	900mm wide x 2100mm high x 120mm deep
Leaf Dimensions	826mm wide x 2035mm high x 44mm deep
Variations between Tests	12 tests were conducted on this product with variations in: • Perimeter caulked • Perimeter sealing • Threshold sealing • Glazing configuration Refer to Summary of Results & Test Data Sheets in Appendix 1 for details of the variations.

SENTRY ProTech 44mm Plywood faced

		Material/type	Dimensions (mm)	Density (kg/m³)
Core		3-layer core with vertical outer lamels and horizontal inner lamels comprising mixed softwood species*	36 thick	450-500*
Facings		Poplar* plywood	4 thick	450*
Lippings		Sapele* – all four edges	8 thick	640*
Adhesive	**Facing**	WBP melamine*	-	-
	Core	WBP melamine*	-	-
	Lipping	Polyurethane*	-	-

* As stated by client, not checked by laboratory

SENTRY ProTech 44mm MDF faced

		Material/type	Dimensions (mm)	Density (kg/m³)
Core		3-layer core with vertical outer lamels and horizontal inner lamels comprising mixed softwood species*	36 thick	450-500*
Facings		MDF*	4 thick	700*
Lippings		Sapele* – all four edges	8 thick	640*
Adhesive	**Facing**	WBP melamine*	-	-
	Core	WBP melamine*	-	-
	Lipping	Polyurethane*	-	-

* As stated by client, not checked by laboratory

Door Frame

	Material/type	Dimensions (mm)	Density (kg/m³)
Head & jambs	Tulipwood*	32 x 120	510*
Rebate	Single type	12 x 45	-
Stops	Tulipwood*	12 x 50	510*
Threshold	Tulipwood*	20 x 120	510*
Joints	Half lap joints with 2No. 5 x 80 screws*	-	-

* As stated by client, not checked by laboratory

Hardware

	Make/type	Size (mm)	Fixing details (dimensions in mm)
Hinges	3No. Halspan R90 lift-off hinges (Ref: HIN-BSS-100)*	110 x 40 blade size	4No. 5 x 30 into frame* 4No. 5 x 50 into leaf*
Locking mechanism	Tubular mortise latch*, no further detail provided by client	21 x 16 x 65*	2No. 3.2 x 25 screws into leaf*
Keeps	Strike plate*, no further detail provided by client	56 x 25	2No. 3.2 x 20 screws into frame*
Handles	Aluminium lever handles*, no further detail provided by client	76 x 40 x 9.5 backplate*	4No. 3.5 x 25 screws into leaf face*

* As stated by client, not checked by laboratory

Perimeter Sealing details

		Make/type	Size (mm)	Location
Door leaf edges		None	-	-
Frame reveal	**Head and jambs**	Norseal 710*	11 x 10.2	Abutting the door stop in the frame reveal
	Threshold	Halspan dropseal,(Ref: SLS-DRP 300 series)*	31 x 12	Centrally fitted in the bottom edge of the door leaf
Seal continuity		All seals uninterrupted	-	-

* As stated by client, not checked by laboratory

Glazing

	Make/type/size (mm)	(dimensions in mm)
Glass type and configuration	**Refer to Results & Data Sheets in Appendix 1 for details of variations**	-
Overall size	320 wide x 1595 high	-
Sight size	300 wide x 1570 high	-
Cassette	Sapele*	44 x 44
Bead	Sapele*	12 x 28
Cassette fixing	14No. into internal face of leaf	4.5 x 45
Bead fixing	14No. into cassette, internally beaded	3.5 x 25
Gaskets	Norseal E100 Weather Strip*	9 x 4.5*
Sealants	Sealmaster Fireglaze Mastic	1 thick

* As stated by client, 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:

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

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 & Kjear Sound Level Meter (Type 2270)	ACT-009
Bruel & Kjear Microphones (Type 4189)	ACT-010 & ACT-016
Bruel & Kjear Calibrator (Type 4231)	ACT-011
Amplifiers	ACT-007 & ACT-020
Noise Generators	ACT-008 & ACT-009
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 ± 0.1°C
- Barometric pressure was reported to within ± 0.01 Mbar (±1 Pa)
- Humidity was reported to within ± 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. BM TRADA 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 client and the stated purpose.
- The client cannot rely on information provided without consent from BM TRADA.
- Any recommendations are specific to the assignment and the client.
- Extracts from the report are not permitted.

5 Authorisation

	Issued by:	Checked by:
Signature:		
Name:	Martin Durham	Vincent Kerrigan
Title:	Technical Officer	Technical Manager
Date of Issue		27th November 2014

Appendix 1 – Summary of Results & Test Data Sheets (12 Pages)

Product Names	SENTRY ProTech 44mm Plywood faced SENTRY ProTech 44mm MDF faced
Product Type	Timber Single leaf doorsets

Datasheet Ref.	**Variations**		**Test Result R_w ($C;C_{tr}$)**
MTP/F14235/01/P001	Product name	SENTRY ProTech 44mm Plywood faced	35 (0;-2) dB
	Perimeter caulked	Yes	
	Perimeter sealing	None	
	Threshold sealing	None	
	Glazing configuration	None	
MTP/F14235/01/P002	Product name	SENTRY ProTech 44mm Plywood faced	33 (0;-1) dB
	Perimeter caulked	No	
	Perimeter sealing	Nor710	
	Threshold sealing	Halspan dropseal, SLS-DRP 300 series	
	Glazing configuration	None	
MTP/F14235/01/P003	Product name	SENTRY ProTech 44mm Plywood faced	34 (0;-1) dB
	Perimeter caulked	No	
	Perimeter sealing	Nor710	
	Threshold sealing	Halspan dropseal, SLS-DRP 300 series	
	Glazing configuration	7mm Pilkington Pyroshield II	

MTP/F14235/01/P004	Product name	SENTRY ProTech 44mm Plywood faced	34 (0;-1) dB
	Perimeter caulked	No	
	Perimeter sealing	Nor710	
	Threshold sealing	Halspan dropseal, SLS-DRP 300 series	
	Glazing configuration	7mm Pilkington Pyrodur Plus	
MTP/F14235/01/P005	Product name	SENTRY ProTech 44mm Plywood faced	34 (0;-1) dB
	Perimeter caulked	No	
	Perimeter sealing	Nor710	
	Threshold sealing	Halspan dropseal, SLS-DRP 300 series	
	Glazing configuration	15mm Pilkington Pyrostop	
MTP/F14235/01/P006	Product name	SENTRY ProTech 44mm MDF faced	35 (0;-2) dB
	Perimeter caulked	Yes	
	Perimeter sealing	None	
	Threshold sealing	None	
	Glazing configuration	None	
MTP/F14235/01/P007	Product name	SENTRY ProTech 44mm MDF faced	34 (0;-2) dB
	Perimeter caulked	No	
	Perimeter sealing	Nor710	
	Threshold sealing	Halspan dropseal, SLS-DRP 300 series	
	Glazing configuration	None	
MTP/F14235/01/P008	Product name	SENTRY ProTech 44mm MDF faced	34 (0;-1) dB
	Perimeter caulked	No	
	Perimeter sealing	Nor710	
	Threshold sealing	Halspan dropseal, SLS-DRP 300 series	
	Glazing configuration	7mm Pilkington Pyroshield II	

MTP/F14235/01/P009	Product name	SENTRY ProTech 44mm MDF faced	35 (0;-1) dB
	Perimeter caulked	No	
	Perimeter sealing	Nor710	
	Threshold sealing	Halspan dropseal, SLS-DRP 300 series	
	Glazing configuration	7mm Pilkington Pyrodur Plus	
MTP/F14235/01/P010	Product name	SENTRY ProTech 44mm MDF faced	36 (0;-2) dB
	Perimeter caulked	No	
	Perimeter sealing	Nor710	
	Threshold sealing	15mm Pilkington Pyrostop	
	Glazing configuration	None	
MTP/F14235/01/P027	Product name	SENTRY ProTech 44mm MDF faced	29 (0;-2) dB
	Perimeter caulked	No	
	Perimeter sealing	Nor710	
	Threshold sealing	None	
	Glazing configuration	None	
MTP/F14235/01/P028	Product name	SENTRY ProTech 44mm MDF faced	25 (0;-2) dB
	Perimeter caulked	No	
	Perimeter sealing	Nor710	
	Threshold sealing	None	
	Glazing configuration	None	

Laboratory measurement to BS EN ISO 10140-2 - Airborne Sound Insulation of Building Elements

1762

Client:	**Sentry Panel Products Ltd**
Product Name	**SENTRY ProTech 44mm Plywood faced**
Product Type	Single leaf doorset
Material Type	Timber
Variations:	
Perimeter caulked	Yes
Perimeter seals	None
Threshold sealing	None
Glazing configuration	None

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

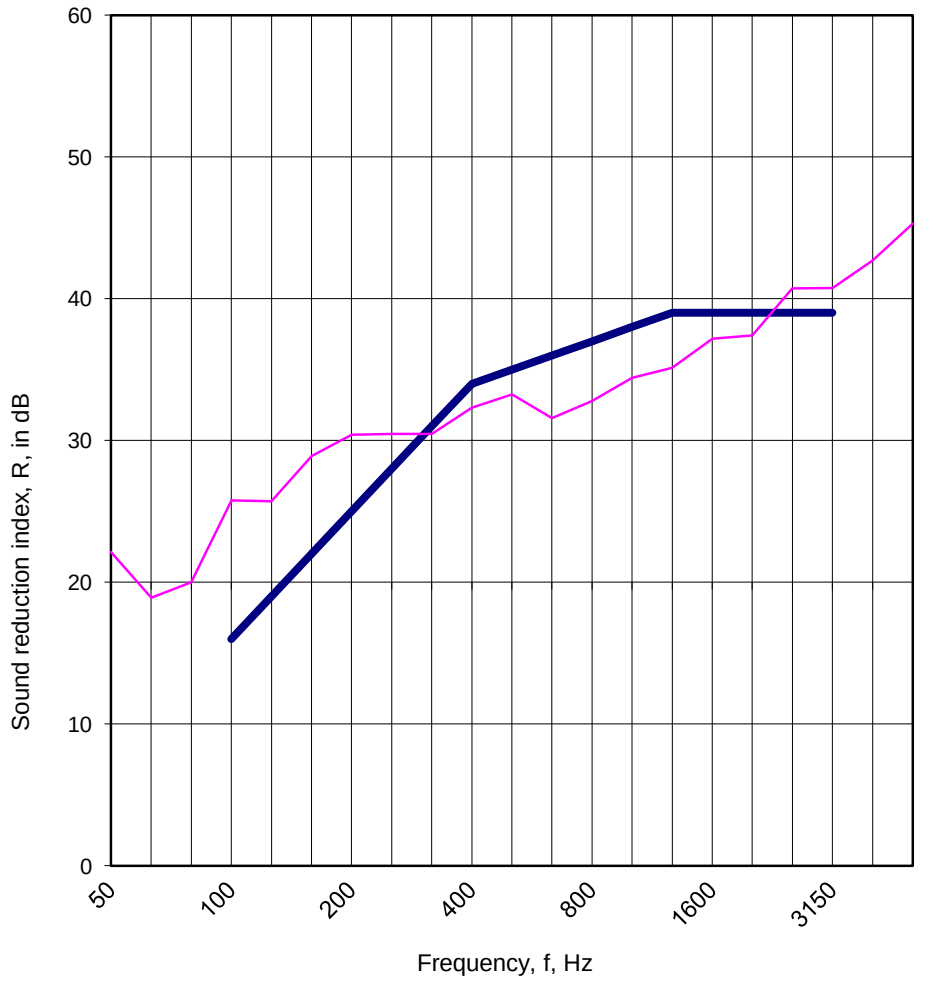
Datasheet Ref. MTP/F14235/01/P001

Date of Test: 22/08/2014

Source Room Volume:	86.00 m^3
Receive Room Volume:	67.00 m^3
Specimen Installed By:	BM TRADA
Area of Specimen (S):	1.89 m^2
Temp. in Test Rooms:	17.8 °C
Static Pressure:	99410.0 Pa
Humidity in Test Rooms:	60.9 %

f, Hz	*R* ,dB	
50+		22.1
63+		18.9
80+		20.0
100		25.8
125		25.7
160		28.9
200		30.4
250		30.5
315		30.5
400		32.3
500		33.2
600		31.6
800		32.8
1000		34.4
1250		35.1
1600		37.2
2000		37.4
2500		40.7
3150		40.7
4000		42.7
5000		45.3
AAD		-23.5

Frequency range for rating in accordance with ISO 717-1



R_w =	**35 dB**	$C_{(50-3150)}$ =	0 dB	$C_{tr\ (50-3150)}$ =	-3 dB
R_w+C =	**35 dB**	$C_{(50-5000)}$ =	1 dB	$C_{tr\ (50-5000)}$ =	-3 dB
R_w+C_{tr} =	**33 dB**	$C_{(100-5000)}$ =	1 dB	$C_{tr\ (100-5000)}$ =	-2 dB

Martin Durham
Technical Officer

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

Laboratory measurement to BS EN ISO 10140-2 - Airborne Sound Insulation of Building Elements

1762

Client:	**Sentry Panel Products Ltd**
Product Name	**SENTRY ProTech 44mm Plywood faced**
Product Type	Single leaf doorset
Material Type	Timber
Variations:	
Perimeter caulked	No
Perimeter seals	Nor 710
Threshold sealing	Halspan dropseal, SLS-DRP 300 series
Glazing configuration	None

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

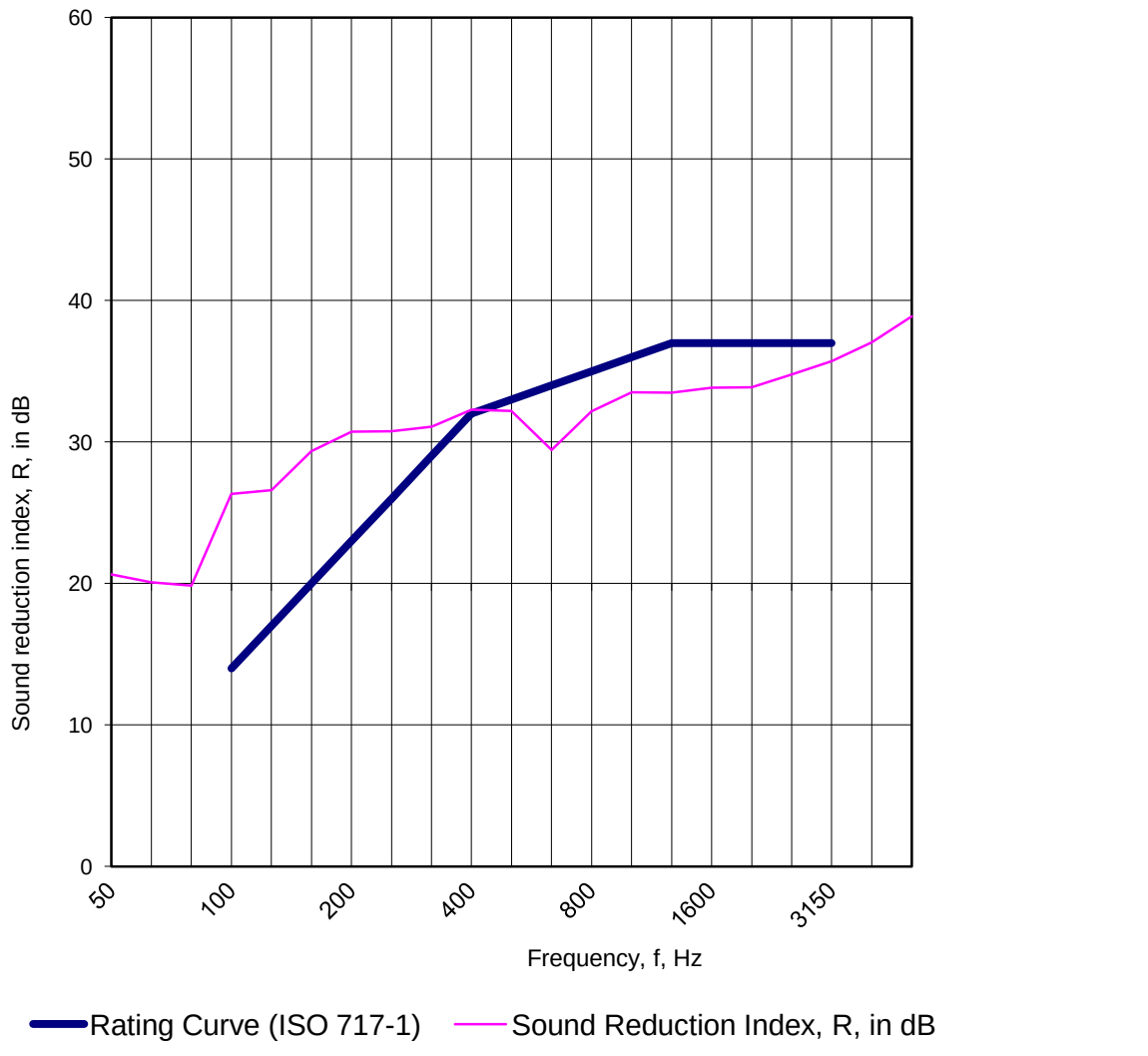
Datasheet Ref. MTP/F14235/01/P002

Date of Test: 22/08/2014

Source Room Volume:	86.00 m^3
Receive Room Volume:	67.00 m^3
Specimen Installed By:	BM TRADA
Area of Specimen (S):	1.89 m^2
Temp. in Test Rooms:	17.8 °C
Static Pressure:	99410.0 Pa
Humidity in Test Rooms:	60.9 %

f, Hz	*R* ,dB
50+	20.6
63+	20.1
80+	19.9
100	26.3
125	26.6
160	29.3
200	30.7
250	30.7
315	31.1
400	32.3
500	32.2
600	29.4
800	32.2
1000	33.5
1250	33.5
1600	33.8
2000	33.9
2500	34.8
3150	35.7
4000	37.0
5000	38.9
AAD	-24.0

Frequency range for rating in accordance with ISO 717-1



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

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Laboratory measurement to BS EN ISO 10140-2 - Airborne Sound Insulation of Building Elements

1762

Client:	**Sentry Panel Products Ltd**
Product Name	**SENTRY ProTech 44mm Plywood faced**
Product Type	Single leaf doorset
Material Type	Timber
Variations:	
Perimeter caulked	No
Perimeter seals	Nor 710
Threshold sealing	Halspan dropseal, SLS-DRP 300 series
Glazing configuration	7mm Pilkington Pyroshield II

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

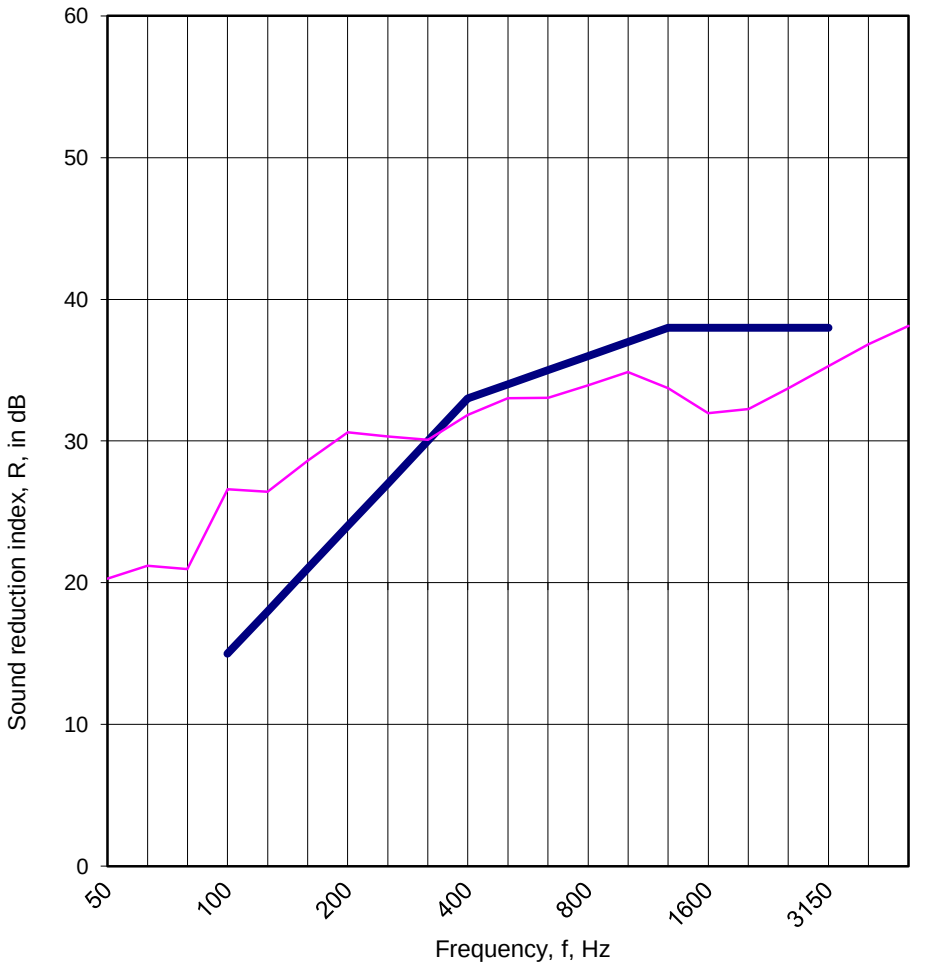
Datasheet Ref. MTP/F14235/01/P003

Date of Test: 22/08/2014

Source Room Volume:	86.00 m^3
Receive Room Volume:	67.00 m^3
Specimen Installed By:	BM TRADA
Area of Specimen (S):	1.89 m^2
Temp. in Test Rooms:	17.8 °C
Static Pressure:	99410.0 Pa
Humidity in Test Rooms:	60.9 %

f, Hz	*R* ,dB	
50+		20.3
63+		21.2
80+		21.0
100		26.6
125		26.4
160		28.6
200		30.6
250		30.3
315		30.1
400		31.8
500		33.0
600		33.0
800		33.9
1000		34.9
1250		33.7
1600		32.0
2000		32.3
2500		33.7
3150		35.3
4000		36.8
5000		38.1
AAD		-31.4

Frequency range for rating in accordance with ISO 717-1



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

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Laboratory measurement to
BS EN ISO 10140-2 -
Airborne Sound Insulation of Building Elements

1762

Client:	**Sentry Panel Products Ltd**
Product Name	**SENTRY ProTech 44mm Plywood faced**
Product Type	Single leaf doorset
Material Type	Timber
Variations:	
Perimeter caulked	No
Perimeter seals	Nor 710
Threshold sealing	Halspan dropseal, SLS-DRP 300 series
Glazing configuration	7mm Pilkington Pyrodur Plus

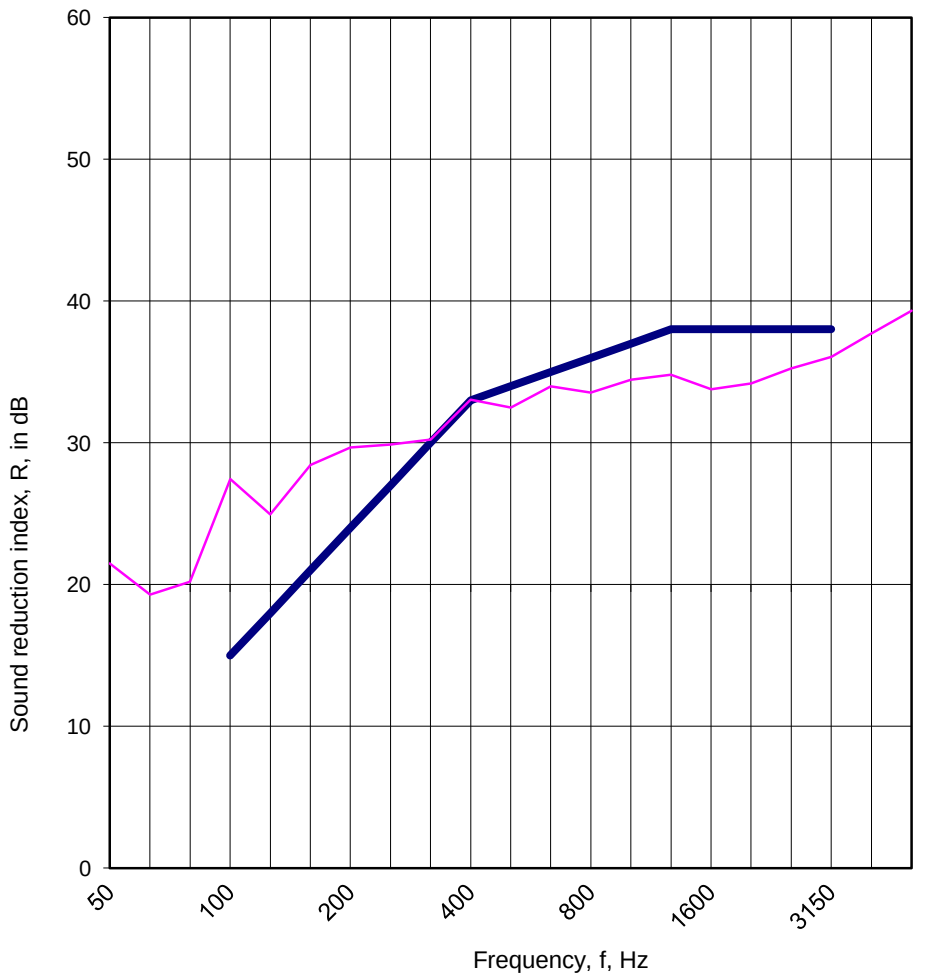
For detailed technical specification, please refer to Section 2 of the report

Datasheet Ref. MTP/F14235/01/P004
Date of Test: 22/08/2014

Source Room Volume:	86.00 m^3
Receive Room Volume:	67.00 m^3
Specimen Installed By:	BM TRADA
Area of Specimen (S):	1.89 m^2
Temp. in Test Rooms:	17.8 °C
Static Pressure:	99410.0 Pa
Humidity in Test Rooms:	60.9 %

f, Hz	*R* ,dB	
50+		21.5
63+		19.3
80+		20.2
100		27.4
125		24.9
160		28.4
200		29.7
250		29.9
315		30.2
400		33.0
500		32.5
600		34.0
800		33.5
1000		34.4
1250		34.8
1600		33.8
2000		34.2
2500		35.2
3150		36.1
4000		37.7
5000		39.3
AAD		-23.5

Frequency range for rating in accordance with ISO 717-1



R_w =	**34 dB**
R_w+C =	**34 dB**
R_w+C_{tr} =	**33 dB**

$C_{(50-3150)}$ =	0 dB	$C_{tr\ (50-3150)}$ =	-2 dB
$C_{(50-5000)}$ =	0 dB	$C_{tr\ (50-5000)}$ =	-2 dB
$C_{(100-5000)}$ =	1 dB	$C_{tr\ (100-5000)}$ =	-1 dB

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Laboratory measurement to BS EN ISO 10140-2 - Airborne Sound Insulation of Building Elements

1762

Client:	**Sentry Panel Products Ltd**
Product Name	**SENTRY ProTech 44mm Plywood faced**
Product Type	Single leaf doorset
Material Type	Timber
Variations:	
Perimeter caulked	No
Perimeter seals	Nor 710
Threshold sealing	Halspan dropseal, SLS-DRP 300 series
Glazing configuration	15mm Pilkington Pyrostop

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

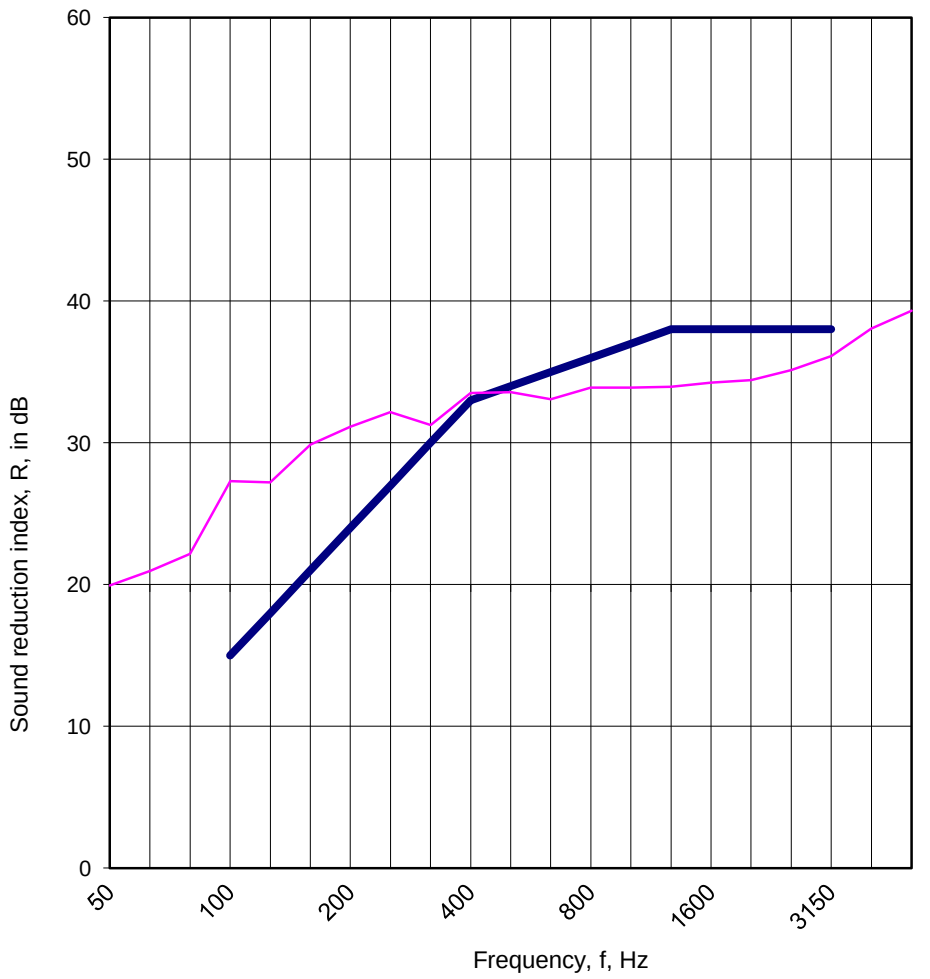
Datasheet Ref. MTP/F14235/01/P005

Date of Test: 22/08/2014

Source Room Volume:	86.00 m^3
Receive Room Volume:	67.00 m^3
Specimen Installed By:	BM TRADA
Area of Specimen (S):	1.89 m^2
Temp. in Test Rooms:	17.8 °C
Static Pressure:	99410.0 Pa
Humidity in Test Rooms:	60.9 %

f, Hz	*R* ,dB	
50+		19.9
63+		21.0
80+		22.2
100		27.3
125		27.2
160		29.9
200		31.2
250		32.2
315		31.3
400		33.5
500		33.6
600		33.1
800		33.9
1000		33.9
1250		34.0
1600		34.2
2000		34.4
2500		35.1
3150		36.1
4000		38.1
5000		39.3
AAD		-23.7

Frequency range for rating in accordance with ISO 717-1



R_w =	**34 dB**
R_w+C =	**34 dB**
R_w+C_{tr} =	**33 dB**

$C_{(50-3150)}$ =	0 dB	$C_{tr\ (50-3150)}$ =	-2 dB
$C_{(50-5000)}$ =	1 dB	$C_{tr\ (50-5000)}$ =	-2 dB
$C_{(100-5000)}$ =	1 dB	$C_{tr\ (100-5000)}$ =	-1 dB

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Laboratory measurement to BS EN ISO 10140-2 - Airborne Sound Insulation of Building Elements

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Client:	**Sentry Panel Products Ltd**
Product Name	**SENTRY ProTech 44mm MDF faced**
Product Type	Single leaf doorset
Material Type	Timber
Variations:	
Perimeter caulked	Yes
Perimeter sealing	None
Threshold sealing	None
Glazing configuration	None

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

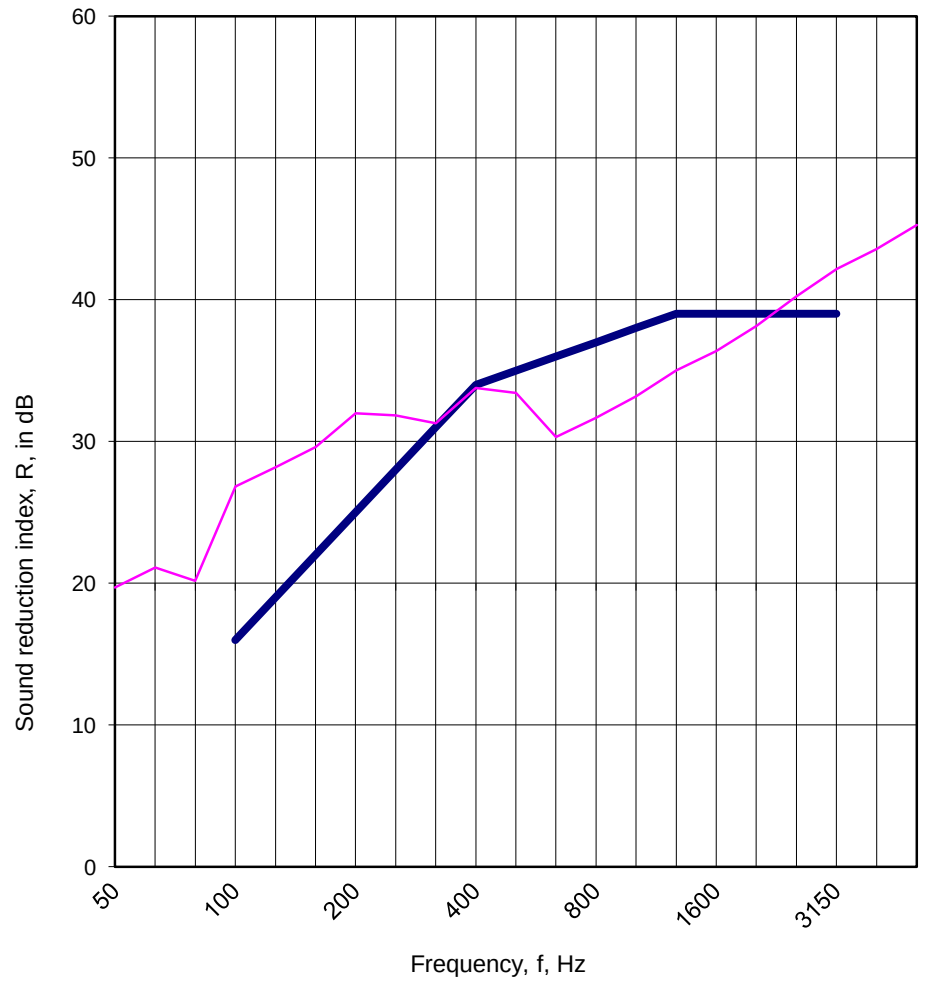
Datasheet Ref. MTP/F14235/01/P006

Date of Test: 22/08/2014

Source Room Volume:	86.00 m^3
Receive Room Volume:	67.00 m^3
Specimen Installed By:	BM TRADA
Area of Specimen (S):	1.89 m^2
Temp. in Test Rooms:	17.8 °C
Static Pressure:	99410.0 Pa
Humidity in Test Rooms:	60.9 %

f, Hz	*R* ,dB	
50+		19.7
63+		21.1
80+		20.2
100		26.8
125		28.2
160		29.6
200		32.0
250		31.9
315		31.3
400		33.8
500		33.4
600		30.3
800		31.7
1000		33.2
1250		35.0
1600		36.4
2000		38.1
2500		40.2
3150		42.2
4000		43.6
5000		45.3
AAD		-25.1

Frequency range for rating in accordance with ISO 717-1



R_w =	**35 dB**	$C_{(50-3150)}$ =	0 dB	$C_{tr\ (50-3150)}$ =	-3 dB
R_w+C =	**35 dB**	$C_{(50-5000)}$ =	0 dB	$C_{tr\ (50-5000)}$ =	-3 dB
R_w+C_{tr} =	**33 dB**	$C_{(100-5000)}$ =	1 dB	$C_{tr\ (100-5000)}$ =	-2 dB

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Laboratory measurement to BS EN ISO 10140-2 - Airborne Sound Insulation of Building Elements

1762

Client:	**Sentry Panel Products Ltd**
Product Name	**SENTRY ProTech 44mm MDF faced**
Product Type	Single leaf doorset
Material Type	Timber
Variations:	
Perimeter caulked	No
Perimeter sealing	Nor710
Threshold sealing	Halspan dropseal, SLS-DRP 300 series
Glazing configuration	Norseal 710 11mm blade width

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

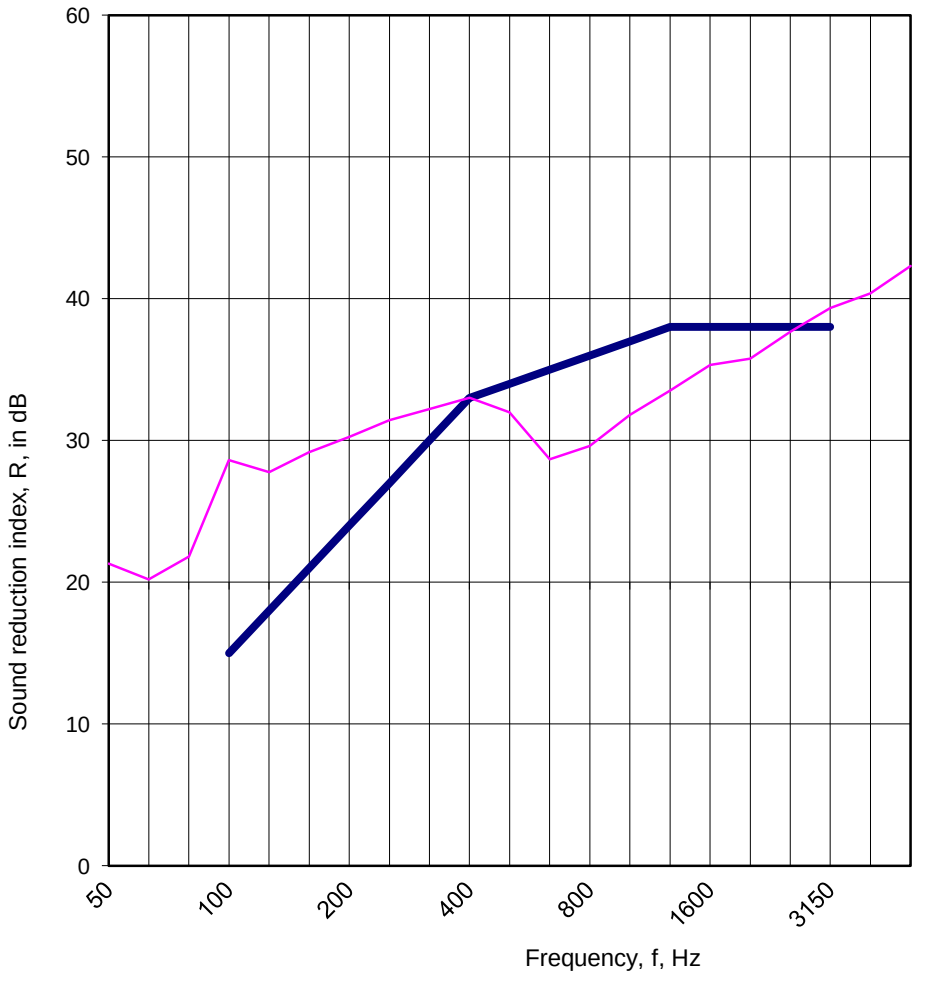
Datasheet Ref. MTP/F14235/01/P007

Date of Test: 22/08/2014

Source Room Volume:	86.00 m^3
Receive Room Volume:	67.00 m^3
Specimen Installed By:	BM TRADA
Area of Specimen (S):	1.89 m^2
Temp. in Test Rooms:	17.8 °C
Static Pressure:	99410.0 Pa
Humidity in Test Rooms:	60.9 %

f, Hz	*R* ,dB	
50+		21.3
63+		20.2
80+		21.8
100		28.6
125		27.8
160		29.2
200		30.3
250		31.4
315		32.2
400		33.0
500		32.0
600		28.7
800		29.6
1000		31.8
1250		33.5
1600		35.3
2000		35.8
2500		37.7
3150		39.4
4000		40.4
5000		42.3
AAD		-29.6

Frequency range for rating in accordance with ISO 717-1



R_w =	**34 dB**	$C_{(50-3150)}$ =	0 dB	$C_{tr\ (50-3150)}$ =	-3 dB
R_w+C =	**34 dB**	$C_{(50-5000)}$ =	0 dB	$C_{tr\ (50-5000)}$ =	-3 dB
R_w+C_{tr} =	**32 dB**	$C_{(100-5000)}$ =	0 dB	$C_{tr\ (100-5000)}$ =	-2 dB

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Laboratory measurement to BS EN ISO 10140-2 - Airborne Sound Insulation of Building Elements

1762

Client:	**Sentry Panel Products Ltd**
Product Name	**SENTRY ProTech 44mm MDF faced**
Product Type	Single leaf doorset
Material Type	Timber
Variations:	
Perimeter caulked	No
Perimeter sealing	Nor710
Threshold sealing	Halspan dropseal, SLS-DRP 300 series
Glazing configuration	7mm Pilkington Pyroshield II

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

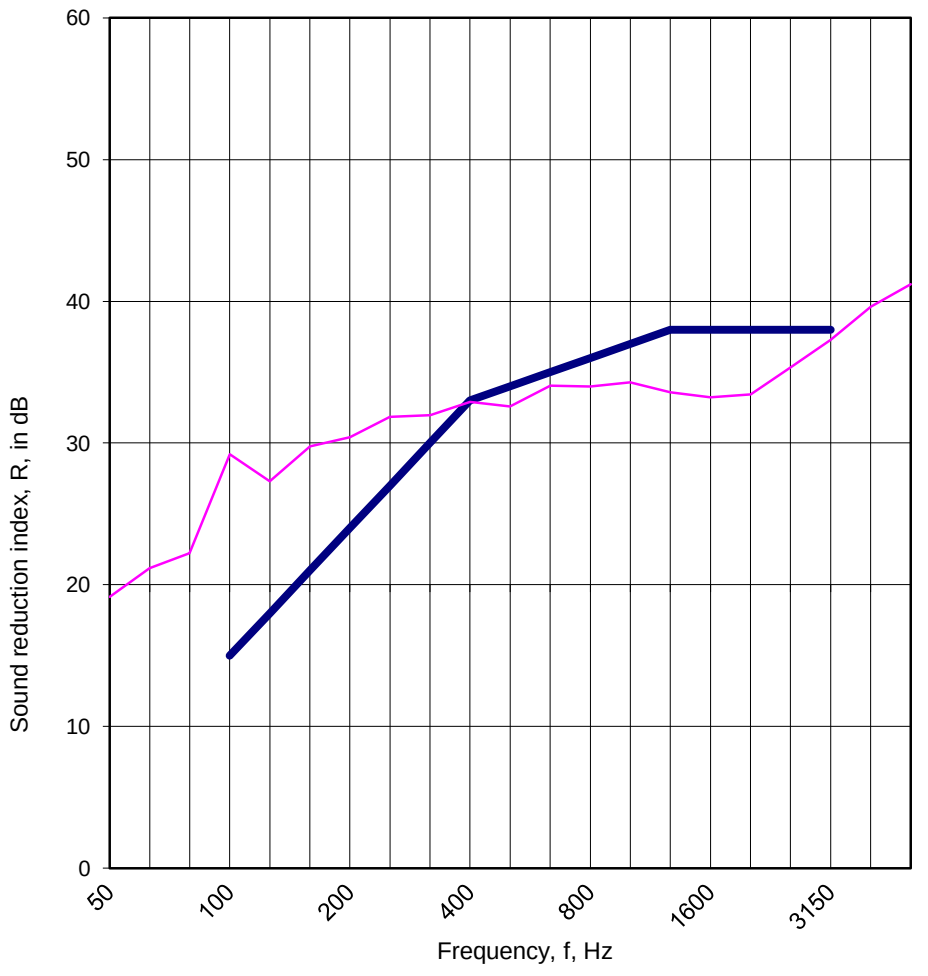
Datasheet Ref. MTP/F14235/01/P008

Date of Test: 22/08/2014

Source Room Volume:	86.00 m^3
Receive Room Volume:	67.00 m^3
Specimen Installed By:	BM TRADA
Area of Specimen (S):	1.89 m^2
Temp. in Test Rooms:	17.8 °C
Static Pressure:	99410.0 Pa
Humidity in Test Rooms:	60.9 %

f, Hz	*R* ,dB	
50+		19.2
63+		21.2
80+		22.2
100		29.2
125		27.3
160		29.8
200		30.4
250		31.8
315		32.0
400		32.9
500		32.6
600		34.0
800		34.0
1000		34.3
1250		33.6
1600		33.2
2000		33.4
2500		35.4
3150		37.3
4000		39.6
5000		41.2
AAD		-24.4

Frequency range for rating in accordance with ISO 717-1



R_w =	**34 dB**
R_w+C =	**34 dB**
R_w+C_{tr} =	**33 dB**

$C_{(50-3150)}$ =	0 dB	$C_{tr\ (50-3150)}$ =	-2 dB
$C_{(50-5000)}$ =	1 dB	$C_{tr\ (50-5000)}$ =	-2 dB
$C_{(100-5000)}$ =	1 dB	$C_{tr\ (100-5000)}$ =	-1 dB

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Laboratory measurement to BS EN ISO 10140-2 - Airborne Sound Insulation of Building Elements

1762

Client:	**Sentry Panel Products Ltd**
Product Name	**SENTRY ProTech 44mm MDF faced**
Product Type	Single leaf doorset
Material Type	Timber
Variations:	
Perimeter caulked	No
Perimeter sealing	Nor710
Threshold sealing	Halspan dropseal, SLS-DRP 300 series
Glazing configuration	7mm Pilkington Pyrodur Plus

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

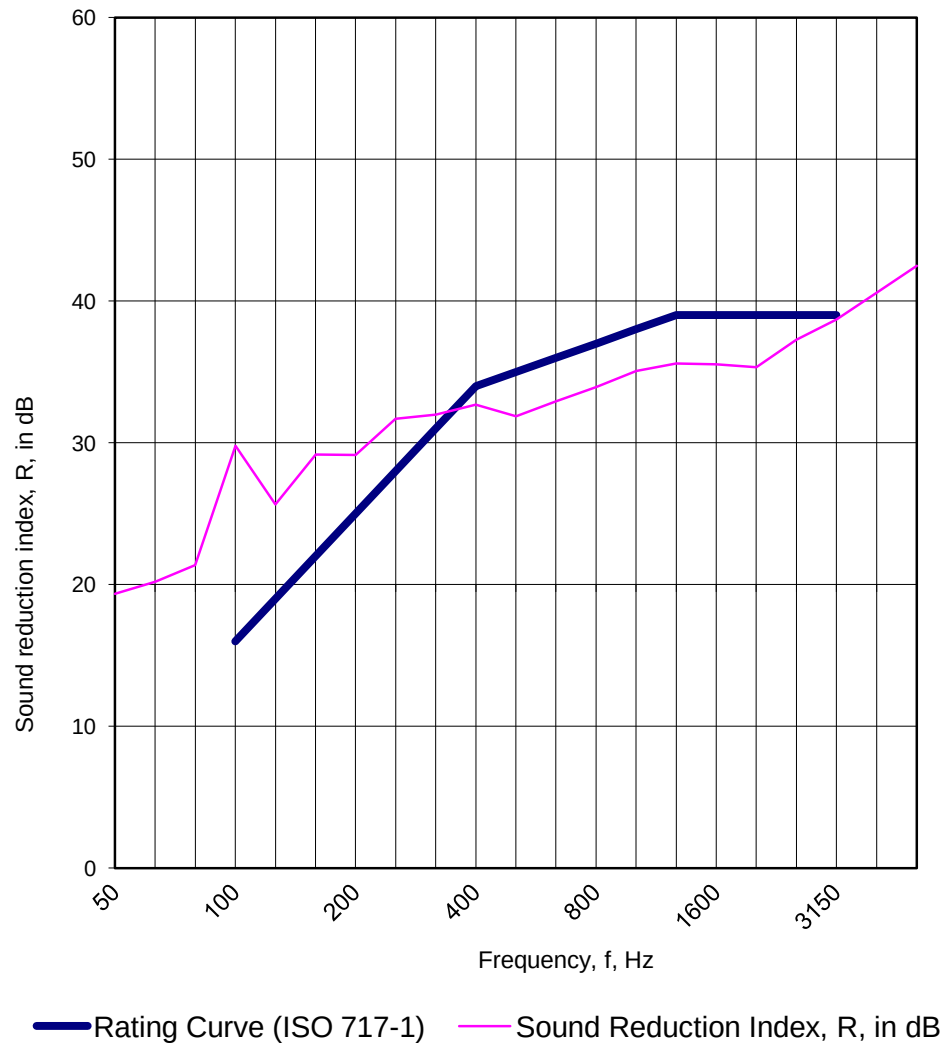
Datasheet Ref. MTP/F14235/01/P009

Date of Test: 22/08/2014

Source Room Volume:	86.00 m^3
Receive Room Volume:	67.00 m^3
Specimen Installed By:	BM TRADA
Area of Specimen (S):	1.89 m^2
Temp. in Test Rooms:	17.8 °C
Static Pressure:	99410.0 Pa
Humidity in Test Rooms:	60.9 %

f, Hz	*R* ,dB	
50+		19.3
63+		20.2
80+		21.4
100		29.8
125		25.6
160		29.2
200		29.2
250		31.7
315		32.0
400		32.7
500		31.9
600		32.9
800		33.9
1000		35.1
1250		35.6
1600		35.5
2000		35.3
2500		37.3
3150		38.7
4000		40.6
5000		42.5
AAD		-26.1

Frequency range for rating in accordance with ISO 717-1



R_w =	**35 dB**	$C_{(50-3150)}$ =	0 dB	$C_{tr\ (50-3150)}$ =	-3 dB
R_w+C =	**35 dB**	$C_{(50-5000)}$ =	0 dB	$C_{tr\ (50-5000)}$ =	-3 dB
R_w+C_{tr} =	**34 dB**	$C_{(100-5000)}$ =	1 dB	$C_{tr\ (100-5000)}$ =	-2 dB

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Laboratory measurement to BS EN ISO 10140-2 - Airborne Sound Insulation of Building Elements

1762

Client:	**Sentry Panel Products Ltd**
Product Name	**SENTRY ProTech 44mm MDF faced**
Product Type	Single leaf doorset
Material Type	Timber
Variations:	
Perimeter caulked	No
Perimeter sealing	Nor710
Threshold sealing	Halspan dropseal, SLS-DRP 300 series
Glazing configuration	15mm Pilkington Pyrostop

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

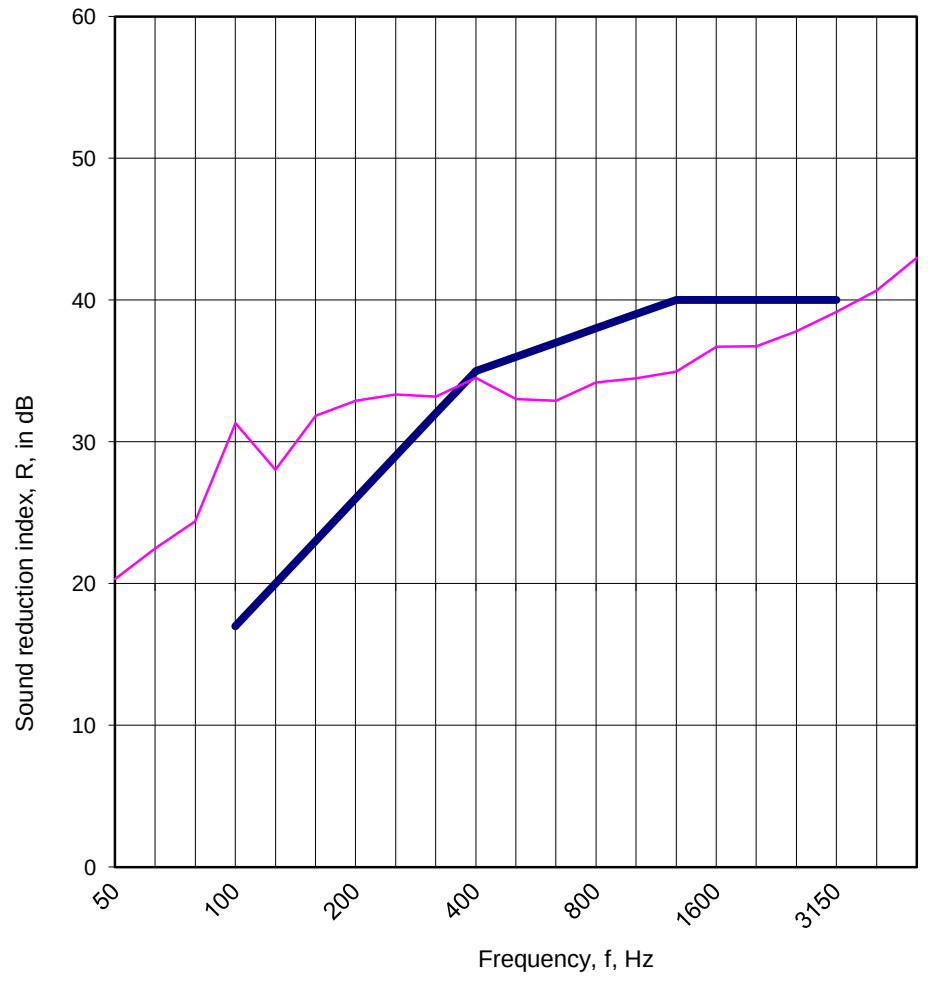
Datasheet Ref. MTP/F14235/01/P010

Date of Test: 22/08/2014

Source Room Volume:	86.00 m^3
Receive Room Volume:	67.00 m^3
Specimen Installed By:	BM TRADA
Area of Specimen (S):	1.89 m^2
Temp. in Test Rooms:	17.8 °C
Static Pressure:	99410.0 Pa
Humidity in Test Rooms:	60.9 %

f, Hz	*R* ,dB	
50+		20.3
63+		22.5
80+		24.4
100		31.3
125		28.0
160		31.8
200		32.9
250		33.3
315		33.2
400		34.5
500		33.0
600		32.9
800		34.2
1000		34.5
1250		34.9
1600		36.7
2000		36.7
2500		37.8
3150		39.2
4000		40.7
5000		43.0
AAD		-30.6

Frequency range for rating in accordance with ISO 717-1



R_w =	**36 dB**
R_w+C =	**36 dB**
R_w+C_{tr} =	**34 dB**

$C_{(50-3150)}$ =	0 dB	$C_{tr\ (50-3150)}$ =	-3 dB
$C_{(50-5000)}$ =	0 dB	$C_{tr\ (50-5000)}$ =	-3 dB
$C_{(100-5000)}$ =	0 dB	$C_{tr\ (100-5000)}$ =	-2 dB

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Laboratory measurement to
BS EN ISO 10140-2 -
Airborne Sound Insulation of Building Elements

1762

Client:	**Sentry Panel Products Ltd**
Product Name	**SENTRY ProTech 44mm MDF faced**
Product Type	Single leaf doorset
Material Type	Timber
Variations:	
Perimeter caulked	No
Perimeter sealing	Nor710
Threshold sealing	None
Glazing configuration	None

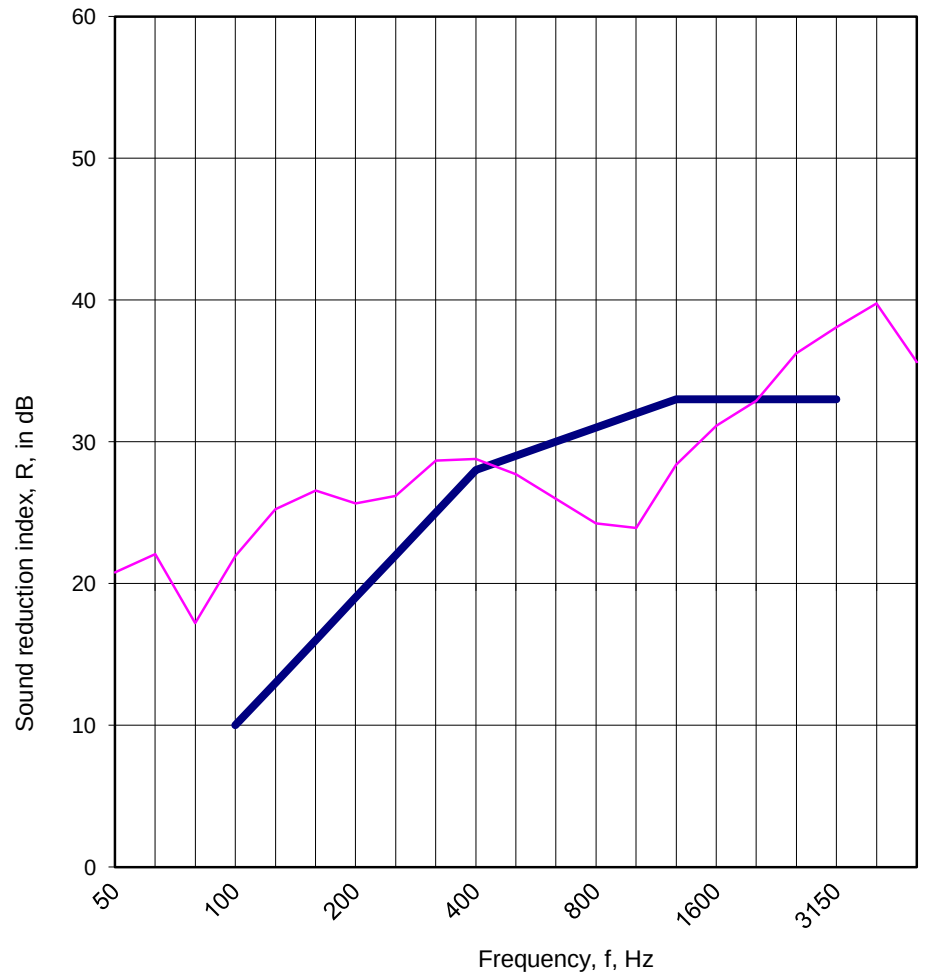
For detailed technical specification, please refer to Section 2 of the report

Datasheet Ref. MTP/F14235/01/P027
Date of Test: 26/08/2014

Source Room Volume:	86.00 m^3
Receive Room Volume:	67.00 m^3
Specimen Installed By:	BM TRADA
Area of Specimen (S):	1.89 m^2
Temp. in Test Rooms:	16.8 °C
Static Pressure:	98740.0 Pa
Humidity in Test Rooms:	61.0 %

f, Hz	*R* ,dB	
50+		20.8
63+		22.1
80+		17.2
100		22.0
125		25.3
160		26.6
200		25.6
250		26.2
315		28.7
400		28.8
500		27.7
600		26.0
800		24.3
1000		23.9
1250		28.4
1600		31.1
2000		32.9
2500		36.3
3150		38.1
4000		39.8
5000		35.6
AAD		-26.7

Frequency range for rating in accordance with ISO 717-1



R_w =	**29 dB**		
R_w+C =	**29 dB**		
R_w+C_{tr} =	**27 dB**		
$C_{(50-3150)}$ =	0 dB	$C_{tr\ (50-3150)}$ =	-3 dB
$C_{(50-5000)}$ =	0 dB	$C_{tr\ (50-5000)}$ =	-3 dB
$C_{(100-5000)}$ =	0 dB	$C_{tr\ (100-5000)}$ =	-2 dB

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Laboratory measurement to BS EN ISO 10140-2 - Airborne Sound Insulation of Building Elements

1762

Client:	**Sentry Panel Products Ltd**
Product Name	**SENTRY ProTech 44mm MDF faced**
Product Type	Single leaf doorset
Material Type	Timber
Variations:	
Perimeter caulked	No
Perimeter sealing	Nor710
Threshold sealing	None
Glazing configuration	None

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

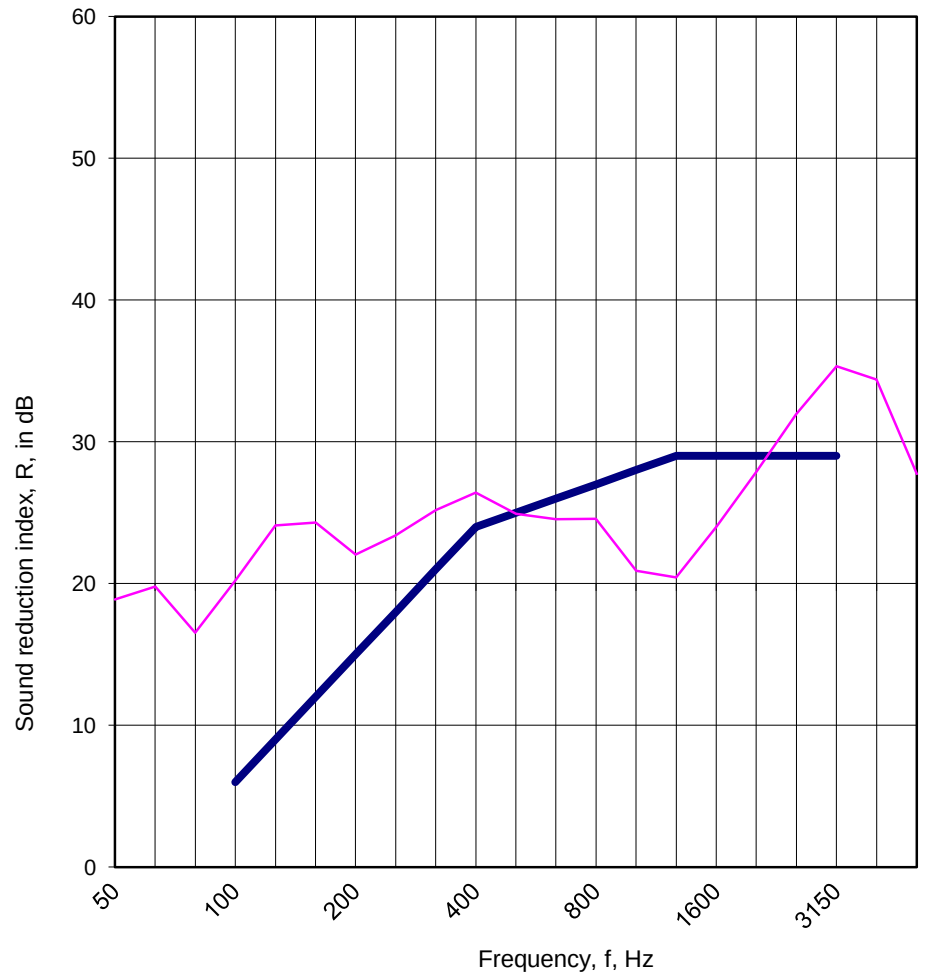
Datasheet Ref. MTP/F14235/01/P028

Date of Test: 26/08/2014

Source Room Volume:	86.00 m^3
Receive Room Volume:	67.00 m^3
Specimen Installed By:	BM TRADA
Area of Specimen (S):	1.89 m^2
Temp. in Test Rooms:	16.8 °C
Static Pressure:	98740.0 Pa
Humidity in Test Rooms:	61.0 %

f, Hz	*R* ,dB	
50+		18.9
63+		19.8
80+		16.5
100		20.2
125		24.1
160		24.3
200		22.1
250		23.4
315		25.2
400		26.4
500		24.9
600		24.5
800		24.6
1000		20.9
1250		20.4
1600		24.0
2000		27.9
2500		32.0
3150		35.3
4000		34.4
5000		27.7
AAD		-25.7

Frequency range for rating in accordance with ISO 717-1



R_w =	**25 dB**
R_w+C =	**25 dB**
R_w+C_{tr} =	**23 dB**

$C_{(50-3150)}$ =	0 dB	$C_{tr\ (50-3150)}$ =	-2	dB
$C_{(50-5000)}$ =	0 dB	$C_{tr\ (50-5000)}$ =	-2	dB
$C_{(100-5000)}$ =	0 dB	$C_{tr\ (100-5000)}$ =	-2	dB

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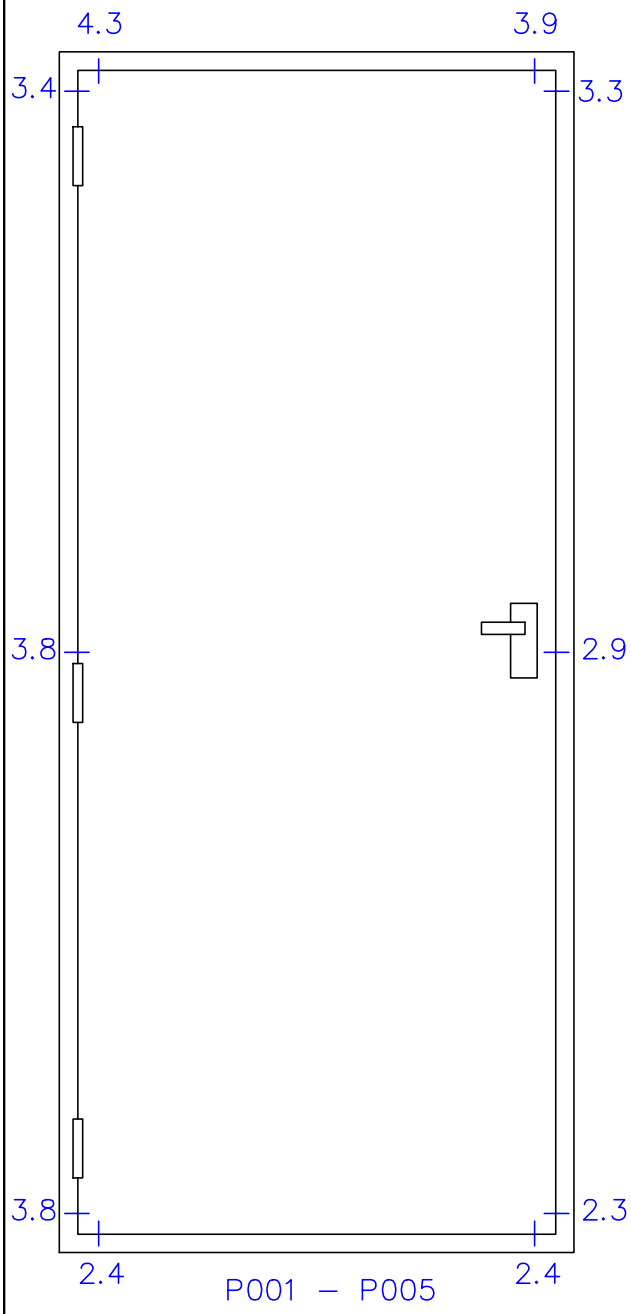
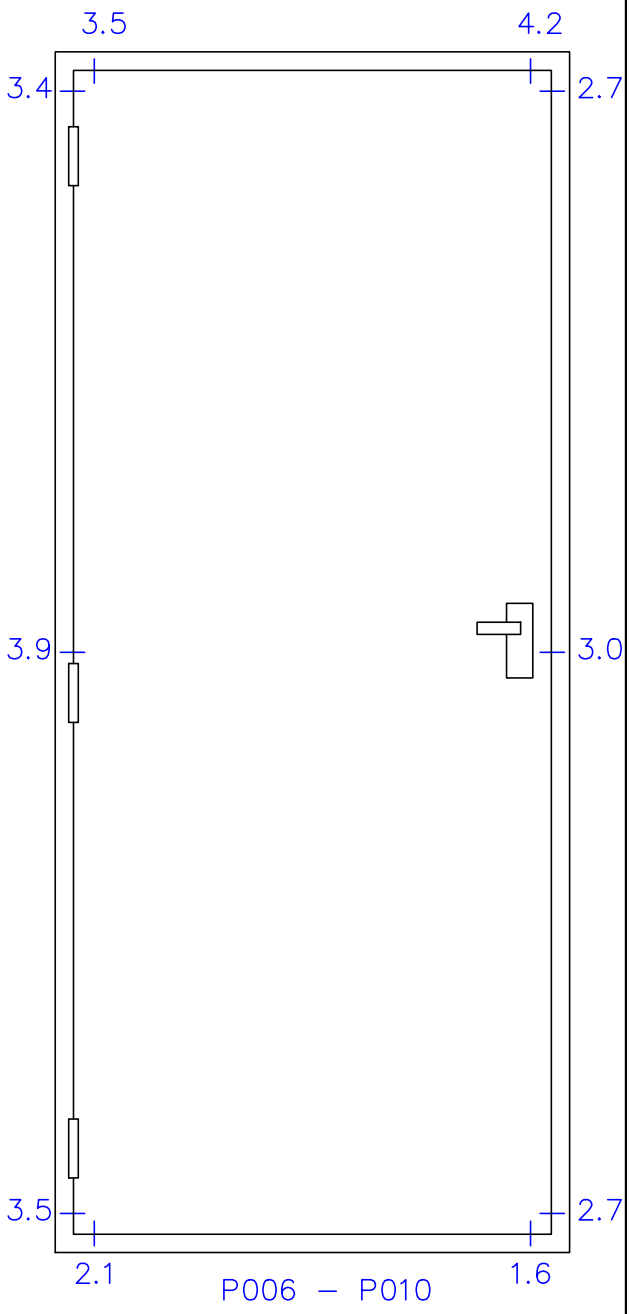
Appendix 2 – Drawings (2 Pages)

Figure 1	Leaf/frame gaps
Figure 2	Leaf/frame gaps

Appendix 2 Figure 1	Sentry Panel Products Ltd





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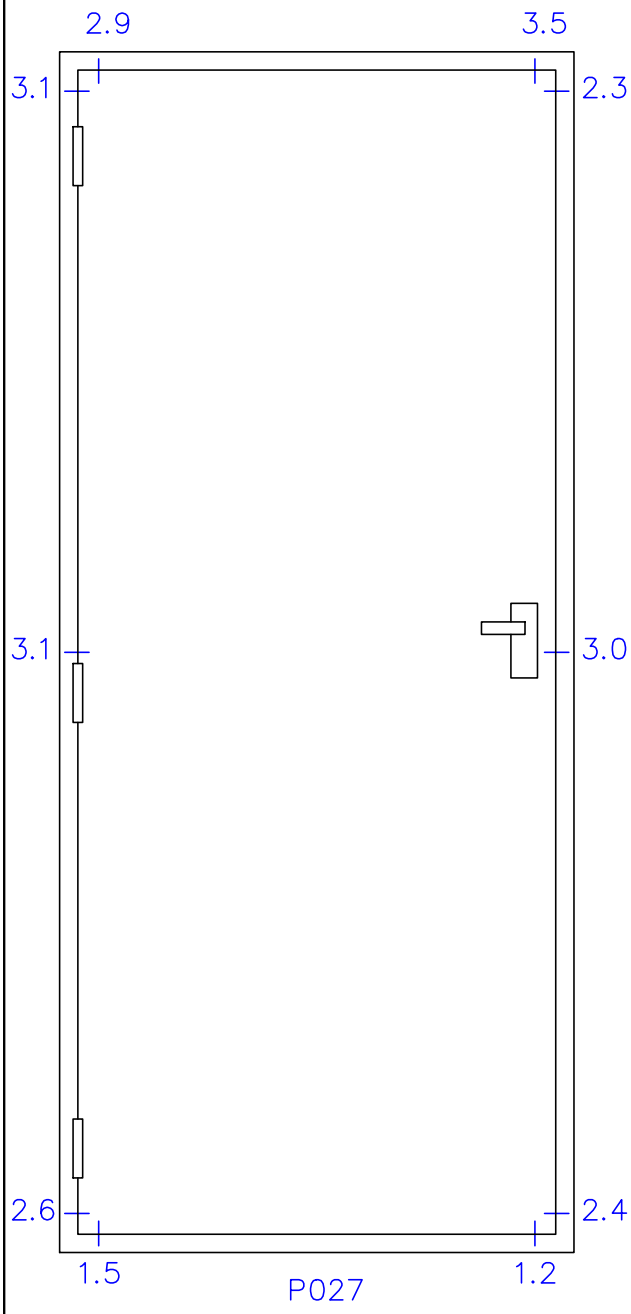
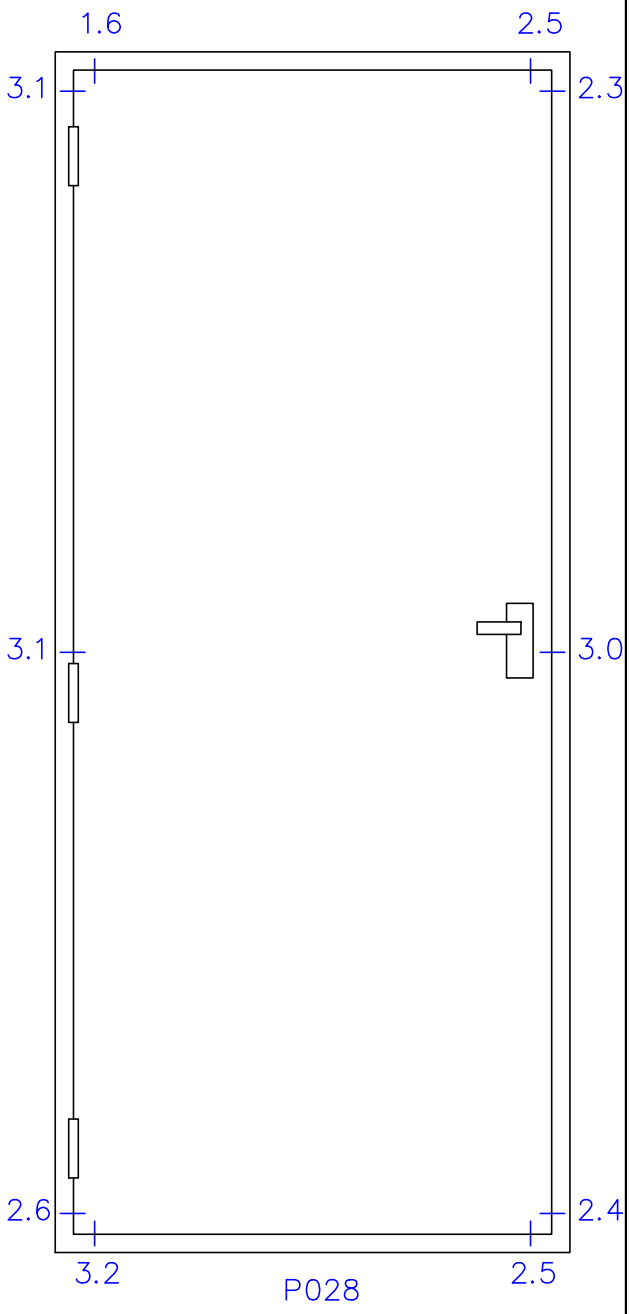
Schematic drawing showing leaf/frame gaps.

Date Drawn	Drawn By	Scale
27/11/2014	ATM	Not to Scale All dimensions in mm unless otherwise stated

Project No.
BMT/MTP/F14235/01

Appendix 2 Figure 2	Sentry Panel Products Ltd





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Schematic drawing showing leaf/frame gaps.

Date Drawn	Drawn By	Scale
27/11/2014	ATM	Not to Scale All dimensions in mm unless otherwise stated

Project No.
BMT/MTP/F14235/01

BMTRADA

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