Technical Report

Report Number ***C/20926/R02***

Date ***20 September 2010***

Project

The Laboratory Determination of The Airborne Sound Transmission of Various Single Door Sets and Panel Constructions

Prepared for

Sentry International
Units 4, 5, 6
Parklands Business Centre
Stortford Road
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By

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1.0 Summary

Tests have been done in SRL's Laboratory at Holbrook House, Sudbury, Suffolk, to determine the sound reduction index of various single door sets and plasterboard panel constructions in accordance with BS EN ISO 140-3:1995.

From these measurements the required results have been derived and are presented in both tabular and graphic form in Data Sheets 1 to 10

The results are given in 1/3rd octave bands over the frequency range 50Hz to 10kHz, which is beyond that required by the test standard. Measurements outside the standard frequency range are not UKAS accredited.

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Tester
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S R L

Contents

2.0 Details of Measurements

2.1 Location

Sound Research Laboratories Ltd
Holbrook House
Little Waldingfield
Sudbury
Suffolk
CO10 OTH

2.2 Test Dates

22 & 23 January 2010

2.3 Instrumentation and Apparatus Used

Make	Description	Type
E D I	Microphone Multiplexer	
	Microphone Power Supply Unit	
Norwegian Electronics	Real Time Analyser	830
	Rotating Microphone Boom	231
Brüel & Kjaer	12mm Condenser Microphones	4166
	Windshields	A0237
	Pre Amplifiers	2639, 2669C
	Microphone Calibrator	4231
	Omnipower Sound Source	4296
Larson Davis	12mm Condenser Microphone	2560
SRL	Power Amplifiers	
Celestion	Loudspeakers	100w
Douglas Curtis	Rotating Microphone Boom	
Thermo Hygro	Temperature & Humidity Probe	
TOA	Graphic Equalizer	E-1231
	Power Amplifier	DPA-800

2.4 References

BS EN ISO 140-3:1995	Laboratory measurement of airborne sound insulation of building elements
BS EN ISO 717-1:1997	Rating of sound insulation in buildings and of building elements. Airborne Sound Insulation.

2.5 Personnel Present

Chris Houchen	Sentry International
Bob Williamson	Williamson Associates

3.0 Description of Test

3.1 Description of Sample

Various single timber door sets, approx 2068mm high x 882mm wide were tested.

See Drawings 1 to 10 for sample descriptions.

All samples weighed on site by SRL.

Sampling plan:	Enough for test only.
Sample condition:	New
Details supplied by:	Sentry International
Sample installed by:	Sentry International

3.2 Sample Delivery date

22 October 2009

3.3 Test Procedures

The doors were tested using either a combination of seals or caulking. Where caulking was used a dense acoustic putty was applied between the frame and door edge to cover the seal area.

The sample was mounted/located and tested in accordance with the relevant standard. The method and procedure is described in Appendix 1.

4.0 Results

The results of the measurements and subsequent analysis are given in Data Sheets 1 to 10 and summarised below.

Results relate only to the items tested.

SRL Test No.	Description in Brief	R_w ($C;C_{tr}$)
2	44mm Sentry ProLite Timber Door, fully caulked both sides with Arboseal	29 (-1;-3)
3	44mm Sentry ProLite Timber Door with seals. Head & Jambs - Triple Fin Seal. Threshold - Halspan Dropseal	25 (0;-1)
5	44mm Sentry ProLite Timber Door with seals adjusted. Head & Jambs - Triple Fin Seal. Threshold - Halspan Dropseal	25 (-1;-2)
6	44mm Sentry ProLite Timber Door with seals adjusted. Head & Jambs - Triple Fin Seal. Threshold - Halspan Dropseal with timber stop & Triple Fin Seal added	25 (0;-1)
7	44mm Sentry ProLite Timber Door with glazing ESG 14mm thick Pyro 630 (600x800mm). Fully caulked	32 (-1;-5)
8	44mm Sentry ProLite Timber Door with glazing ESG 14mm thick Pyro 630 (600x800mm). Head & Jambs - Halspan Triple Fin Seal. Threshold - Halspan Dropseal	25 (0;-1)
9	44mm Sentry ProLite Timber Door with glazing ESG 14mm thick Pyro 630 (600x800mm) with seals adjusted. Head & Jambs - Halspan Triple Fin Seal. Threshold - Halspan Dropseal	28 (-1;-3)
10	44mm Sentry ProLite Timber Door with glazing ESG 14mm thick Pyro 630 (600x800mm). Head & Jambs _ Halspan Triple Fin Seal. Threshold - Halspan Dropseal with additional timber stop & Triple Fin Seal added to Threshold	29 (-1;-3)
31	Metal frame with Sentry ProLite Timber Door. Fully caulked	29 (0;-2)
32	Metal frame with Sentry ProLite Timber Door. Head & Jambs - standard Rema gasket in stop Threshold - caulked	25 (0;-1)

End of Text

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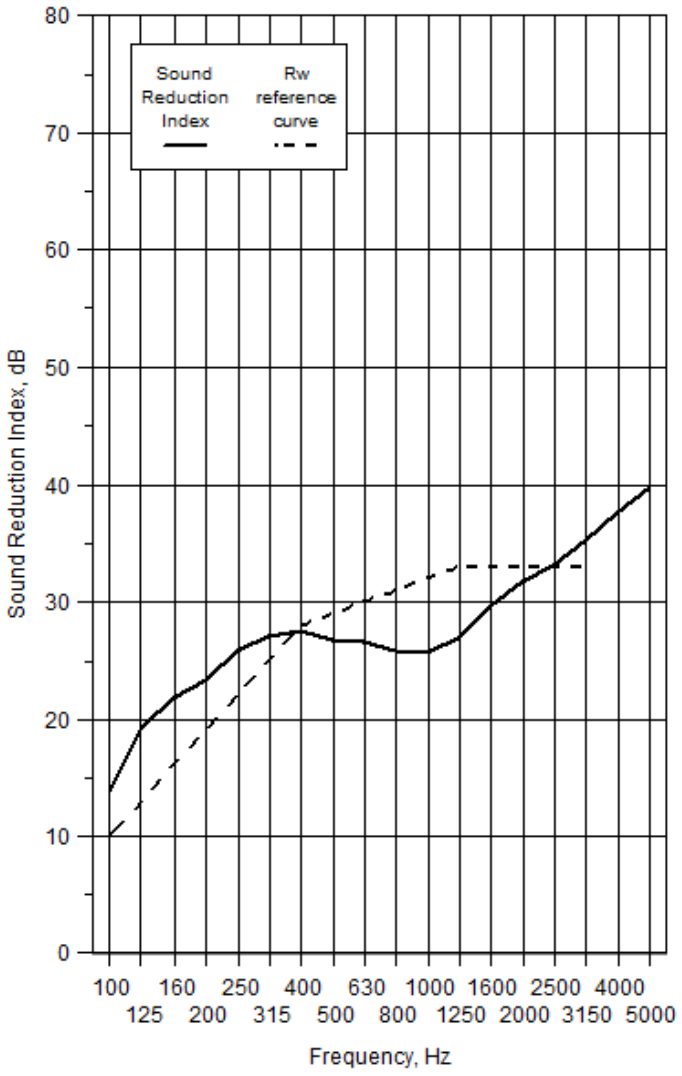
Data Sheet 1

Test Number :	2	**Air temperature:**	14.3 °C
Client:	Sentry International	**Air humidity:**	77 %
Test Date:	22/10/2009	**Receiving room volume**	300 m3
Sample height:	2.068 m	**Source room volume:**	115 m3
Sample width:	0.882 m	**Sample weight:**	15.3 kg/m2
Product Identification:	44mm Sentry ProLite Timber Door Fully Caulked both sides with Arboseal		

Freq f Hz	Sound Reduction Index, dB 1/3 Oct	1/1 Oct
50+	13.8	14.2
63+	15.2	
80+	13.6	
100	13.9	17.1
125	19.3	
160	21.9	
200	23.4	25.2
250	25.9	
315	27.1	
400	27.6	27.1
500	26.8	
630	26.7	
800	25.9	26.2
1000	25.7	
1250	27.0	
1600	29.7	31.3
2000	31.8	
2500	33.2	
3150	35.4	37.3
4000	37.7	
5000	39.9	
6300+	42.4	40.9
8000+	41.8	
10000+	39.1 *	
Average 100-3150	26.3	



Rating according to BS EN ISO 717-1:1997

Rw(C;Ctr)= **29 (-1;-3)** dB

Notes * designates measurement corrected for background
designates limit of measurement due to background
+ designates frequency beyond standard and not UKAS accredited

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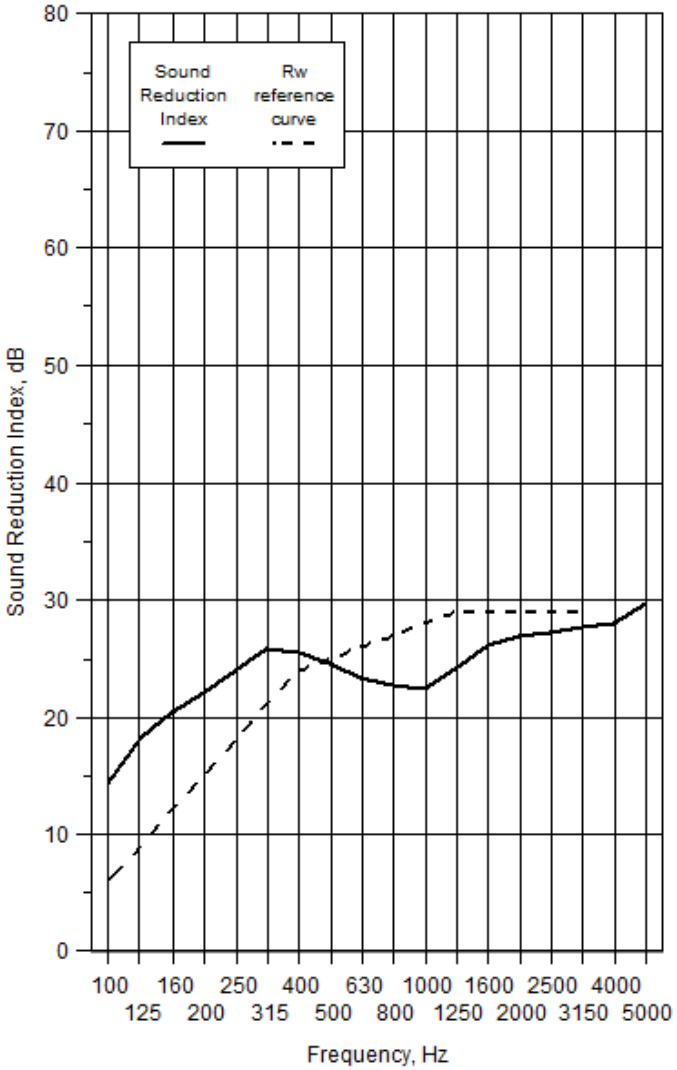
Data Sheet 2

Test Number :	3	**Air temperature:**	14.3 °C
Client:	Sentry International	**Air humidity:**	77 %
Test Date:	22/10/2009	**Receiving room volume**	300 m3
Sample height:	2.068 m	**Source room volume:**	115 m3
Sample width:	0.882 m	**Sample weight:**	15.3 kg/m2
Product	44mm Sentry ProLite Timber Door with seals		
Identification:	Head & Jambs - Triple Fin Seal		
	Threshold - Halspan Dropseal		

Freq f Hz	Sound Reduction Index, dB 1/3 Oct	1/1 Oct
50+	11.3	13.3
63+	15.2	
80+	14.5	
100	14.4	17.0
125	18.3	
160	20.5	
200	22.2	23.7
250	24.0	
315	25.8	
400	25.6	24.4
500	24.6	
630	23.4	
800	22.8	23.1
1000	22.4	
1250	24.1	
1600	26.2	26.7
2000	26.9	
2500	27.2	
3150	27.7	28.4
4000	28.0	
5000	29.7	
6300+	32.1	32.8
8000+	32.7	
10000+	33.8	
Average 100-3150	23.5	



Rating according to BS EN ISO 717-1:1997

Rw(C;Ctr)= **25 (0;-1)** dB

Notes * designates measurement corrected for background
designates limit of measurement due to background
+ designates frequency beyond standard and not UKAS accredited

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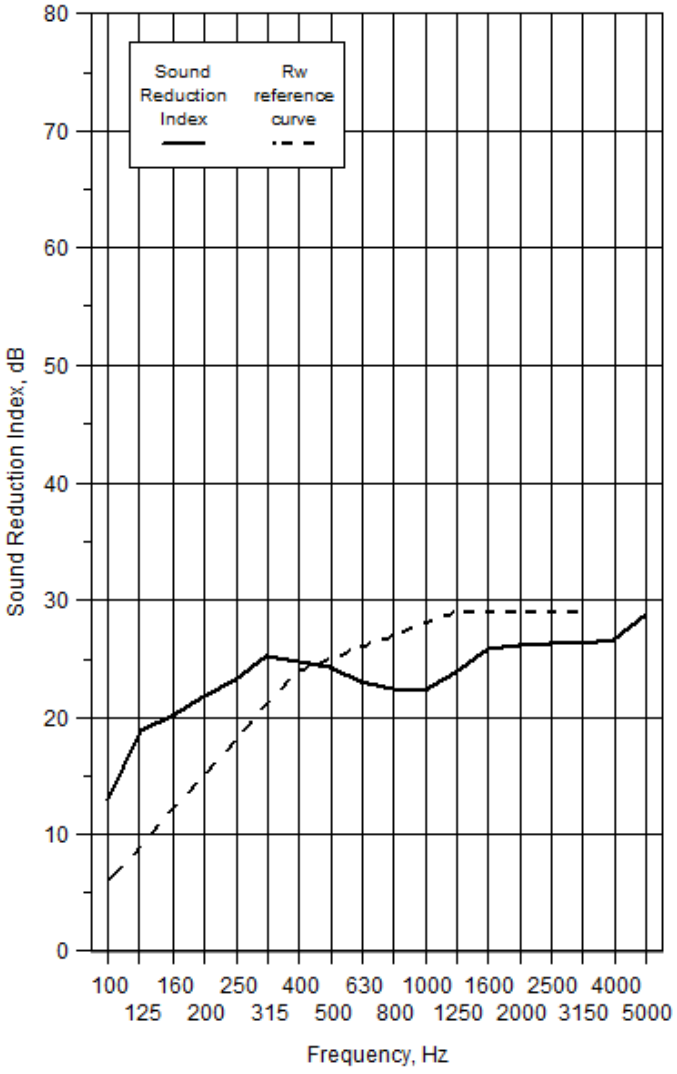
Data Sheet 3

Test Number :	5	**Air temperature:**	15.8 °C
Client:	Sentry International	**Air humidity:**	69 %
Test Date:	23/10/2009	**Receiving room volume**	300 m3
Sample height:	2.068 m	**Source room volume:**	115 m3
Sample width:	0.882 m	**Sample weight:**	15.3 kg/m2
Product Identification:	44mm Sentry ProLite Timber Door with seals adjusted Head & Jambs - Triple Fin Seal Threshold - Halspan Dropseal		

Freq f Hz	Sound Reduction Index, dB 1/3 Oct	1/1 Oct
50+	12.9	14.0
63+	15.6	
80+	13.9	
100	13.0	16.2
125	18.9	
160	20.1	
200	21.8	23.2
250	23.3	
315	25.2	
400	24.7	23.9
500	24.3	
630	23.0	
800	22.4	22.8
1000	22.3	
1250	23.8	
1600	25.8	26.1
2000	26.1	
2500	26.4	
3150	26.4	27.2
4000	26.6	
5000	28.8	
6300+	31.5	32.2
8000+	31.9	
10000+	33.2	
Average 100-3150	23.0	



Rating according to BS EN ISO 717-1:1997

Rw(C;Ctr)= **25 (-1;-2)** dB

Notes * designates measurement corrected for background
designates limit of measurement due to background
+ designates frequency beyond standard and not UKAS accredited

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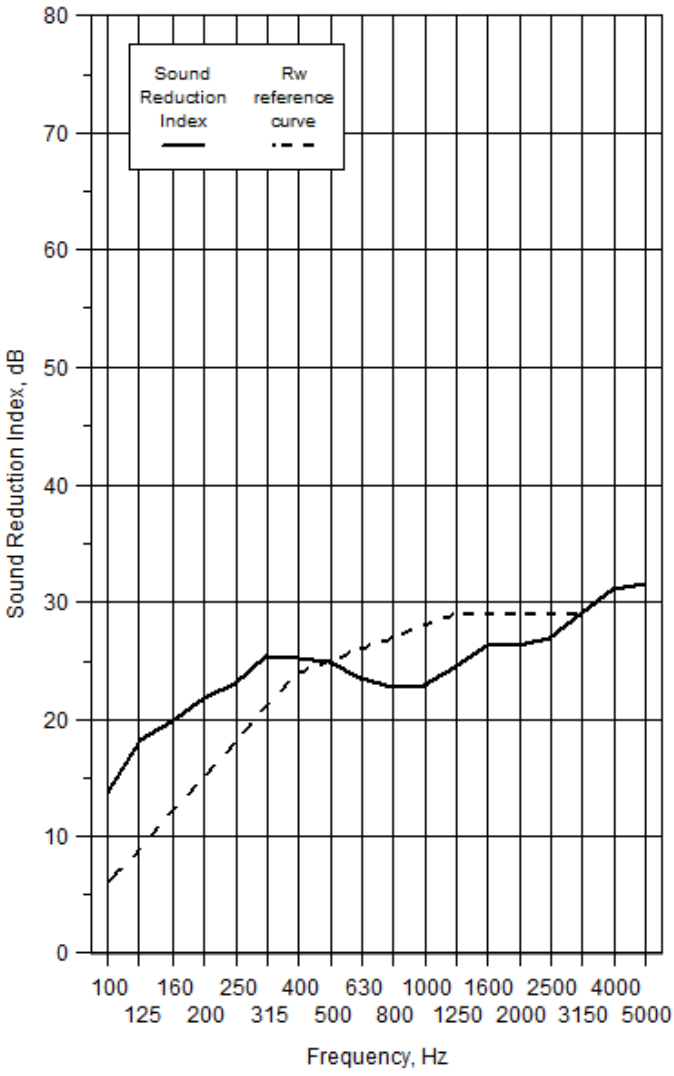
Data Sheet 4

Test Number :	6	**Air temperature:**	14.3 °C
Client:	Sentry International	**Air humidity:**	77 %
Test Date:	23/10/2009	**Receiving room volume**	300 m3
Sample height:	2.068 m	**Source room volume:**	115 m3
Sample width:	0.882 m	**Sample weight:**	15.3 kg/m2
Product Identification:	44mm Sentry ProLite Timber Door with seals adjusted Head & Jambs - Triple Fin Seal Threshold - Halspan Dropseal with timber stop & Triple Fin Seal added		

Freq f Hz	Sound Reduction Index, dB 1/3 Oct	1/1 Oct
50+	13.7	14.9
63+	15.7	
80+	15.6	
100	13.8	16.5
125	18.3	
160	19.8	
200	21.8	23.2
250	23.1	
315	25.4	
400	25.2	24.5
500	24.9	
630	23.5	
800	22.8	23.4
1000	22.9	
1250	24.5	
1600	26.3	26.6
2000	26.4	
2500	27.0	
3150	29.2	30.5
4000	31.1	
5000	31.6	
6300+	32.7	33.2
8000+	32.9	
10000+	34.0	
Average 100-3150	23.4	



Rating according to BS EN ISO 717-1:1997

Rw(C;Ctr)= **25 (0;-1)** dB

Notes * designates measurement corrected for background
designates limit of measurement due to background
+ designates frequency beyond standard and not UKAS accredited

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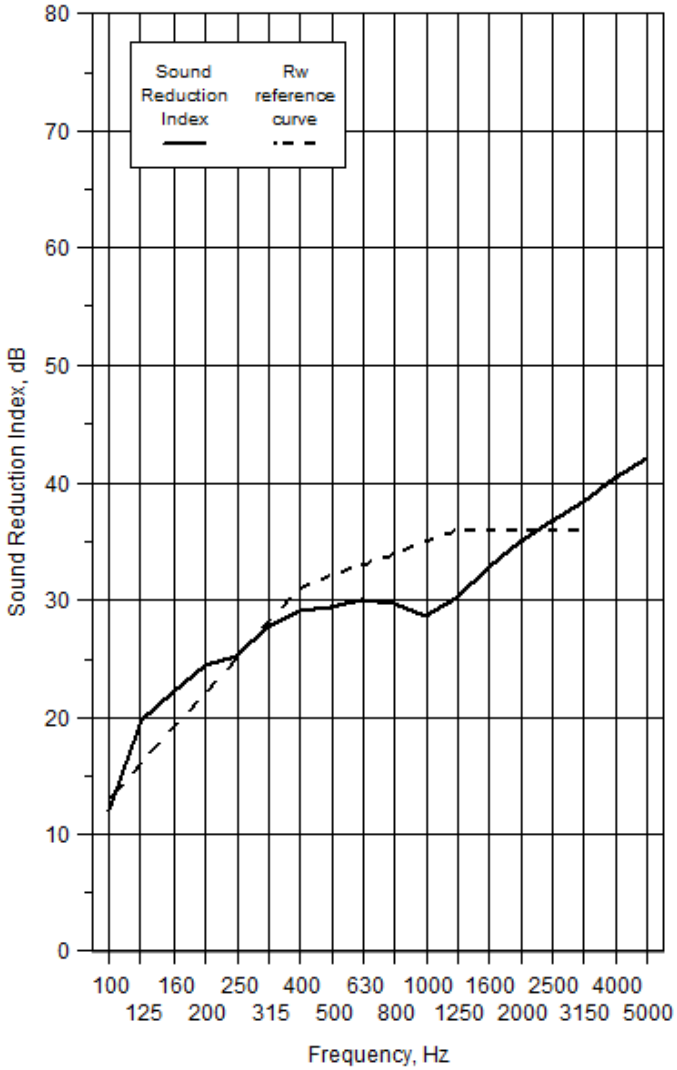
Data Sheet 5

Test Number :	7	**Air temperature:**	14.3 °C
Client:	Sentry International	**Air humidity:**	77 %
Test Date:	23/10/2009	**Receiving room volume**	300 m3
Sample height:	2.068 m	**Source room volume:**	115 m3
Sample width:	0.882 m	**Sample weight:**	20.7 kg/m2
Product Identification:	44mm Sentry ProLite Timber Door with glazing ESG 14mm thick Pyro 630 (600x800mm) Fully caulked		

Freq f Hz	Sound Reduction Index, dB 1/3 Oct	1/1 Oct
50+	22.2	17.6
63+	20.5	
80+	14.3	
100	12.0	15.8
125	19.8	
160	22.2	
200	24.4	25.6
250	25.3	
315	27.7	
400	29.2	29.6
500	29.4	
630	30.1	
800	29.8	29.5
1000	28.7	
1250	30.2	
1600	32.9	34.6
2000	35.1	
2500	36.7	
3150	38.4	40.0
4000	40.4	
5000	42.2	
6300+	44.4	42.6
8000+	43.7	
10000+	40.7 *	
Average 100-3150	28.2	



Rating according to BS EN ISO 717-1:1997

Rw(C;Ctr)= **32 (-1;-5)** dB

Notes * designates measurement corrected for background
designates limit of measurement due to background
+ designates frequency beyond standard and not UKAS accredited

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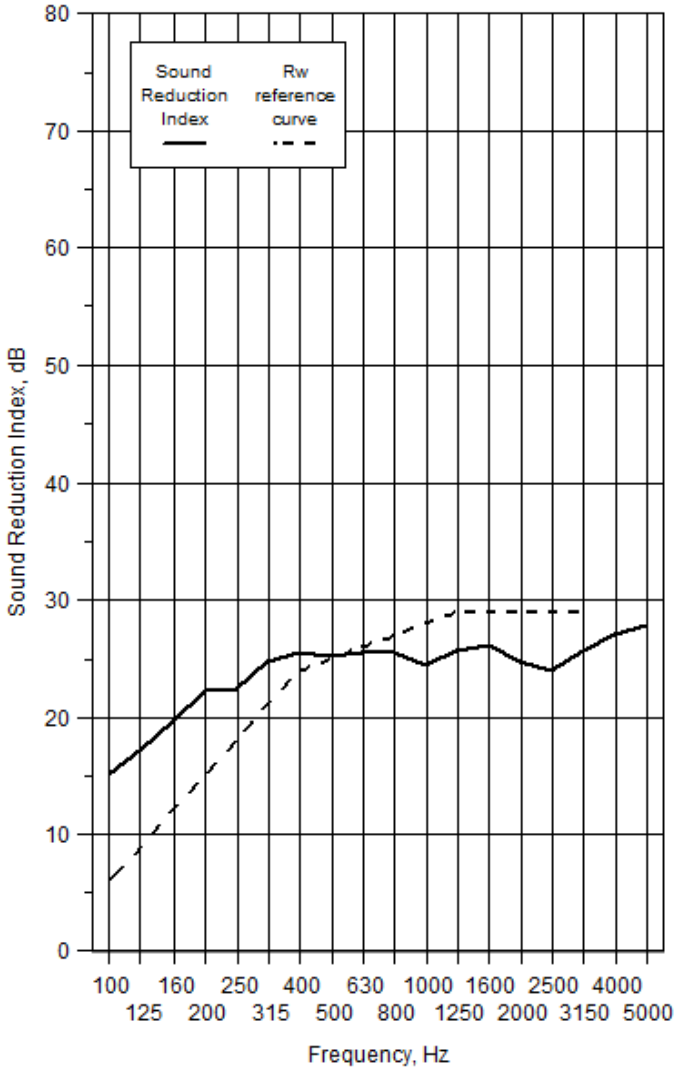
Data Sheet 6

Test Number :	8	**Air temperature:**	14.3 °C
Client:	Sentry International	**Air humidity:**	77 %
Test Date:	23/10/2009	**Receiving room volume**	300 m3
Sample height:	2.068 m	**Source room volume:**	115 m3
Sample width:	0.882 m	**Sample weight:**	20.7 kg/m2
Product Identification:	44mm Sentry ProLite Timber Door with glazing ESG 14mm thick Pyro 630 (600x800mm) with seals Head & Jambs - Halspan Triple Fin Seal, Threshold - Halspan Dropseal		

Freq f Hz	Sound Reduction Index, dB 1/3 Oct	1/1 Oct
50+	17.7	16.9
63+	18.1	
80+	15.5	
100	15.1	17.0
125	17.3	
160	19.7	
200	22.3	23.0
250	22.4	
315	24.7	
400	25.6	25.5
500	25.3	
630	25.6	
800	25.6	25.2
1000	24.4	
1250	25.7	
1600	26.2	24.9
2000	24.7	
2500	24.0	
3150	25.7	26.8
4000	27.1	
5000	27.9	
6300+	27.6	28.1
8000+	27.2	
10000+	30.2	
Average 100-3150	23.4	



Rating according to BS EN ISO 717-1:1997

Rw(C;Ctr)= **25 (0;-1)** dB

Notes * designates measurement corrected for background
designates limit of measurement due to background
+ designates frequency beyond standard and not UKAS accredited

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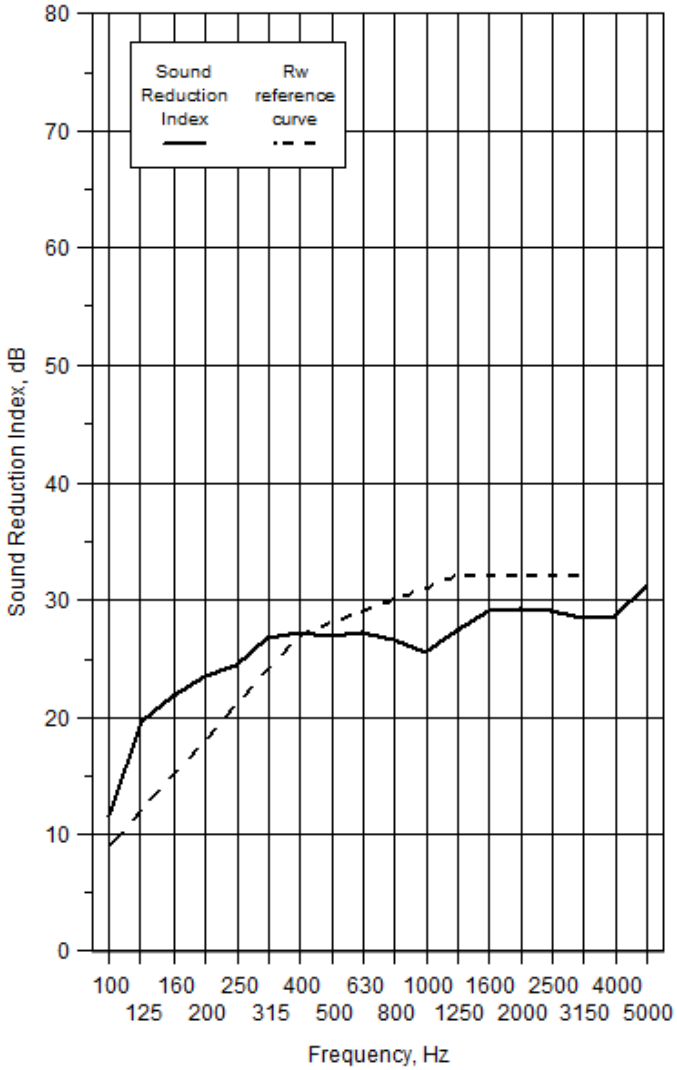
Data Sheet 7

Test Number :	9	**Air temperature:**	14.3 °C
Client:	Sentry International	**Air humidity:**	77 %
Test Date:	23/10/2009	**Receiving room volume**	300 m3
Sample height:	2.068 m	**Source room volume:**	115 m3
Sample width:	0.882 m	**Sample weight:**	20.7 kg/m2
Product Identification:	44mm Sentry ProLIte Timber Door with glazing ESG 14mm thick Pyro 630 (600x800mm) with seals adjusted Head & Jambs - Halspan Triple Fin Seal, Threshold - Halspan Dropseal		

Freq f Hz	Sound Reduction Index, dB 1/3 Oct	1/1 Oct
50+	19.3	13.2
63+	15.2	
80+	10.0	
100	11.6	15.4
125	19.6	
160	21.8	
200	23.6	24.8
250	24.5	
315	26.8	
400	27.3	27.1
500	26.9	
630	27.2	
800	26.6	26.4
1000	25.6	
1250	27.4	
1600	29.2	29.2
2000	29.3	
2500	29.2	
3150	28.5	29.3
4000	28.7	
5000	31.3	
6300+	34.8	34.3
8000+	34.9	
10000+	33.3	
Average 100-3150	25.3	



Rating according to BS EN ISO 717-1:1997

Rw(C;Ctr)= **28 (-1;-3)** dB

Notes * designates measurement corrected for background
designates limit of measurement due to background
+ designates frequency beyond standard and not UKAS accredited

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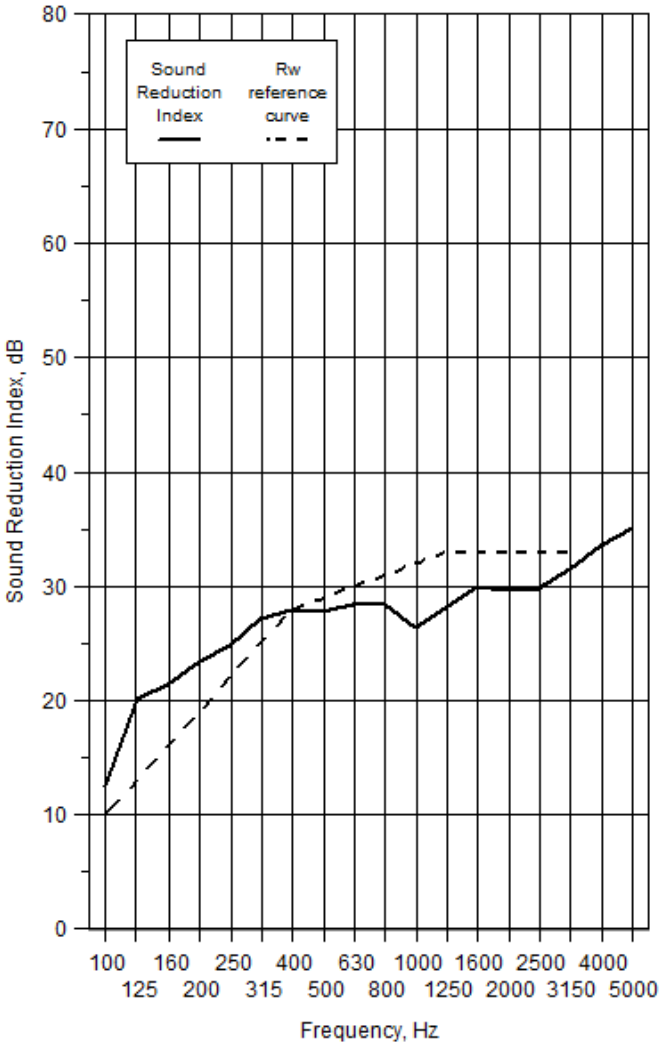
Data Sheet 8

Test Number :	10	**Air temperature:**	14.3 °C
Client:	Sentry International	**Air humidity:**	77 %
Test Date:	23/10/2009	**Receiving room volume**	300 m3
Sample height:	2.068 m	**Source room volume:**	115 m3
Sample width:	0.882 m	**Sample weight:**	20.7 kg/m2

Product Identification: 44mm Sentry ProLite Timber Door with glazing ESG 14mm thick
Pyro 630 (600x800mm)
Head & Jambs - Halspan Triple Fin Seal, Threshold - Halspan Dropseal with additional timber stop & Triple Fin Seal added to Threshold

Freq f Hz	Sound Reduction Index, dB 1/3 Oct	1/1 Oct
50+	19.9	
63+	20.0	14.7
80+	10.9	
100	12.5	
125	20.2	16.2
160	21.5	
200	23.5	
250	24.8	24.9
315	27.2	
400	28.0	
500	27.9	28.1
630	28.5	
800	28.4	
1000	26.5	27.6
1250	28.1	
1600	30.0	
2000	29.7	29.8
2500	29.8	
3150	31.6	
4000	33.6	33.2
5000	35.1	
6300+	37.3	
8000+	37.2	37.2
10000+	37.1 *	
Average 100-3150	26.1	



Rating according to BS EN ISO 717-1:1997
Rw(C;Ctr)= **29 (-1;-3)** dB

Notes * designates measurement corrected for background
designates limit of measurement due to background
+ designates frequency beyond standard and not UKAS accredited

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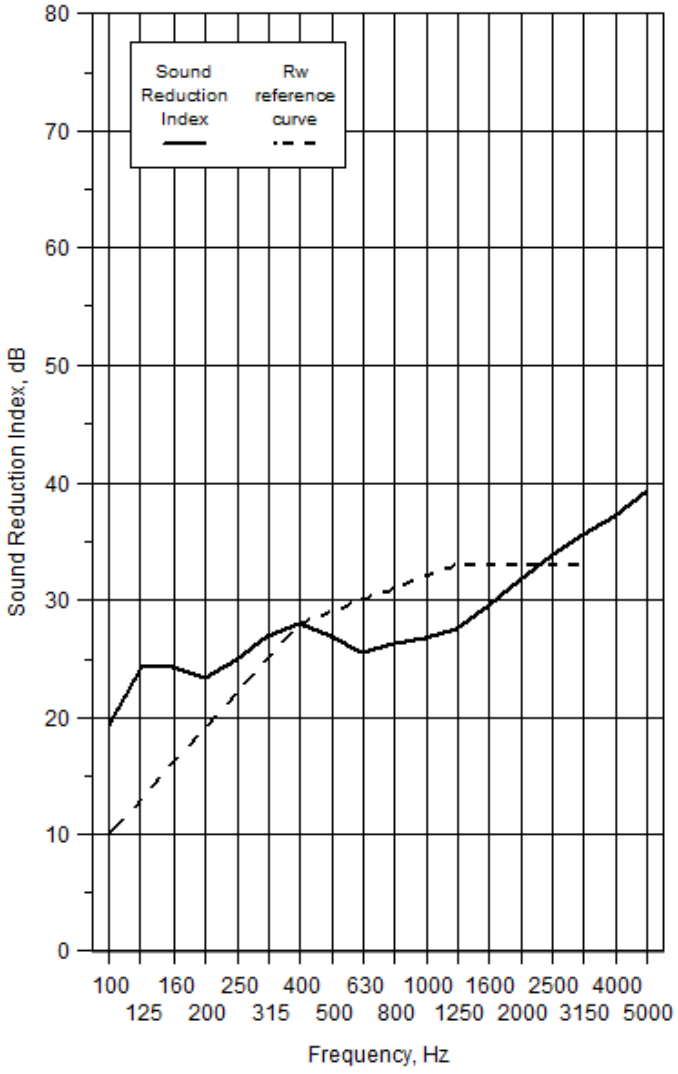
Data Sheet 9

Test Number :	31	**Air temperature:**	13.7 °C
Client:	Sentry International	**Air humidity:**	58 %
Test Date:	04/11/2009	**Receiving room volume**	300 m3
Sample height:	2.068 m	**Source room volume:**	115 m3
Sample width:	0.882 m	**Sample weight:**	15.3 kg/m2
Product Identification:	Metal frame with Sentry ProLIte Timber Door Fully caulked		

Freq f Hz	Sound Reduction Index, dB 1/3 Oct	1/1 Oct
50+	17.0	14.0
63+	12.9	
80+	13.0	
100	19.4	22.0
125	24.3	
160	24.3	
200	23.4	24.8
250	24.9	
315	26.9	
400	28.1	26.8
500	27.0	
630	25.6	
800	26.3	26.9
1000	26.8	
1250	27.5	
1600	29.6	31.4
2000	31.7	
2500	33.8	
3150	35.6	37.1
4000	37.2	
5000	39.4	
6300+	41.5	40.6
8000+	40.5	
10000+	39.8	
Average 100-3150	27.2	



Rating according to BS EN ISO 717-1:1997

Rw(C;Ctr)= **29 (0;-2)** dB

Notes * designates measurement corrected for background
designates limit of measurement due to background
+ designates frequency beyond standard and not UKAS accredited

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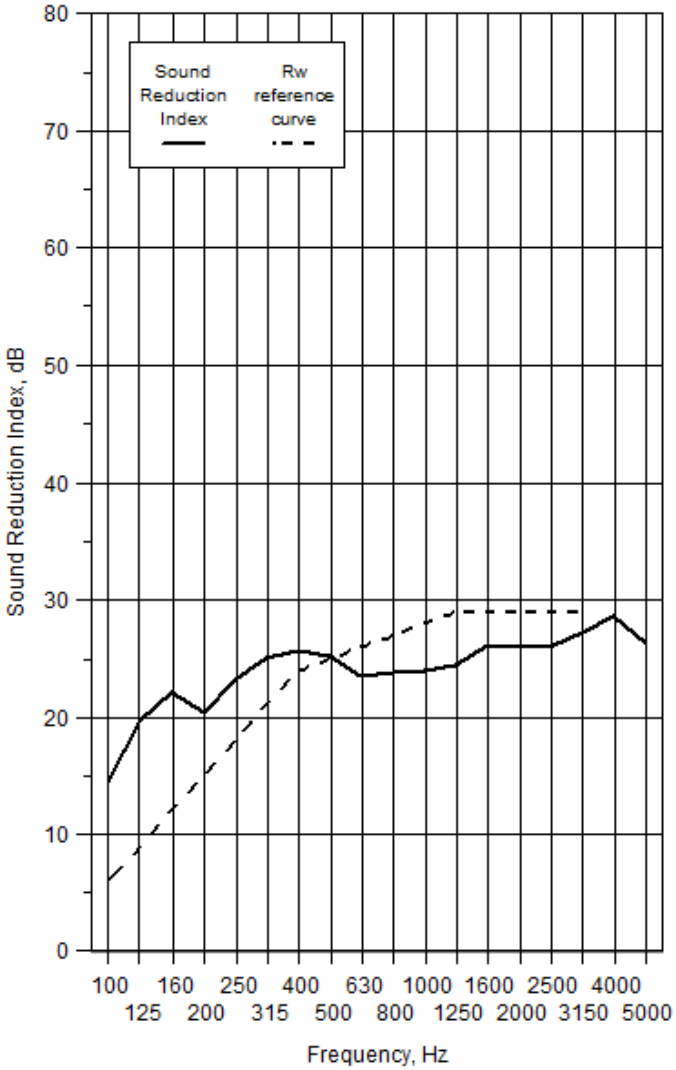
Data Sheet 10

Test Number :	32	**Air temperature:**	13.7 °C
Client:	Sentry International	**Air humidity:**	58 %
Test Date:	04/11/2009	**Receiving room volume**	300 m3
Sample height:	2.068 m	**Source room volume:**	115 m3
Sample width:	0.882 m	**Sample weight:**	15.3 kg/m2
Product Identification:	Metal frame with Sentry ProLite Timber Door Head & Jambs - Standard Rema gasket in stop Threshold - Caulked		

Freq f Hz	Sound Reduction Index, dB 1/3 Oct	1/1 Oct
50+	13.0	13.7
63+	13.6	
80+	14.6	
100	14.5	17.6
125	19.8	
160	22.2	
200	20.4	22.5
250	23.3	
315	25.1	
400	25.7	24.8
500	25.3	
630	23.6	
800	23.8	24.1
1000	24.0	
1250	24.5	
1600	26.1	26.0
2000	26.0	
2500	26.0	
3150	27.2	27.3
4000	28.7	
5000	26.4	
6300+	28.6	29.2
8000+	29.0	
10000+	30.3	
Average 100-3150	23.6	



Rating according to BS EN ISO 717-1:1997

Rw(C;Ctr)= **25 (0;-1)** dB

Notes * designates measurement corrected for background
designates limit of measurement due to background
+ designates frequency beyond standard and not UKAS accredited

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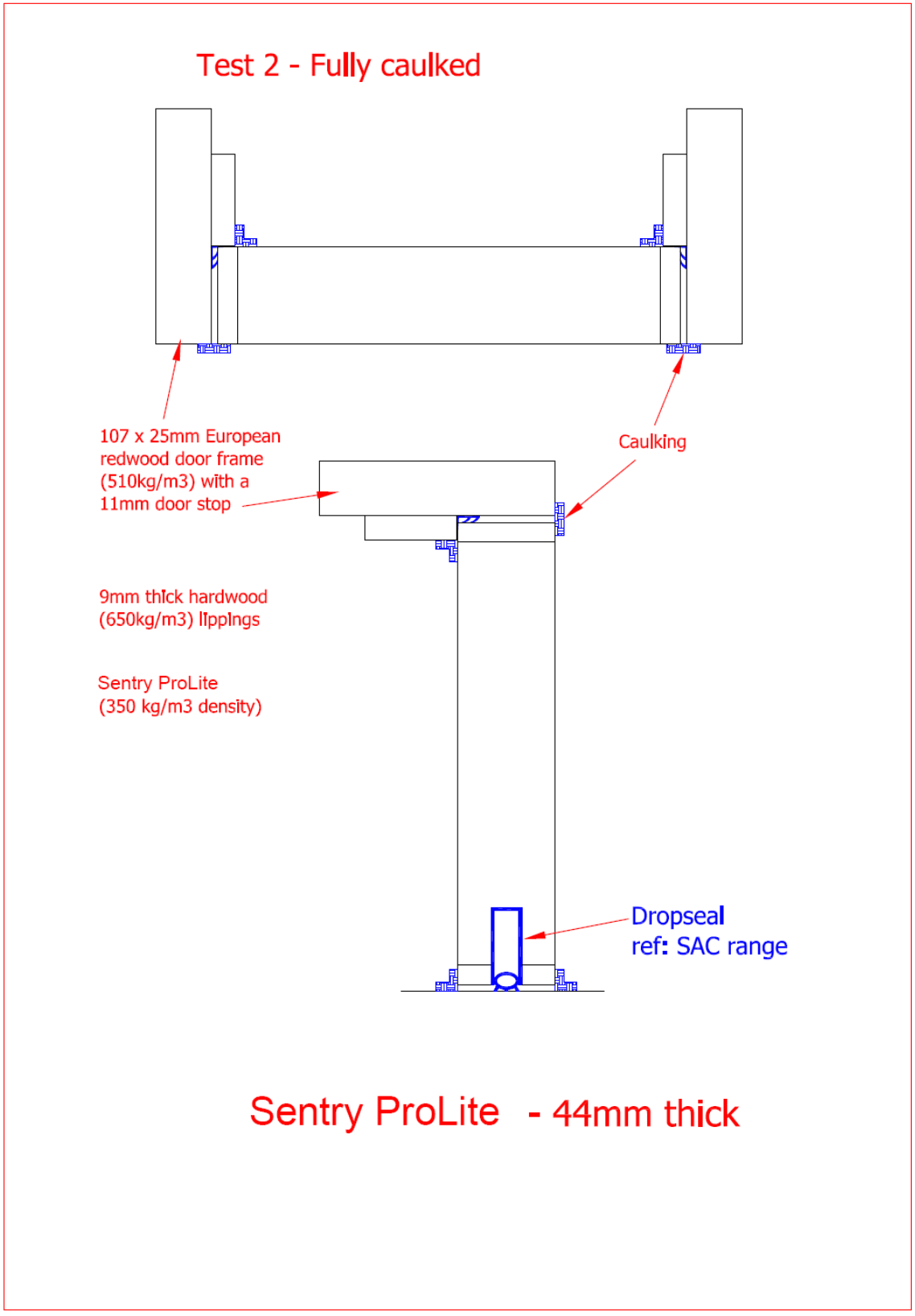
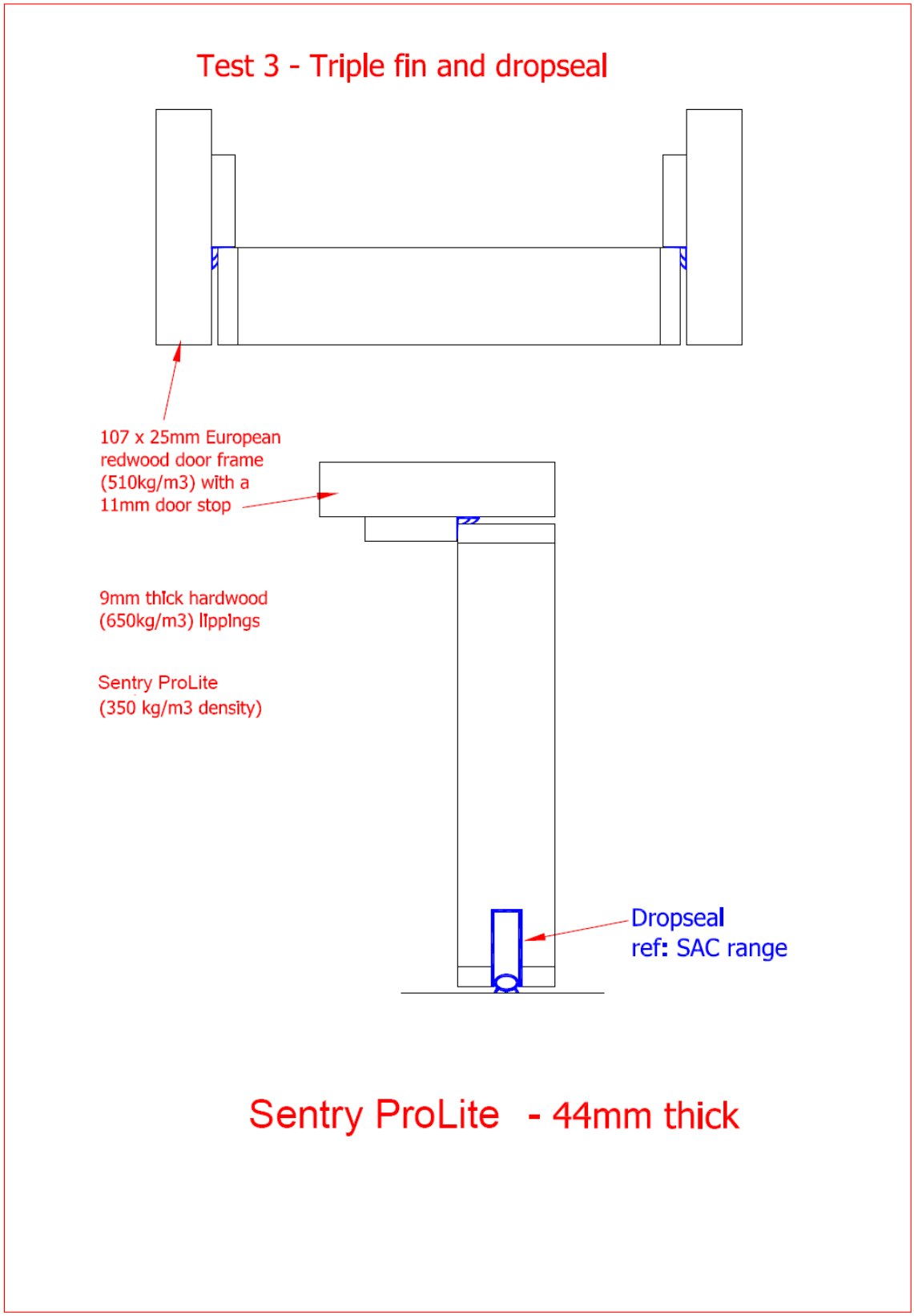
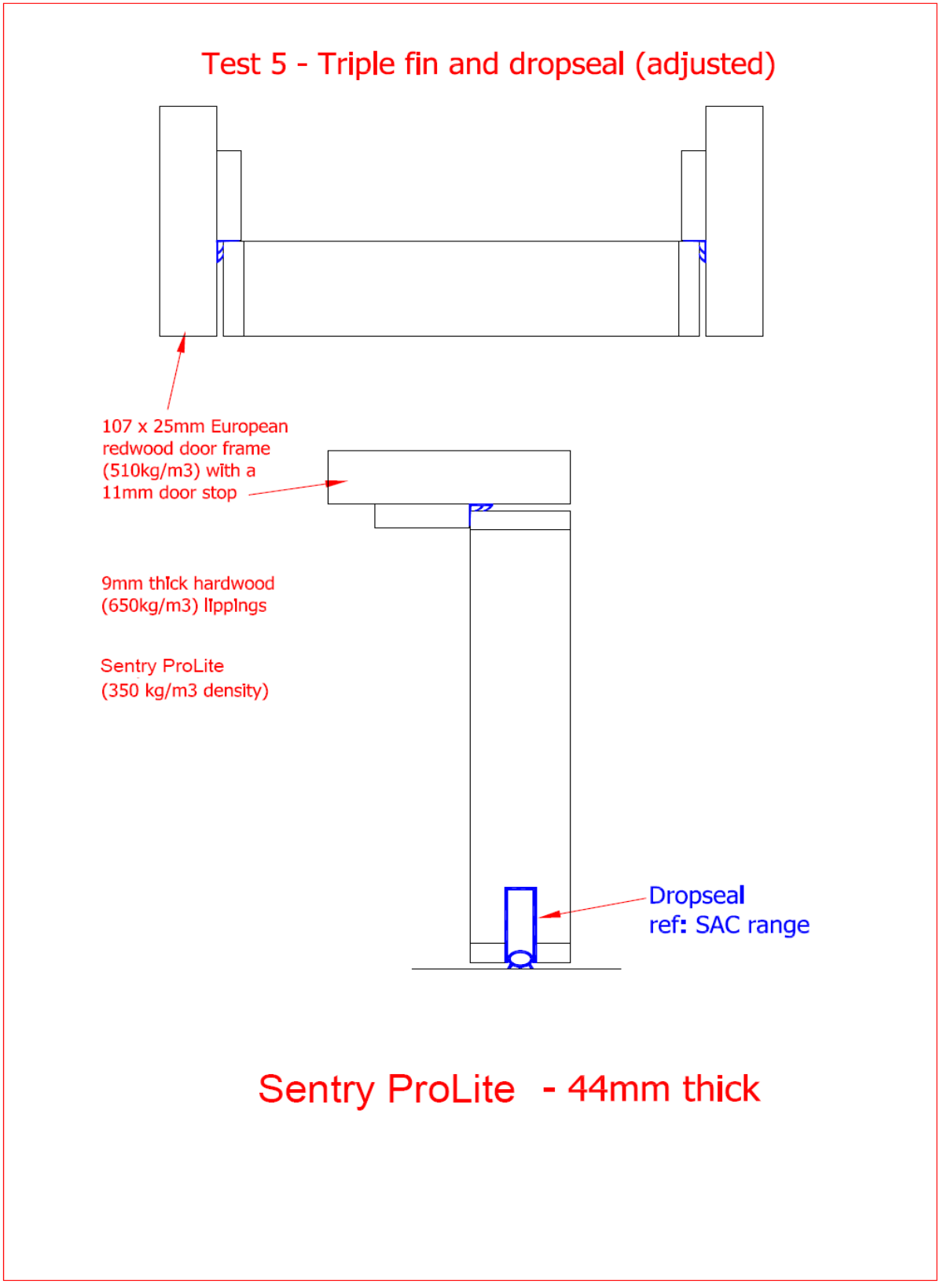
Drawing 1


Test 2 - Fully caulked
107 x 25mm European redwood door frame (510kg/m3) with a 11mm door stop
Caulking
9mm thick hardwood (650kg/m3) lippings
Sentry ProLite (350 kg/m3 density)
Dropseal ref: SAC range
Sentry ProLite - 44mm thick

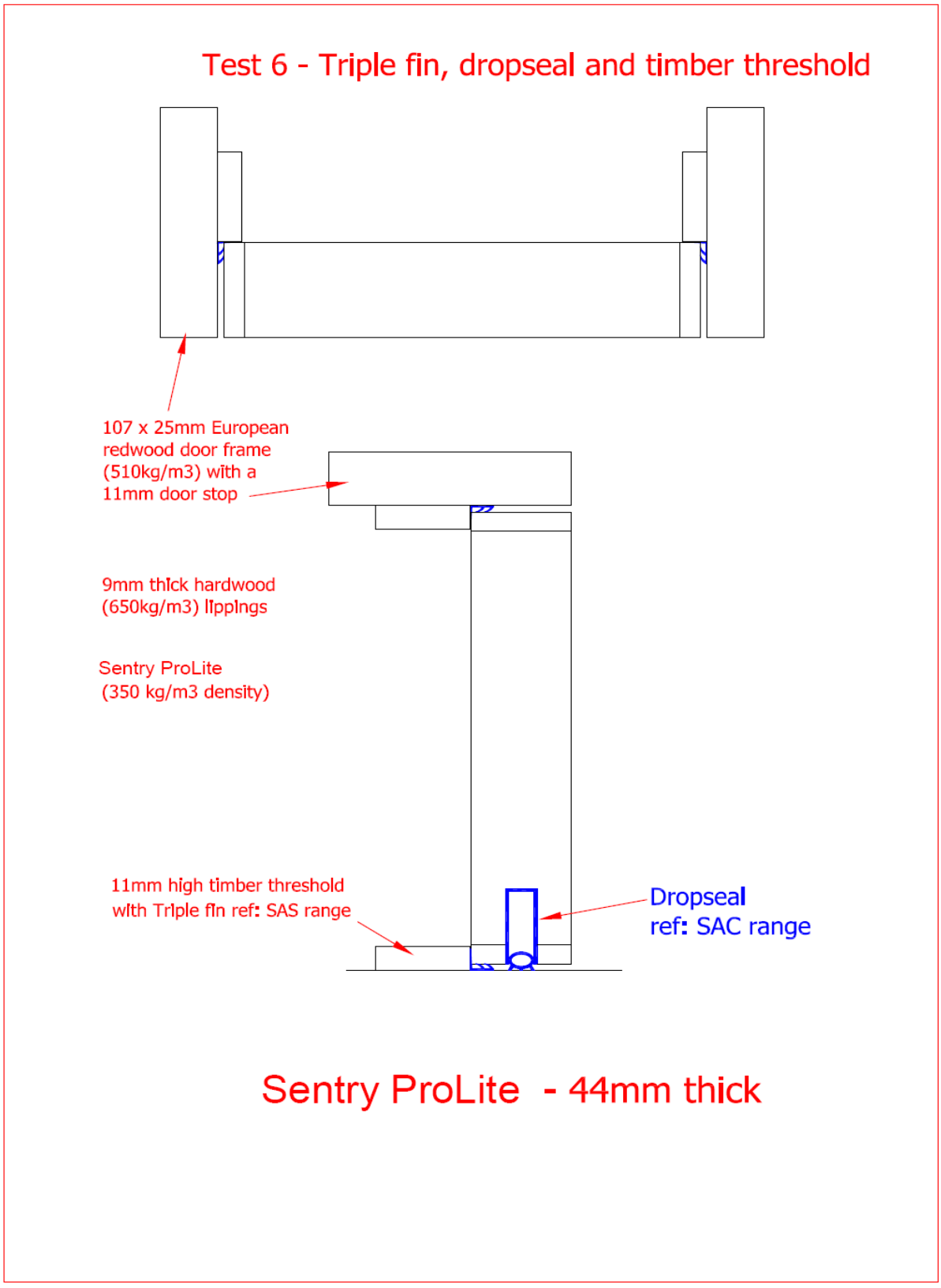
Drawing 2


Test 3 - Triple fin and dropseal
107 x 25mm European redwood door frame (510kg/m3) with a 11mm door stop
9mm thick hardwood (650kg/m3) lipplngs
Sentry ProLite (350 kg/m3 density)
Dropseal ref: SAC range
Sentry ProLite - 44mm thick

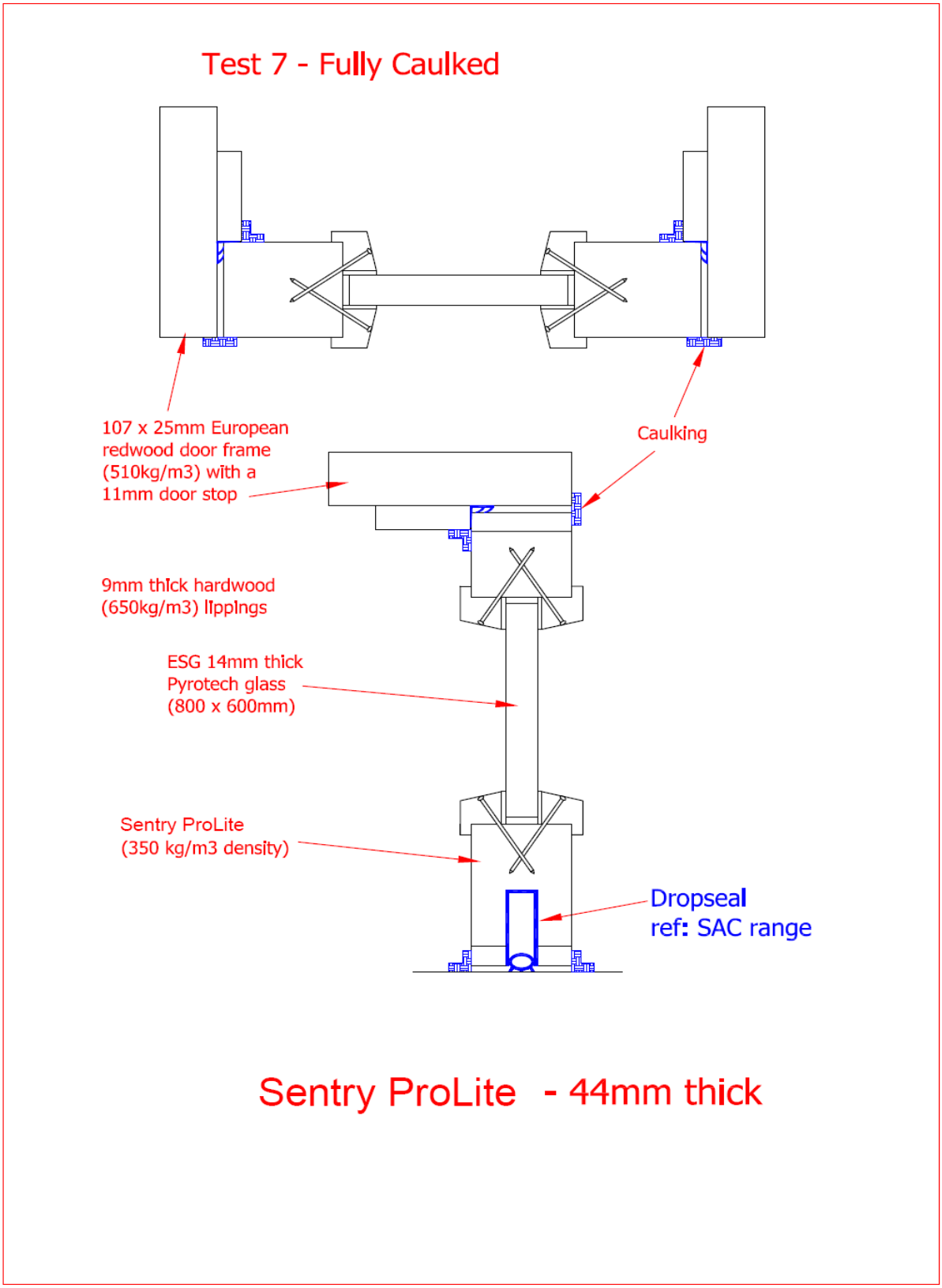
Drawing 3


Test 5 - Triple fin and dropseal (adjusted)
107 x 25mm European redwood door frame (510kg/m3) with a 11mm door stop
9mm thick hardwood (650kg/m3) lipplngs
Sentry ProLite (350 kg/m3 density)
Dropseal ref: SAC range
Sentry ProLite - 44mm thick

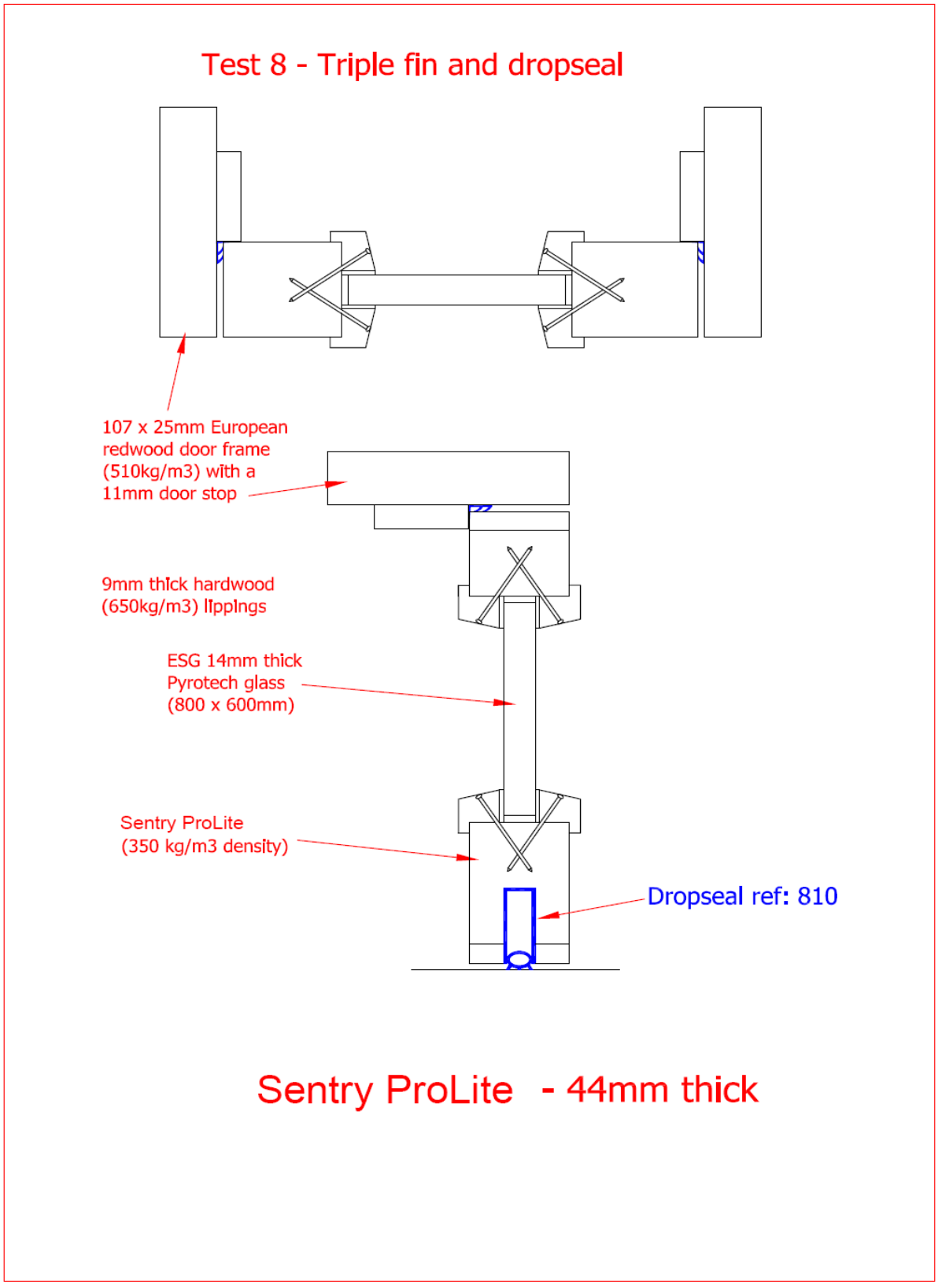
Drawing 4



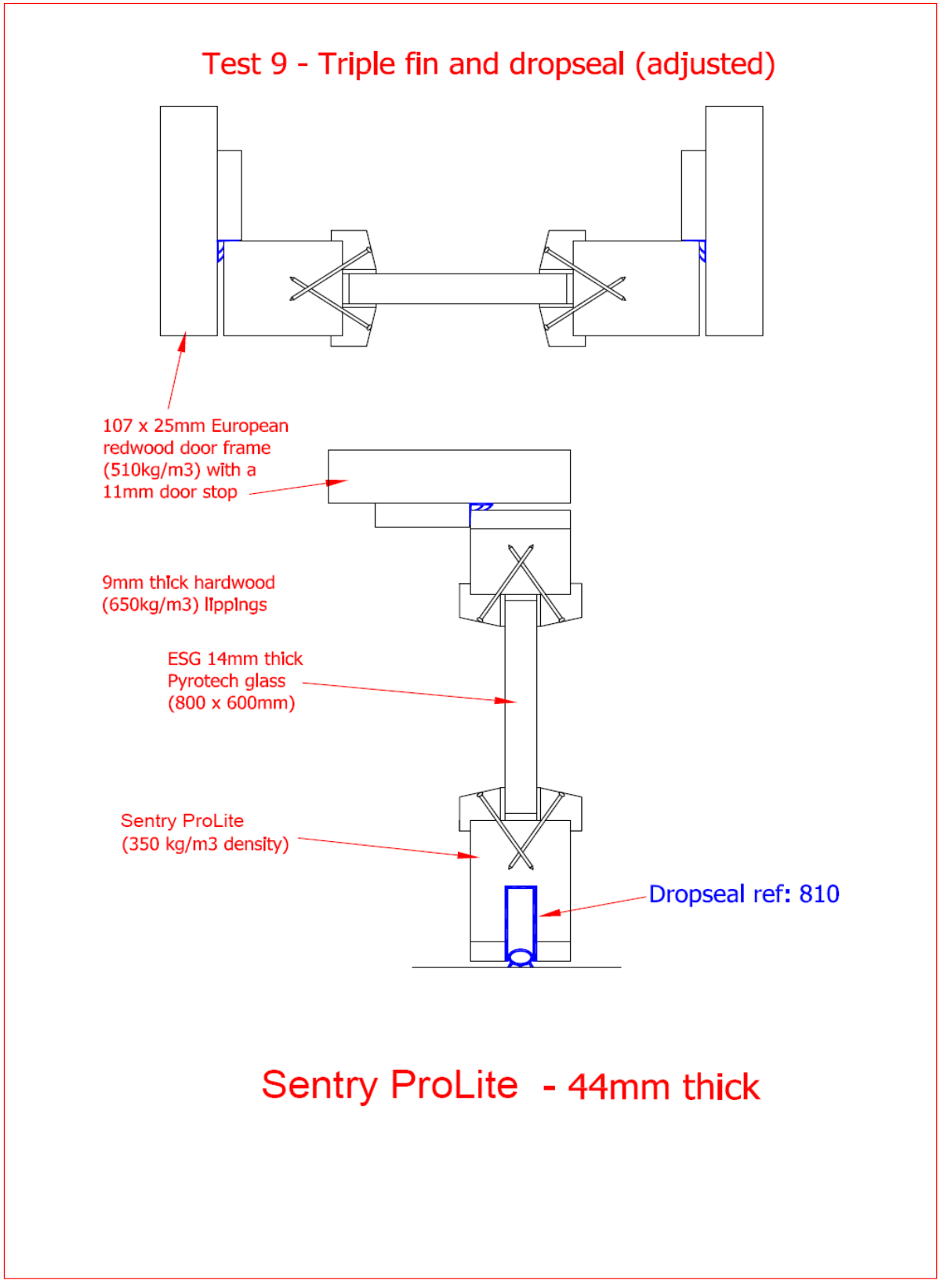
Drawing 5


Test 7 - Fully Caulked
107 x 25mm European redwood door frame (510kg/m3) with a 11mm door stop
Caulking
9mm thick hardwood (650kg/m3) lippings
ESG 14mm thick Pyrotech glass (800 x 600mm)
Sentry ProLite (350 kg/m3 density)
Dropseal ref: SAC range
Sentry ProLite - 44mm thick

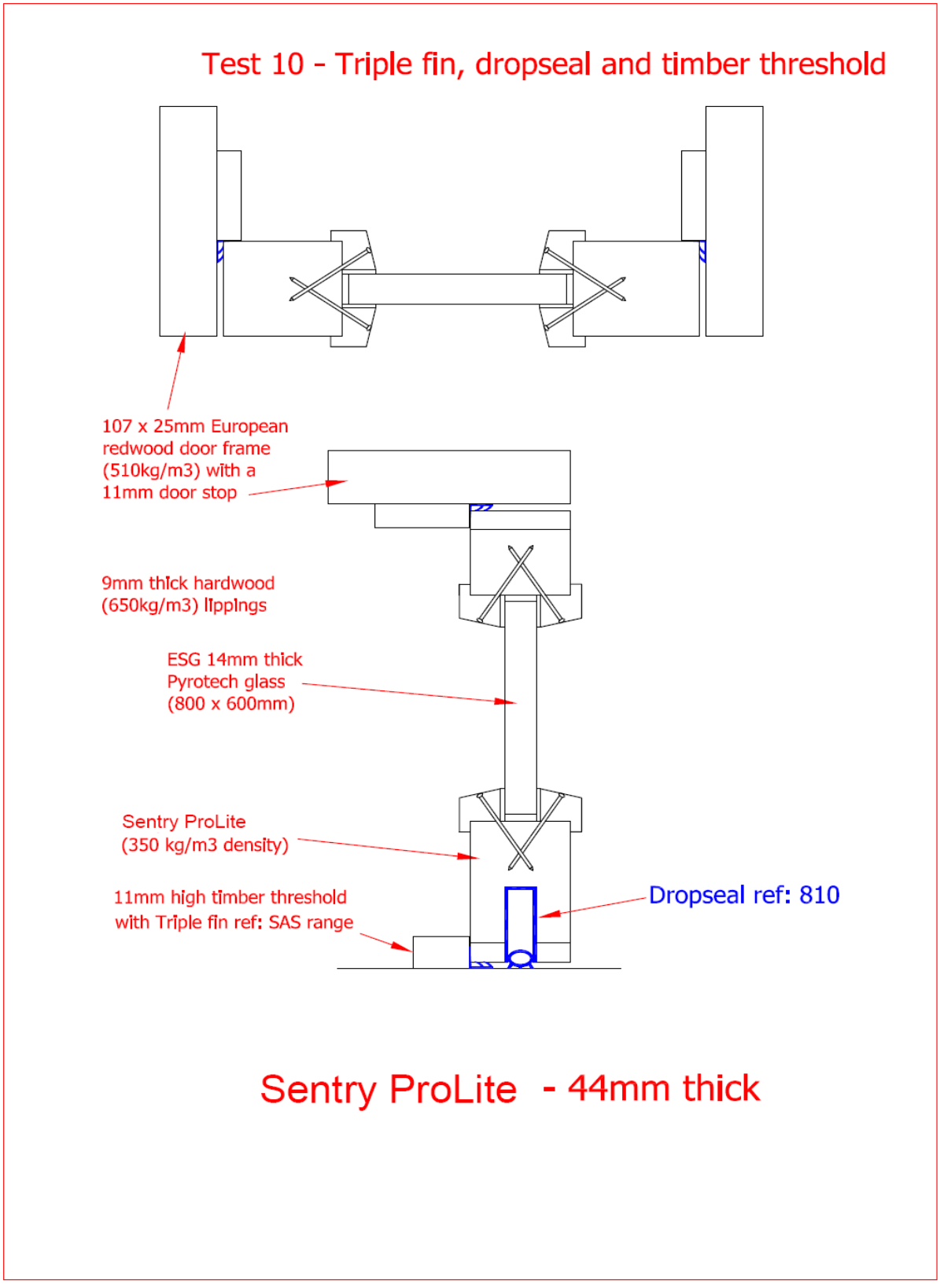
Drawing 6


Test 8 - Triple fin and dropseal
107 x 25mm European redwood door frame (510kg/m3) with a 11mm door stop
9mm thick hardwood (650kg/m3) lippings
ESG 14mm thick Pyrotech glass (800 x 600mm)
Sentry ProLite (350 kg/m3 density)
Dropseal ref: 810
Sentry ProLite - 44mm thick

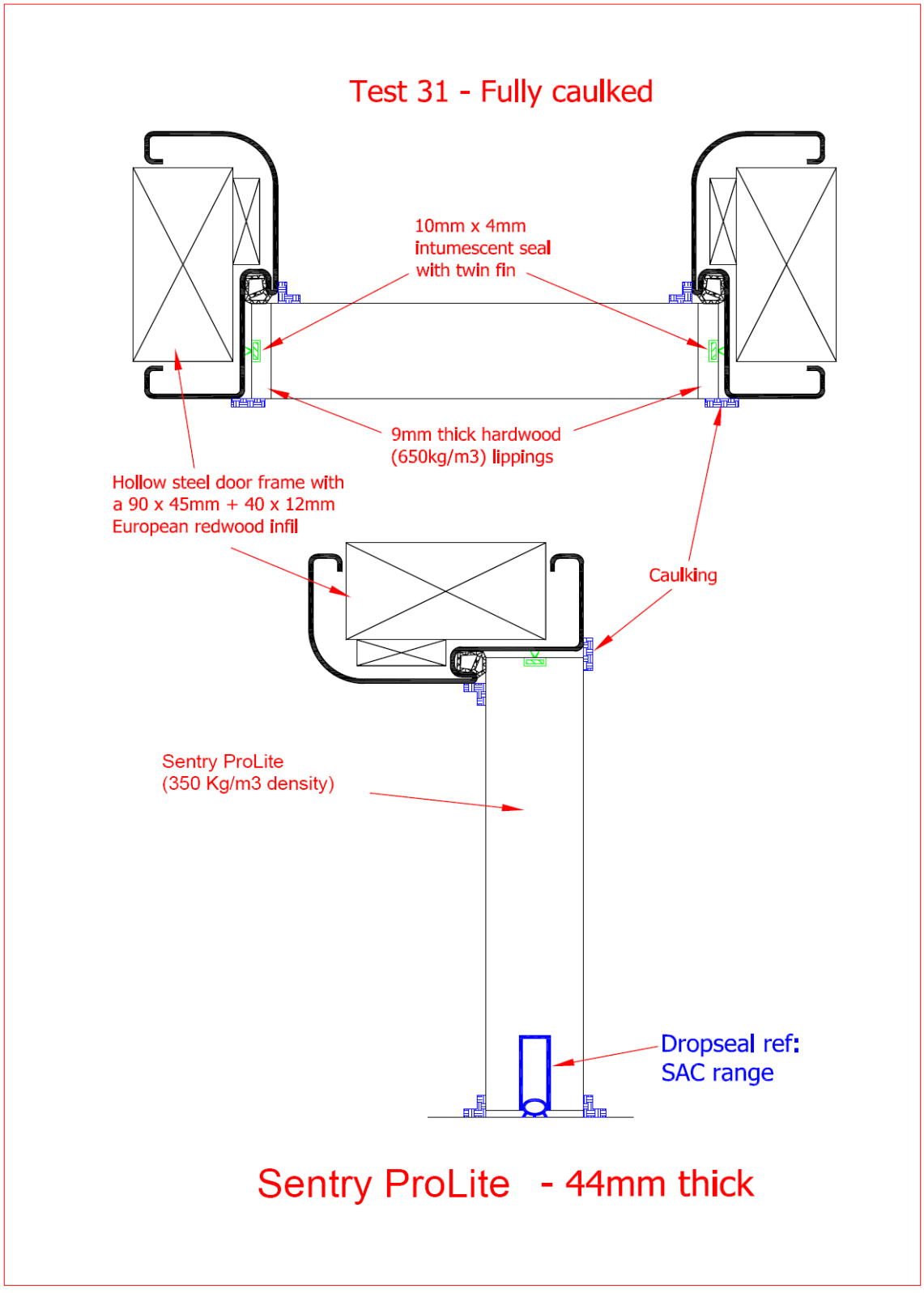
Drawing 7


Test 9 - Triple fin and dropseal (adjusted)
107 x 25mm European redwood door frame (510kg/m3) with a 11mm door stop
9mm thick hardwood (650kg/m3) lipplngs
ESG 14mm thick Pyrotech glass (800 x 600mm)
Sentry ProLite (350 kg/m3 density)
Dropseal ref: 810
Sentry ProLite - 44mm thick

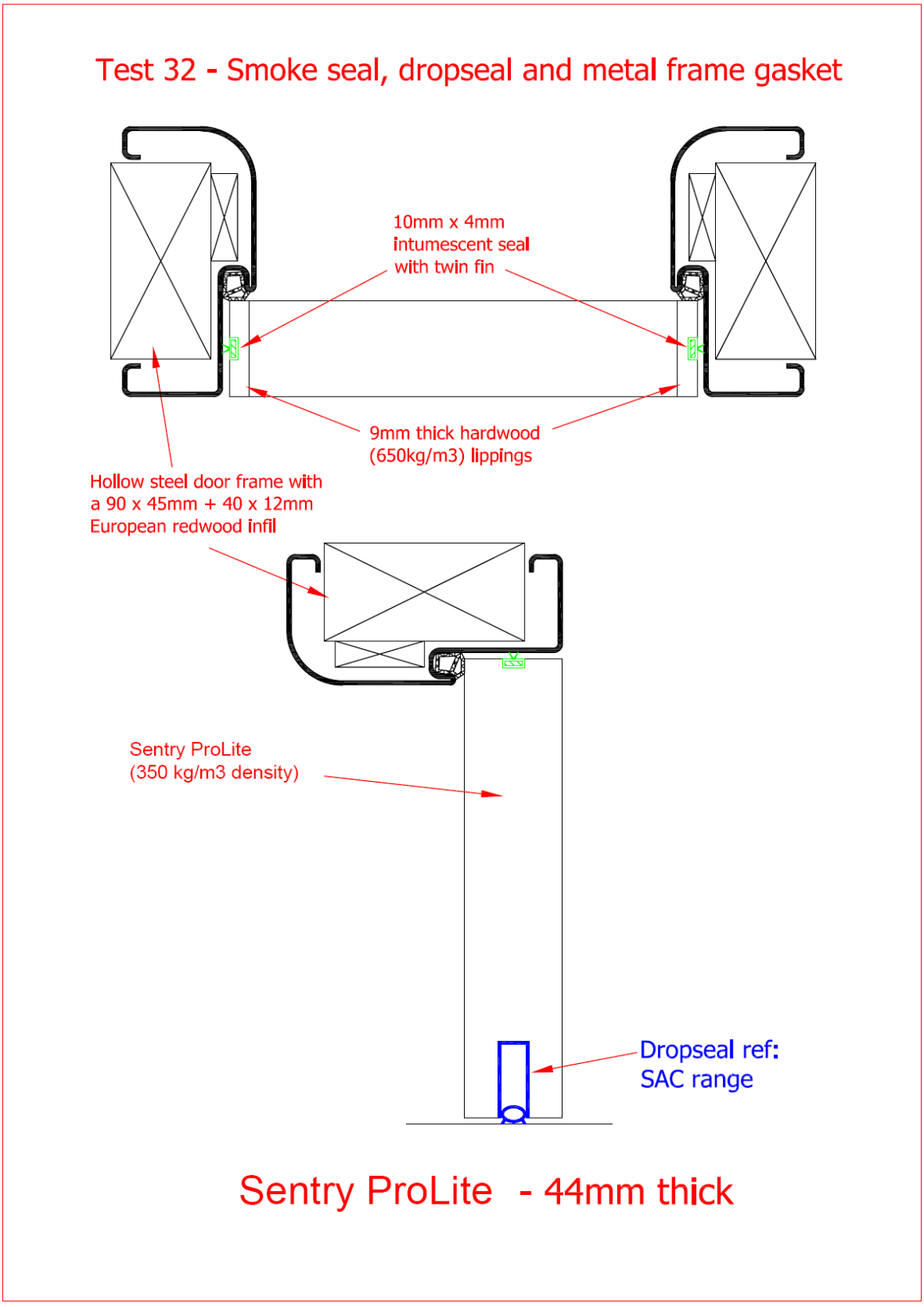
Drawing 8


Test 10 - Triple fin, dropseal and timber threshold
107 x 25mm European redwood door frame (510kg/m3) with a 11mm door stop
9mm thick hardwood (650kg/m3) lipplngs
ESG 14mm thick Pyrotech glass (800 x 600mm)
Sentry ProLite (350 kg/m3 density)
11mm high timber threshold with Triple fin ref: SAS range
Dropseal ref: 810
Sentry ProLite - 44mm thick

Drawing 9


Test 31 - Fully caulked
10mm x 4mm
intumescent seal
with twin fin
9mm thick hardwood
(650kg/m3) lippings
Hollow steel door frame with
a 90 x 45mm + 40 x 12mm
European redwood infil
Caulking
Sentry ProLite
(350 Kg/m3 density)
Dropseal ref:
SAC range
Sentry ProLite - 44mm thick

Drawing 10



Appendix 1

Test Procedure

Measurement of Sound Transmission in accordance with BS EN ISO 140-3 : 1995 - TP15

In the laboratory, airborne sound transmission is determined from the difference in sound pressure levels measured across a test sample installed between two reverberant rooms. The difference in measured sound pressure levels is corrected for the amount of absorption in the receiving room. The test is done under conditions which restrict the transmission of sound by paths other than directly through the sample. The source sound field is randomly incident on the sample.

The test sample is located and sealed in an aperture within the brick dividing wall between the two rectangular reverberant (i.e. acoustically "live") room, both of which are constructed from 215mm brick with reinforced concrete floors and roofs. The brick wall has dimensions of 4.8m wide x 3.1m high and 550mm nominal thickness and forms the whole of the common area between the two rooms.

One of the rooms is used as the receiving room and has a volume of 300 cubic metres. It is isolated from the surrounding structure and the adjoining room by the use of resilient mountings and seals ensuring good acoustic isolation. The adjoining source room has a volume of 115 cubic metres.

Broad band noise is produced in the source room from an electronic generator, power amplifier and loudspeaker. The resulting sound pressure levels in both rooms are sampled using a microphone mounted on an oscillating boom and connected to a real time analyser. The signal is filtered into one third octave band widths, integrated and averaged. The value obtained at each frequency is known as the average sound pressure level for either the source or the receiving room. The change in level across the test sample is termed the sound pressure level difference, i.e.

$$D = L_1 - L_2$$

where

D is the equivalent Sound Pressure level difference in dB

L_1 is the equivalent Sound Pressure level in the source room in dB

L_2 is the equivalent Sound Pressure level in the receiving room in dB

The Sound Reduction Index (R) also known by the American terminology Sound Transmission Loss, is defined as the number of decibels by which sound energy randomly incident on the test sample, is reduced in transmitting through it and is given by the formula:

$$R = D + 10\log_{10} - \text{..... in decibels}$$

Where

S is the area of the sample

A is the total absorption in the receiving room

both dimensions being in consistent units

The Sound Reduction Index is an expression of the laboratory sound transmission performance of a particular element or construction. It is a function of the mass, thickness, sealing method of mounting etc.and is independent of the overall area of the sample.

However, when an example of this construction is installed on site, the sound insulation obtained will depend upon its surface area, as well as the absorption in the receiving room. The larger the area the greater the sound energy transmitted. Also, the overall sound insulation is affected by the sound transmission through other building elements, some of which may have an inferior performance to the sample tested. In practice, therefore, the potential sound reduction index of a construction is not fully realised on site. Furthermore, the sound reduction index of a particular sample of that construction can only be measured accurately in a laboratory, because only under such controlled conditions can the sound transmission path be limited to the sample under test.

R_w, C and C_{tr} have been calculated in accordance with the relevant section of BS EN ISO 717-1 :1997 from the results of laboratory tests carried out in accordance with BS EN ISO 140-3 : 1995.

SRL

Appendix 2

Measurement Uncertainty
BS EN ISO 140-3:1995 - TP15

The following values of uncertainty are based on a standard uncertainty multiplied by a coverage factor of k = 2, which provides a level of confidence of approximately 95%.

Frequency, Hz	Uncertainty, ± dB
100	2.6
125	2.4
160	2.1
200	2.1
250	1.5
315	1.5
400	1.2
500	1.2
800	1.0
1000	1.0
1250	1.0
1600	1.0
2000	1.0
2500	1.0
3150	1.0

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