

Report Number BTC 10101A

ACOUSTIC TEST REPORT COVERING LABORATORY
SOUND ABSORPTION TEST TO BS 3638: 1987, ISO 354-
1984 ON A GYPTONE QUATRO CEILING TILE TYPE 22
ON A 187mm HIGH FRAME. (RATED IN ACCORDANCE
WITH EN ISO 11654:1997).

Test Date: 16th January 1991

Customer:

British Gypsum Ltd
East Leake
Loughborough
Leics
LE12 6HT

Gyproc AB
Box 505
S-201 25
Malmo
SWEDEN

Customer: British Gypsum Limited and Gyproc AB

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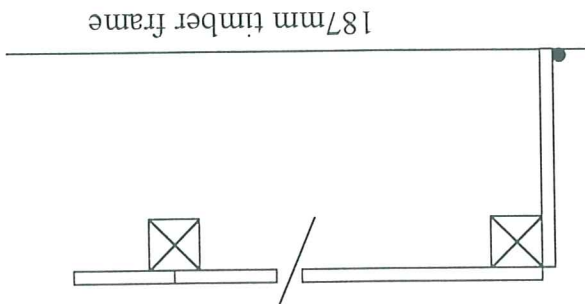
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ACOUSTIC TEST REPORT COVERING LABORATORY SOUND ABSORPTION TEST TO BS 3638: 1987, ISO 354-1984 ON A GYPTONE QUATRO CEILING TILE TYPE 22 ON A 187mm HIGH FRAME. (RATED IN ACCORDANCE WITH EN ISO 11654:1997).

DESCRIPTION

13mm x 600mm x 600mm Gypstone Quatro ceiling tile Type 22 with acoustic tissue backing on a 187mm x 3600mm x 3000mm timber frame. The frame incorporates 45mm x 45mm timber supports at 600mm centres running in one direction.

The frame constructed on the concrete floor with the timber frame sealed to the floor using Gyproc Sealant.



The descriptions of individual components making up the test specimen were provided by the customer and were checked for accuracy wherever possible.

RESULT

$$\alpha_w = 0.45 \text{ (I)}$$

$$\text{NRC} = 0.50$$

Test conducted in accordance with BS 3638:1987 and ISO 354:1984. The practical sound absorption coefficient, α_w calculated in accordance with EN ISO 11654:1997. The Noise Reduction Coefficient, NRC calculated in accordance with ASTM C423-90a 1992.

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MATERIALS

Gyptone Quatro Ceiling Tiles Type 22 with acoustic tissue

Nominally 13mm (thick) x 600 x 600mm Gyptone Quatro Ceiling Tiles Type 22 manufactured by Gyproc AB, Malmö, Sweden.

Actual surface density:

8.56 kg/m²

TEST PROCEDURE

For each of the three microphone locations and the two loudspeaker positions, 2 decays are taken for each combination, making a total of 12 decays. The two loudspeaker positions are placed in diagonally opposite corners of the room - one on the floor and one in the upper corner. Broad band pink noise and third-octave band filters in real time mode are used to make simultaneous measurements for all frequency bands.

REVERBERATION ROOM

The test room is approximately 196m³ in volume with a surface area of 203m² and contains fourteen perspex diffusers 4mm x 1220mm x 1220mm suspended from the ceiling.

Report Author:

Howard

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Paul

Eur. Ing Paul Royle B.Tech.(Hons.), M.Sc., CEng., MIOA

Report Date:

5 May, 1998

Customer: British Gypsum Limited and Gyproc AB

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TESTING
No. 0296
0296SI

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LABORATORY SOUND ABSORPTION TEST

Test Code: R112_14

Specimen Area, S :	10.8	m^2	Temperature, deg.C:	11	Empty	Specimen	56	11
Room Volume, m^3 :	196	m^3	Rel. Humidity, %RH:	56			56	

(Check environmental requirements - Table 2 of standard)

Freq	Plane Absorber			U.D.
	Empty	Specimen		
HZ	T10, Sec	T10, Sec	T20, Sec	α_{pi}

50	20.21	21.93	8.20	9.47	0.18	0.20	0.50	0.30	-0.15	0.00	0.05	-0.05	0.05
63	16.39	19.25	7.54	8.17	0.21	0.20	0.50	0.30	-0.15	0.00	0.05	-0.05	0.05
80	17.31	19.16	6.15	7.03	0.27	0.20	0.50	0.30	-0.15	0.00	0.05	-0.05	0.05
100	11.93	13.07	4.03	3.94	0.53	0.20	0.50	0.30	-0.15	0.00	0.05	-0.05	0.05
125	10.23	10.93	3.60	4.27	0.42	0.20	0.50	0.30	-0.15	0.00	0.05	-0.05	0.05
160	9.31	10.22	3.24	3.38	0.59	0.20	0.50	0.30	-0.15	0.00	0.05	-0.05	0.05
200	10.43	10.68	3.34	3.71	0.52	0.20	0.50	0.30	-0.15	0.00	0.05	-0.05	0.05
250	11.28	11.39	3.45	3.53	0.58	0.20	0.50	0.30	-0.15	0.00	0.05	-0.05	0.05
315	11.21	10.99	3.41	3.46	0.59	0.20	0.50	0.30	-0.15	0.00	0.05	-0.05	0.05
400	8.26	8.82	2.83	3.07	0.63	0.20	0.50	0.30	-0.15	0.00	0.05	-0.05	0.05
500	7.32	7.22	2.90	2.88	0.62	0.20	0.50	0.30	-0.15	0.00	0.05	-0.05	0.05
630	8.11	7.64	3.02	3.20	0.54	0.20	0.50	0.30	-0.15	0.00	0.05	-0.05	0.05
800	7.89	8.05	3.62	3.51	0.48	0.20	0.50	0.30	-0.15	0.00	0.05	-0.05	0.05
1 000	8.08	8.16	3.91	3.98	0.38	0.20	0.50	0.30	-0.15	0.00	0.05	-0.05	0.05
1 250	7.47	7.30	3.37	3.56	0.43	0.20	0.50	0.30	-0.15	0.00	0.05	-0.05	0.05
1 600	6.20	6.19	3.72	3.46	0.38	0.20	0.50	0.30	-0.15	0.00	0.05	-0.05	0.05
2 000	5.53	5.50	3.18	3.31	0.36	0.20	0.50	0.30	-0.15	0.00	0.05	-0.05	0.05
2 500	4.64	4.76	3.15	2.93	0.39	0.20	0.50	0.30	-0.15	0.00	0.05	-0.05	0.05
3 150	3.61	3.71	2.49	2.49	0.39	0.20	0.50	0.30	-0.15	0.00	0.05	-0.05	0.05
4 000	2.65	2.70	2.00	1.91	0.46	0.20	0.50	0.30	-0.15	0.00	0.05	-0.05	0.05
5 000	2.02	2.05	1.61	1.59	0.42	0.20	0.50	0.30	-0.15	0.00	0.05	-0.05	0.05
6 300						0.20	0.50	0.30	-0.15	0.00	0.05	-0.05	0.05
8 000													
10 000													

Single Figure Rating
EN ISO 11654: 1997
 $\alpha_w = 0.45$ (L)

It is strongly recommended to use this single figure rating in combination with the complete sound absorption coefficient curve that can be obtained on request

Tested By: 
Checked By: 

Test Procedure: 20354/Issue 1

Worksheet: MSOFFICE\EXCEL\20354\20354.XLS

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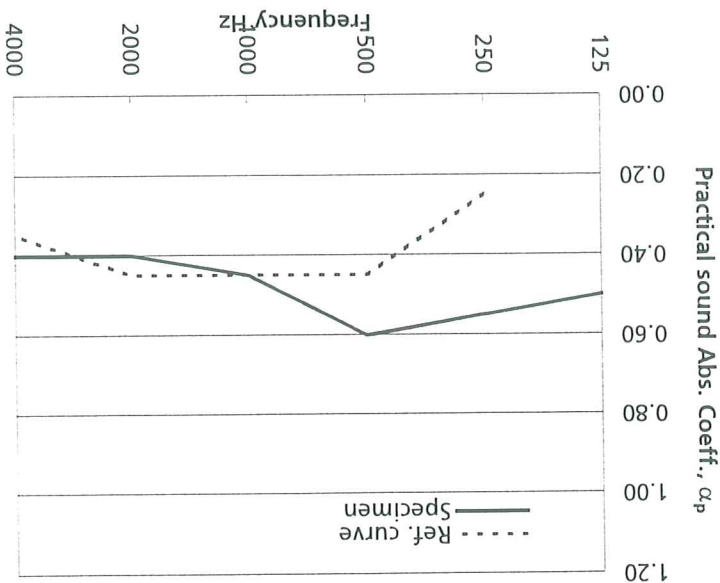
Test Code:

R112_14

Test Date:

16/01/91

Specimen	Ref. curve	Freq. Hz
0.50	0.25	125
0.55	0.45	250
0.60	0.45	500
0.45	0.45	1000
0.40	0.45	2000
0.40	0.35	4000



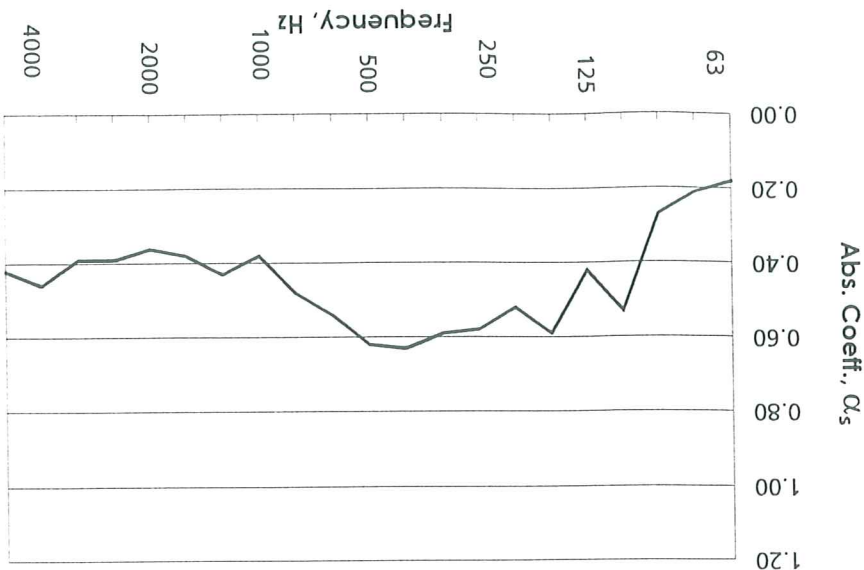
$$\alpha_{\text{w}} = 0.45 \text{ (L)}$$

Rating according to

EN ISO 11654: 1997

It is strongly recommended to use this single figure rating in combination with the complete sound absorption coefficient curve that can be obtained on request

Freq. Hz	α_s
50	0.18
63	0.21
80	0.27
100	0.53
125	0.42
160	0.59
200	0.52
250	0.58
315	0.59
400	0.63
500	0.62
630	0.54
800	0.48
1000	0.38
1250	0.43
1600	0.38
2000	0.36
2500	0.39
3150	0.39
4000	0.46
5000	0.42
6300	



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