



# Confidential Report

Our Ref: 25/04339G/10/11





**BCTC**

CARPET TECHNICAL CENTRE

BTTG Testing & Certification Ltd.  
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16 November 2011

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Your Ref:

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Client: Forbo Flooring UK Ltd  
High Holborn Road  
Ripley  
Derbyshire  
DE5 3NT

Job Title: **Sound Absorption Test on One Sample of Carpet Tiles**

Clients Order Ref: --

Date of Receipt: 20 October 2011

Reference: **Flotex Tile**  
Description of Sample: Flotex Tile PVC  
Measurements: 50cm x 50cm

Work Requested: BCTC were requested to carry out a Sound Absorption Test on the sample of carpet tiles supplied.





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### Random Incidence Sound Absorption Coefficient

The sample was laid to cover an area measuring 3m x 4m directly on the concrete floor of the test facility.

The tests were carried out in a large reverberation chamber. The room has been designed with hard surfaces and non-parallel walls to give long empty room reverberation times with uniform decays. It has the shape of a truncated wedge. In addition, 11 plywood panels, each panel 1.22m x 2.44m, were hung in the room to improve the diffusivity of the sound field. The test sample was placed in the centre of the floor. The excitation signal comprised wide band random noise played into the room via a loudspeaker mounted in a cabinet facing a corner. The sound was monitored at each of 6 microphone positions. The room is 7.4m long x ~6.6m wide x 4.5m high. It has a volume of 220m<sup>3</sup> and a total surface area of 224m<sup>2</sup>.

The procedure followed that detailed in BS EN ISO 354:2003 "Acoustics - Measurement of sound absorption in a reverberation room". Measurements were made on the rate of decay of sound in the test chamber with and without the sample in place. The frequency range from 100Hz to 5000Hz was covered in one third octave bands. An average reverberation time was taken from 5 decays at each of 6 microphone positions for each of two loudspeaker positions (i.e. 60 decays per third octave band). The decays were produced by exciting the room with amplified wide band random noise and stopping the excitation once the chamber became saturated. The time taken for the sound to decay by 20dB is measured and tripled to give the reverberation time. The reverberation time was obtained from the arithmetically averaged decays at each frequency. The measurements with and without the sample in the room were carried out consecutively to avoid significant changes in relative humidity and temperature which influence air absorption at higher frequencies.

For most purposes the absorption coefficient at each octave interval is sufficient and these are given in the following table.

| <u>Frequency</u><br>(Hz) | <u>Average Absorption Coefficient</u><br>(1/1 Octave) |
|--------------------------|---|
| 100 - 160                | 0.00  |
| 200 - 315                | 0.00  |
| 400 - 630                | 0.05  |
| 800 - 1250               | 0.10  |
| 1600 - 2500              | 0.20  |
| 3150 - 5000              | 0.20  |

**Noise reduction coefficient (250 - 2000 Hz) is 0.10**

**Classification: Not Classified**





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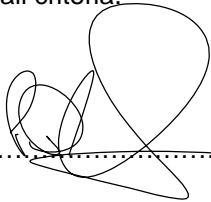
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An estimation of uncertainty of measurement has not been taken into account when making a judgement to any pass/fail criteria.

Reported by:.......... P Doherty, Operational Head

Enquiries concerning this report should be addressed to Customer Services.



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