

HORIZONTAL TEST SUITE

This test chamber can be used to test wall, doors, windows, panels, etc. It consists of two adjacent transmission rooms and has been designed to satisfy the British, European and international standard recommendations for measurement of sound transmission through walls. The rooms are similar in shape size and volume.

Test Method and Conditions

The source room (T2) was treated with six perspex diffusers of approximately 900mm x 1220mm. An omni-directional loudspeaker sound source is placed near a back corner of the source room (T2), rotating at 1 rpm and at least 0.7m from any room boundary to satisfy Annex C of BS EN ISO 140-3: 1995. A stationary loudspeaker sound source is placed in the corner of the receiving room (T1) opposite the test specimen.

The average sound pressure level in each 1/3 octave band is measured using a rotating microphone boom, positioned such that the minimum distance between microphone and sound source is 1m and between microphone and room boundaries is 0.7m. The rotating microphone has a sweep radius of at least 1m and is inclined in relation to the boundaries at an angle of at least 30° to the horizontal. The microphone has a traverse time of 32 seconds, and the sound pressure levels are averaged over 64 seconds which is equivalent to two complete sweeps of the microphone boom.

The equivalent absorption area of the receiving room is determined by producing the arithmetic average of twelve reverberation times and applying this to the Sabine formula.

The test specimen is installed in the aperture so that it finishes flush with the last timber in room T2 side to eliminate indirect transmission between rooms. The specimen is not installed so that the aperture depth ratio 2:1 is met as recommended in section 5.2.1 of BS EN ISO 140-3:1995. Laboratory tests have shown to prove the insignificance of this installation position on the test results

The laboratory limit for measurement due to flanking is (combined BTC 11709A, BTC13562EA, BTC 15398A and BTC 15829A)

| Freq Hz | 50 | 63 | 80 | 100 | 125 | 160 | 200 | 250 | 315 | 400 | 500 | 630 | 800 | 1000 | 1250 | 1600 | 2000 | 2500 | 3150 | 4000 | 5000 |
|------------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|------|-------|-------|-------|-------|------|------|------|
| R'max | 45.0 | 46.9 | 58.5 | 62.4 | 62.9 | 67.7 | 71.2 | 77.2 | 84.2 | 92.0 | 97.7 | 101.5 | 103.8 | 97.6 | 102.4 | 104.8 | 101.8 | 102.9 | 98.7 | 96.4 | 96.2 |

