



**PRO)))SOUND™**

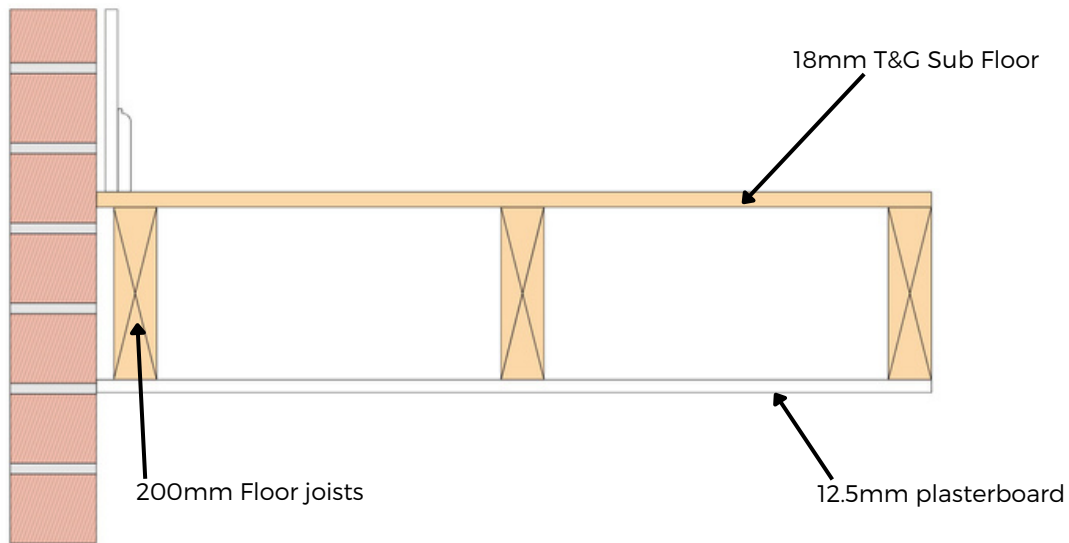
---

# Reverso SoundMat

Floor Performance Data

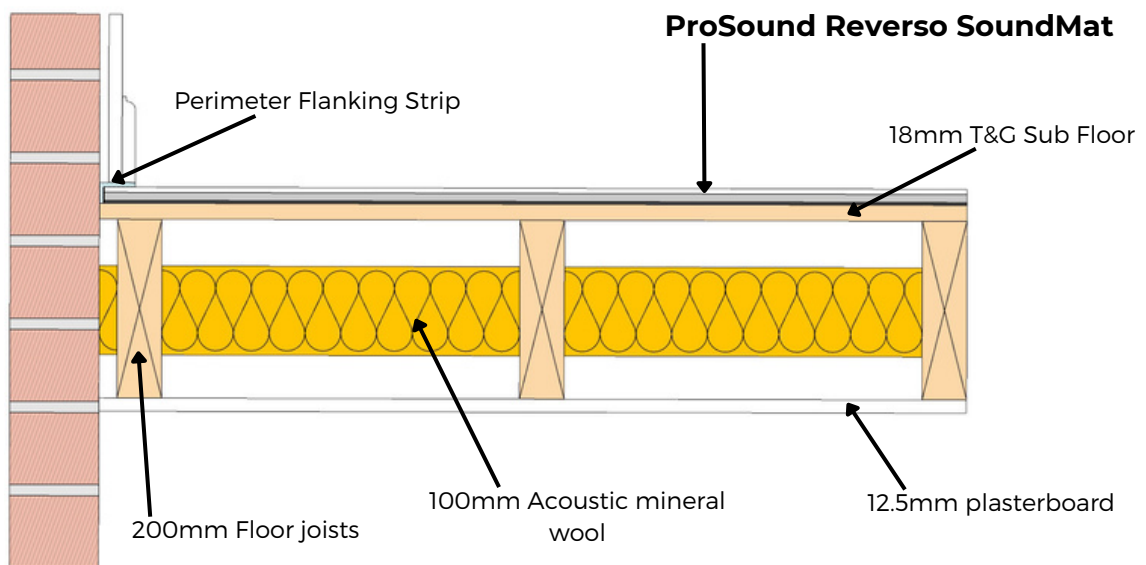
## Timber Joisted Floor: Build-up

### Untreated Floor



### Treated Floor

Fig.1



| Structure Layers  | Weight Per Sqm        |
|---|-----------------------|
| 18mm Reverso SoundMat                                   | 17.5Kg m <sup>2</sup> |
| 18mm T+G P5 Chipboard Floor                             | 12Kg m <sup>2</sup>   |
| 200mm Timber Floor Joists                               | N/A                   |
| 100mm Acoustic Mineral Wool Fitted Between Floor Joists | 6Kg m <sup>2</sup>    |
| 12.5mm Plasterboard                                     | 9.3Kg m <sup>2</sup>  |

## Timber Joisted Floor: Airborne Test Data

Standardised airborne sound level difference according to BS EN ISO 140-4

Field measurement of airborne sound insulation between rooms

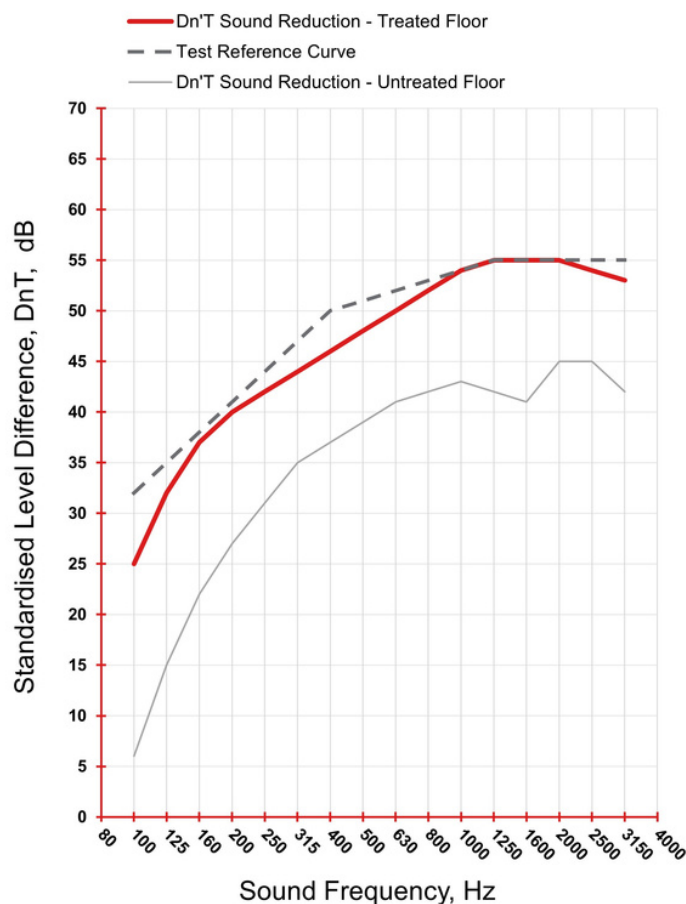
Source room volume - 47m<sup>3</sup>

Receiving room volume - 42m<sup>3</sup>

| Frequency - Hz | DnT Value<br>1/3 Octave -dB<br>Untreated Floor | DnT Value<br>1/3 Octave -dB<br>Treated Floor |
|----------------|--|--|
| 63             | #  | #  |
| 80             | #  | #  |
| 100            | 6  | 25   |
| 125            | 15   | 32   |
| 160            | 22   | 37   |
| 200            | 27   | 40   |
| 250            | 31   | 42   |
| 315            | 35   | 44   |
| 400            | 37   | 46   |
| 500            | 39   | 48   |
| 630            | 41   | 50   |
| 800            | 42   | 52   |
| 1000           | 43   | 54   |
| 1250           | 42   | 55   |
| 1600           | 41   | 55   |
| 2000           | 45   | 55   |
| 2500           | 45   | 54   |
| 3150           | 42   | 53   |
| 4000           | #  | #  |

# Indicates limitations of measurements

\* Resonate Frequency - 42Hz



Reference: Fig. 1

## Airborne Sound Test Results

| Untreated Floor    | Treated Floor      | Floor Improvement  |
|--------------------|--------------------|--------------------|
| DnT,w = 38dB       | DnT,w = 51dB       | DnT,w = 13dB       |
| DnT,w + Ctr = 25dB | DnT,w + Ctr = 43dB | DnT,w + Ctr = 18dB |

Rating according to ISO 717-1

With airborne noise a higher value equals a better performance

## Timber Joisted Floor: Impact Test Data

Standardised impact sound pressure levels difference according to BS EN ISO 140-7

Field measurement of impact sound insulation of floors

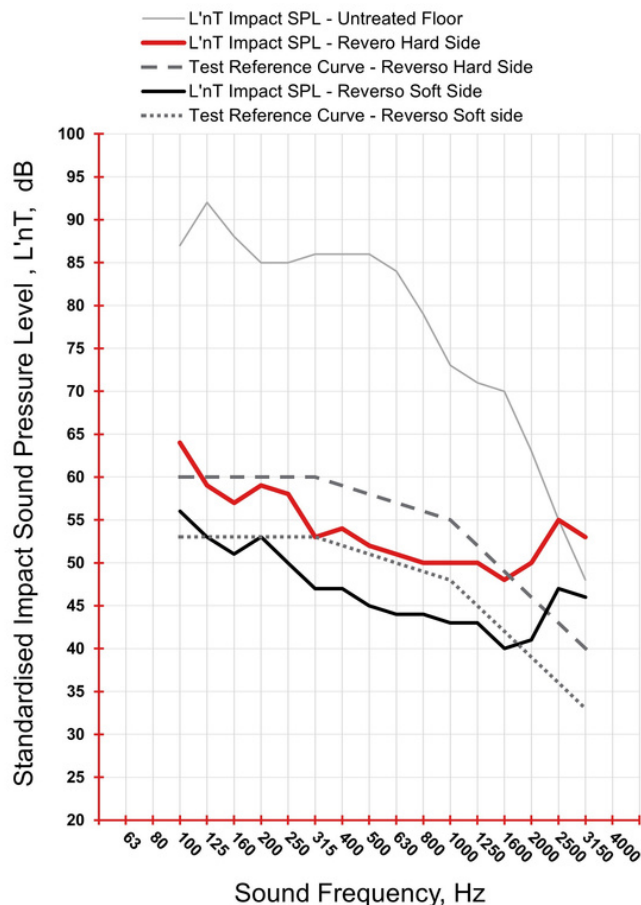
Source room volume - 47m<sup>3</sup>

Receiving room volume - 42m<sup>3</sup>

| Frequency<br>- Hz | L'nT Value<br>1/3 Octave -<br>dB<br>Untreated<br>Floor | L'nT Value<br>1/3 Octave -<br>dB<br>Treated Floor<br>Hard Side | L'nT Value<br>1/3 Octave -<br>dB<br>Treated Floor<br>Soft Side |
|-------------------|--|--|--|
| 63                | #  | #  | #  |
| 80                | #  | #  | #  |
| 100               | 87   | 63   | 56   |
| 125               | 92   | 56   | 53   |
| 160               | 88   | 54   | 51   |
| 200               | 85   | 54   | 53   |
| 250               | 85   | 55   | 50   |
| 315               | 86   | 50   | 47   |
| 400               | 86   | 49   | 47   |
| 500               | 86   | 49   | 45   |
| 630               | 84   | 47   | 44   |
| 800               | 79   | 47   | 44   |
| 1000              | 73   | 47   | 43   |
| 1250              | 71   | 45   | 43   |
| 1600              | 70   | 45   | 40   |
| 2000              | 63   | 50   | 41   |
| 2500              | 55   | 47   | 47   |
| 3150              | 48   | 48   | 46   |
| 4000              | #  | #  | #  |

# Indicates limitations of measurements

\* Resonate Frequency - 42Hz



Reference: Fig. 1

## Impact Sound Test Results

| Untreated Floor | Treated Floor             | Floor Improvement         |
|-----------------|---------------------------|---------------------------|
| L'nT,w = 82dB   | L'nT,w = 58dB - Hard Side | L'nT,w = 24dB - Hard Side |
| L'nT,w = 82dB   | L'nT,w = 51dB - Soft Side | L'nT,w = 31dB - Soft Side |

Rating according to ISO 717-2

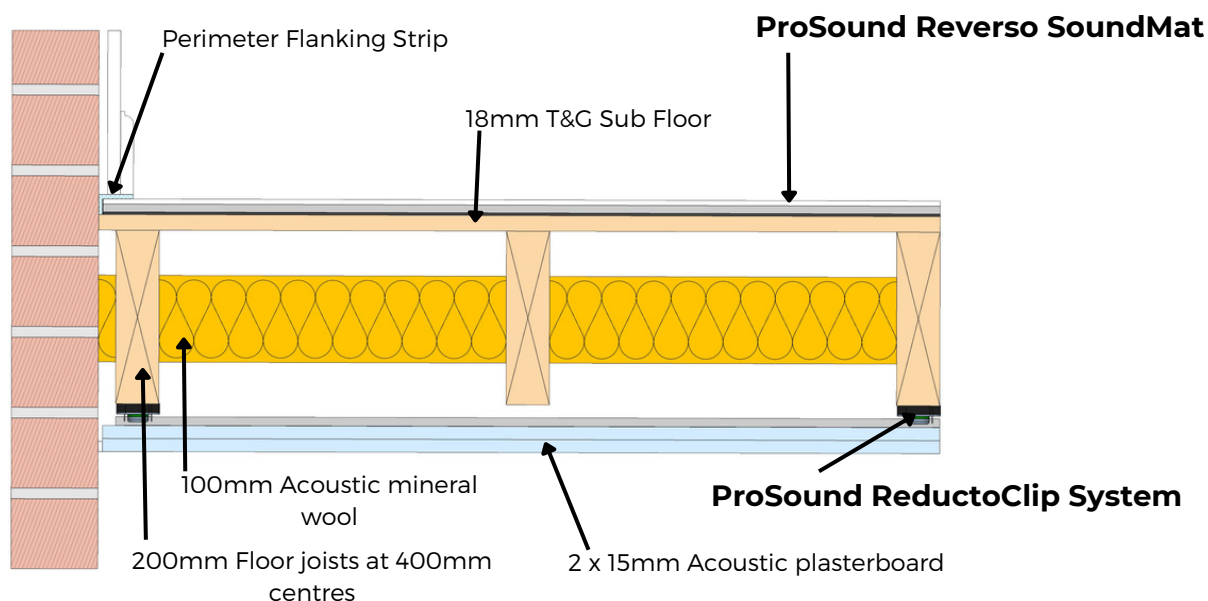
With impact noise a lower value equals a better performance

## Timber Joisted Floor: Build-up (Recommended for Part E)

The below is recommended when needing to pass Part E Building Regulations.

### Treated Floor

Fig.2



| Structure Layers   | Weight Per Sqm        |
|--|-----------------------|
| 18mm Reverso SoundMat  | 17.5Kg m <sup>2</sup> |
| 18mm T+G P5 Chipboard Floor  | 12Kg m <sup>2</sup>   |
| 200mm Timber Floor Joists Filled with 100mm 60Kg m <sup>3</sup> Mineral Wool | 6Kg m <sup>2</sup>    |
| 25mm ReductoClip & Furring Bar   | N/A                   |
| 15mm Acoustic Plasterboard   | 12.8Kg m <sup>2</sup> |
| 15mm Acoustic Plasterboard   | 12.8Kg m <sup>2</sup> |

## Timber Joisted Floor: Airborne Test Data (Recommended For Part E)

Standardised airborne sound level difference according to BS EN ISO 140-4

Field measurement of airborne sound insulation between rooms

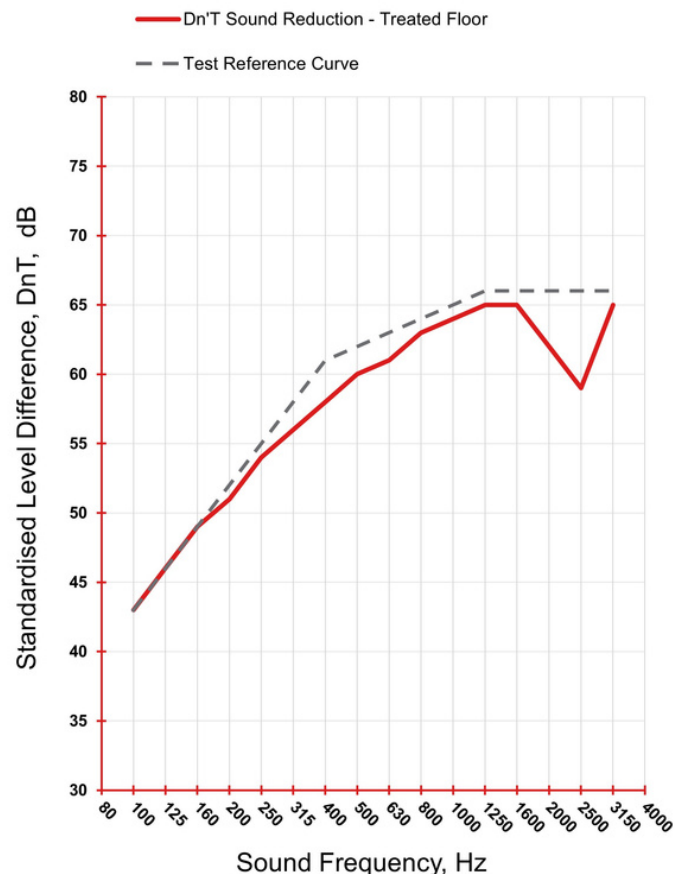
Source room volume - 47m<sup>3</sup>

Receiving room volume - 42m<sup>3</sup>

| Frequency - Hz | DnT Value<br>1/3 Octave -dB<br>Treated Floor |
|----------------|--|
| 63             | #  |
| 80             | #  |
| 100            | 43   |
| 125            | 46   |
| 160            | 49   |
| 200            | 51   |
| 250            | 54   |
| 315            | 56   |
| 400            | 58   |
| 500            | 60   |
| 630            | 61   |
| 800            | 63   |
| 1000           | 64   |
| 1250           | 65   |
| 1600           | 65   |
| 2000           | 62   |
| 2500           | 59   |
| 3150           | 65   |
| 4000           | #  |

# Indicates limitations of measurements

\* Resonate Frequency - 29Hz



Reference: Fig. 2

## Airborne Sound Test Results

| Treated Floor      |
|--------------------|
| DnT,w = 62dB       |
| DnT,w + Ctr = 57dB |

DnT,w - This measurement type is used in Scottish Part E Building Regulations.

DnT,w + Ctr - This measurement type is used in England and Wales Part E Building Regulations.

Rating according to ISO 717-1

With airborne noise a higher value equals a better performance

## Timber Joisted Floor: Impact Test Data (Recommended For Part E)

Standardised impact sound pressure levels difference according to BS EN ISO 140-7

Field measurement of impact sound insulation of floors

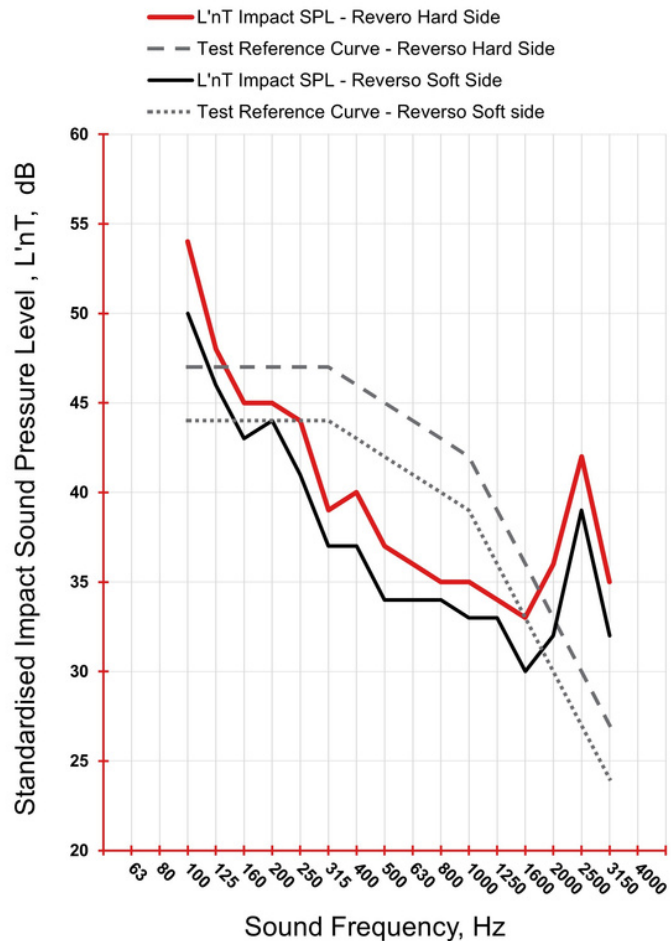
Source room volume - 47m<sup>3</sup>

Receiving room volume - 42m<sup>3</sup>

| Frequency - Hz | L'nT Value<br>1/3 Octave -dB<br>Treated Floor<br>Hard Side | L'nT Value<br>1/3 Octave -dB<br>Treated Floor<br>Soft Side |
|----------------|--|--|
| 63             | #  | #  |
| 80             | #  | #  |
| 100            | 54   | 50   |
| 125            | 48   | 46   |
| 160            | 45   | 43   |
| 200            | 45   | 44   |
| 250            | 44   | 41   |
| 315            | 39   | 37   |
| 400            | 40   | 37   |
| 500            | 37   | 34   |
| 630            | 36   | 34   |
| 800            | 35   | 34   |
| 1000           | 35   | 33   |
| 1250           | 34   | 33   |
| 1600           | 33   | 30   |
| 2000           | 36   | 32   |
| 2500           | 42   | 39   |
| 3150           | 35   | 32   |
| 4000           | #  | #  |

# Indicates limitations of measurements

\* Resonate Frequency - 29Hz



Reference: Fig. 2

## Impact Sound Test Results

| Treated Floor- Hard Side | Treated Floor- Soft Side |
|--------------------------|--------------------------|
| L'nT,w = 45dB            | L'nT,w = 42dB            |

Rating according to ISO 717-2

With impact noise a lower value equals a better performance



## Part E Regulations For England & Wales

| Element of Construction   | Airborne Sound<br>DnT,w + Ctr<br>Minimum Value | Impact Sound<br>L'nT,w<br>Maximum Value |
|---|--|---|
| <b>Floors</b>   |  |   |
| Separating floors between purpose built dwelling-houses and flats (i.e. New Build) & purpose built rooms for residential use. | (Higher than) 45dB                             | (Lower than) 62dB                       |
| Separating floors between dwelling-houses flats and residential rooms formed by a material change of use (i.e. conversions)   | (Higher than) 43dB                             | (Lower than) 64dB                       |

## Part E Regulations For Scotland

| Element of Construction   | Airborne Sound<br>DnT,w<br>Minimum Value | Impact Sound<br>L'nT,w<br>Maximum Value |
|---|--|---|
| <b>Floors</b>   |  |   |
| Separating floors between dwelling-houses flats and rooms for residential purposes. New build and conversions           | (Higher than) 56dB                       | (Lower than) 53dB                       |
| Separating floors between dwelling-houses flats and rooms for residential purposes. Conversion of traditional buildings | (Higher than) 53dB                       | (Lower than) 58dB                       |



## Technical Terms

### **DnT,w - Weighted Standardised Field Level Difference**

The difference, in decibels, between the level of noise either side of a structure tested in the field / on site.

This measurement type is used in Scottish Part E Building Regulations.

### **DnT,w + Ctr - Weighted Standardised Field Level Difference Adjusted For Control**

The difference, in decibels, between the level of noise either side of a structure tested in the field / on site. But it is adjusted to include how well it stops low frequency noise.

This measurement type is used in England and Wales Part E Building Regulations.

### **L'nT,w - Weighted Standardised Field Impact Sound Pressure Level**

The amount of impact noise transmitted through a floor structure, in field conditions, so includes flanking transmission.

This measurement type is used in all Part E Building Regulations.

## Sound Tests

Sound tests are carried out by an independent testing company.

For airborne testing high volume “white” noise is generated from a single loudspeaker in the source room, positioned in order to obtain a diffuse sound field.

A spatial average of the resulting one-third octave band noise levels between 100 Hz and 3150 Hz is obtained by using a moving microphone technique over a minimum period of 15 seconds at one position.

The same measurement procedure is followed in the receiver room.

The entire procedure is then repeated, with the loudspeaker located in a different position.

The results of the tests are rated in accordance with BS EN ISO 717-1: 1997

For impact testing a tapping machine is placed on the floor which has a set of 5 steel hammers to produce impact noise on the separating floor. Level measurements are acquired in the receiving room at 2 microphone positions, at one third octave band intervals from 100 to 3150 Hertz using an average time of at least 6 seconds for each of 4 tapping machine positions, creating 8 individual measurement readings.

The procedure is repeated in different positions.

The results of the tests are rated in accordance with BS EN ISO 717-2: 1997