

ACOUSTICS 3C CALCULATED PERFORMANCE DATA

As well as providing certified measured data, Saint-Gobain Building Glass UK can also provide calculated performance values for glazing constructions. Calculations are carried out using a finite element methodology (MSC FFT ACTRAN) to simulate the performance of glazing constructions under test conditions associated with determining acoustic performance, specifically ISO 140-3:1995 [1]. The weighted values are then calculated based on ISO 717-1:2013 [2].

The below data shows comparisons of measure data to calculated values for identical constructions, and so give an indication of the accuracy of the calculation methodology.

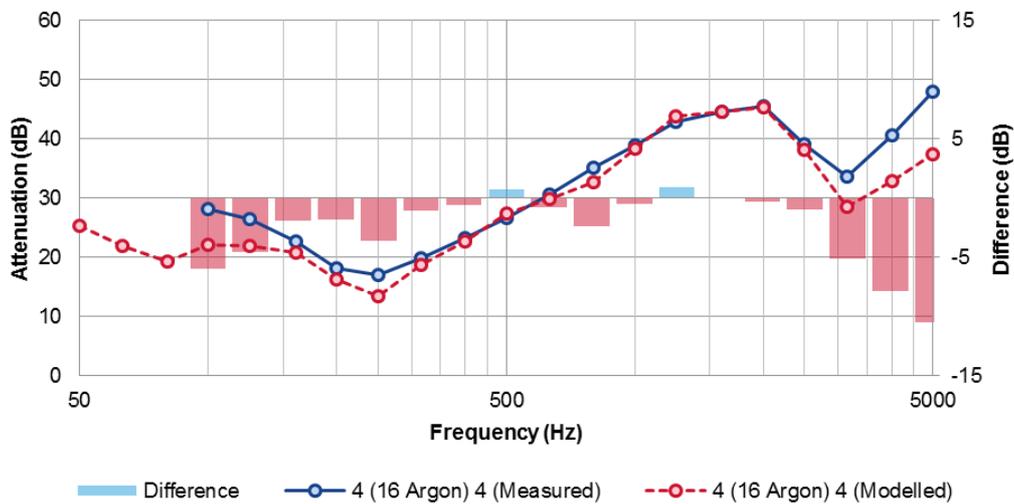


Figure 1 - 1/3 octave centre band performance data, modelled and measured, 4(16)4

Table 1 - Single figure performance data, modelled and measured, 4(16)4

Configuration	R_w (dB)	C (dB)	C_{tr} (dB)
4 (16) 4 (Calculated)	29	-1	-4
4 (16) 4 (Measured)	31	-1	-4

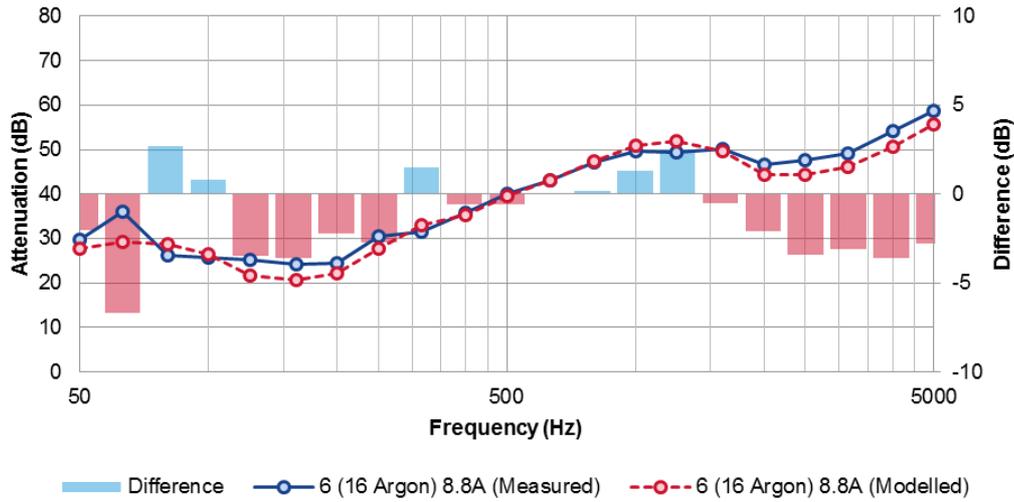


Figure 2 - 1/3 octave centre band performance data, modelled and measured, 6(16)8.8A

Table 2 - Single figure performance data, modelled and measured, 6(16)8.8A

Configuration	R _w (dB)	C (dB)	C _{tr} (dB)
6 (12) 8.8 sGG STADIP SILENCE (Calculated)	40	-2	-7
6 (12) 8.8 sGG STADIP SILENCE (Measured)	42	-2	-7

Results show modelled values to be conservative relative to measured, which from a design point of view, may be considered beneficial. Whilst not all data can be shown in this publication, the accuracy of single figure values is typically reported to be within 2 dB of measured.

REFERENCES

- [1] International Organisation for Standardization, *ISO 140-3:1995 - Acoustics - Measurement of sound insulation in buildings and of building elements - Part 3: Laboratory measurements of airborne sound insulation of building elements*, ISO, 1995.
- [2] International Organization for Standardization, *ISO 717-1:2013 - Acoustics - Rating of sound insulation in buildings and of building elements - Part 1: Airborne sound insulation*, ISO, 2013.