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AcousticOne Oy Ltd.

Effect of Spray Coating Thickness on Acoustic Absorption

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1 Background

The thickness of acoustic material has a considerable effect on absorption yielded by the material. Increasing the material thickness will increase absorption at low and medium-high frequencies. When the question is of porous and homogeneous mineral wool and spray coating materials, the connection between the material thickness and the absorption frequency curve is clear, i.e. doubling of the absorption material thickness shifts the absorption curve downwards by approx. one octave band and reduction of the absorption material thickness by half shifts the curve upwards by approx. one octave band.

2 AcousticOne Absorption with Different Material Thicknesses

The illustration below shows an example of the absorption provided by the AcousticOne product when using sprayed coating layers of a different thickness. The absorption of the product is measured for a 12 mm thick coating layer sprayed against a hard background in accordance with standard ISO 354-2000. Curves marked with blue are calculatory estimates for equivalent spray coating layers with the thickness of 48, 38, 30, 24, 19 or 15 mm and 10, 8, 6, 5, 4 or 3 mm.

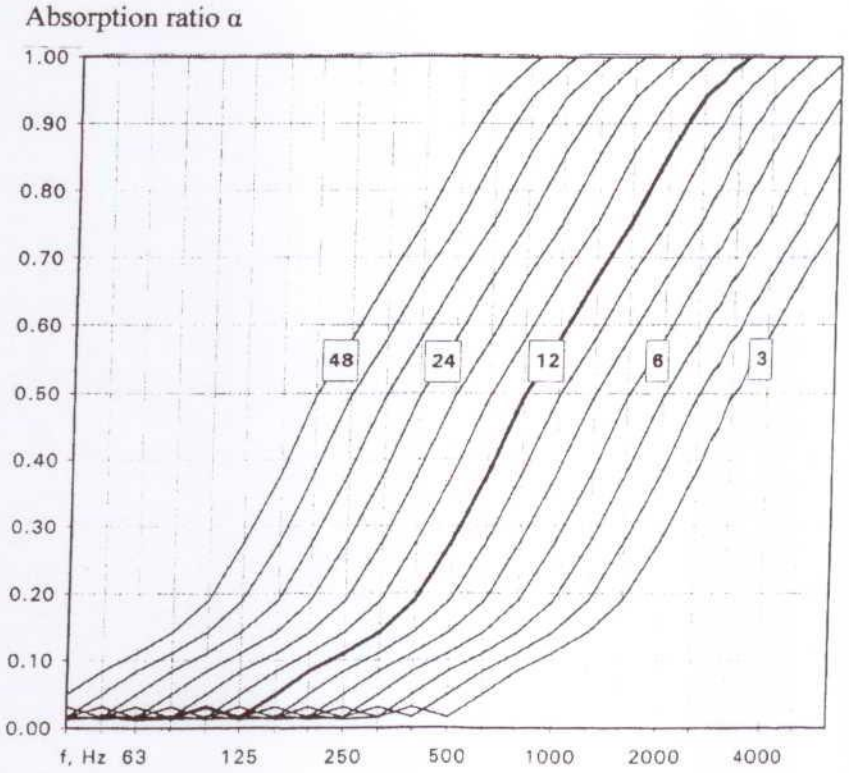

Figure 1. Absorption ratios of AcousticOne spray coatings of a different thickness. The black curve is the measuring result obtained for the 12 mm thick spray coating, while blue curves stand for calculatory estimates for different thicknesses.