

CALCULATION OF N_{10} -VALUES FOR XROSS ABSORPTION DESK AND FLOOR SCREEN BOOTHS

Based on measurements of sound absorption for Xross Absorption desk and floor screens, reported in Akustikverkstan report 18-701-R1b, calculations of N_{10} -values have been made for screen booths. The booths consists of three screens with thickness 40 mm. The calculated N_{10} -values are presented in table 1 below.

Object	Depth x height x width (mm)	N_{10}
Desk screen booth Xross Absorption	800 x 600 x 1000	7.1
	800 x 600 x 1200	6.7
	800 x 600 x 1400	6.3
	800 x 600 x 1600	5.9
	800 x 600 x 1800	5.6
	800 x 600 x 2000	5.3
	800 x 800 x 1000	5.6
	800 x 800 x 1200	5.0
	800 x 800 x 1400	4.8
	800 x 800 x 1600	4.3
	800 x 800 x 1800	4.2
	800 x 800 x 2000	4.0
Floor screen booth Xross Absorption	800 x 1400 x 800	3.4
	800 x 1400 x 1000	3.1
	800 x 1400 x 1200	3.0
	800 x 1400 x 1600	2.6
	800 x 1400 x 1800	2.5

Table 1: Calculated N_{10} -values.

1. CLIENT

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2. ASSIGNMENT

To calculate N_{10} -values for desk and floor screen booths based on measurements reported in Akustikverkstan report 18-701-R1b.

3. CALCULATIONS

The calculations were made by adding the sound absorption area of the three screens measured as single screens. Akustikverkstan's experience from other measurements of single screens compared to the same screens measured as a booth, the sound absorption is generally higher (lower N_{10} -value) when the screens are combined to a booth. So these calculations are conservative.

Some of the screen sizes that are part of the calculated booths were not previously measured. These sizes have been interpolated based on measured sizes in accordance with ISO 20189:2018.

Table 2 below shows the screens used in the calculations for the booths and what screen sizes used for interpolation.

Screen size (HxW) (mm)	Measured / Interpolated	Measurement protocol from report 18-701-R1b
600 x 800	Measured	M1a
600 x 1000	Interpolated	M1a / M2a*
600 x 1200	Measured	M2a
600 x 1400	Interpolated	M20
600 x 1600	Interpolated	M21
600 x 1800	Interpolated	M3 / M4a*
600 x 2000	Interpolated	M4a / M5*
800 x 800	Interpolated	M1a / M2a*
800 x 1000	Interpolated	M2a / M3*
800 x 1200	Measured	M3
800 x 1400	Measured	M4a
800 x 1600	Measured	M5
800 x 1800	Measured	M6
800 x 2000	Interpolated	M6 / M11*
1400 x 800	Measured	M8a
1400 x 1000	Interpolated	M8a / M11*
1400 x 1200	Measured	M11
1400 x 1600	Interpolated	M12 / M13*
1400 x 1800	Interpolated	M12 / M13*

*Interpolations not previously reported, and used for these calculations only.

Table 2: Measurements used for calculations of screen booths.

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