REPORT
issued by an Accredited Testing Laboratory

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SWEDAC ACKREDITERING 1002 ISO/IEC 17025

Götessons Industri AB
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Determination of screen sound attenuation according to ISO 10053 and NT ACOU 085

(This is the English translation of the SP test report PX05161 issued July 13, 2010. In the event of any dispute as to the content of the document, the Swedish text shall take precedence.)

Client

Götessons Industri AB

Test objects

The office screen "ScreenIT".

The screen elements are made of MDF boards. The dimensions of each of the screen elements are about 2220 mm high, 1315 mm wide and 50 mm thick. The screen elements are entirely covered by fabric on both sides.

Date of test object supplied

July 9, 2010

Date of test

July 9, 2010

Result

The results shown in table 1 are the averaged screen sound attenuation, $\overline{\Delta L_s}$, the weighted screen sound attenuation, $\Delta L_{s,W}$ and the screen sound attenuation class. The screen sound attenuation ΔL_s in octave bands of 125 – 4000 Hz is given I table 2. The results are valid for the tested samples only.

Table -1 Screen sound attenuation class

Test object	$\overline{\Delta L_s}$ (dB)	$\Delta L_{s,W}$ (dB)	Screen sound attenuation class According to NT ACOU 085
Office screen "ScreenIT"	17,7	20	A+

Table-2 Screen sound attenuation (ΔL_s, in dB) in octave band

Test object	Frequency(Hz)					
	125	250	500	1000	2000	4000
Office screen "ScreenIT"	9	12	16	20	22	27

Measurement method

The measurements and evaluations were carried out according to ISO 10053 and NT ACOU 085, respectively. SP is accredited for the methods.

The screen sound attenuation ΔL_S is defined as

$$\Delta L_S = L_{p0} - L_p - 20 \lg (R/r)$$

where:

L_{p0}	The sound pressure level (dB) measured at the reference position (in front of the loudspeaker directly above the top of the screen but with the screen removed).
L_p	The sound pressure level (dB) measured at the standard position (at the position of the receiver, behind the screen)
R	Distance between the sound source and receiver (m).
r	Distance between the sound source and the measurement position for L_{p0} (m).

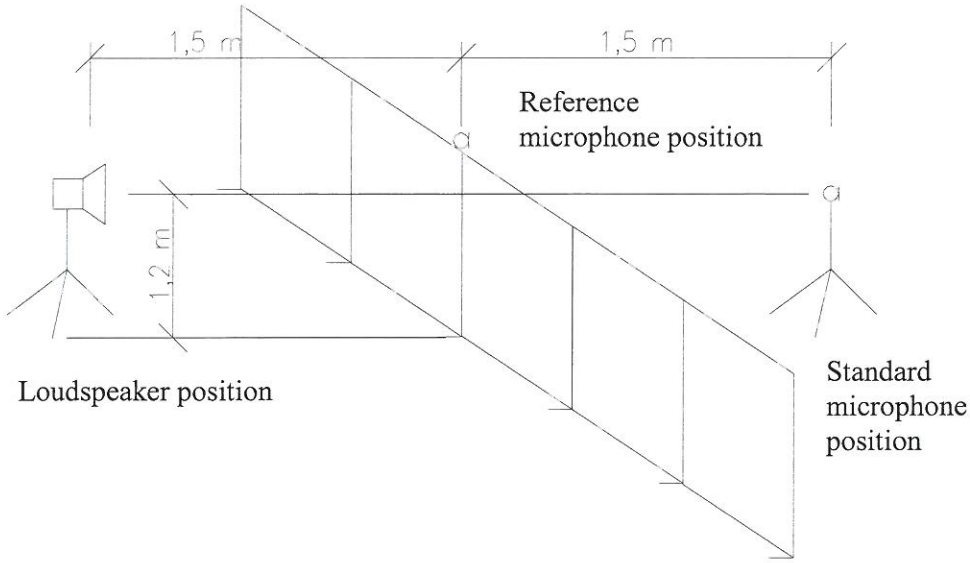

Figure 1: Positioning of microphone and loudspeaker.

The measurements were carried out in the SP hemi-anechoic room complying with the requirements of ISO 3745 which provides the same measurement conditions as outdoors (sound reflections only from the floor). The arrangement of the measuring site is shown in figure 1.

Mounting

The screen was mounted by the client and the SP staff. Five screen elements were mounted to form a screen of about 6575 mm long, in the hemi-anechoic room. One side of the screen was against to a room corner. The screen top height is 2220 mm, including the screen feet. The air gap between the floor and the underside of the screen was about 2 mm.

The mounting of the screen is shown in the following.

Photo 1. Setup of the screen

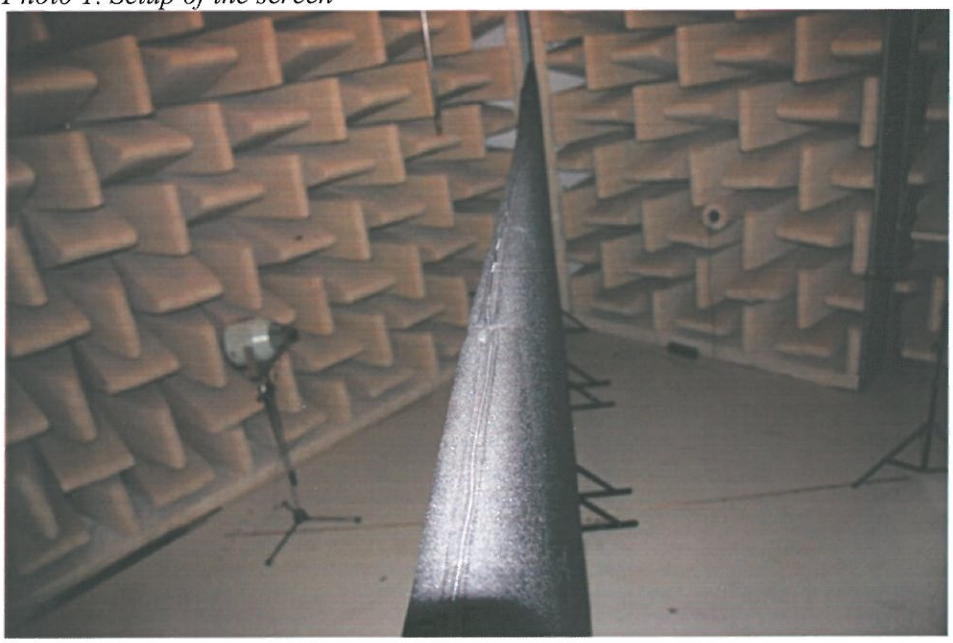

Photo 2. Setup of the screen – some details.

Measurement uncertainty

No estimate of the reproducibility is given in ISO 10053:91. The reproducibility indicates the spread in measured results when carrying out comparison measurements between different laboratories, with different test rooms, equipment, personnel etc. However, the repeatability is stated. The influence of the test room should be small. An estimate of the reproducibility has been made by adding an instrument variance of 0,5 dB. The estimate then becomes:

Frequency (Hz)	Repeatability (dB)	**Estimated reproducibility (dB)**
125 Hz	≤ 1,5 dB	≤ 3,0 dB
250-4000	≤ 1,0 dB	≤ 2,0 dB

List of instruments

Type	**Manufacturer**	**Model no.**	**Serial no**
Sound analyser	01 dB	Harmonie	04227
Microphone	Brüel & Kjær	4189	2495410
Pre-amplifier	Brüel & Kjær	2671	2497455
Calibrator	Brüel & Kjær	4231	1762189
Sound effect source	Brüel & Kjær	4205	649625

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