7.3 Lower limits for reliable results caused by filter and detector

In the case of very short reverberation times, the decay curve can be influenced by the filter and the detector. Using traditional forward analysis, the lower limits for reliable results shall be according to Equations (6) and (7):

$$BT > 16 \tag{6}$$

$$T > 2T_{\text{det}} \tag{7}$$

where

B is the filter bandwidth, in hertz;

T is the measured reverberation time, in seconds;

T_{det} is the reverberation time, in seconds, of the averaging detector.

8 Spatial averaging

The results measured for the range of source and microphone positions can be combined either for separate identified areas or for the room as a whole to give spatial average values. This spatial averaging shall be achieved by arithmetic averaging of the reverberation times. The spatial average is given by taking the mean of the individual reverberation times for all the independent source and microphone positions. The standard deviation may be determined to provide a measure of accuracy and the spatial variance of the reverberation time. See also A.4.

9 Statement of results

9.1 Tables and curves

The evaluated reverberation times for each frequency of measurement shall be both plotted in the form of a graph and stated in a table.

In the case of a graph, the points shall be connected by straight lines. The abscissa shall present frequency on a logarithmic scale using a distance of 1,5 cm per octave, while the ordinate shall use either a linear time scale such that 2,5 cm corresponds to one second or a logarithmic scale with 10 cm corresponding to one decade. The nominal mid-band frequencies for octave bands according to IEC 61260 should be marked on the frequency axis.

A single figure reverberation time, $T_{30,\text{mid}}$, can be calculated by averaging T_{30} in the 500 Hz and 1 000 Hz octave bands; $T_{20,\text{mid}}$ may also be used. Alternatively, take averages over the six one-third-octave bands from 400 Hz to 1 250 Hz.

9.2 Test report

The test report shall include the following information:

a) a statement that the measurements were made in conformity with this part of ISO 3382;

b) name and place of the room tested;

c) sketch plan of the room, with an indication of the scale;

d) volume of the room — if the room is not completely enclosed, an explanation should be given of how the stated volume is defined;

e) for rooms for speech and music, the number and type of seats, e.g. whether upholstered or not, and if the information is available, the thickness and kind of upholstery, the kind of covering material (porous or non-porous, seats raised or lowered) and which parts of the seat are covered;

f) a description of the shape and material of the walls and the ceiling;

g) state or states of occupancy during measurements and the number of occupants;

h) condition of any variable equipment such as curtains, public-address system, electronic reverberation enhancement systems, etc.;

i) for theatres, whether the safety curtain or decorative curtains were up or down;

j) description, where appropriate, of the stage furnishing, including any concert enclosure, etc.;

k) temperature and relative humidity in the room during the measurement;

l) description of measuring apparatus, source and microphones, and whether tape recorders were employed;

m) description of the sound signal used;

n) coverage chosen, including details of the source and microphone positions, preferably shown on a plan, together with the heights of the sources and microphones;

o) date of measurement and name of the measuring organization.