

Accredited field (see www.latak.lv)

LABORATORY MEASUREMENTS OF SOUND ABSORPTION COEFFICIENT

STANDARD LVS EN ISO 354:2003

Acoustics. Sound absorption measurements in reverberation room

Measured parameters :

T_{30} – reverberation time in reverberation room in 1/3 octave bands

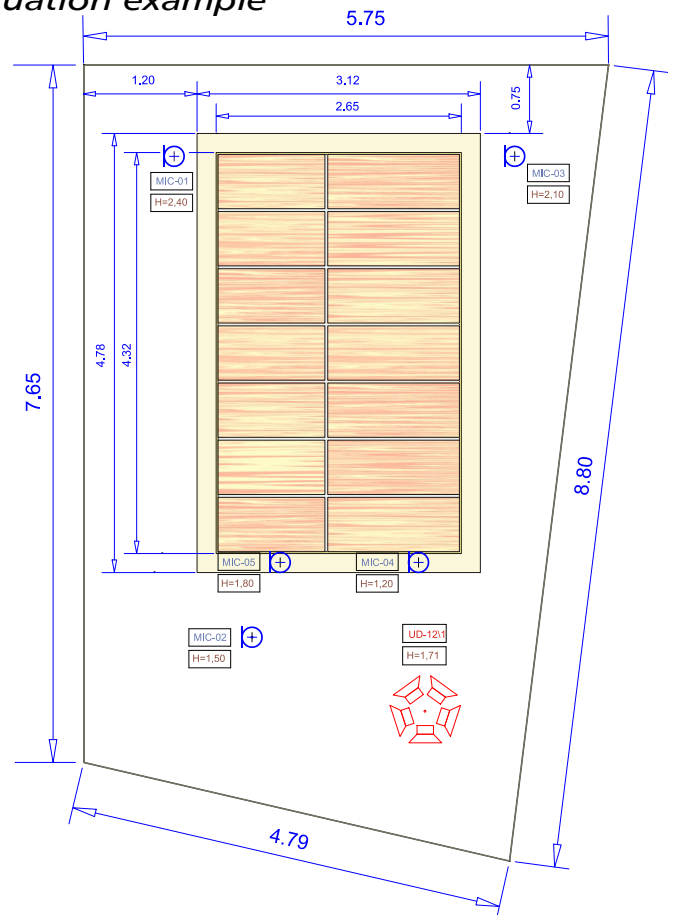
Calculable parameters :

α_S – sound absorption coefficient for [equivalent] surface in 1/3 octave bands

α_P ; α_W – practical and weighted reverberation absorption coefficient in accordance with standard LVS EN ISO 11654:2000)

Sound absorption coefficient α_S values for different surfaces (theatre chair rows, upholstery, wall finishing panels etc.) are used for room, lecture-room, concert hall or open-air stage mathematic simulation and acoustic parameter optimization, to prognosticate the compliance of object with boundary values limited in construction standard LBN 016-11 “Building acoustics”.

Measurement situation example

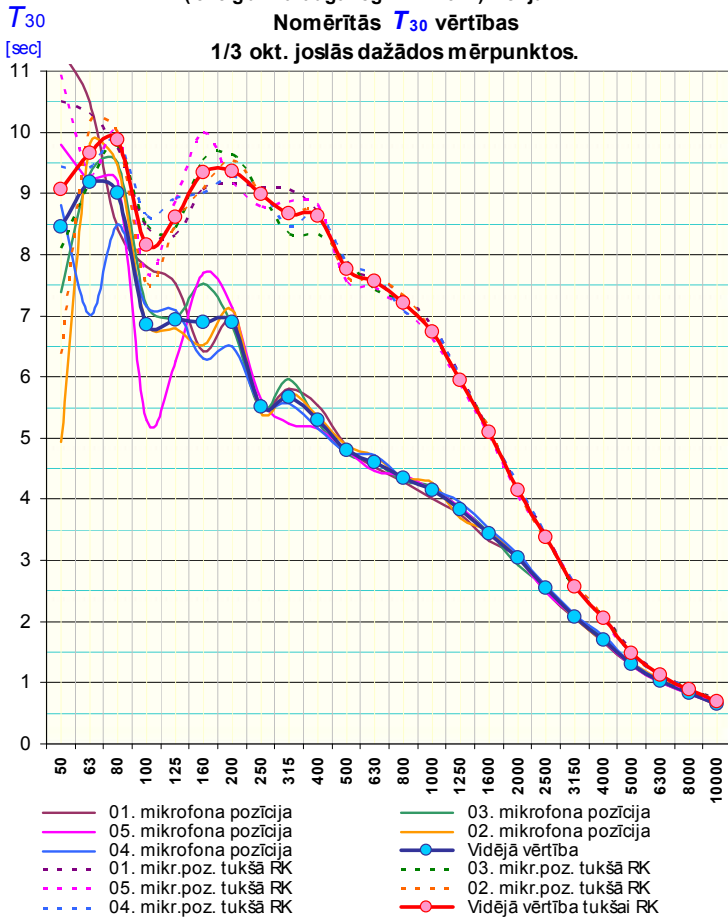


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Measurement result example (given in report with LATAK logo)

Vienpusēji, vidēji polsterēti krēslī ar paceltiem sēdekļiem
(3x3 gb. Parauga reģ. Nr. 446-1) mērījumi RK.
Nomērītās T_{30} vērtības
1/3 okt. joslās dažādos mērītpunktos.



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(3x3 gb. Parauga reģ. Nr. 446-1) mērījumi RK.
Skaņas absorbcijas koeficienta, α_s ,
frekvenču raksturliņķne 1/3 oktāvu joslās.

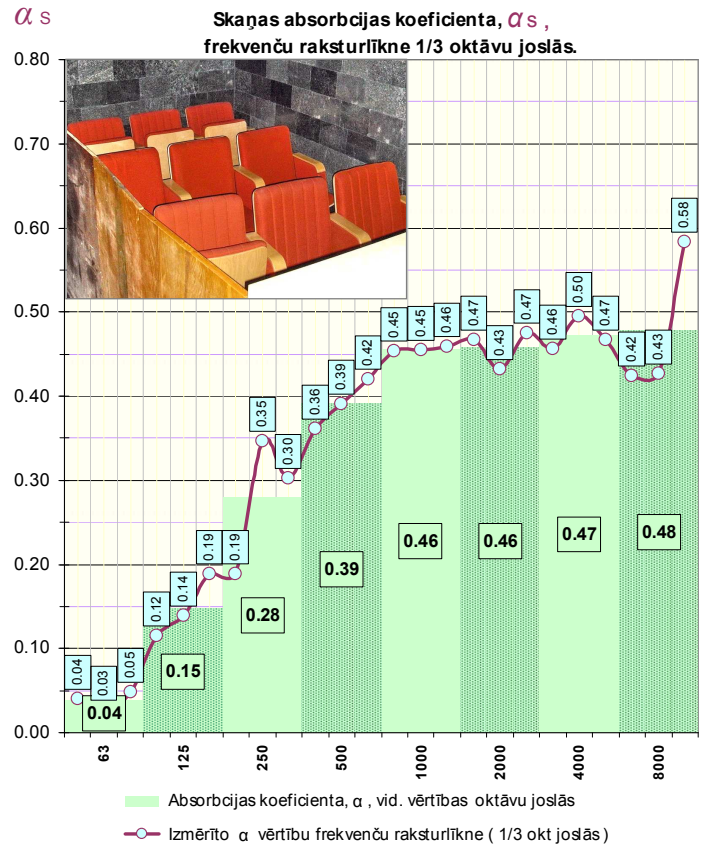


Table 1 Sound absorption coefficient α_s in 1/3 octave bands

| Sample Nr. | 50 | 63 | 80 | 100 | 125 | 160 | 200 | 250 | 315 | 400 | 500 | 630 | |
|------------|-------|------|------|------|------|------|------|------|------|------|------|------|-------|
| α_s | 446-1 | 0,04 | 0,03 | 0,05 | 0,12 | 0,14 | 0,19 | 0,19 | 0,35 | 0,3 | 0,36 | 0,39 | 0,42 |
| | | 800 | 1000 | 1250 | 1600 | 2000 | 2500 | 3150 | 4000 | 5000 | 6300 | 8000 | 10000 |
| 446-1 | 0,45 | 0,45 | 0,46 | 0,47 | 0,43 | 0,47 | 0,46 | 0,5 | 0,47 | 0,42 | 0,43 | 0,58 | |

Table 2 Sound absorption coefficient α_s octave bands

| Sample Nr. | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 | |
|------------|-------|------|------|------|------|------|------|------|------|
| α_s | 446-1 | 0,04 | 0,15 | 0,28 | 0,39 | 0,46 | 0,46 | 0,47 | 0,48 |

Table 3 Practical sound absorption coefficient α_p octave bands

| Sample Nr. | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 | |
|------------|-------|-----|------|------|------|------|------|------|---|
| α_p | 446-1 | – | 0,30 | 0,40 | 0,45 | 0,45 | 0,45 | 0,30 | – |

Table 4 Weighted sound absorption coefficient α_w and α_p form indicator (L, M, H)
Calculation results in accordance with LVS EN ISO 11654:2000

| Sample Nr. | Measured sample effective area [m ²] | Weighted sound absorption coefficient α_w | Sound absorbent class | α_p form indicator (L, M, H) |
|------------|--|--|-----------------------|-------------------------------------|
| 446-1 | 6,8 | 0,45 | D | – |