

MEASUREMENTS OF SOUND ABSORPTION COEFFICIENT AND TRANSFER LOSSES IN 2 CHAMBER IMPEDANCE TUBE

STANDARD: LVS EN ISO 10534-2:2002 Acoustics. Determination of sound absorption coefficient and impedance in impedance tubes. Part 2: Transfer-function method.

METHODS: Brüel & Kjær. Impedance/Transmission Loss Measurement Tubes. Type 4206.
The Four-microphone Method with PULSE Acoustic Material Testing software - Type 7758.

Measured parameters:

- r – sound refraction coefficient of normal angle of incidence in linear frequency scale
- α – sound absorption coefficient of normal angle of incidence in linear frequency scale
- TL – coefficient of sound transfer losses in linear frequency scale

Calculable parameters:

- $Z/\rho c_0$ – relative acoustic impedance of material in linear frequency scale
- α_N – sound absorption coefficient of normal angle of impedance in 1/3 octave bands
- TL – coefficient of sound transfer losses in 1/3 octave bands.

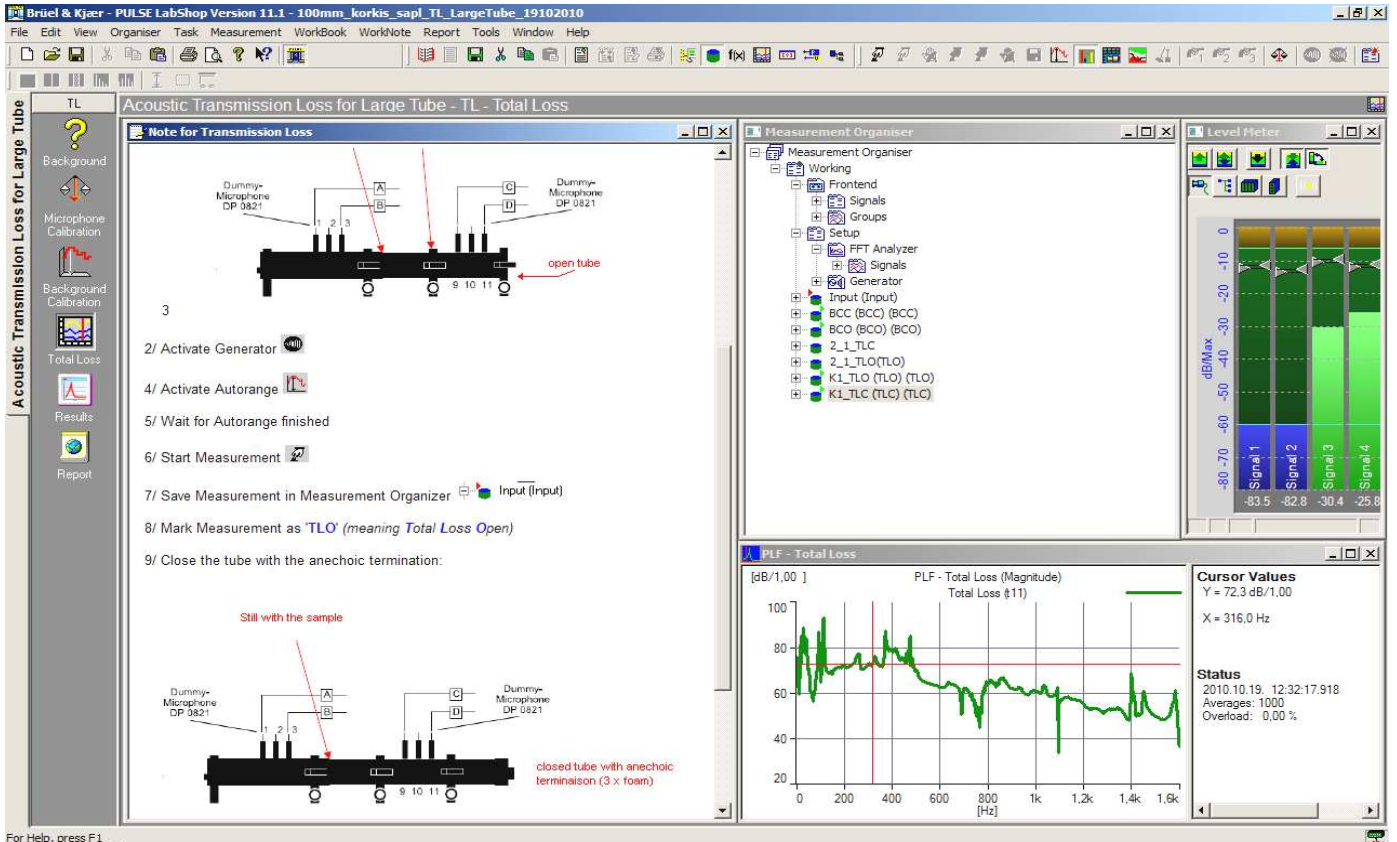
Measurements of these parameters for surface finishing, volume absorbent, sound scattering or insulation construction materials are crucial for development or manufacturing control. These parameters give the possibility to prognosticate achieving the goal. If information base has been accrued for measurements of different material constructions or rooms with their surfaces treated with materials, then their correlations with simpler measurements in impedance tube are used, because this method requires small samples ($\varnothing 99,5$ un 29mm). Final criteria for suitability of materials is prognosticated or tested conformity with borderline values of sound insulation or room acoustics limitations in Construction standard LBN 016-11 "Building acoustics".

Measurement situation examples



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Measurement result example with "PULSE Acoustic Material Testing software -Type 7758"



Measurement result example (given in measurement report)

