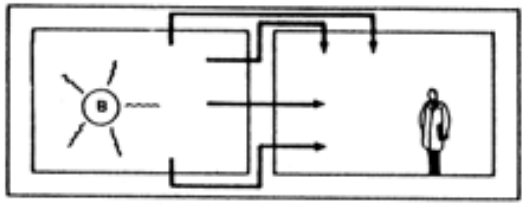
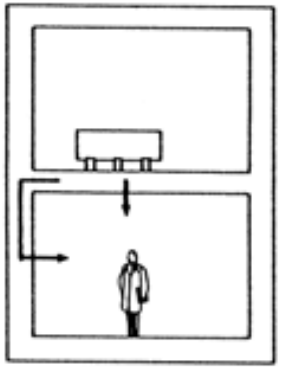
Binnengeluiden

Van emissie via transmissie naar immissie

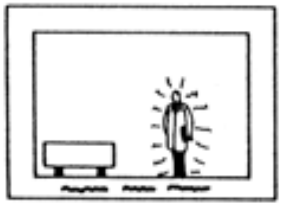
Geluiden in een ruimte



Luchtgeluid

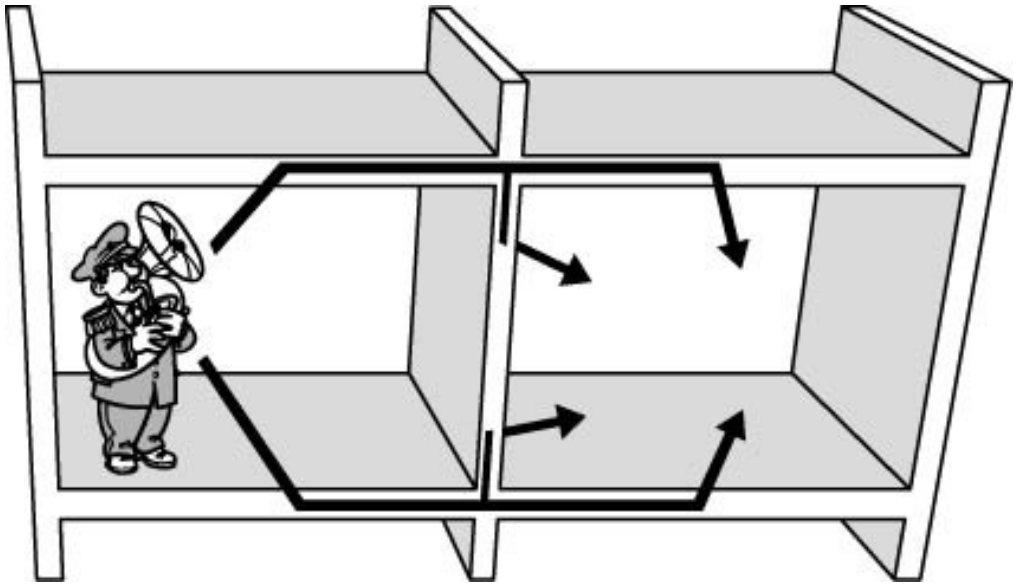


Contactgeluid

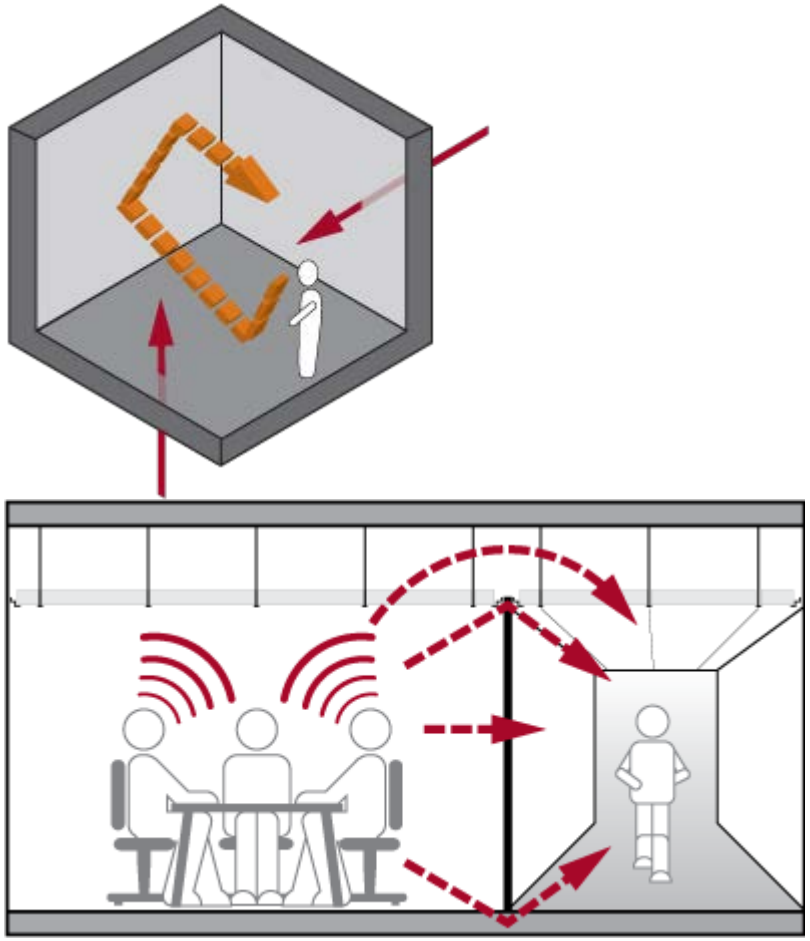


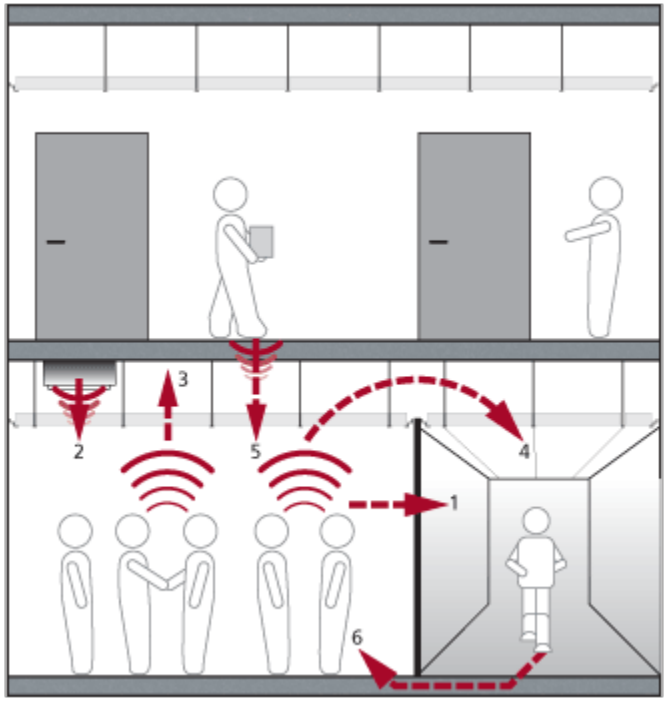
Trillingen

Flankerend geluidoverdracht

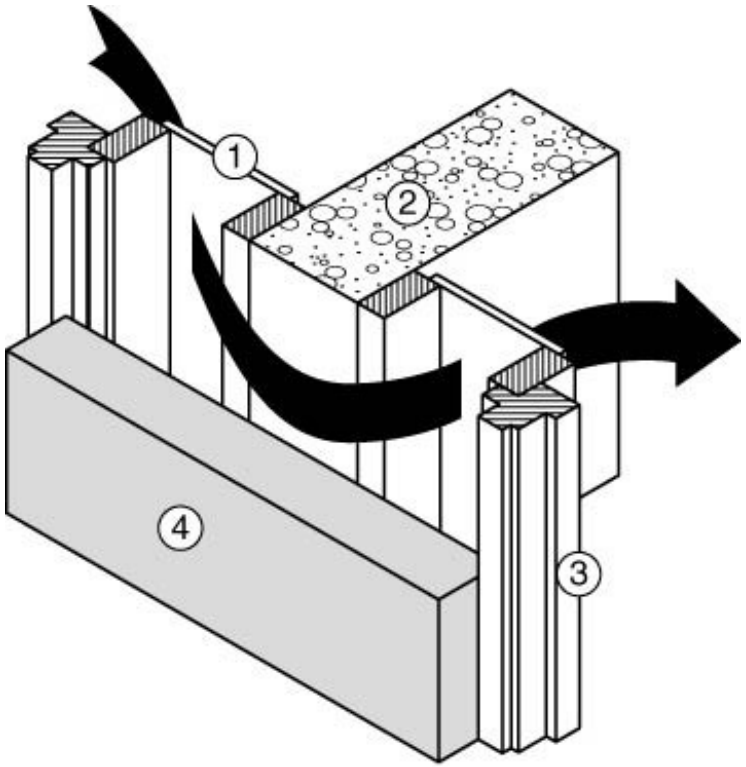


Binnengeluiden



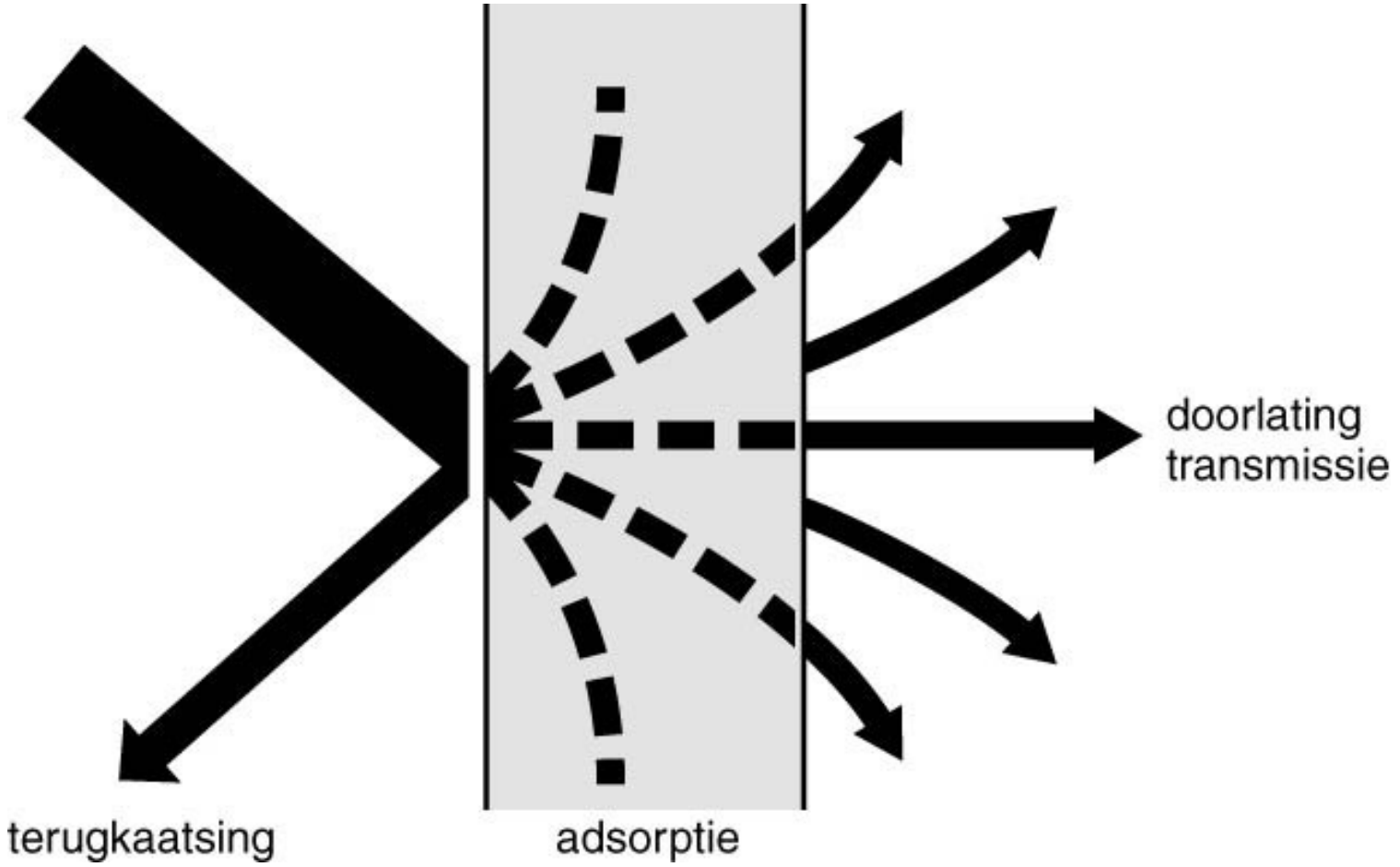


Omloopgeluid

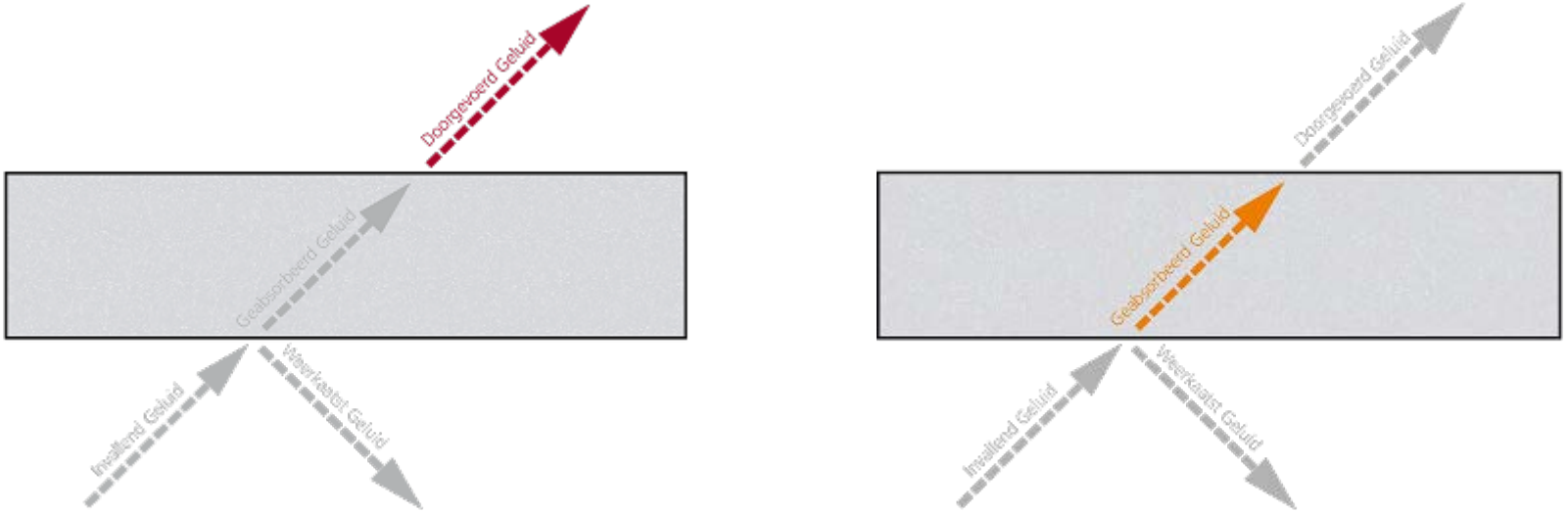


1 Houten binnenspouwblad
2 Woningscheidende muur
3 Kozijn
4 Buitenmuur

Reflectie absorptie en transmissie

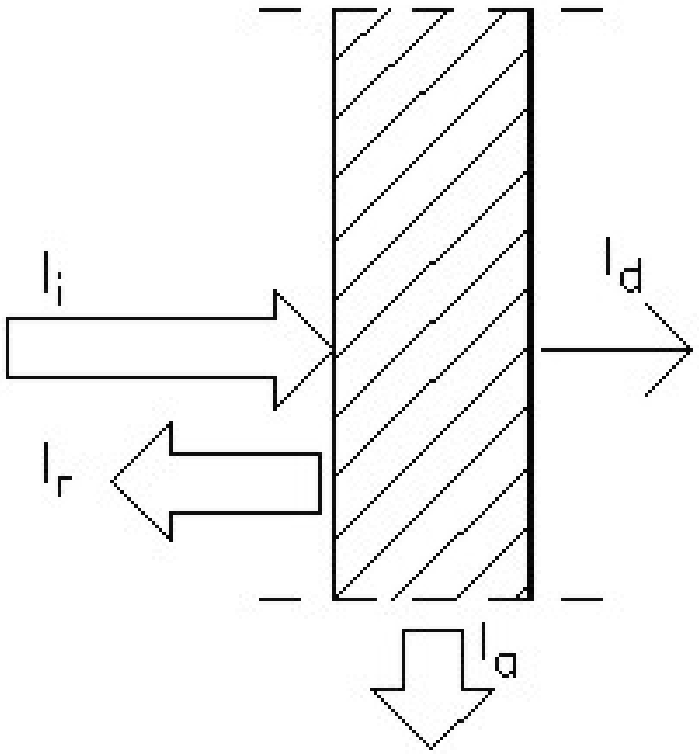


Transmissie en absorptie van geluid



Definitie geluidsabsorptie

$$
\begin{aligned}
I_i &= I_r + I_d + I_a \\
&\Rightarrow\ 1 = \frac{I_r}{I_i} + \frac{I_d}{I_i} + \frac{I_a}{I_i} \\
&\Rightarrow\ 1 = r + d + a
\end{aligned}
$$



Praktisch isolatie $> 20dB$

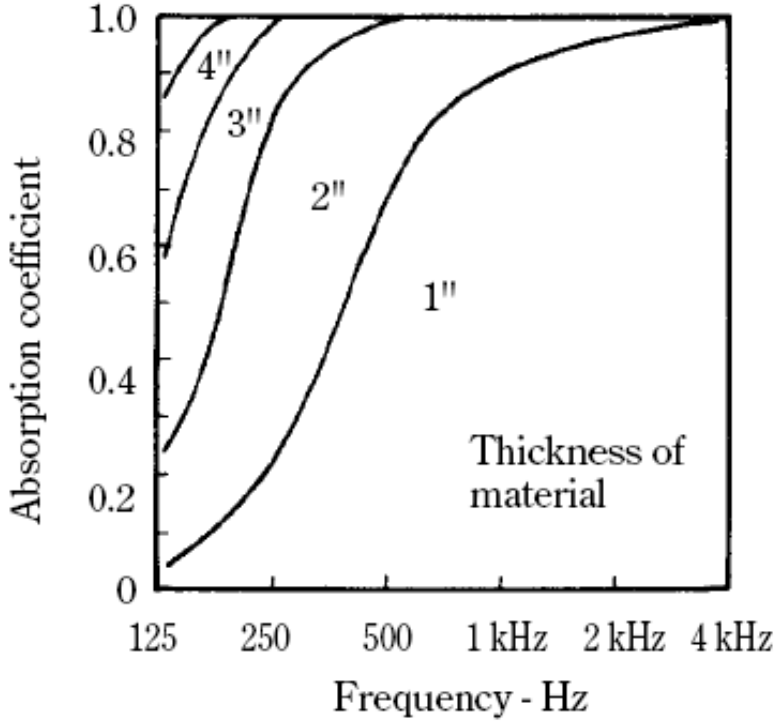
dus $d < 10^{\frac{-20}{10}} = 0.01$

Dus d verwaarloosbaar t.o.v. a en r.

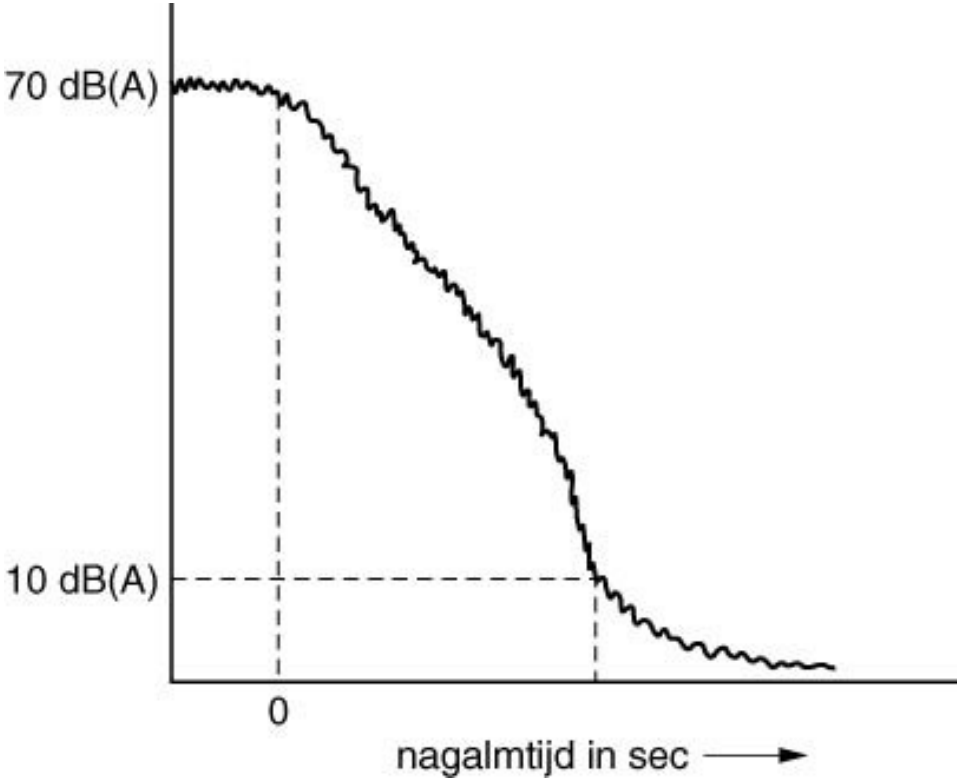
Verwezenlijking van akoestische absorptie

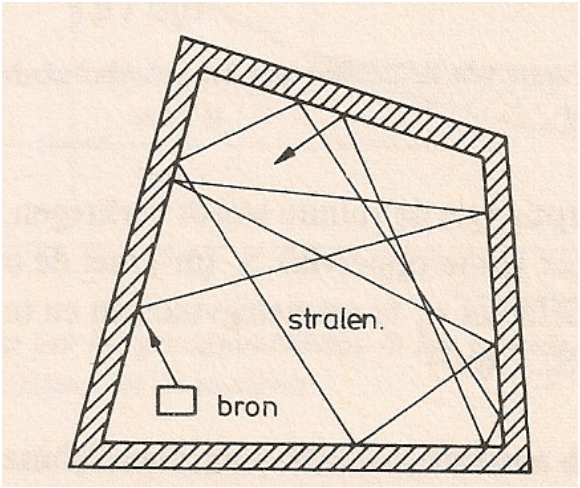
Poreuze materialen. Absorptie afhankelijk van:

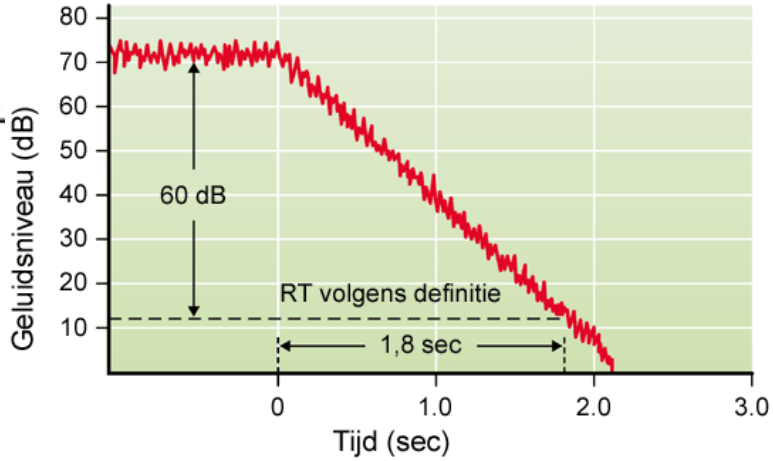
- Specifieke impedantie (meetrillen)
- Porositeit, resistiviteit (weerstand)
- Dikte
- Frequentie
- Bevestiging: latten
- Profiel



Definitie van nagalmtijd







Meten van absorptie: de nagalmtijd

(.wav)

Kamer

(.wav)

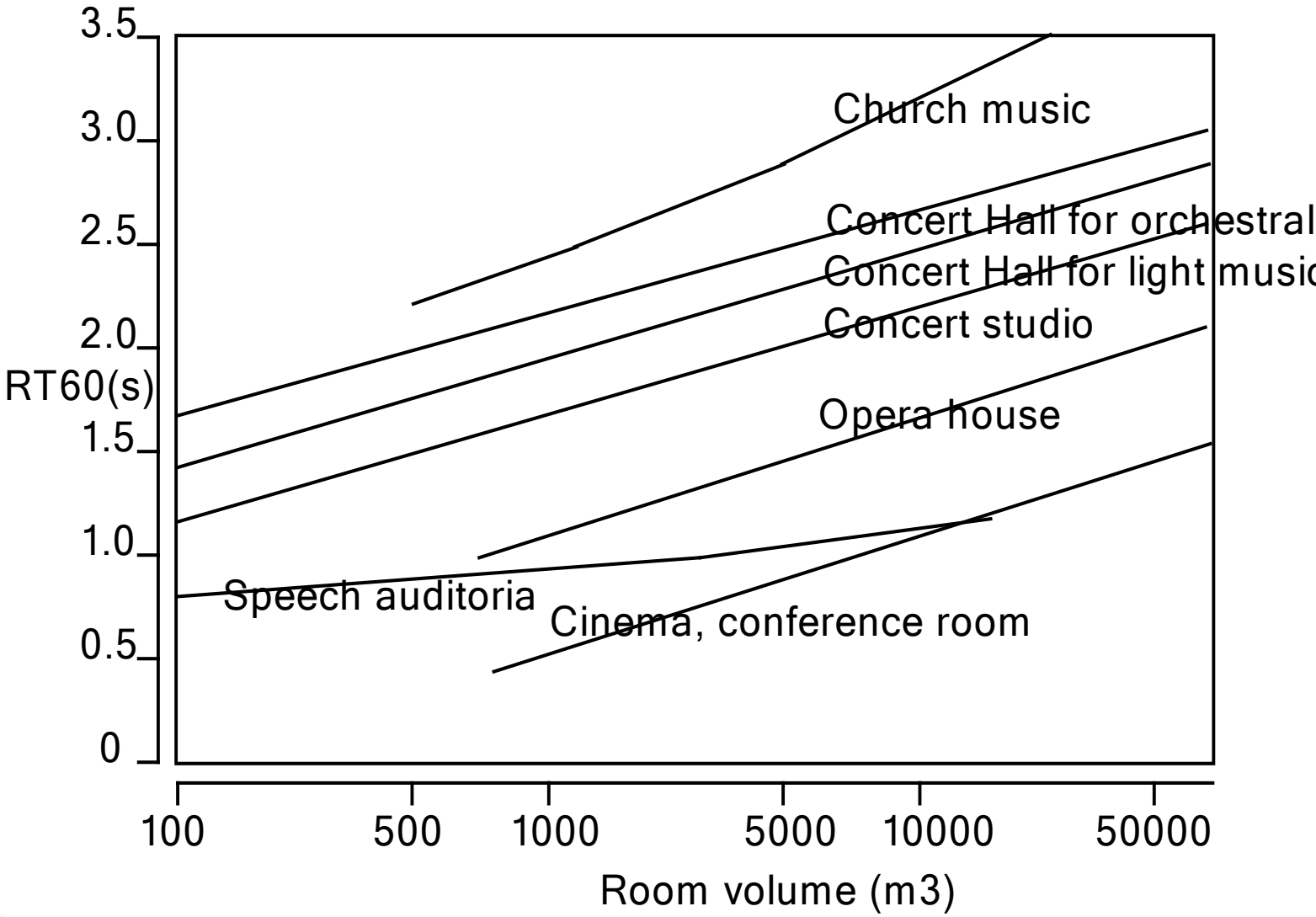
Concertzaal

(.wav)

Vrij veld

(.wav)

Vrij veld
+ wand



Meten van absorptie: de nagalmtijd

- Anechoische ruimte


(.wav)

- 0.8 seconden


(.wav)

- 1.5 seconden


(.wav)

- 2.5 seconden


(.wav)

- 5 seconden


(.wav)

Meten van absorptie: de nagalmtijd

Een akoestische geluidstudio