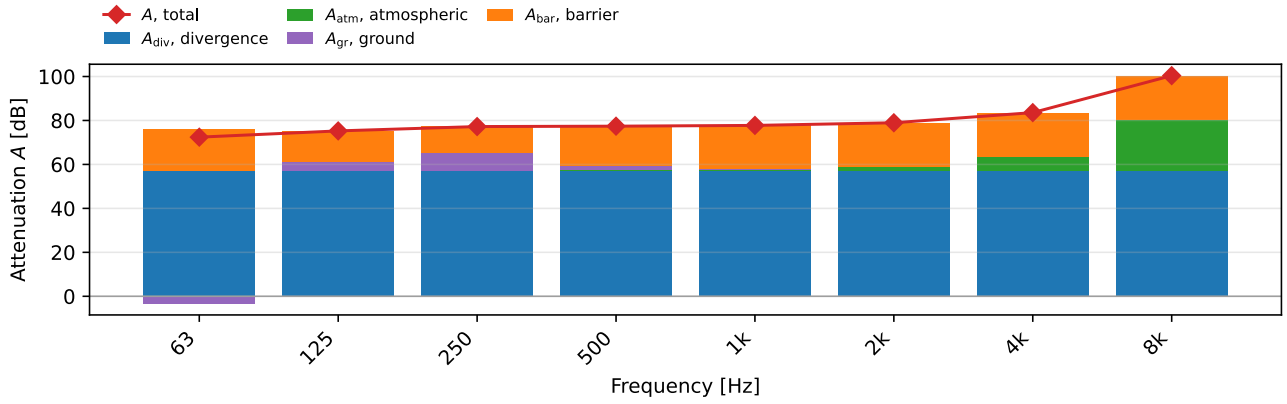
Predicted outdoor sound propagation

Octave-band attenuation and the downwind sound pressure level at the receiver predicted in accordance with ISO 9613-2:1996 (general method of calculation), for conditions favourable to propagation (downwind, or the equivalent moderate temperature inversion; clause 5). This is a prediction, not a measurement.

Source / situation:	Industrial fan plant (point source)	Client:	Example client
Receiver position:	Nearest dwelling facade	Distance d [m]:	200
Air temperature [°C]:	10.0	Relative humidity [%]:	70
Pressure [kPa]:	101.3	Date of prediction:	2026-07-22

Attenuation breakdown

f [Hz]	L_w [dB]	A_{div}	A_{atm}	A_{gr}	A_{bar}	A [dB]	L_{fT} [dB]
63	95.0	57.0	0.0	–3.3	18.7	72.4	22.6
125	100.0	57.0	0.1	4.2	14.0	75.3	24.7
250	103.0	57.0	0.2	7.9	12.1	77.2	25.8
500	105.0	57.0	0.4	2.2	17.8	77.4	27.6
1000	104.0	57.0	0.7	0.1	19.9	77.8	26.2
2000	101.0	57.0	1.9	0.0	20.0	79.0	22.0
4000	95.0	57.0	6.6	0.0	20.0	83.6	11.4
8000	88.0	57.0	23.4	0.0	20.0	100.4	–12.4



A-weighted downwind level at the receiver $L_{AT}(DW)$ = **29.9 dB**

Result vs requirement: $L_{AT}(DW)$ = 29.9 dB, required ≤ 50.0 dB → **PASS**

The attenuation A = A_{div} + A_{atm} + A_{gr} + A_{bar} (Eq. (4)); a negative A_{gr} is a net gain from ground reflection.

The downwind level $L_{fT}(DW) = L_w + D_c - A$ (Eq. (3)); $L_{AT}(DW)$ is its A-weighted total.

A_{misc} (foliage, industrial sites, housing; Annex A) and reflections from vertical surfaces (clause 7.5) are not included. The method is accurate to within about 1 dB to 3 dB for broadband noise up to 1000 m (Table 5).

Laboratory: Phonometry reference example
Report no.: EXAMPLE-9613-ATTEN
Date: 2026-07-22
Notes: Point source over porous ground with a noise barrier (ISO 9613-2).
Operator: phonometry Signature: _____

■ The results relate only to the tested specimen.