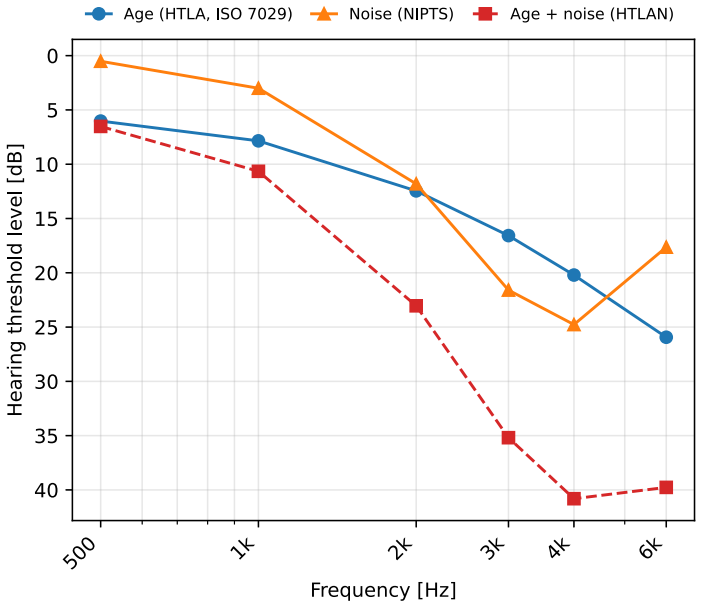
Hearing threshold level prediction (age and noise)

Statistical prediction of the hearing threshold level associated with age and noise per ISO 1999:2013 (clause 6.1).

Company:	Example fabrication works	Worker(s) / group:	Machine operator (60 years, 30 years in role)
Workplace:	Steel assembly hall, line 2	Date of assessment:	2026-07-20

Threshold level by frequency

Frequency [Hz]	H [dB]	N [dB]	H′ [dB]
500	6.0	0.5	6.5
1000	7.8	3.0	10.7
2000	12.5	11.8	23.0
3000	16.6	21.6	35.2
4000	20.2	24.8	40.8
6000	25.9	17.6	39.8



Predicted hearing threshold level (age and noise) averaged over 2/3/4 kHz = **33.0 dB HL**

Listener: male, age 60 years
Noise exposure $L_{EX,8h}$ = 95 dB over 30 years
Population fractile Q = 50 % (median)

These values are a statistical prediction for a noise-exposed population (ISO 1999:2013), not a clinical diagnosis or a measured audiogram of any individual.

Q is the percentage of the noise-exposed population predicted to show a larger (worse) value than the one stated, as ISO 1999:2013 defines it (6.3.2, Formulae (4) and (5)); Q = 10 % is the most-susceptible tenth.

The age component H (database A) is evaluated from ISO 7029:2017, the edition ISO 1999:2013 references undated (6.2.2); its values differ from the illustrative Table A.3 selection, which derives from an earlier ISO 7029 edition.

ISO 1999:2013 does not specify frequencies or frequency combinations for evaluating hearing disability (Scope, NOTE 1); the 2/3/4 kHz average shown is a commonly used descriptor whose choice is left to the user.

Laboratory: Phonometry reference example
Report no.: EXAMPLE-1999-HTLAN
Date: 2026-07-20
Notes: Predicted age-plus-noise threshold per ISO 1999:2013 clause 6.1.
Operator: phonometry Signature: _____

■ The results are a statistical prediction for the stated population and exposure conditions; they do not describe any individual person.