

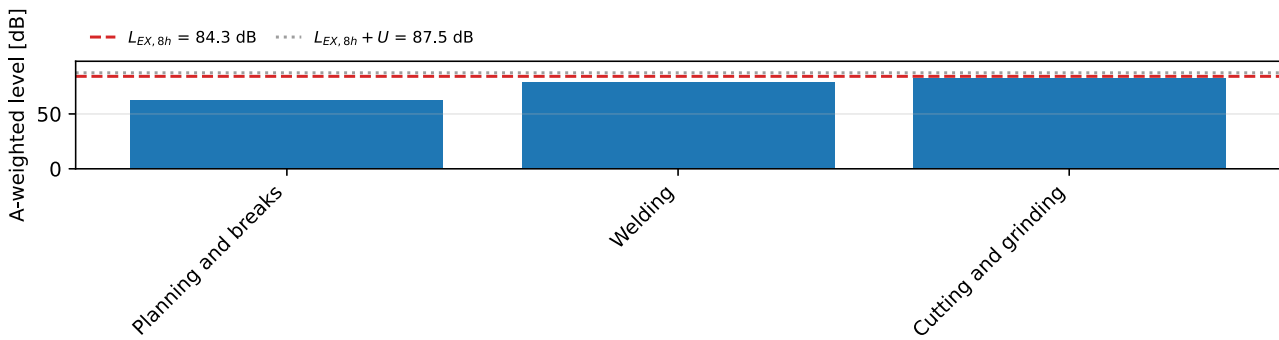
Occupational noise exposure determination

Determination of occupational noise exposure per ISO 9612:2009 (engineering method); task-based measurement (Clause 9).

Company:	Example fabrication works	Worker(s) / job:	Welders (homogeneous exposure group, 4 workers)
Workplace:	Steel assembly hall, line 2	Date of test:	2026-07-20
Instrumentation:	Personal sound exposure meter (IEC 61252), s/n 0042	Calibration:	Calibrator IEC 60942 class 1, s/n 0117; field checks before/after each series within 0.3 dB

Work analysis

Task	T_m [h]	Samples l	$L_{p,A,eqT,m}$ [dB]	Contribution $L_{EX,8h,m}$ [dB]
Planning and breaks	1.5	1	70.0	62.7
Welding	5.0	3	80.8	78.7
Cutting and grinding	1.5	6	90.1	82.8
Nominal day	8.0			84.3



Daily noise exposure level $L_{EX,8h} = 84.3$ dB
 $U = 3.2$ dB

Coverage factor $k = 1.65$ (one-sided 95 %)
Combined standard uncertainty $u = 2.0$ dB
Upper limit $L_{EX,8h} + U = 87.5$ dB

Assessment against Directive 2003/10/EC exposure values

Directive 2003/10/EC value	Threshold	Measured	Result
Lower exposure action value	80 dB(A)	$L_{EX,8h} = 84.3$ dB	● Exceeded
Upper exposure action value	85 dB(A)	$L_{EX,8h} = 84.3$ dB	● Not exceeded
Exposure limit value	87 dB(A)	$L_{EX,8h} = 84.3$ dB	● Not exceeded
One-sided 95 % upper limit $L_{EX,8h} + U$	—	87.5 dB	—

Result vs requirement: $L_{EX,8h} = 84.3$ dB, exposure limit value ≤ 87 dB(A) → **PASS**

The ISO 9612 sampling rules recommend additional measurements (3 dB spread rule of Clauses 9.3/11.3, Table C.4 threshold of Clause 10.4, or the Table 1 minimum cumulative duration).

Noise exposure level and measurement uncertainty are stated as separate values (ISO 9612:2009 Clause 15); $U = k \cdot u$ with $k = 1.65$ gives the one-sided 95 % confidence interval (Clause 14, Annex C).

When applying the exposure limit value, Directive 2003/10/EC (Article 3) takes account of the attenuation of the individual hearing protectors worn; the measured $L_{EX,8h}$ stated above does not include it.

Laboratory: Phonometry reference example

Report no.: EXAMPLE-9612

Date: 2026-07-20

Notes: Reproduces the ISO 9612:2009 Annex D task-based worked example.

Operator: phonometry Signature: _____

■ The results relate only to the tested specimen.
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