

INTERNATIONAL REGULATIONS

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Table 5 gives some of the main features of the noise exposure standards of several nations. Most of the information is current as of this publication, but some standards may have been recently revised. Readers are advised to consult the newest versions of the individual nations' standards.

Table 5. Permissible exposure limits (PEL), exchange rates, and other requirements for noise exposure according to nation.

NATION Date	PEL $L_{av.}$, 8-hour (A-weighted average sound level in dB)	Exch. Rate dB	L_{max} rms L_{peak} SPL	Level eng. control (A-weighted average sound level in dB)	Level audio. test (A-weighted average sound level in dB)	Comments
Argentina, 2003	85	3	115 dB*	85	85	Note (1)
Australia, 2000	85	3	140 dB**peak	85	85	Note (2)
Brazil, 1992	85	5	115 dB* 130 dB peak or 120 dB**	85		
Canada, 1991	87	3		87	84	Note (3)
Chile, 2000	85	3	115 dB* 140 dB**peak			Note (4)
China, 1985	85	3	115 dB*	85		
Colombia, 1990	85	5	115 dB* 140 dB peak			
EU, 2003	87	3	140 dB** 137 dB** 135 dB**	85	85 80	Note (5) Note (6)
Finland, 1982	85	3		85		
France, 1990	85	3	135 dB peak		85	
Germany, 1990	85 55,70	3	140 dB peak	90	85	Note (7)
Hungary	85	3	125 dB* 140 dB peak	90		

India, 1989	90		115 dB* 140 dB*			Note (8)
Israel, 1984	85	5	115 dB* 140 dB peak			
Italy, 1990	85	3	140 dB peak	90	85	
Mexico, 2001	85	3	105 dB*	90	80	
Netherlands, 1987	80	3	140 dB peak	85		Note (9)
New Zealand, 1995	85	3	140 dB peak	85	85	
Norway, 1982	85 55,70	3	110 dB*		80	Note (10)
Spain, 1989	85	3	140 dB peak	90	80	
Sweden, 1992	85	3	115 dB* 140 dB	85	85	
United Kingdom, 1989	85	3	140 dB peak	90	85	
United States, 1983	90	5	115 dB* 140 dB peak	90	85	Note (11)
Uruguay, 1988	85	3		85	85	
Venezuela	85	3	140 dB peak			

* A-weighted sound pressure level

** C-weighted sound pressure level

(No designation presumes unweighted)

Notes and Comments:

Note (1) Argentine standard 295/2003 states that no work is allowed for sound pressure levels greater than 135 dB even for workers wearing hearing protectors.

Note (2) Each of the Australian states and territories has its own legislation for noise. All have now adopted the 8-hour L_{eq} of 85 dB and most have a standard of 140 dB peak C-weighted sound pressure level for impulses.

Note (3) There is some variation among the individual Canadian provinces: Ontario, Quebec, and New Brunswick use an A-weighted sound pressure level of 90 dB with a 5-dB exchange rate; Alberta, Nova Scotia, and Newfoundland use 85 dB with a 5-dB exchange rate; and British Columbia uses 85 dB with a 3-dB exchange rate. All require engineering controls to the level of the PEL. Manitoba requires certain hearing conservation practices above 80 dB, hearing protectors and training on request above 85 dB, and engineering controls above 90 dB. The Federal standard, effective July 1991, has no requirements for L_{max} or L_{peak} .

Note (4) Chilean standard DS 594/99 of April 2000 requires a maximum C-weighted sound pressure level of 95 dB for an 8-hour exposure to impulse noise, measured at the worker's ear using a 3 dB exchange rate.

Note (5) European Union (Directive 2003/10/EC)¹⁴ puts forward three exposure values: an A-weighted exposure limit value of L_{eq} 87 dB and a peak C-weighted sound pressure level of 140 dB; an “upper action” A-weighted sound pressure level of 85 dB and a peak C-weighted sound pressure level of 137 dB; and a “lower action” A-weighted sound pressure level of 80 dB and a peak C-weighted sound pressure level of 135 dB. The attenuation of hearing protectors may be taken into account when assessing the exposure limit value, but not for requirements driven by the upper and lower action values. At no time shall employees’ noise exposures exceed the exposure limit value. When exposures exceed the upper action level, the employer must implement a program of noise reduction, taking into account technology and availability of control measures.

Note (6) EU cont.: Hearing protectors must be made available when exposures exceed the lower action A-weighted sound pressure level of 80 dB. Hearing protectors must be used by workers whose exposures equal or exceed the upper action value of 85 dB.

Audiometric testing must be available to workers whose exposures exceed the upper action value, and when noise measurements indicate a risk to health, these measures must be available at the lower action value.

Note (7) The German standard (UVV Larm-1990) states that it is not possible to give a precise limit for the elimination of hearing hazard and the risk of other health impairments from noise. Therefore the employer is obliged to reduce the noise level as far as possible, taking technical progress and the availability of control measures into account. Germany also has noise standards of 55 dB for mentally stressful tasks and 70 dB for mechanized office work (both are A-weighted sound pressure levels.)

Note (8) India: Recommendation.

Note (9) The Netherlands' noise legislation requires engineering noise control at an A-weighted sound pressure level of 85 dB "unless this cannot be reasonably demanded." Hearing protection must be provided above 80 dB and workers are required to wear it at levels above 90 dB.

Note (10) Norway requires an A-weighted PEL of 55 dB for work requiring a large amount of mental concentration, 70 dB for work requiring verbal communication or great accuracy and attention, and 85 dB for other noisy work settings. Recommended limits are 10 dB lower. Workers exposed to average A-weighted sound pressure levels greater than 85 dB should wear hearing protectors.

Note (11) These levels apply to the OSHA noise standard, covering workers in general industry and maritime. The U.S. military services require standards that are somewhat more stringent. The U.S. Air Force and the U.S. Army both use an 85-dB PEL and a 3-dB exchange rate.

Sources for Table 5:

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Tony F.W. Embleton, "Technical assessment of upper limits on noise in the workplace," *Noise/News International*, I-INCE, Poughkeepsie, NY, 1994.¹⁰

Christine Harrison, Worker Compensation Board, British Columbia (personal communication, March 2005).

ILO, Noise Regulations and Standards, CIS data base, International Labour Office, Geneva, Switzerland (summaries), 1994.¹¹

Published standards of various nations.

See also A.H. Suter^{12,13}