



Changes In EU Noise Directive

How do recent changes in the European Union Noise Directive affect workers, and what must employers do to implement it?

After nearly twenty years since the original threshold values were defined, the European Parliament adopted Directive 2003/10/EC, which establishes new values for allowable noise exposures. These new threshold values are lower [more protective] than the previous values. In addition, a new exposure limit of 87 dBA is defined as the maximum allowable daily noise exposure level in the worker's ear with all protective measures in place [including hearing protectors]. The measures of the new Directive take effect in EU member states in 2006.

Table 1 compares the new Directive to the old requirements. The biggest change is the lowering of Action Levels by 5 dB. Precautionary measures, such as making hearing protectors available, must now be initiated when noise levels exceed 80 dBA [the previous level was 85 dBA]. Protective measures, like enforcing the use of hearing protectors, must now be initiated when noise levels exceed 85 dBA [previously 90 dBA].

Table 1. Comparison of Old EU Directive [86/188/EEC] to New [2003/10/EC]

Hearing Protective Measure	Old Directive Noise Level	New Directive Noise Level
Warning Signs Posted in Work Areas	90 dBA	85 dBA
Hearing Protectors Available	85 dBA	80 dBA
Hearing Protection Required	90 dBA	85 dBA
Training of Exposed Workers	85 dBA	80 dBA
Noise Reduction Program	90 dBA	85 dBA
Protected Exposure Limit	N/A	87 dBA

Although a change from 85 to 80 decibels seems quite minor, the difference is significant and noticeable. Because decibels are on a logarithmic scale, small changes in number represent enormous changes in sound pressure levels. In this case, the difference between 80 and 85 decibels represents more than a doubling of sound energy. In practical terms, most people must shout to be heard by a listener just one meter away in the presence of 85 dBA background noise.

The new action levels now include many employees who were previously deemed to be working in "safe" noise levels without protection. To encourage these workers to protect their hearing, the following steps are advised:

- Provide training to noise-exposed workers on the effects of noise
- Include workers in the choice of suitable hearing protectors
- Offer a variety of hearing protectors
- Avoid overprotection – choose hearing protectors that allow workers to communicate and hear warning signals, while still protecting them from hazardous noise

In addition to defining more protective Action Levels, the new EU Directive also establishes a new exposure limit. This exposure limit – defined as 87 dBA – is the maximum allowable daily noise exposure level, taking account of attenuation provided by hearing protectors worn by a worker. This means employers must now ensure that a worker’s protected daily average noise exposure [the estimated noise level in the ear under hearing protectors] does not exceed 87 dBA. The best way to ensure that the protected exposures do not exceed 87 dBA is to select suitable hearing protectors, comparing attenuation ratings of the protectors with the noise environment in which they will be used, and then ensuring proper fitting. In most cases, this is accomplished by providing training in how hearing protectors are correctly worn.

Table 2. **Action Levels and Exposure Limits – Protective Measures Are Required At These Levels**

Protective Measures	Daily 8-Hour Exposure	Peak Exposure
Lower Exposure Action Level	80 dBA	135 dBC
<ul style="list-style-type: none"> ⊙ Variety of hearing protectors must be made available to noise-exposed workers (voluntary usage) ⊙ Audiometric screening must be made available to workers whose exposure indicates a risk to health ⊙ Training must be provided in the risks of noise, correct use of hearing protectors, detection of hearing damage, provisions of health surveillance and safe working practices to minimize noise exposure 		
Upper Exposure Action Level	85 dBA	137 dBC
<ul style="list-style-type: none"> ⊙ Variety of hearing protectors must be made available to noise-exposed workers, and usage is enforced ⊙ Audiometric evaluation by a doctor must be made available to exposed workers ⊙ Warning signs must be posted in noisy areas 		
Exposure Limit Value	87 dBA	140 dBC
<ul style="list-style-type: none"> ⊙ Maximum allowable noise level in the ear with all protective measures in place ⊙ Protected noise exposures under hearing protection may not exceed this level ⊙ Include the attenuation provided by hearing protectors when estimating this value 		

It should be noted that these changes only affect EU member states. Other countries and regions have their own standards and regulations defining action levels and exposure limits for noise. But with this new change in the EU Directive, Europe has implemented the most protective noise exposure limits currently in practice, based upon the best available scientific knowledge on the risks of noise-induced hearing loss.

Table 3. **Comparison of Action Levels and Exposure Limits by Region** [all noise levels based on 8-hour exposures]

	Precautionary Action Level Hearing protectors made available, and audiometric testing training programs implemented	Preventive Action Levels Hearing protectors and warning signage required	Protected Exposure Limit Maximum noise exposure under hearing protectors
European Union	80 dBA	85 dBA	87 dBA
Australia	85 dBA	85 dBA	–
United States	85 dBA	90 dBA	90 dBA

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