
**VOLUME 11 ENVIRONMENTAL
ASSESSMENT
SECTION 3 ENVIRONMENTAL
ASSESSMENT
TECHNIQUES**

PART 7

HD 213/11 – REVISION 1

NOISE AND VIBRATION

SUMMARY

This revised Standard provides guidance on the assessment of the impacts that road projects may have on levels of noise and vibration. This revision replaces the previous Standard, and includes updated advice on calculating night time noise levels, determining the extent of the study area and selecting appropriate traffic speed data. Where appropriate, this standard may be applied to existing roads.

INSTRUCTIONS FOR USE

1. Remove existing contents pages for Volume 11 and insert new contents pages for Volume 11 dated November 2011.
2. Remove HA 213/11 dated February 2011 from Volume 11, Section 3 and archive as necessary.
3. Insert HD 213/11 into Volume 11, Section 3, Part 7.
4. Please archive this sheet as appropriate.

Note: A quarterly index with a full set of Volume Contents Pages is available separately from The Stationery Office Ltd.

REGISTRATION OF AMENDMENTS

Amend No	Page No	Signature & Date of incorporation of amendments	Amend No	Page No	Signature & Date of incorporation of amendments

Magnitude of Impact

3.36 Section 2 of Volume 11 includes HA 205/08. This provides a method for the classification of the magnitude of impact and the significance of an effect in order to arrive at an overall level of significance. In terms of road traffic noise, a methodology has not yet been developed to assign a significance according to both the value of a resources and the magnitude of an impact. However, the magnitude of traffic noise impact from a road project should be classified into levels of impact in order to assist with the interpretation of the road project. Therefore, for the assessment of traffic noise that is covered by this document, a classification is provided for the magnitude of impact.

3.37 A change in road traffic noise of 1 dB $L_{A10,15h}$ in the short term (e.g. when a project is opened) is the smallest that is considered perceptible. In the long term (typically 15 years after project opening), a 3 dB $L_{A10,15h}$ change is considered perceptible. The magnitude of impact should, therefore, be considered different in the short term and long term. The classification of magnitude of impacts to be used for traffic noise is given in Table 3.1 (short term) and Table 3.2 (long term).

Noise change, $L_{A10,15h}$	Magnitude of Impact
0	No change
0.1 – 0.9	Negligible
1 – 2.9	Minor
3 – 4.9	Moderate
5+	Major

Table 3.1 – Classification of Magnitude of Noise Impacts in the Short Term

Noise change, $L_{A10,15h}$	Magnitude of Impact
0	No change
0.1 – 2.9	Negligible
3 – 4.9	Minor
5 – 9.9	Moderate
10+	Major

Table 3.2 – Classification of Magnitude of Noise Impacts in the Long Term

3.38 Research into the response to changes in road traffic noise is largely restricted to daytime periods. Until further research is available only noise impacts in the long term is to be considered and Table 3.2 should be used to consider the magnitude of noise change at night. However, given the caution with predicting night time noise levels as traffic flow fall (see 3.24), only those sensitive receptors predicted to be subject to a $L_{night,average}$ exceeding of 55 dB should be considered. The $L_{night,average}$ of 55 dB corresponds to the Interim Target level specified in the WHO Night Noise Guidelines for Europe.

3.39 Methods are available for evaluating the significance of construction noise and vibration. These methods are described in Annex E of BS 5228 (Ref 9) and should be used unless an alternative method is agreed with the Overseeing Organisation.

3.40 Table 3.1 should be used in the assessment of noise impact associated with construction traffic on the local road network and from temporary diversion routes resulting from construction of the road project. For road projects where construction traffic and temporary diversions occur at night, the Overseeing Organisation should be consulted to agree a suitable methodology for assessing the associated noise impact.

3.41 The level of vibration at sensitive receptors has the potential to increase and decrease. If the level of vibration at a receptor is predicted to rise to above a level of 0.3 mm/s, or an existing level above 0.3 mm/s is predicted to increase, then this should be classed as an adverse impact from vibration.

Uncertainty and validity

3.42 During an assessment of the impacts from noise and vibration, the uncertainty associated with input data is an important factor in determining how confident the Overseeing Organisation's supply chain can be with the assessment results. As the road project progresses, the quality and accuracy of the assessment should normally improve. This in turn will influence the accuracy of designed mitigation measures, for example the height and positioning of any barriers. The most up to date scheme design and traffic flow information should be used in the final assessment.