

Guidance on Acoustic Safety

Introduction

Article 3.1a of the R&TTE Directive concerns “the protection of the health and the safety of the user and any other person, including the objectives with respect to safety requirements contained in Directive 73/23/EEC, but with no voltage limit applying”. The objectives referenced include “that persons, domestic animals and property are adequately protected against non-electrical dangers caused by the electrical equipment which are revealed by experience”. Accordingly, it is clear that acoustic safety must be included in assessment of the essential requirements of R&TTE. Here “acoustic safety” is used in its broadest sense and is not restricted to any particular concept or definition of “acoustic shock”.

There are no standards concerning acoustic safety of R&TTE which are harmonised for the purposes of the R&TTE Directive. It is therefore not possible to acquire a presumption of compliance in accordance with Article 5.1 of the Directive in this respect. Manufacturers therefore have the choice of adopting the compliance procedure of Directive 73/23/EEC, where appropriate (Article 10.2 of the R&TTE Directive), or seeking the opinion of a notified body (Article 10.5 of the R&TTE Directive).

This guidance is aimed at notified bodies that are requested to give an opinion on the acoustic safety of telephone handsets and headsets (wired, cordless or mobile) or other R&TTE using a handset or headset or with facility for the intentional connection of a handset or headset. It should be noted that the handset or headset use may be incidental to the R&TTE functions of the equipment concerned.

Commission Decision & Standardisation Mandate

The European Commission has issued:

- (i) Decision 2009/490/EC of 23 June 2009 on the safety requirements to be met by European standards for personal music players pursuant to Directive 2001/95/EC of the European Parliament and of the Council; and
- (ii) Standardisation Mandate, M/452 of 28 September 2009 to CEN, CENELEC and ETSI in the field of Directives 1999/5/EC, 2006/95/EC and 2001/95/EC for Health and Safety aspects of personal music players and mobile phones with a music playing function.

These documents require that “...that, under reasonably foreseeable conditions of use, such devices must be inherently safe and must not cause hearing damage...” In particular, they require that “...the following aspects are to be dealt with in a satisfactory manner with respect to all relevant types of personal music players, including the performance of earphones and headphones that are intended to be used with personal music players :

- (1) Exposure to sound levels shall be limited to avoid hearing damage. At 80 dB(A) exposure shall be limited to 40 hours/week, whereas at 89 dB(A) exposure shall be limited to 5 hours/week. For other exposure levels a linear intra- and extrapolation applies. Account shall be taken of the dynamic range of sound and the reasonably foreseeable use of these devices; and
- (2) Adequate warnings on the risks involved in using the device and to the ways of avoiding them and information to users in cases exposure poses a risk of hearing damage. Information should also be provided when the original set of earphones is replaced with another type and this causes higher unsafe sound levels.

The safe exposure levels defined above shall be the default settings on products. Higher exposure levels can be permitted provided that they have been intentionally selected by the user and the product incorporates a reliable means to inform the user of the risks.”

Guidance

Assessment should take into account the particular nature of the device and its intended use (Article 6.1 of R&TTE & Article 2.1 of LVD). This means that any instructions or guidance supplied with the equipment must be taken into account but does not imply that any particular information is mandatory.

The above Decision & Mandate also indicate that "Account should be taken of technical features that can improve the safety of use of personal music players such as earphone design, noise cancelling features, automatic sound level reduction and parental controls".

The European guide, report and standards listed below offer some possibilities for assessment in the above context. They are not mandatory but they should not be ignored. They may be applied in whole or in part or combined or substituted with other methods at the discretion of the notified body so as to reach an informed opinion on compliance with the essential requirements.

ETSI EG 202 518 V1.2.1 (2008-08) ETSI Guide "Speech Processing, Transmission and Quality Aspects (STQ); Acoustic Output of Terminal Equipment; Maximum Levels and Test Methodology for Various Applications"

http://webapp.etsi.org/WorkProgram/Report_WorkItem.asp?WKI_ID=26342

ETSI TR 101 800 V1.1.1 (2000-07) Technical Report "Acoustic safety of Terminal Equipment (TE); An investigation on standards and approval documents"

http://webapp.etsi.org/workprogram/Report_WorkItem.asp?WKI_ID=8875

EN 50332-1:2000 Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations -- Part 1: General method for "one package equipment"

EN 50332-2:2003 Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations -- Part 2: Matching of sets with headphones if either or both are offered separately

In addition to the source documents referenced in the above standards etc, the following recently revised industry guideline drawn up by the Australian Communications Industry Forum may also be helpful.

ACIF G616:2006 Acoustic safety for telephone equipment

http://www.acif.org.au/ACIF_documents/guidelines/G616

The notified body should maintain records which show the rationale, based on the above considerations, used to arrive at a particular opinion.

The opinion itself should be documented in accordance with R&TTE CA TGN10 "Guidance on the Minimum Content of a Notified Body Opinion Document".

Disclaimer

This guidance document does not replace the text of the R&TTE Directive and is for guidance only. In legal disputes the text of the Directive, or its implementation in National legislation, takes precedence.