

Audiometric testing for use in hearing loss prevention programs



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Preface

This is the second edition of CSA Z107.6, *Audiometric testing for use in hearing loss prevention programs*. It supersedes previous edition, published in 1990 under the title *Pure tone air conduction threshold audiometry for hearing loss prevention*.

This Standard includes requirements for audiometers which were previously covered in CSA CAN3-Z107.4-M86 (withdrawn), *Pure tone air conduction audiometers for hearing conservation and for screening*.

This edition incorporates several amendments and additions to the 1990 edition, as follows:

- a) addition of mobile audiometric test facility requirements;
- b) elaboration on different types of audiometric test equipment and their calibration requirements;
- c) elaboration on audiometric technician training requirements;
- d) elaboration on pre-testing requirements, including checking the functioning of the equipment and providing instructions to and preparing the tested individual. Annex A includes example questions that the technician can ask the individual prior to the test;
- e) addition of guidance on classification of the audiometric test results;
- f) addition of guidance on informing the individual about the test results; and
- g) addition of guidance on reporting the test results to the hearing loss prevention program administrator (HLPPA).

This Standard should be used in conjunction with CSA Z1007, *Hearing loss prevention program (HLPP) management*, which deals with all aspects of the creation and management of hearing conservation programs. This Standard complements other CSA hearing conservation standards including CSA Z94.2 (hearing protection), CSA Z107.56 (measurement of occupational noise exposure), and CSA Z107.58 (noise emission declarations for machinery).

This Standard was prepared by the Subcommittee on Hearing Surveillance (Audiometry), under the jurisdiction of the Technical Committee on Occupational Hearing Conservation and the Strategic Steering Committee on Occupational Health and Safety, and has been formally approved by the Technical Committee.

Notes:

- 1) Use of the singular does not exclude the plural (and vice versa) when the sense allows.
- 2) Although the intended primary application of this Standard is stated in its Scope, it is important to note that it remains the responsibility of the users of the Standard to judge its suitability for their particular purpose.
- 3) This Standard was developed by consensus, which is defined by CSA Policy governing standardization — Code of good practice for standardization as “substantial agreement. Consensus implies much more than a simple majority, but does not necessarily unanimity”. It is consistent with this definition that a member may be included in the Technical Committee list and yet not be in full agreement with all clauses of this Standard.
- 4) To submit a request for interpretation of this Standard, please send the following information to inquiries@csagroup.org and include “Request for interpretation” in the subject line:
 - a) define the problem, making reference to the specific clause, and, where appropriate, include an illustrative sketch;
 - b) provide an explanation of circumstances surrounding the actual field condition; and
 - c) where possible, phrase the request in such a way that a specific “yes” or “no” answer will address the issue.

Committee interpretations are processed in accordance with the CSA Directives and guidelines governing standardization and are available on the Current Standards Activities page at standardsactivities.csa.ca.

- 5) *This Standard is subject to review within five years from the date of publication. Suggestions for its improvement will be referred to the appropriate committee. To submit a proposal for change, please send the following information to inquiries@csagroup.org and include "Proposal for change" in the subject line:*
- a) *Standard designation (number);*
 - b) *relevant clause, table, and/or figure number;*
 - c) *wording of the proposed change; and*
 - d) *rationale for the change.*

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Audiometric testing for use in hearing loss prevention programs

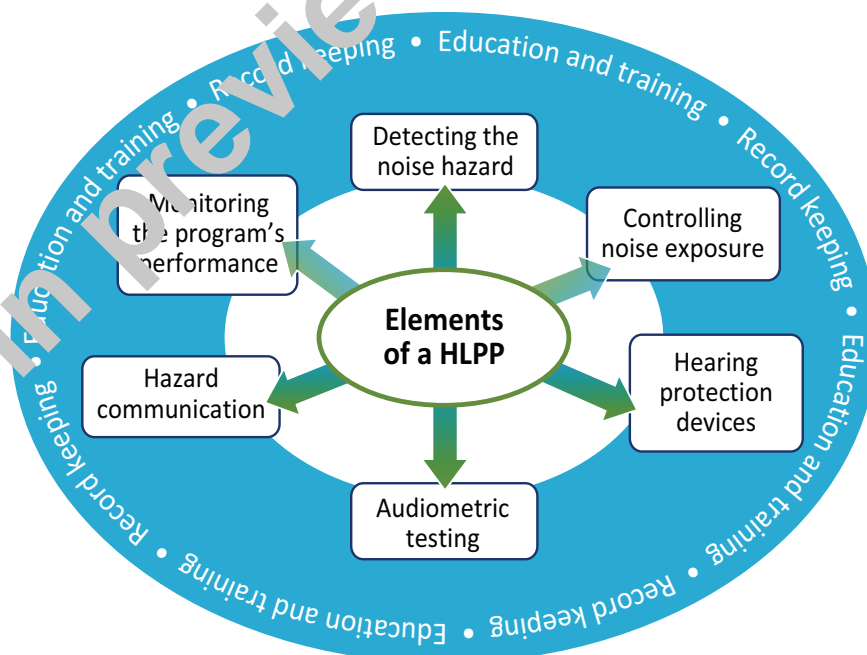
0 Introduction

Audiometric testing, is one element of a hearing loss prevention program (HLPP) as described in CSA Z1007 (see Figure 1). Audiometric testing can help by monitoring individuals' hearing thresholds, and the resulting audiometric data (or test results) can be a tool toward determining the effectiveness of HLPPs.

Long-term exposure to excessive noise can cause permanent hearing loss through sensorineural damage in the cochlea, the organ of hearing. Typically, hearing is first affected in the mid-range of audible frequencies (3000 to 6000 Hz). Damage spreads to other frequencies over time and becomes more severe. While monitoring for potential signs of noise-induced hearing loss (NIHL), it is therefore important to pay attention to thresholds, particularly any shifts in the mid-range frequencies in the initial years of exposure.

This Standard focuses on quantifying hearing as a means of early detection of possible damage from hazardous noise exposure. It is directed to organizations and service providers responsible for supplying and maintaining audiometric test facilities, to institutions providing training for competencies required in audiometric testing, and to those in charge of conducting audiometric tests, classifying results, and advising the tested individuals.

Figure 1
Elements of a hearing loss prevention program (HLPP)
 (see Clause 0.)



1 Scope

1.1 General

This Standard specifies requirements for equipment and procedures for audiometric testing in the workplace. It is applicable to organizations, service providers, and all institutions involved in the provision of audiometric testing to individuals who are exposed to hazardous noise.

1.2 Subjects not addressed

The following subjects are not addressed in this Standard:

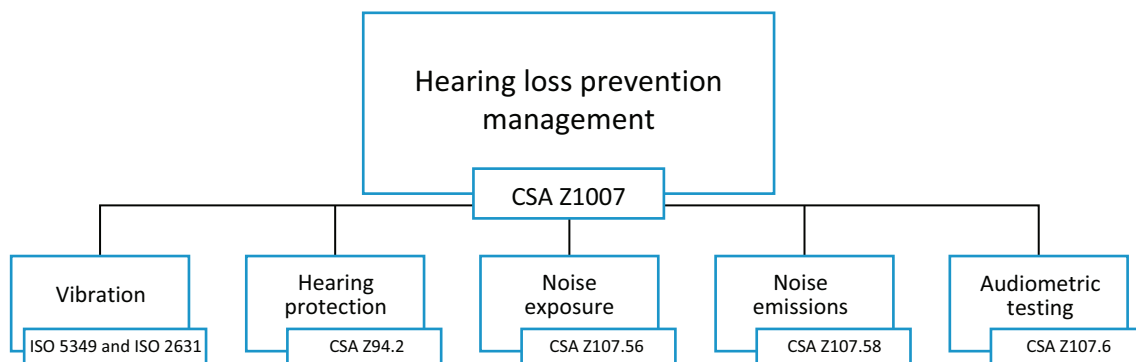
- hearing tests used to determine eligibility for compensation claims or benefits;
- diagnostic tests such as those used for tinnitus, clinical assessments, hearing aid fittings, or to determine fitness for duty;
- otoacoustic emissions; and
- extended high-frequency testing.

1.3 Relation to other Standards

This Standard complements other CSA Group hearing loss prevention standards (see Figure 2), as follows:

- Z1007 for guidance to the person(s) responsible for implementing and managing a hearing loss prevention program (HLPP);
- Z94.2 for hearing protection;
- Z107.56 for measurement of occupational noise exposure; and
- Z107.58 for noise emission declarations for machinery.

Figure 2
Hierarchy of hearing conservation Standards
(See Clause 1.3.)



1.4 Terminology

In this Standard, “shall” is used to express a requirement, i.e., a provision that the user is obliged to satisfy in order to comply with the standard; “should” is used to express a recommendation or that which is advised but not required; and “may” is used to express an option or that which is permissible within the limits of the Standard.

Notes accompanying clauses do not include requirements or alternative requirements; the purpose of a note accompanying a clause is to separate from the text explanatory or informative material.