

STANDARDS AUSTRALIA

Amendment No. 1
to
AS 2670.1—2001
Evaluation of human exposure to whole-body vibration
Part 1: General requirements

REVISED TEXT

The 2001 edition of AS 2670.1 is amended as follows; the amendment(s) should be inserted in the appropriate place(s).

SUMMARY: This Amendment applies to the Preface, Foreword and relevant parts of Amendment 1 (2010) to ISO 2631-1:1997.

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Preface

1. In paragraph 5 *add* the following:
‘and its Amendment 1 (2010), which has been added at the end of the document.’
2. *Delete* paragraphs 6, 7, 8, 9 and 10, i.e. *from—*
‘Increasing awareness of the complexity . . .’ *through to* ‘. . . collection of better data as the basis for the various dose-effect relationships.’
3. *Delete* the last paragraph and *replace* with the following:
Of the Standards referenced in this document, ISO 2041:1990, ISO 5805:1997 and ISO 8041:1990 have not been adopted as Australian Standards. IEC 61260:1995 has been adopted as AS/NZS 4476:1997, *Acoustics—Octave-band and fractional-octave-band filters*, but it does not include amendments from IEC 61260:2001 and subsequent to that.

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ISO Foreword

Add the following Foreword after the Contents list. This information is an extract from the Foreword to ISO 2631-1:1997 as amended by its Amendment 1 (2010).

FOREWORD

Increasing awareness of the complexity of human physiological/pathological response as well as behavioral response to vibration and the lack of clear, universally recognized dose-response relationships made it desirable to give more quantitative guidance on the effects of vibration on health and comfort as well as on perception and the incidence of motion sickness (see annexes B to D).

The frequency range in this revision is extended below 1 Hz and the evaluation is based on frequency weighting of the r.m.s. acceleration rather than the rating method. Different frequency weightings are given for the evaluation of different effects.

Based on practical experience, r.m.s. methods continue to be the basis for measurements for crest factors less than 9 and consequently the integrity of existing databases is maintained. Studies in recent years have pointed to the importance of the peak values of acceleration in the vibration exposure, particularly in health effects. The r.m.s. method of assessing vibration has been shown by several laboratories to underestimate the effects for vibration with substantial peaks. Additional or alternative measurement procedures are presented for vibration with occasional but substantial peaks and particularly for crest factors greater than 9. ISO 2631-5 provides an alternative assessment method for exposures dominated by multiple shocks in relation to health of the lumbar spine.

For simplicity, the dependency on exposure duration of the various effects on people had been assumed in ISO 2631-1:1985 to be the same for the different effects (health, working proficiency and comfort). This concept was not supported by research results in the laboratory and consequently has been removed. New approaches are outlined in the annexes. Exposure boundaries or limits are not included and the concept of “fatigue-decreased proficiency” due to vibration exposure has been deleted.

In spite of these substantial changes, improvements and refinements in this part of ISO 2631, the majority of reports or research studies indicate that the guidance and exposure boundaries recommended in ISO 2631-1:1985 were safe and preventive of undesired effects. This revision of ISO 2631 should not affect the integrity and continuity of existing databases and should support the collection of better data as the basis for the various dose-effect relationships.

ISO 2631-1:1997/Amd.1:2010

Add the following ISO Amendments at the end of the source text. These amendments are identical with and reproduced from those contained within ISO 2631-1:1997/Amd.1:2010. Amendments to the ISO Foreword have been omitted. An extract from the ISO Foreword, as amended by Amendment 1 (2010), has been incorporated into the Standard by this Amendment.

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AMENDMENT 1

Page 1, Clause 2

Replace this clause with the following:

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 2041, *Mechanical vibration, shock and condition monitoring — Vocabulary*

ISO 5805, *Mechanical vibration and shock — Human exposure — Vocabulary*

ISO 8041, *Human response to vibration — Measuring instrumentation*

IEC 61260, *Electroacoustics — Octave-band and fractional-octave-band filters*