AS/NZS 2161.9:2002
ISO 10819:1996

Australian/New Zealand Standard™

Occupational protective gloves

Part 9: Method of measurement and evaluation of the vibration transmissibility of gloves at the palm of the hand

[ISO title: Mechanical vibration and shock—Hand-arm vibration—Method for the measurement and evaluation of the vibration transmissibility of gloves at the palm of the hand]

Standards Australia

STANDARDS NEW ZEALAND

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee SF-023, Occupational Protective Gloves. It was approved on behalf of the Council of Standards Australia on 15 February 2002 and on behalf of the Council of Standards New Zealand on 27 February 2002. It was published on 22 March 2002.

The following interests are represented on Committee SF-023:

Association of Certification Bodies
Australian Chamber of Commerce and Industry
Bureau of Steel Manufacturers of Australia
Department of Labour, New Zealand
Griffith University
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This Standard was issued in draft form for comment as DR 98611.

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First published as AS/NZS 2161.9:2002

Jointly published by Standards Australia International Ltd, GPO Box 5420, Sydney, NSW 2001 and Standards New Zealand, Private Bag 2439, Wellington 6020

ISBN 0 7337 4352 8

PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee SF-023, Occupational Protective Gloves. It is identical to and has been reproduced from ISO 10819:1996, *Mechanical vibration and shock—Hand-arm vibration—Method for the measurement and evaluation of the vibration transmissibility of gloves at the palm of the hand*.

The objective of Part 9 of AS/NZS 2161 is to provide users and manufacturers with requirements for gloves intended to provide protection against some frequencies of radiation that may be transmitted to the palm of the hand. The transmissibility value according to this Standard is not sufficient to assess the health risk due to vibration.

As this Standard is reproduced from an International Standard that is an adopted European Standard, the following applies:

(a) Its number appears on the cover and title page while the International Standard number appears only on the cover.

(b) In the source text, 'this European Standard' should read 'this Australian/New Zealand Standard'.

(c) A full point substitutes for a comma when referring to a decimal marker.

References to international Standards should be replaced by Australian or Australian/New Zealand Standards, as follows:

Reference to International Standard or other publication		*Australian/New Zealand Standard*	
EN		AS/NZS	
420	General requirements for gloves	2161 2161.2	Occupational protective gloves Part 2: General requirements
61260	Electroacoustics—Octave-band and fractional-octave-band filters*	—	
ENV		AS	
25349	Mechanical vibration—Guidelines for the measurement and the assessment of human exposure to hand-transmitted vibration†	2763	Vibration and shock—Hand-transmitted vibration—Guidelines for measurement and assessment of human exposure
28041	Human response to vibration—Measuring instrumentation‡	—	
ISO			
2041	Vibration and shock—Vocabulary	2606	Vibration and shock—Vocabulary
5805	Mechanical vibration and shock affecting man—Vocabulary	3658	Vibration and shock—Mechanical vibration and shock affecting man—Vocabulary

The terms 'normative' and 'informative' have been used in this Standard to define the application of the annex to which they apply. A 'normative' annex is an integral part of a Standard, whereas an 'informative' annex is only for information and guidance.

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* CEN equivalent of IEC 1260:1995
† CEN equivalent of ISO 5349:1986
‡ CEN equivalent of ISO 8041:1990

INTRODUCTION

This European Standard was developed in response to the growing demand to protect people from the risks of vibration damage caused by exposure to hand-transmitted vibration.

In the field of personal protective equipment (PPE), gloves are being marketed which are intended to reduce the magnitude of vibration exposure.

On present evidence, there have been no circumstances in which gloves have been shown to provide adequate attenuation of vibration to prevent vibration injuries.

Within the current state of knowledge, gloves do not provide significant attenuation in the frequency range below 150 Hz. Some gloves may provide amplification in this frequency range. Also, the use of gloves might alter the gripping force which would alter the transmission of vibration into the arms thus increasing the risk of damage. However, it must be emphasized that an important purpose of gloves is to keep the hands warm and dry, as this may help to limit some vibration-induced effects.

This standard describes a method of measuring the vibration transmissibility of gloves in the laboratory, but as far as possible under conditions typical of use at actual working places. The measurement is performed at the palm of the hand and so does not give the transmission of vibration to the fingers. However, when evaluating the protective effects of a glove, it must be remembered that in many work situations vibration is transmitted not only to the palm but also to the fingers. A different measurement procedure will be required to establish the vibration transmissibility of gloves at the fingers.

This standard describes a method of measuring the vibration transmissibility of gloves worn by a test subject. For the measurement of the vibration transmissibility of resilient materials which are used to cover handles of tools or make gloves, EN ISO 13753 should be consulted.

NOTES

AUSTRALIAN/NEW ZEALAND STANDARD

Occupational protective gloves

Part 9:

Method of measurement and evaluation of the vibration transmissibility of gloves at the palm of the hand

1 Scope

This European Standard specifies a method for the laboratory measurement, the data analysis and reporting of the vibration transmissibility of gloves in terms of vibration transmission from a handle to the palm of the hand in the frequency range from 31,5 Hz to 1250 Hz.

The standard is intended to define a screening test for the vibration transmission through gloves. It is recognised that many factors influence the transmission of vibration through gloves. Therefore the transmissibility value according to this standard is not sufficient to assess the health risk due to vibration.

The transmissibility of vibration is measured and reported for two input spectra, which are representative of the vibration of some tools, and may be reported as a function of frequency.

2 Normative References

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European standard only when incorporated in it by amendment or revision. For undated references, the latest edition of the publication referred to applies.

EN 420	General requirements for gloves
ENV 25349	Mechanical vibration – Guidelines for the measurement and the assessment of human exposure to hand-transmitted vibration (ISO 5349:1986)
ENV 28041	Human response to vibration – Measuring instrumentation (ISO 8041:1990)
EN 61260	Electroacoustics - Octave-band and fractional-octave-band filters (IEC 1260:1995)
ISO 2041	Vibration and shock – Vocabulary
ISO 5805	Mechanical vibration and shock affecting man – Vocabulary