AS 2625.1—2003
ISO 10816-1:1995

Australian Standard™

Mechanical vibration—Evaluation of machine vibration by measurements on non-rotating parts

Part 1: General guidelines

Standards Australia

This Australian Standard was prepared by Committee AV-009, Vibration and Shock Application. It was approved on behalf of the Council of Standards Australia on 20 August 2003 and published on 29 September 2003.

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PREFACE

This Standard was prepared by the Standards Australia Committee AV-009, Mechanical Vibration and Shock Application to supersede the following Standards, which have been technically revised:

AS
2625 Rotating and reciprocating machinery—Mechanical vibration
2625.1 Part 1: Basis for specifying evaluation standards
2625.3 Part 3: Measurement and evaluation of vibration severity of large machines *in situ*

The objective of this Standard is to provide designers, manufacturers, operators and maintainers of rotating and reciprocating machinery with guidelines for the evaluation of vibration of rotating and reciprocating machines measured on non-rotating and non-reciprocating parts.

This Standard is identical with and has been reproduced from ISO 10816-1:1995, *Mechanical vibration—Evaluation of machine vibration by measurements on non-rotating parts,* Part 1: *General guidelines*

AS 2625.1—1983 and AS 2625.3—1983 were based on ISO 2372:1974 and ISO 3945:1985 respectively and these Standards have been withdrawn and superseded by ISO 10816-1:1995.

ISO 10816 consists of the following parts:

Part 1: General guidelines

Part 2: Large land-based steam turbine generator sets in excess of 50 MW

Part 3: Industrial machines with nominal power above 15 kW and nominal speeds between 120 r/min and 15000 r/min when measured in situ

Part 4: Gas turbine driven sets excluding aircraft derivatives

Part 5: Machine sets in hydraulic power generating and pumping plants

In addition to Part 1, Part 3 has also been reproduced as an Australian Standard as Part 4 of the AS 2625 series.

The term 'informative' has been used in this Standard to define the application of the appendix to which it applies. An 'informative' appendix is only for information and guidance.

As this Standard is reproduced from an International 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 part of ISO 10816' should read 'this Australian Standard'.

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

There is no equivalent Australian Standard to the normative reference listed in Clause 2.

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NOTES

AUSTRALIAN STANDARD

Mechanical vibration—Evaluation of machine vibration by measurement on non-rotating parts

Part 1: General guidelines

1 Scope

This part of ISO 10816 establishes general conditions and procedures for the measurement and evaluation of vibration using measurements made on non-rotating and, where applicable, non-reciprocating parts of complete machines. The general evaluation criteria, which are presented in terms of both vibration magnitude and change of vibration, relate to both operational monitoring and acceptance testing. They have been provided primarily with regard to securing reliable, safe, long-term operation of the machine, while minimizing adverse effects on associated equipment. Guidelines are also presented for setting operational limits.

The evaluation criteria relate only to the vibration produced by the machine itself and not to vibration transmitted to it from outside.

This part of ISO 10816 does not include any consideration of torsional vibration.

2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this part of ISO 10816. At the time of publication, the edition indicated was valid. All standards are subject to revision, and parties to agreements based on this part of ISO 10816 are encouraged to investigate the possibility of applying the most recent edition of the standard indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 7919-1:—[1], *Mechanical vibration of non-reciprocating machines — Measurements on rotating shafts and evaluation criteria — Part 1: General guidelines.*

3 Measurements

This clause describes the measurements, procedures and operating conditions recommended for assessing machine vibration. The guidelines given will permit the evaluation of vibration in accordance with the general criteria and principles given in clause 5.

3.1 Measurement parameters

3.1.1 Frequency range

The measurement of vibration shall be broad band, so that the frequency spectrum of the machine is adequately covered.

The frequency range will depend on the type of machine being considered (e.g. the frequency range necessary to assess the integrity of rolling element bearings should include frequencies higher than those on machines with fluid-film bearings only).

Guidelines for instrumentation frequency ranges for specific machine classes will be given in the appropriate parts of ISO 10816.

1) To be published. (Revision of ISO 7919-1:1986)