

Australian Standard<sup>®</sup>

**Condition monitoring and diagnostics of  
machines—General guidelines**

**STANDARDS**  
Australia



This Australian Standard® was prepared by Committee ME-087, Machine Condition Monitoring. It was approved on behalf of the Council of Standards Australia on 11 March 2014. This Standard was published on 7 April 2014.

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The following are represented on Committee ME-087:

- Asset Institute
  - Australasian Railway Association
  - Australian Industry Group
  - Australian Institute for Non-Destructive Testing
  - Australian Professional Thermography Association
  - Bureau of Steel Manufacturers of Australia
  - Crane Industry Council of Australia
  - Engineers Australia
  - Institute of Electrical Inspectors
  - International Council for Machinery Lubrication
  - Queensland University of Technology
- 

This Standard was issued in draft form for comment as **DIS ISO 17359**.

Standards Australia wishes to acknowledge the participation of the expert individuals that contributed to the development of this Standard through their representation on the Committee and through the public comment period.

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First published as AS ISO 17359:2014.

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Published by SAI Global Limited under licence from Standards Australia Limited, GPO Box 476, Sydney, NSW 2001, Australia

ISBN 978 1 74342 674 6

## PREFACE

This Standard was prepared by the Standards Australia Committee ME-087, Machine Condition Monitoring.

The objective of this Standard is to set out guidelines for the general procedures to be considered when setting up a condition monitoring programme for machines. It applies to all machines.

This Standard is identical with and has been reproduced from ISO 17359:2011, *Condition monitoring and diagnostics of machines—General guidelines*.

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

- (a) In the source text ‘this International Standard’ should read ‘this Australian Standard’.
- (b) A full point substitutes for a comma when referring to a decimal marker.

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

<i>Reference to International Standard</i>	<i>Australian Standard</i>
ISO	AS ISO
13381 Condition monitoring and diagnostics of machines—Prognostics	13381 Condition monitoring and diagnostics of machines—Prognostics
13381-1 Part 1: General guidelines	13381.1 Part 1: General guidelines

Only normative references that have been adopted as Australian or Australian/New Zealand Standard have been listed.

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

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## INTRODUCTION

This International Standard provides guidelines for condition monitoring and diagnostics of machines using parameters such as vibration, temperature, flow rates, contamination, power, and speed typically associated with performance, condition, and quality criteria. The evaluation of machine function and condition may be based on performance, condition or product quality.

It is the parent document of a group of standards which cover the field of condition monitoring and diagnostics.

It sets out general procedures to be considered when setting up a condition monitoring programme for all machines, and includes references to other International Standards and other documents required or useful in this process.

An overview of the current status of condition monitoring International Standards is shown in Annex D.

This International Standard presents an overview of a generic procedure recommended to be used when implementing a condition monitoring programme, and provides further detail on the key steps to be followed. It introduces the concept of directing condition monitoring activities towards root cause failure modes and describes the generic approach to setting alarm criteria, carrying out diagnosis and prognosis, and improving the confidence in diagnosis and prognosis, which are developed further in other International Standards.

Particular techniques of condition monitoring are only introduced briefly and are covered in more detail in other International Standards referenced in the Bibliography.

## AUSTRALIAN STANDARD

**Condition monitoring and diagnostics of machines—General guidelines****1 Scope**

This International Standard sets out guidelines for the general procedures to be considered when setting up a condition monitoring programme for machines and includes references to associated standards required in this process. This International Standard applies to all machines.

**2 Normative references**

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 13372, *Condition monitoring and diagnostics of machines — Vocabulary*

ISO 13379-1, *Condition monitoring and diagnostics of machines — Data interpretation and diagnostics techniques — Part 1: General guidelines*<sup>1)</sup>

ISO 13381-1, *Condition monitoring and diagnostics of machines — Prognostics — Part 1: General guidelines*

**3 Terms and definitions**

For the purposes of this document, the terms and definitions given in ISO 2041, ISO 13372 and the following apply.

**3.1 equipment**

machine or group of machines including all machine or process control components

**4 Overview of condition monitoring procedure**

A generic procedure which may be used when implementing a condition monitoring programme is described in Clauses 5 to 11 and shown in diagrammatic form in Figure 1. Details on the key steps to be followed are provided. Condition monitoring activities should be directed towards identifying and avoiding root cause failure modes.

Particular techniques of condition monitoring are only introduced briefly. They are covered in more detail in the International Standards referenced in Annex D and the Bibliography.

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1) To be published. (Revision of ISO 13379:2003)