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

*Surveillance et diagnostic d'état des machines — Lignes directrices
générales*



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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 17359 was prepared by Technical Committee ISO/TC 108, *Mechanical vibration, shock and condition monitoring*, Subcommittee SC 5, *Condition monitoring and diagnostics of machines*.

This second edition cancels and replaces ISO 17359:2003 and ISO 13380:2002, which have been technically revised.

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.

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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*¹⁾

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 other International Standards referenced in Annex D and the Bibliography.

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