# INTERNATIONAL STANDARD

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# Condition monitoring and diagnostics of machines — Requirements for qualification and assessment of personnel —

## Part 3:
## Requirements for training bodies and the training process

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*Surveillance et diagnostic d'état des machines — Exigences relatives à la qualification et à l'évaluation du personnel —*

*Partie 3: Exigences relatives aux organismes de formation et au processus de formation*

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a5376b1ee664/iso-18436-3-2008

# Contents

Page

# 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 18436-3 was prepared by Technical Committee ISO/TC 108, *Mechanical vibration, shock and condition monitoring*, Subcommittee SC 5, *Condition monitoring and diagnostics of machines*.

ISO 18436 consists of the following parts, under the general title *Condition monitoring and diagnostics of machines — Requirements for qualification and assessment of personnel*:

— *Part 1: Requirements for certifying bodies and the certification process*

— *Part 2: Vibration condition monitoring and diagnostics*

— *Part 3: Requirements for training bodies and the training process*

— *Part 4: Field lubricant analysis*

— *Part 6: Acoustic emission*

— *Part 7: Thermography*

The following parts are under preparation:

— *Part 5: Lubricant laboratory technician/analyst*

## Introduction

Condition monitoring and diagnostics of machines are integral parts of an effective maintenance programme. Non-intrusive technologies used in condition monitoring and fault diagnosis include vibration, infrared thermography, lubrication analysis, acoustic emission, and electrical signature analysis. In many instances these technologies act as complementary condition analysis tools. The skills and expertise of the practitioners performing the measurements and analysing the data are critical to the effective application of these technologies.

This part of ISO 18436 defines the requirements for bodies operating training programmes in the non-intrusive machine condition monitoring, diagnostic, and correction technologies. General requirements for training body personnel are contained in this part of ISO 18436. Specific requirements for personnel in condition monitoring and diagnostics are covered in other parts of ISO 18436.

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# Condition monitoring and diagnostics of machines — Requirements for qualification and assessment of personnel —

## Part 3:
## Requirements for training bodies and the training process

## 1 Scope

This part of ISO 18436 defines the requirements for bodies operating training programmes for personnel who perform machinery condition monitoring, identify machine faults, and recommend corrective action. Procedures for training of condition monitoring and diagnostics personnel are specified.

## 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 9000, *Quality management systems — Fundamentals and vocabulary*

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

ISO 18436 (all parts), *Condition monitoring and diagnostics of machines — Requirements for qualification of personnel*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 9000, and the following, apply.

**3.1**
**administrative committee**
**advisory committee**
committee advising a training body

**3.2**
**certificate of completion**
written testimony of completion of training issued under the rules of a training programme

**3.3**
**invigilator**
person who administers a written examination as part of a training programme but does not evaluate competency of the candidate

**3.4**
**technical training committee**
committee organized by a training body to direct the technical aspects of a training programme

**3.5**
**trainer**
person with relevant technical and personal qualifications who is entrusted with training candidates for qualification

**3.6**
**training body**
organization competent to administer a programme to train personnel in machinery condition monitoring and diagnostics technology

**3.7**
**training centre**
centre authorized and monitored by a training body where theoretical and practical instruction are administered

**3.8**
**training process**
the procedures by which a training body provides instruction to candidates for qualification

**3.9**
**training programme**
programme system having its own rules of procedure and management for training through the use of verbal, visual and practical instruction

# 4 Training body

## 4.1 Purpose

The training body shall be responsible for development and implementation of procedures to prepare individuals to carry out tasks in machinery condition monitoring and diagnostics.

## 4.2 Requirements

A training body shall:

a) have the relevant technical, educational and financial resources to ensure effective training in accordance with ISO 18436 (all parts);

b) have the administrative resources needed to organize and implement training programmes;

c) manage training that can lead to classification in accordance with ISO 18436 (all parts) and shall not promote specific commercial products or services;

d) use non-discriminatory policies and procedures in the administration of the training programme;

e) have a quality system that reflects the intent of ISO 9001.

## 4.3 Responsibilities

A training body shall:

a) develop, maintain and implement a technically based, practical training programme that prepares an individual to carry out tasks in machinery condition monitoring and diagnosis and which may lead to classification as evidence of their qualifications;

b) administer the procedures and operations for training with modern educational procedures and facilities;

c) take the ultimate responsibility for the training procedures and content, including technical and administrative requirements;

d) ensure the adherence to training curricula as specified in the relevant clauses of ISO 18436 (all parts), and use the terminology given in ISO 13372;

e)   approve properly staffed and equipped training centres which it shall monitor on a periodic basis;

f)   approve the candidate's eligibility for training on the basis of prerequisite fulfilment;

g)   authorize the time, location of the training, training centre, and instructor for each course or programme;

h)   prepare and distribute training materials consistent with the relevant technical requirements of ISO 18436 (all parts);

i)   select, evaluate and instruct qualified trainers based on education and experience;

j)   prepare and implement training examinations at the training sessions and provide assessment of progress to participants;

k)   issue certificates of completion of training;

l)   keep appropriate records of the operations of training;

m)   maintain records of training examinations;

n)   maintain records of training evaluation forms;

o)   monitor all delegated functions.

## 4.4   Training body organizational structure

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### 4.4.1   General

A training body shall have an organizational structure, whose details shall be accessible to public examination, and which invites and permits participation by all interested parties.

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### 4.4.2   Responsibilities

A training body shall:

a)   identify the persons, groups, and/or committees responsible for:

1)   procedures, curriculum and surveillance as defined in this part of ISO 18436 and the applicable competency standards and normative documents;

2)   the formulation of policy matters relating to the operation of the training body;

3)   decisions on the training programme;

4)   supervision of the implementation of its policies; and

5)   supervision of the finances of the training body.

b)   delegate authority to administrative committees, advisory committees or individuals, as required, to undertake defined activities on its behalf.

## 4.5   Training body management

The management of each training body shall define and document its policy for quality. The management shall ensure that this policy is understood and implemented on all levels of the organization.

The training body shall operate a documented management system, which covers all the requirements of this part of ISO 18436 and ensures the effective application of these requirements.