



DRAFT INTERNATIONAL STANDARD ISO/DIS 18436-1

ISO/TC 108/SC 5

Secretariat: ANSI

Voting begins on
2011-01-05

Voting terminates on
2011-06-05

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Condition monitoring and diagnostics of machines — Requirements for qualification and assessment of personnel — Part 1: Requirements for assessment bodies and the assessment process

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

Partie 1: Exigences relatives aux organismes d'évaluation et au mode opératoire d'évaluation

[Revision of first edition (ISO 18436-1:2004) and (ISO 18436-1:2004/Cor.2006)]

ICS 03.100.30; 17.160

To expedite distribution, this document is circulated as received from the committee secretariat. ISO Central Secretariat work of editing and text composition will be undertaken at publication stage.

Pour accélérer la distribution, le présent document est distribué tel qu'il est parvenu du secrétariat du comité. Le travail de rédaction et de composition de texte sera effectué au Secrétariat central de l'ISO au stade de publication.

THIS DOCUMENT IS A DRAFT CIRCULATED FOR COMMENT AND APPROVAL. IT IS THEREFORE SUBJECT TO CHANGE AND MAY NOT BE REFERRED TO AS AN INTERNATIONAL STANDARD UNTIL PUBLISHED AS SUCH.

IN ADDITION TO THEIR EVALUATION AS BEING ACCEPTABLE FOR INDUSTRIAL, TECHNOLOGICAL, COMMERCIAL AND USER PURPOSES, DRAFT INTERNATIONAL STANDARDS MAY ON OCCASION HAVE TO BE CONSIDERED IN THE LIGHT OF THEIR POTENTIAL TO BECOME STANDARDS TO WHICH REFERENCE MAY BE MADE IN NATIONAL REGULATIONS.

RECIPIENTS OF THIS DRAFT ARE INVITED TO SUBMIT, WITH THEIR COMMENTS, NOTIFICATION OF ANY RELEVANT PATENT RIGHTS OF WHICH THEY ARE AWARE AND TO PROVIDE SUPPORTING DOCUMENTATION.

PDF disclaimer

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

iTeh STANDARD PREVIEW
(standards.iteh.ai)
Full standard:
<https://standards.iteh.ai/catalog/standards/sist/dc52a6e9-356a-462f-a6a4-91a7865a5588/iso-18436-1-2012>

Copyright notice

This ISO document is a Draft International Standard and is copyright-protected by ISO. Except as permitted under the applicable laws of the user's country, neither this ISO draft nor any extract from it may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, photocopying, recording or otherwise, without prior written permission being secured.

Requests for permission to reproduce should be addressed to either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Reproduction may be subject to royalty payments or a licensing agreement.

Violators may be prosecuted.

Contents

Page

Foreword	v
Introduction.....	vi
1 Scope.....	1
2 Normative references.....	1
3 Terms and definitions	1
4 Assessment body.....	2
4.1 Charter.....	2
4.2 Requirements.....	2
4.3 General provisions	2
4.4 Responsibilities.....	3
4.5 Organizational structure of the assessment body.....	3
4.6 Examination centres	3
4.6.1 General	3
4.6.2 Requirements.....	4
4.6.3 Responsibilities.....	4
4.7 Technical committees.....	4
4.7.1 General	4
4.7.2 Requirements.....	4
4.7.3 Responsibilities.....	4
5 Requirements for assessment body personnel.....	4
5.1 General provisions.....	4
5.2 Additional criteria for examiners.....	5
6 Classification of personnel.....	6
6.1 General	6
6.2 Categories.....	6
6.3 Employer	6
7 Eligibility for examination.....	6
7.1 General	6
7.2 Mature candidate entry.....	6
8 Qualification examinations.....	6
8.1 Conduct of examinations.....	6
8.2 Grading.....	7
8.3 Re-examination.....	7
9 Certification.....	7
9.1 Administration.....	7
9.2 Recognition documents.....	8
10 Validity and renewal of recognition.....	8
10.1 Validity of recognition.....	8
10.2 Renewal of recognition.....	8
10.3 Late renewal of recognition.....	8
10.4 Reassessment	9
11 Files.....	9
12 Transition period	9
Annex A (normative) Code of ethics.....	10
Annex B (normative) Qualifications for examiners and invigilators	11

DRAFT 2011

iTeh STANDARD PREVIEW
(standards.itih.ai)
Full standard:
<https://standards.itih.ai/catalog/standards/sist/dc52afce-356a-462f-a6a4-91a786545588/iso-18436-1-2012>

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 18436-1 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 the first edition which has been technically revised.

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 assessment bodies and the assessment process*
- *Part 2: Vibration condition monitoring and diagnostics*
- *Part 3: Requirements for training bodies and the training process*
- *Part 4: Field lubricant analysis*
- *Part 5: Lubricant laboratory technician/analyst (under preparation)*
- *Part 6: Acoustic emission*
- *Part 7: Thermography*
- *Part 8: Ultrasound (future work)*

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, oil and wear debris analysis, acoustic and ultrasonic analysis, and electric signature analysis. In many instances these technologies act as complimentary condition monitoring 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 assessment systems in the non-intrusive machine condition monitoring and diagnostic technologies that use the technology parts of ISO 18436. General requirements for assessment body personnel are contained in this part of ISO 18436. Specific requirements for the assessment of personnel in condition monitoring and diagnostics are contained in subsequent parts of ISO 18436.

In accordance with ISO/IEC 17050-1 and -2, the assessment body may be a second party qualifying body issuing a declaration of conformity, or it may be a third party certification body compliant to ISO/IEC 17024 issuing certificates of conformity. This document specifies the general provisions for certification bodies, however, where applicable, they should apply to qualifying bodies also to provide a degree of standardisation across all second party qualifying bodies. These provisions could form the basis for a voluntary validation process of qualifying bodies by an appointed national accrediting body or a certifying body accredited to approve second party bodies.

D R A F T

iTeh STANDARD

(standards.iteh.ai)

Full standard:

<https://standards.iteh.ai/catalog/standards/sist/356a-462f-a6a4-91a786545588/iso-18436-18436-1>

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

Part 1: Requirements for assessment bodies and the assessment process

1 Scope

This part of ISO 18436 defines the requirements for bodies operating assessment systems for personnel who perform machinery condition monitoring, identify machine faults, and recommend corrective action. Procedures for the assessment of condition monitoring and diagnostic personnel are specified. These requirements are in addition to those of ISO/IEC 17024 and ISO/IEC 17050-1.

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/IEC 17000, *Conformity assessment — Vocabulary and general principles*

ISO/IEC 17024, *Conformity assessment — General requirements for bodies operating certification of persons*

ISO/IEC 17050-1, *Conformity assessment — Suppliers declaration of conformity — Part 1: General requirements*

ISO/IEC 17050-2, *Conformity assessment — Suppliers declaration of conformity — Part 2: Supporting documentation*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/IEC 17000, ISO/IEC 17024, ISO/IEC 17050 and the following apply.

3.1

certificate

written attestation of third-party conformity that an individual has shown proof of fulfilment of the requirements specified in the relevant part of ISO 18436 dealing with the specific technology concerned

3.2

certification body

organization that meets the requirements of ISO/IEC 17024 for third party certification bodies and issues a certificate of conformity

3.3

examination centre

centre, authorised and monitored by a certification body, where written or practical qualification examinations are administered

**3.4
invigilator**

person who administers a written examination as part of a certification programme but does not evaluate the competency of the candidate

**3.5
technical committee**

committee organised by an assigned certification body to direct the technical aspects of certification

**3.6
significant interruption**

absence from (or a change of) work activity which prevents the holder of certification from practising the duties corresponding to the scope of the certification for

- a) a continuous period in excess of 365 days, or
- b) two or more periods for a total time exceeding two-fifths of the total period of validity of the certificate

**3.7
qualifying body**

organisation that meets the requirements of second party qualifying bodies and issues a declaration (written attestation) of conformity

4 Assessment body

4.1 Charter

The assessment process, which includes all procedures adopted to demonstrate the conformity of individuals with the requirements specified in this part of ISO 18436 (and, to subsequent parts of ISO 18436) and leads to a written attestation of their qualifications, shall be administered by an assessment body.

4.2 Requirements

An assessment body shall:

- a) conform to this part of ISO 18436 (and, to subsequent relevant parts of ISO 18436) for personnel involved in the condition monitoring and diagnostics of machines;
- b) be in accordance with ISO/IEC 17024, Clause 4;
- c) have the administrative resources needed to conduct examinations and administer examination centres;
- d) be independent of any commercial interest;
- e) use non-discriminatory policies and procedures in the administration of the certification system; and
- f) comply with all applicable national and international laws.

4.3 General provisions

Qualifications for recognition shall not be based on limiting conditions, such as undue financial commitment, training by a specific organization, or membership in any specific organization. However, specific training courses involving standard curricula are required for recognition of compliance by an assessment body, which shall have a process to ensure adherence to the curricula.

There shall be no limit to the number of persons certified in any category.

The certification or qualification body shall be responsible for granting, maintaining, renewing, extending, restricting and withdrawing certificates or recognition.

4.4 Responsibilities

An assessment body shall meet the following requirements:

- a) initiate, maintain and promote the assessment procedures to demonstrate the qualification of an individual to carry out tasks in machinery condition monitoring and diagnosis, which leads to written attestation of their qualifications;
- b) administer the procedures and operations for certification in accordance with the requirements of this part of ISO 18436, and a stringent code of ethics (see Annex A), including sanctions, that will apply to certificate holders;
- c) take the ultimate responsibility for the assessment procedures, including technical and administrative requirements;
- d) ensure the adherence to training curricula as specified in the individual technical specifications of subsequent parts of ISO 18436;
- e) approve properly staffed and equipped examination centres, which it shall monitor on a periodic basis;
- f) develop and/or approve suitable assessment examination questions;
- g) approve the eligibility of candidates for examination;
- h) authorise the time and location of the examination, the examination centre, and the invigilator or examiner for each examination;
- i) prepare and distribute examinations to the examination centre;
- j) receive and evaluate the completed examinations;
- k) notify the examinee of the results of the examination;
- l) issue the certificate or recognition of conformity to successful examinees;
- m) keep appropriate records of the operations of conformity;
- n) provide an overview of the examination results to the examinee upon written request;
- o) develop and implement renewal and recertification procedures and requirements;
- p) monitor all delegated functions.

4.5 Organizational structure of the assessment body

The assessment body shall have an organizational structure, accessible to the public that invites and permits participation by all interested persons, and meets the requirements of ISO/IEC 17024.

4.6 Examination centres

4.6.1 General

Examination centres, which can include technical organizations, vendors, companies and independent training organizations, are bodies that meet the requirements stated in 4.6.2 and have the responsibilities given in 4.6.3.