INTERNATIONAL STANDARD

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

Part 2: Vibration condition monitoring and diagnostics

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

Partie 2: Surveillance des vibrations et diagnostic d'état des machines

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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 108, *Mechanical vibration, shock and condition monitoring*, Subcommittee SC 5, *Condition monitoring and diagnostics of machine systems*.

This second edition cancels and replaces the first edition (ISO 18436-2:2003), of which it is a minor revision.

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*

— *Part 6: Acoustic emission*

— *Part 7: Thermography*

— *Part 8: Ultrasound*

The following part is planned:

— *Part 9: Condition monitoring specialists*

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Introduction

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.

Those in manufacturing industry who have diligently and consistently applied these techniques have experienced a return on investment far exceeding their expectations. However, the effectiveness of these programmes depends on the capabilities of individuals who perform the measurements and analyse the data.

A programme, specified in this part of ISO 18436, has been developed to train and assess the competence of personnel whose duties require the appropriate theoretical and practical knowledge and relevant experience in VA for machinery condition monitoring and diagnostics.

This part of ISO 18436 defines the requirements against which personnel associated with vibration measurement and analysis for machinery condition monitoring and diagnostics are to be assessed, and the methods of assessing such personnel. Applicants should be aware that employers and customers are likely to have the greatest confidence in those vibration analysts certified by accredited bodies. Alternately, applicants can choose to seek recognition from other party assessment bodies which may provide the next lower level of confidence. Lastly, applicants may rely upon their own self-assessment and declaration of competence but in doing so they should be aware that employers and customers are likely to have the least confidence in this option.

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

Part 2: Vibration condition monitoring and diagnostics

1 Scope

This part of ISO 18436 specifies requirements for the training, relevant experience, and examination of personnel performing condition monitoring and diagnostics of machines using vibration analysis (VA).

A certificate or declaration of conformity to the requirements of this part of ISO 18436 in accordance with ISO 18436-1, provides recognition and evidence that individuals are able to perform vibration measurements and analysis for machinery condition monitoring and diagnostics using a range of vibration measurement equipment.

This part of ISO 18436 specifies a four-category classification programme that is based on the technical areas delineated herein.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 1925, *Mechanical vibration — Balancing — Vocabulary*

ISO 2041, *Mechanical vibration, shock and condition monitoring — Vocabulary*

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

ISO 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*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 1925, ISO 2041, ISO 13372, , and ISO 18436-1 apply.

4 Classification of personnel

4.1 General

Depending upon their competence in VA, individuals meeting the requirements of this part of ISO 18436 shall be classified in one of four categories (4.2 to 4.5). They shall have demonstrated competence appropriate to their classification category as indicated in Annex A, in the concepts of machine condition monitoring using VA.

The classification of individuals at all categories shall be subject to the scope and any limitations of the award issued by the assessing body. Authority to work shall be limited or specified by the employer or

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