AS ISO 18436.6:2014
ISO 18436-6:2014

AS ISO 18436.6:2014

Australian STANDARD

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

Part 6: Acoustic emission

STANDARDS Australia

Accessed by MONASH UNIVERSITY LIBRARY on 12 Jun 2015 (Document currency not guaranteed when printed)

Documents
Document Sharing Hub

Full document details: AS ISO 18436.6-2014

This Australian Standard® was prepared by Committee ME-087, Machine Condition Monitoring. It was approved on behalf of the Council of Standards Australia on 27 November 2014.
This Standard was published on 18 December 2014.

The following are represented on Committee ME-087:

- Asset Institute
- Australasian Railway Association (RISSB)
- Australasian Thermographers Association
- Australian Chamber of Commerce and Industry
- Australian Industry Group
- Australian Institute for Non-Destructive Testing
- Australian Professional Thermography Association
- Bureau of Steel Manufacturers of Australia
- Department of Defence (Australian Government)
- Engineers Australia
- Institute of Electrical Inspectors
- Insurance Council of Australia
- International Council for Machinery Lubrication
- National Electrical and Communications Association
- Queensland University of Technology
- The Crane Industry Council of Australia
- WorkCover New South Wales
- WorkSafe Victoria

This Standard was issued in draft form for comment as DR AS ISO 18436.6:2014.

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.

Keeping Standards up-to-date

Australian Standards® are living documents that reflect progress in science, technology and systems. To maintain their currency, all Standards are periodically reviewed, and new editions are published. Between editions, amendments may be issued.

Standards may also be withdrawn. It is important that readers assure themselves they are using a current Standard, which should include any amendments that may have been published since the Standard was published.

Detailed information about Australian Standards, drafts, amendments and new projects can be found by visiting www.standards.org.au

Standards Australia welcomes suggestions for improvements, and encourages readers to notify us immediately of any apparent inaccuracies or ambiguities. Contact us via email at mail@standards.org.au, or write to Standards Australia, GPO Box 476, Sydney, NSW 2001.

Accessed by MONASH UNIVERSITY LIBRARY on 12 Jun 2015 (Document currency not guaranteed when printed)

Documents
Document Sharing Hub

Full document details: AS ISO 18436.6-2014

Australian Standard®

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

Part 6: Acoustic emission

First published as AS ISO 18436.6:2014.

COPYRIGHT

© Standards Australia Limited

All rights are reserved. No part of this work may be reproduced or copied in any form or by any means, electronic or mechanical, including photocopying, without the written permission of the publisher, unless otherwise permitted under the Copyright Act 1968.

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

ISBN 978 1 74342 939 6

Accessed by MONASH UNIVERSITY LIBRARY on 12 Jun 2015 (Document currency not guaranteed when printed)

Documents
Document Sharing Hub

Full document details: AS ISO 18436.6-2014

PREFACE

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

The objective of this Standard is to specify the requirements for qualification and assessment of personnel who perform machinery condition monitoring and diagnostics using acoustic emission.

This Standard is identical with, and has been reproduced from, ISO 18436-6:2014, *Condition monitoring and diagnostics of machines—Requirements for qualification and assessment of personnel*, Part 6: *Acoustic emission.*

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

(a) In the source text 'this part of ISO 18436' 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:

Reference to International Standard		*Australian Standard*	
ISO		AS/NZS ISO	
17359	Condition monitoring and diagnostics of machines—General guidelines	17359	Condition monitoring and diagnostics of machines—General guidelines

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

The term 'normative' has been used in this Standard to define the application of the annex to which it applies. A 'normative' annex is an integral part of a Standard.

Accessed by MONASH UNIVERSITY LIBRARY on 12 Jun 2015 (Document currency not guaranteed when printed)

Documents
Document Sharing Hub

Full document details: AS ISO 18436.6-2014

CONTENTS

1 Scope **1**

2 Normative references **1**

3 Terms and definitions **2**

4 Classification of personnel (acoustic emission) **2**
4.1 General 2
4.2 Category I 2
4.3 Category II 2
4.4 Category III 3

5 Eligibility **3**
5.1 General 3
5.2 Education 4
5.3 Training 4
5.4 Experience 4

6 Examination **5**
6.1 Examination content 5
6.2 Conduct of examinations 6

Annex A (normative) **Training course requirements and minimum training hours for acoustic emission condition monitoring and diagnostics of machines** **7**

Annex B (normative) **Standards from which examination questions may be developed** **10**

Bibliography **11**

Accessed by MONASH UNIVERSITY LIBRARY on 12 Jun 2015 (Document currency not guaranteed when printed)

Documents
Document Sharing Hub

Full document details: AS ISO 18436.6-2014

INTRODUCTION

The use of acoustic emission technology in condition monitoring is one of the key activities in predictive maintenance programmes for most industries. Other non-intrusive technologies including infrared thermography, vibration analysis, lubricant analysis, wear debris analysis and motor current analysis are used as complementary condition analysis tools. Those in the manufacturing industry who have diligently and consistently applied these technologies 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, administered by an assessment body, has been developed to train and assess the competence of personnel whose duties require the appropriate theoretical and practical knowledge of machinery condition monitoring and diagnostics.

This part of ISO 18436 defines the requirements against which personnel in the non-intrusive machinery condition monitoring and diagnostics technologies associated with acoustic emission for machinery condition monitoring are to be qualified and the methods of assessing such personnel.

Accessed by MONASH UNIVERSITY LIBRARY on 12 Jun 2015 (Document currency not guaranteed when printed)

Documents
Document Sharing Hub

Full document details: AS ISO 18436.6-2014

AUSTRALIAN STANDARD

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

Part 6:
Acoustic emission

1 Scope

This part of ISO 18436 specifies the requirements for qualification and assessment of personnel who perform machinery condition monitoring and diagnostics using acoustic emission.

A certificate or declaration of conformity to this part of ISO 18436 will provide recognition of the qualifications and competence of individuals to perform acoustic emission measurements and analysis for machinery condition monitoring using acoustic emission equipment. This procedure may not apply to specialized equipment or other specific situations.

This part of ISO 18436 specifies a three-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 13372, *Condition monitoring and diagnostics of machines — Vocabulary*

ISO 13374 (all parts), *Condition monitoring and diagnostics of machines — Data processing, communication and presentation*

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

ISO 17359, *Condition monitoring and diagnostics of machines — General guidelines*

ISO 18436-1:2012, *Condition monitoring and diagnostics of machines — Requirements for qualification and assessment of personnel — Part 1: Requirements for assessment bodies and the assessment process*

ISO 18436-3, *Condition monitoring and diagnostics of machines — Requirements for qualification and assessment of personnel — Part 3: Requirements for training bodies and the training process*

ISO 22096:2007, *Condition monitoring and diagnostics of machines — Acoustic emission*

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

ASTM E2374-10, *Standard Guide for Acoustic Emission System Performance Verification*

ASTM E1106-12, *Standard Test Method for Primary Calibration of Acoustic Emission Sensors*

ASTM E650-M12, *Standard Guide for Mounting Piezoelectric Acoustic Emission Sensors*

EN 13477-1:2001, *Non-destructive testing — Acoustic emission — Equipment characterization — Part 1: Equipment description*

Accessed by MONASH UNIVERSITY LIBRARY on 12 Jun 2015 (Document currency not guaranteed when printed)

Documents
Document Sharing Hub

© Standards Australia

Full document details: AS ISO 18436.6-2014