

BS ISO 18436-5:2012



BSI Standards Publication

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

Part 5: Lubricant laboratory technician/
analyst

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National foreword

This British Standard is the UK implementation of ISO 18436-5:2012.

The UK participation in its preparation was entrusted to Technical Committee GME/21/7, Mechanical vibration, shock and condition monitoring - Condition monitoring.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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

**Part 5:
Lubricant laboratory technician/analyst**

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

Partie 5: Technicien/analyste de laboratoire d'analyse de lubrifiants





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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 18436-5 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 assessment parties and the assessment process*
- *Part 2: Vibration condition monitoring*
- *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*

The following part is under preparation:

- *Part 8: Ultrasound*

The following part is planned:

- *Part 9: Condition monitoring specialists*

Introduction

Using lubricant analysis to monitor condition and diagnose faults in machinery is a key activity in predictive maintenance programmes for most industries. Other non-intrusive technologies including thermography, vibration analysis, acoustic emission, and motor current analysis are used as complementary condition analysis tools. Those in the 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, 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 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 laboratory lubricant analysis for machinery condition monitoring are to be qualified and the methods of assessing such personnel.

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

Part 5: Lubricant laboratory technician/analyst

1 Scope

This part of ISO 18436 specifies the requirements for qualification and assessment of personnel who perform machinery condition monitoring and diagnostics using laboratory-based lubricant analysis.

A certificate or declaration of conformity to this part of ISO 18436 provides recognition of the qualifications and competence of individuals to perform laboratory-based lubricant analysis for machinery condition monitoring. It is possible that this procedure is not applicable to specialized equipment or other specific situations.

This part of ISO 18436 covers 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.

Table A.3 provides comments on the degree of equivalence between the ISO and ASTM standards on the same subjects.

ISO 1523, *Determination of flash point — Closed cup equilibrium method*

NOTE Technically equivalent to ASTM D3828.

ISO 2592, *Determination of flash and fire points — Cleveland open cup method*

NOTE Technically equivalent to ASTM D92.

ISO 2719, *Determination of flash point — Pensky–Martens closed cup method*

NOTE Technically equivalent to ASTM D93.

ISO 2909, *Petroleum products — Calculation of viscosity index from kinematic viscosity*

NOTE Technically equivalent to ASTM D2270.

ISO 3104, *Petroleum products — Transparent and opaque liquids — Determination of kinematic viscosity and calculation of dynamic viscosity*

NOTE Technically equivalent to ASTM D445.

ISO 3679, *Determination of flash point — Rapid equilibrium closed cup method*

NOTE Technically equivalent to ASTM D3828.

ISO 3733, *Petroleum products and bituminous materials — Determination of water — Distillation method*

NOTE Technically equivalent to ASTM D95.

ISO 3771, *Petroleum products — Determination of base number — Perchloric acid potentiometric titration method*