

RG 6

Accreditation for In-Service Inspection of Lifting Equipment

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About the United Kingdom Accreditation Service

The United Kingdom Accreditation Service (UKAS) is recognised by the UK Government as the UK national accreditation body responsible for assessing and accrediting the competence of organisations in the fields of inspection, measurement, testing and the certification of systems, products and personnel.

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1 Introduction

- 1.1 This publication (RG 6) should be read in conjunction with the European Standard EN 45004, *General criteria for the operation of various types of inspection bodies*, EA (European co-operation for Accreditation) publication EA-5/01, *Accreditation of Inspection Bodies, Guidelines on the application of EN 45004* and UKAS publications E2, *UKAS Regulations to be met by inspection bodies* and RG 0, *Accreditation for inspection*.
- 1.2 RG 6 has been produced by UKAS and the UKAS Technical Advisory Committee for Engineering Inspection.
- 1.3 RG 6 shall be used for accreditation of Inspection Bodies performing in-service inspection of lifting equipment. It is also intended to assist employers to select 'competent persons' for the purposes of The Lifting Operations and Lifting Equipment Regulations 1998 (LOLER).

2 Inspection Services covered by RG6 (EN 45004 Clause 3.3)

- 2.1 RG 6 covers the in-service inspection of lifting equipment which includes that undertaken after installation and prior to being put into service. It does not include the inspection of lifting equipment during manufacture.
- 2.2 In-service inspection of lifting equipment performed both onshore and offshore may be accredited using this RG document.
- 2.3 The scope of activity of in service inspection for which accreditation is granted may be described in the accreditation schedule as Powered Lifting Appliances, Manual Lifting Appliances or Lifting Accessories as defined in section 6.7 or by reference to the specific type of lifting equipment (eg, lifts or tower cranes).
- 2.4 Inspection bodies accredited under RG 6 provide one or more of the following services:
 - (a) development of schemes of in-service inspection.
 - (b) in-service inspection of equipment to detect actual and potential defects and judgements on the significance of such defects for continued safe use;
 - (c) reporting the result of the in-service inspection, specifying any remedial action and/or recommendations;
 - (d) inspection during or following remedial action;
 - (e) commenting on the suitability of, and any changes necessary to, inspection methods/ schemes of in-service inspection.

3 Independence, Impartiality and Integrity (EN 45004, Clause 4)

- 3.1 Inspection bodies operating as Type A, B or C bodies as defined in EN 45004 may be accredited for in- service inspection of lifting equipment.

4 Organisation and Management — Supervision (EN 45004, Clause 6.4)

- 4.1 The requirements for minimum levels of supervision are shown in Table 1.

5 Internal Audit (EN 45004, Clause 7.7 and 7.8)

- 5.1 No further guidance is required.

6 Personnel (EN 45004, Clause 8)

- 6.1 The inspection body shall ensure that the persons used to resolve technical issues and to perform inspections have the category of qualifications, experience and training specified in Table 1 and defined in section 6.6.
- 6.2 The inspection body shall demonstrate that persons engaged in non-destructive testing of lifting equipment have been trained and examined in accordance with a documented programme approved by a person holding at least Level 3 certification as defined in BS EN 473 *General principles for qualification and certification of NDT personnel* or equivalent. Alternatively they should hold personnel certification to the appropriate level for each non-destructive testing method used as defined in BS EN 473 or hold personnel certification from a nationally recognised scheme such as PCN, ASNT or MIL-standard 4.10.
- 6.3 The inspection body shall only use persons to carry out inspections of lifting equipment who have the qualifications, training, experience and knowledge of the requirements of the inspections to be carried out. The inspection body shall maintain records of such qualifications, training and experience, and records to show how, and when, each person was authorised to perform specific in-service inspection activities. These records shall, as a minimum, indicate the Class of lifting equipment as defined in Table 1, considered to be within the competence of that person.
- 6.4 The inspection body shall only authorise persons to carry out in-service inspections of lifting equipment if the inspections are within the designated competence of that person and if that person holds the Category of qualification shown in Table 1 and defined in section 6.6.
- 6.5 Where the persons of the Inspection Body carry out in-house calibrations of inspection, measuring and test equipment, the records of their training, qualifications and experience shall be maintained together with details of who is authorised to perform specific calibrations.

6.6 Qualification categories

- Category 1** Chartered Engineer as defined by the Engineering Council or equivalent (e.g. appropriate degree with relevant experience, NVQ Level V Engineering Surveying) including at least 3 years experience within an engineering discipline related to lifting equipment
- Category 2** Incorporated Engineer as defined by Engineering Council or equivalent (e.g. appropriate HNC with relevant experience, NVQ Level IV Surveying Engineering) including at least 5 years experience within a relevant engineering discipline of which at least one year** shall have been spent working within an engineering discipline related to lifting equipment.
- Category 3** Person employed prior to the date of application for accreditation in the in-service inspection of lifting equipment with less than Incorporated Engineer qualification but meeting the criteria of Category 4 below.
- Category 4(a)** Engineering Technician as defined by Engineering Council or equivalent (e.g. appropriate ONC with relevant experience) having a minimum of 5 years experience within a relevant discipline of which at least one year shall have been spent working within an engineering discipline related to lifting equipment or,
- Category 4(b)** person trained* in a relevant engineering discipline with a recognised and documented engineering apprenticeship with a minimum of 5 years experience within a relevant discipline of which at least one year shall have been spent working within an engineering discipline related to lifting equipment.
- Category 5** Person employed prior to the date of application for accreditation in the inspection of lifting equipment with less than tradesman's apprenticeship but with a minimum of 5 years** spent working with or within the industry related to lifting equipment and has general knowledge of lifting equipment and its operating environment. Personnel shall be given training followed by documented tests in in-service inspection of lifting equipment. The minimum age for this Category is 21 years.
- Category 6** Persons with a minimum of 5 years** spent working with or within the industry related to lifting equipment and has general knowledge of lifting equipment and its operating environment. Personnel shall be given training followed by documented tests in in-service inspection of lifting equipment. The minimum age for this Category is 21 years.

* The inspection body shall assess the competence of persons in Categories 4(b), 5 and 6 and this assessment should cover relevant knowledge of the law, codes of practice and inspection techniques. UKAS should be given the opportunity to review the means of such an assessment.

** For some routine, well-monitored activities this period may not be necessary.

6.7 Classification of Lifting Equipment

Class A Powered Lifting Appliances

Powered lifting appliances cover a wide range of appliances used for lifting and mean any stationary or mobile appliance including attachments for anchoring, fixing or supporting that appliance, which is operated by means of motive power. E.g.. electric, hydraulic or pneumatic or other powered means.

Class B Manual Lifting Appliances

Manual lifting appliances cover a wide range of appliances used for lifting and mean any stationary or mobile appliance including attachments for anchoring, fixing or supporting that appliance which is operated solely by means of the operator without any powered assistance.

Class C Lifting Accessory

Lifting Accessory covers the whole range of equipment used for attaching loads to Lifting Appliances.

Table 1

Requirements for qualifications and minimum supervision levels of inspectors performing inspection of lifting equipment

Class of lifting equipment	Qualification category	Min level of supervision of technical activities	Constraints
Class A Powered lifting appliances	1	Occasional	Inspection or associated activities in technology outside the field of competence is prohibited except by formally documented consultation
	2 & 3	Occasional	The above constraint plus prohibition on any non-routine repairs, modifications, changes to operating parameters, changes to inspection methods, calculations not defined in recognised standards except with specific approval by an appropriately qualified person.
	4	Occasional	Permitted only for testing and examination to identify defects, within the limits specified by Category 1 or 2 person. Any decisions involving limits of acceptability, repairs or modifications shall be approved by authorised persons qualified to Category 1 or 2.
	5	Frequent	Same as for Category 4 above.

— continued

Table 1 — *continued*

Class of lifting equipment	Qualification category	Min level of supervision of technical activities	Constraints
Class B Manual lifting appliances	1	Occasional	Inspection or associated activities in technology outside the field of competence is prohibited except by formally documented consultation.
	2 & 3	Occasional	The above constraint plus prohibition on any non routine repairs, modifications, changes to operating parameters, changes to inspection methods, calculations not defined in recognised standards except with specific approval by an appropriately qualified person.
	4	Ocasional	Permitted only for testing and examination to identify defects, within the limits specified by Category 1 or 2 person. Any decisions involving limits of acceptability , repairs or modifications shall be approved by authorised persons qualified to Category 1 or 2.
	5	Frequent	Same as for Category 4 above
	6	Constant	Permitted only for testing and examination to identify defects, within the limits specified by Category 1 or 2 person. Any decisions involving limits of acceptability , repairs or modifications shall be approved by authorised persons qualified to Category 1 or 2.
Class C Lifting Accessories	1	Occasional	Inspection or associated activities in technology outside the field of competence is prohibited except by formally documented consultation.
	2 & 3	Occasional	The above constraint plus prohibition on any non-routine repairs, modifications, changes to operating parameters, changes to inspection methods, calculations not defined in recognised standards except with specific approval by an appropriately qualified person
	4 & 5	Occasional	Same as for Category 2 & 3 above.
	6	Frequent	Same as for Category 2 & 3 above.

6.8 Levels of supervision and requirements for technical support

6.8.1 Occasional

Formal, direct contact to review work with Supervisor at least annually. More frequent direct contact with Supervisor may be necessary. Technical support from persons qualified to Category 1 or 2 to be readily available. For example, an Inspector working from home who has little direct contact with his Head Office.

6.8.2 Frequent

Direct contact with Supervisor at least weekly. Technical support from persons qualified to Category 1, 2 or 3. For example, an Inspector whose work is based from a depot or office where the Supervisor is available.

6.8.3 Constant

Direct daily contact with Supervisor. Technical support from persons qualified to Category 1,2,3 or 4 to be readily available. For example an inspector working within a factory environment under direct control of the Supervisor.

7 Training (EN 45004, Clause 8.2)

7.1 The training provided by the Inspection Body shall provide a working knowledge of the plant, equipment and systems including design construction, operation, maintenance, significance of defects, typical problem areas and associated method of rectification.

7.2 The training shall include the safe conduct of the inspectors' duties, in particular safe practices applicable to lifting equipment, risk assessment, knowledge of applicable statutory requirements, codes of practice and standards.

8 Facilities & Equipment (EN 45004, Clause 9.1)

8.1 Testing facilities owned or used by the Inspection Body for testing (functional or other tests) of lifting equipment shall comply with the relevant requirements of EN 45004, RG 0 and this publication.

9 Inspection Methods and Procedures (EN 45004, Clause 10.1, 10.2,10.3,10.4, 10.5)

9.1 The procedures and instructions used to develop schemes of in-service inspection and performance of in- service inspection of lifting equipment shall detail how the Inspection Body interprets and applies the appropriate regulations, codes of practice, standards, specifications, guidance documents and customer requirements.

- 9.2 Where risk assessment techniques are used to establish the nature and frequency of inspections, the inspection body shall document the techniques used in procedures including a demonstrable justification for using the technique.
- 9.3 The inspection body shall have instructions from its customer clearly specifying the precise scope of work it contracts to undertake including any specific conditions. For example, if the Inspection body undertakes the inspection of repairs or witnessing of proof load testing, this should be clearly stated in the instructions agreed with the customer.
- 9.4 If the inspection body uses information supplied by any other party as part of in-service inspection of lifting equipment then it shall be able to demonstrate the measures taken to verify the integrity of such information.
- 9.5 Non destructive testing methods used by the inspection body shall comply with requirements of EA-4/08 (EAL-G 15).
- 9.6 Reporting requirements including any statutory requirements for reporting shall be detailed in procedures.
- 9.7 Codes, Standards, Specifications and other technical literature applicable to the design, construction, operation, inspection, test and repair of lifting equipment and their components within the accredited scope shall be maintained up to date and be readily available to the persons of the Inspection Body.

10 Sub-contracting (EN 45004, Clause 14.4)

- 10.1 Where the inspection body sub-contracts certain specialised activities there must be identifiable member(s) of the management personnel sufficiently knowledgeable in those technical activities being sub-contracted, to be able to:
 - (a) define the problem adequately to enable the sub-contractor to offer appropriate services, personnel and equipment;
 - (b) choose an appropriate sub contractor and to assess its technical competence (eg. methods, personnel and facilities);
 - (c) interpret the results supplied by the sub contractor and relate those results properly to the service originally requested or problem originally defined.

References

EN 45004, *General Criteria for the Operation of Various Types of Bodies Performing Inspections*

E2, *UKAS regulations to be met by Inspection Bodies*

EA-5/01 (EAL-G24), *Accreditation of Inspection Bodies – guidelines on the application of EN 45004*

RG0, *Accreditation for Inspection*

Select list of statutory and other related documents:

Health and Safety at Work etc Act 1974.

The Provision and Use of Work Equipment Regulations 1998 (PUWER 98)

Safe use of work equipment, The Provision & Use of Work Equipment Regulations 1998 (PUWER 98), Approved Code of Practice and Guidance-L22

Safe use of lifting equipment, Lifting Operations and Lifting Equipment Regulations 1998 (LOLER), Approved Code of Practice and Guidance-L113

BS EN 473, *General principles for qualification and certification of NDT personnel*

EA-4/08 (EAL-G15) *Accreditation for Non- Destructive Testing Laboratories*

IB 3, *UKAS Directory of Accredited Inspection Bodies*

Details of organisations holding UKAS accreditation for non-destructive testing, performed in laboratories and on-site are in the section headed 'Metal Products' in the *UKAS Directory of Accredited laboratories, D3*, available from UKAS.