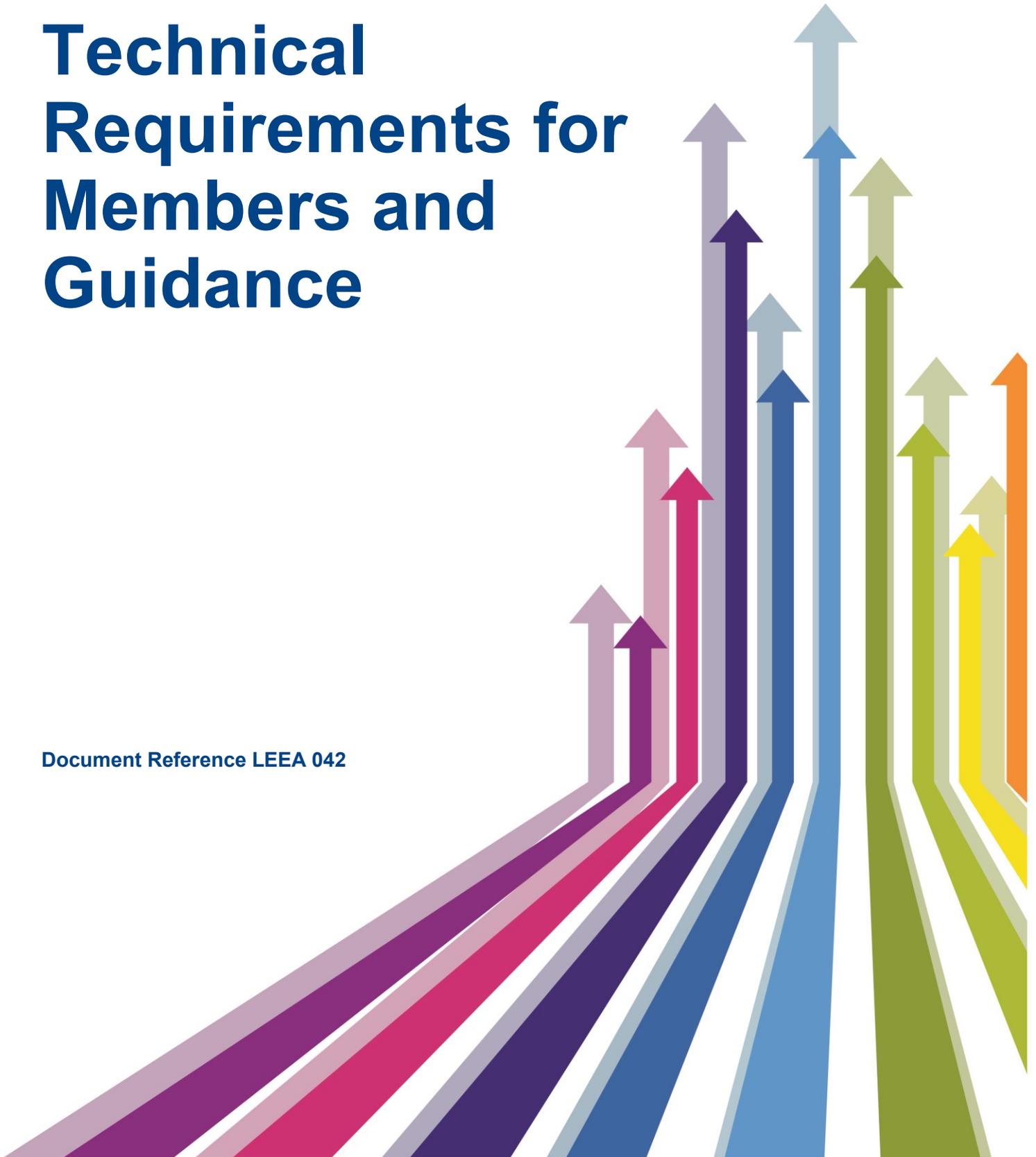


Technical Requirements for Members and Guidance

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**TECHNICAL AUDIT REPORT
Combined with
TECHNICAL REQUIREMENTS FOR MEMBERS AND GUIDANCE**

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TECHNICAL AUDIT REPORT COMBINED WITH TECHNICAL REQUIREMENTS FOR MEMBERS AND GUIDANCE

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INTRODUCTION

This document lays down the Technical Requirements for Members of the Lifting Equipment Engineers Association. Compliance with the Technical Requirements is a condition of membership. The requirements refer to the current UK legislation concerning the manufacture, supply and use of lifting equipment and related personal protective equipment and draws on this for many of the requirements.

The relevant legislation is:

The Health and Safety at Work Etc. Act 1974, as amended 1988 (HSAWA).

The Supply of Machinery (Safety) Regulations 2008 which implements the EC Machinery Directive (2006/42/EC)

The Management of Health and Safety at Work Regulations 1999

Personal Protective Equipment Regulations 2002

Provision and Use of Work Equipment Regulations 1998

Lifting Operations and Lifting Equipment Regulations 1998

Working at Height Regulations 2005 (amended 2007)

This legislation may be accessed via the internet at www.legislation.gov.uk/uk/sj, however this does not include the ACoPs and Guidance. The legislation is published in book form together with the ACoPs and Guidance and can be obtained from HSE Books, PO Box 1999, Sudbury, Suffolk, CO10 6FS.

The terminology used in this document has the same meaning as in the relevant legislation, however, references to the generic term 'lifting equipment' include certain items of personal protective equipment where appropriate. In the context of this document, personal protective equipment is limited to those items which are intended to give protection from falls from a height as these tend to have much in common with lifting equipment. It should also be noted that, if personal protective equipment of this type is also used for recovery purposes which involve lifting it is then also caught by the requirements of LOLER.

This document will also be used as a best practise example for member companies that are based outside of the UK. The member will be expected to follow any national or local legislation and where none exists then the requirements of this document must be followed.

TECHNICAL REQUIREMENTS

Section 1 – Organisation, Management and Facilities

1.1 Structure of Organisation

The member shall maintain a document showing the responsibilities and reporting structure of the organisation. In particular this must identify the Technical Manager and Deputy Technical Manager, however they are named, and to whom the examination personnel must report.

1.2 Personnel Training and Qualification

Personnel engaged in the thorough examination and associated testing, including NDT or other specialist tests, and personnel engaged in the design appraisal and/or theoretical checking of lifting equipment shall have received training and be appropriately qualified for the items they deal with. The member must maintain records for such personnel, identifying the training they have received and the duties for which they are qualified.

The member shall employ sufficient qualified staff for their normal scope of work. Where a member does not have qualified persons on their own staff to undertake specialist design, theoretical checking or verification activities beyond their normal scope of work, arrangements must be made with a suitably qualified organisation to undertake this work on their behalf. The competency of subcontractors providing such services must be established and documented adequately.

Guidance:

Modern industrial legislation places emphasis on training and calls for ongoing training of all personnel. To demonstrate this member's therefore need to maintain training records for their employees. Similarly, the law imposes restrictions on persons only to perform operations and use equipment for which they have received training and instruction and then only to use such equipment in the manner and for the purpose in which they have been trained. Therefore the training records need to show the link between the training and the duties performed.

LOLER requires that all lifting equipment is thoroughly examined by a 'competent person'. Paragraph 296 of the ACoP and Guidance to these regulations requires that person to have:

'such practical and theoretical knowledge and experience of the lifting equipment to be thoroughly examined as will enable them to detect defects or weaknesses and to assess their importance in relation to the safety and continued use of the lifting equipment'.

Although LOLER only applies to in-service equipment, the same requirements apply when newly manufactured equipment is to be thoroughly examined.

In the case of thorough examination, examples of acceptable ways of demonstrating compliance with this requirement are:

- a) *Persons conducting thorough examinations hold the LEEA Diploma for the appropriate product group*
- b) *The persons conducting the thorough examination of equipment within the registration schedule have received documented training in the examination of the specific item and are responsible to a person who holds appropriate LEEA Diploma for the appropriate product group.*

In the case of design appraisal/theoretical checking, examples of acceptable ways of demonstrating compliance with this requirement are:

- a) *Persons designing and/or theoretically checking lifting structures hold a nationally recognised qualification in the appropriate subject area.*
- b) *Persons theoretically checking lifting equipment and structures hold the appropriate LEEA Diploma qualification or equivalent.*

- c) *Persons theoretically checking lifting accessories and manual machines (excluding lifting beams and frames) hold the appropriate LEEA diploma for the equipment being examined (LEG / LMM).*
- d) *Persons theoretically checking lifting structures (including lifting beams and frames) hold the appropriate LEEA diploma for the equipment being examined (RCS).*
- e) *The persons engaged in the design and/or theoretical checking of equipment within the registration schedule have received documented training for such work on the specific item(s).*
- f) *Creditable sub-contract arrangements are made with an organisation or individual who meets any of the above requirements.*

In the case of NDT and other specialist tests, examples of acceptable ways of demonstrating compliance with this requirement are:

- a) *Persons conducting NDT or other specialist tests hold a nationally recognised qualification in the appropriate test method e.g. ASNT or PCN level 2 or an equivalent qualification.*
- b) *Persons conducting NDT or other specialist tests have served a recognised apprenticeship, or equivalent, in the appropriate subject area.*
- c) *The persons conducting NDT or other specialist tests have received documented training in the appropriate function(s).*
- d) *In the case of limited testing using proprietary items, persons conducting these functions have received documented training from the manufacturer, or other competent body.*
- e) *Other personnel conducting such tests are working under the supervision of someone who meets the above requirements.*
- f) *Creditable sub-contract arrangements are made with an organisation or individual who meets any of the above requirements*

Whilst a member should employ sufficient qualified people to meet their day to day needs, it will sometimes be the case that an item will be presented to them for thorough examination and test which is beyond their capacity or normal scope of work. Steps therefore need to be taken to ensure that such work is contracted out to a person or organisation that is qualified and competent to do the work.

1.3 Independence of Examination Personnel

Personnel involved in the examination of lifting equipment shall be free from any financial or commercial pressures which might influence the result of any examination they conduct

Guidance:

Paragraph 297 of the ACoP and Guidance to LOLER calls for the person making examinations to have:

‘Genuine authority and independence to ensure examinations are properly carried out and that necessary recommendations arising from them are made without fear or favour’.

1.4 Technical Support

The member shall have a procedure in place for any personnel involved in the examination of lifting equipment to follow if they require technical support or expertise outside of their own competence.

Guidance:

Persons making examinations must be able to obtain advice and support for matters beyond their expertise from suitably qualified person’s e.g. a structural engineer both within and external to the organisation that may be required in reaching their conclusions as to the safety and suitability of the item under examination.

1.5 Reference Material

The member shall have available, or have ready access to, such reference material as is necessary for their scope of work.

Guidance:

Modern legislation places emphasis on manufacturers' information and instructions and for many products there are national, European and international standards. Members will need to refer to these documents from time to time. Members must hold, or have ready access to, those covering their normal scope of work. They must also hold copies of the relevant legislation together with their accompanying ACoPs and Guidance.

1.6 Availability of Test and/or Verification Equipment

The member shall have available, or have access to, such test equipment as is appropriate for their scope of work and as may be required by the standard being worked to. A register of test equipment shall be maintained which identifies the time intervals between calibration checks, related to the records of such checks and showing the calibration range of accuracy.

Guidance:

In relation to proof load/force testing, standards require a minimum accuracy of $\pm 2\%$.

In addition to stating the calibrated accuracy, the calibration document will impose limits on the range of use, which the operator, anyone witnessing a test or auditing the facility, will need to be aware of. Therefore, a copy of the certificate must be available and the range of accuracy must be recorded in the test equipment register. Where reasonably practicable both the range and date of when the next calibration is due shall be marked or posted on the machine.

1.7 Liability Insurance

The member shall have adequate liability insurance in respect of any work undertaken, or services provided, by them.

Guidance:

Employers' liability insurance should cover all of the risks, e.g. working on site, working at a height etc. Where a member thoroughly examines and tests items, or where they offer training and advice they should also have professional indemnity insurance. Where a member manufactures lifting equipment he shall have the necessary product liability insurance. If required the member shall also have public liability insurance in place.

Section 2 – Documentation and Records

Guidance:

Where appropriate and permitted by legislation, records may be authenticated and stored electronically.

2.1 Report of Thorough Examination

A record of thorough examination, for retention in the job file, shall be made contemporary with the examination and shall be available to the person authenticating the report of thorough examination issued with the item. The information given in a report of thorough examination shall at least be that required by Schedule 1 of regulation 10 of LOLER.

Guidance:

The contemporary draft of the report made by the examiner during the examination must be retained for reference purposes and should be authenticated and dated by him. It should be available to the person signing the Report of Thorough Examination for reference and to enable them to ensure the correct information has been given.

Schedule 1 of LOLER gives the prescribed information to be recorded following a thorough examination of in-service equipment, however, the format for the report of thorough examination is not prescribed and therefore a member can lay this out in any way he chooses, as long as it is clear to the reader. Additional information can be given if required, but no information can be omitted.

2.2 EC Declaration of Conformity

The information given in an EC Declaration of Conformity shall at least be that required by Annex

II (Part 2 of Schedule 2), section A, part 1, where the standard being worked to calls for other information to be issued, this shall be done either as an addition to the EC Declaration or on a separate document referenced to the item by the identification marks.

Guidance:

The Machinery Directive requires the responsible person to issue an EC Declaration of Conformity. Under this legislation the responsible person is defined as:

- (a) The manufacture;
- (b) The manufacturer's authorised representative established in the Community; or
- (c) Where the manufacturer is not established in the Community and either –
 - (i) He has not appointed an authorised representative in the Community; or
 - (ii) His authorised representative established in the Community is not the supplier of that machinery,

The person who first supplies the relevant machinery in the Community; and, in this definition the manufacturer includes any person who assembles machinery or parts thereof to form relevant machinery.

Product standards usually require other information to be issued and often this is the record of a test or similar. This information may be combined with the EC Declaration of Conformity.

2.3 Manufacturers Certificate(s)

2.3.1 Replication of Reports, Certificates and Declarations

The member shall not adopt the practice of copying information from reports, certificates and declarations issued by others on to their own documentation so as to imply that they have done the work themselves.

Guidance:

In the past, lifting equipment legislation was worded in such a way that the practice of replicating certificates and reports onto ones' own documentation became a common practice and there was tacit acceptance of this by the authorities. LOLER is worded in a different way and the view of the enforcing authorities is also somewhat different. This practice is now considered illegal, and prosecutions have taken place for issuing fraudulent documents and making false statements. Members must therefore ensure that this practice is no longer followed. (Back to back certification)

2.4 Job/Technical File

The job/technical file must comprise such information as enables necessary traceability of the materials, components or spares used. For items they have manufactured, the member shall keep such records as will enable them to compile a technical file, as required by Part 7, Annex VII of the SOMSR, including a copy of the EC Declaration of Conformity they have issued, for a period of at least ten (10) years after the last item has been issued. Records of other examinations shall be kept for a period of at least two (2) years.

Where the Report of Thorough Examination is reproduced from the examiners record, the original (contemporary) record, authenticated and dated by the examiner, shall also be retained for reference purposes for a similar period.

2.5 Reporting Defects

Where a thorough examination reveals defects, a system shall be in place to ensure the user is notified promptly, so as to prevent further use, and a record of this is kept with the job records. In the case of reports of thorough examination which record defects which are reportable to the enforcing authorities, a copy of the report shall be sent to them as quickly as possible and a record of this is kept with the job records.

Guidance:

Regulation 10 of LOLER places legal obligations on the competent person when the examination of in-service equipment reveals defects. A report has to be made to the 'employer' forthwith and, where the defect presents an immediate or imminent risk of serious personal injury, a copy of the report must be sent to the enforcing authorities as soon as possible. The Technical Requirements therefore require a member to maintain a record of the report indicating the actions they have taken.

2.6 Instructions for Use and Maintenance

The member shall keep such records as will enable them to circulate any revisions that may become necessary to the information and instructions for use and maintenance previously issued by them.

Guidance:

Both the HSAWA and SOMSR require information on the safe use and maintenance to be issued to the user. Section 6 of HSAWA also requires that, where that information is amended, all persons who had been provided with the earlier information are issued with the revised information.

Section 3 – Factored Goods

3.1 Compliance with Legal Requirements

Where equipment is bought in (entire) for resale, the member shall ensure such equipment is in compliance with the relevant European Directive(s) as well as the general requirements of Section 6 of the Health and Safety at Work Act 1974.

Prior to issue of the equipment, the EC Declaration of Conformity (or other acceptable assurances) and instructions for use and maintenance must have been received from the supplier.

Guidance:

It is a requirement of Regulation 10 of PUWER 1998 that the person (employer) placing equipment into the work place, for others to use in the course of their duties, ensures that it complies with the relevant European Directives.

In order that their customers can be passed the Declaration, or given the assurances they need, it is essential that members obtain the correct documentation from their suppliers.

3.2 Own Branding

Where factored items are own branded, the member shall be able to compile or have agreed access to the technical file and meet all of the requirements of the legislation as if they were the manufacturer.

Guidance:

When own branding finished goods, the member takes the full legal responsibility for the compliance of the product with the relevant Directive(s) and other legal requirements. The advice of the DTI is that, in the case of own branding, the person controlling the technical file may issue the EC Declaration of Conformity. Members must therefore be able to assemble, or have agreed access to, the technical file and satisfy themselves that the item complies.

Section 4 – Verification of Lifting Equipment

4.1 Method of Verification

The method of verification shall be as laid down in the appropriate product standard or specification or, where no standard or specification exists, as given in guidance issued by the Association and in accordance with current best practice.

In the case of items manufactured by others, which have been submitted for test and report prior to issue of the EC Declaration of Conformity by the responsible person, the method of test to be employed shall be agreed with the responsible person (the manufacturer or his authorised representative)

Where there is any doubt concerning the original design etc., prior to the application of any tests that may be deemed necessary; the design capability of all components shall be checked by calculation or reference to standards, specifications or suitable tables.

Guidance:

Although LOLER does not refer to 'test or testing', paragraph 301 of the ACoP to LOLER makes it clear that the term 'thorough examination' includes any tests the competent person(s) making such an examination may deem are necessary in order to reach a conclusion as to the condition of the item under examination.

This is therefore much broader than required by earlier legislation and includes such tests as functional tests, light load tests, electrical tests, NDT etc. as well as traditional proof load tests.

In the case of newly manufactured items, SOMSR implements the European Machinery Directive. This requires certain dynamic tests to be made. Many British and European product standards used in the course of manufacture or commissioning also require the application of test loads/forces or for other tests to be made.

Section 6 of HSAWA places duties on designers, manufacturers, importers, installers and/or suppliers:

'to ensure, so far as is reasonably practicable, that the item is so designed and constructed that it will be safe and without risks to health at all times when it is being set, used, cleaned or maintained'

'to carry out or arrange for the carrying out of such testing and examination as may be necessary for the performance duty'

Section 5 – Test and Examination Equipment

5.1 Tension and Compression Testing Machines and Load/Force Measuring Equipment

Tension and compression testing machines and load/force measuring equipment shall be calibrated and verified by a competent person or authority in accordance with BS EN ISO 7500-1 at intervals not exceeding 12 months, or following any repair, modification or incident which might affect the calibration. The accuracy of the applied load/force shall be within that required by the standard or specification being worked to and in all cases shall be within $\pm 2\%$ of the nominal load/force.

Guidance:

The Technical Requirements call for test machines and load/force measuring equipment to be verified and calibrated in accordance with BS EN ISO 7500-1. This standard requires certain information to be given on the report of verification, however, the discrete values of relative errors of accuracy, repeatability, reversibility zero and resolution need only be given if requested. Members are strongly advised to request this additional information and ensure it is given in the report.

The maximum and minimum load that can be applied by the machine, or for which a load/force measuring device can be used, within its range of accuracy should be marked on the machine or otherwise known to the operator. The use of calibration charts as a means of adjusting for errors is not acceptable.

The speed of operation of testing machines and the means of control must be such that the desired load/force can be applied and sustained within the verified accuracy and in such a way as to reduce to a minimum any risk of overloading the item under test.

Test facilities must be large enough to apply the load/force to the largest item handled by the member in a single application

For safety, the facility must be such that, in the event of a failure of the item under test or its fixing or supports, the operator and all other personnel are safe from any moving parts of the machine and, in so far as is reasonably practicable, from any debris that might be ejected.

Tension and compression testing machines (for lifting gear and jacks)

The Technical Requirements call for tension and compression testing machines to have an accuracy equal to, or better than, that required by the standard being worked to, but in no case less than $\pm 2\%$. Where the load is read from dials, the calibration and distance between the graduations must be such that they can be read by the operator to the required degree of accuracy. In the case of digital scales the resolution is taken to be one increment of the numerical indicator, provided the indication does not fluctuate by more than one increment.

Note: *some displays are proportional to the load and that some digital displays flicker or hunt up and down. The resolution is therefore the range of flicker. For example if a 10 tonne load cell is calibrated to an accuracy of $\pm 0.5\%$ at full scale, then at half scale the error will be twice this. Therefore at 5t it will be $1\% = 50\text{kg}$ or $\pm 50\text{kg}$. However, if the load cell has a display with 2 decimal places, then it can be read to 10kg. If it flickers up 1 and down 1, then this resolution will be 30kg. Therefore if during a test the examiner loads a 10 t load cell calibrated to an accuracy of full scale up such that the indicator shows a load of 4980kg, he may think that this is ok as 20kg is negligible, however, adding this to the error due to sensory accuracy and resolution the total error could be 100kg. This would be to an accuracy of 2% of the required load and thus meeting the technical requirements. However, please note that the 20kg human error can and should be rectified, but if the resolution and accuracy are inadequate, then the error could easily exceed the required $\pm 2\%$ of the required load.*

Testing machines using load multiplication devices (for lifting machines)

Mechanisms which are used to multiply the load, e.g. nodding donkey, must be verified for accuracy over their full range of movement. The height of lift available must be such as to allow all working parts of the appliance under test to be loaded at least once.

The overall accuracy must be within $\pm 2\%$ taking into account additional sources of error such as friction. The multiplying ratio must be constant throughout the range of movement. To achieve this it is recommended that the pivot points and load points are in a straight line.

The load can be adjusted by either altering the amount of load or by changing the position of the load or a combination of these two. In the latter case there needs to be suitable means of repositioning the weights under the appropriate suspension point. In this case there should be a chart to indicate the combination of suspension point and weights required for each test load.

Whilst individual weights can be pre-weighed, the load chart should be checked with a load cell at the lifting machine suspension points and all intended combinations of weights and suspension points. The accuracy of the load cell should be taken into account as explained above.

Hydraulic test machines which simulate a live load (for lifting machines)

Hydraulic test machines which simulate a live load must be verified for accuracy over the full range of movement. The Technical Requirements call for a minimum accuracy of $\pm 2\%$.

LEEA technical requirements permit an accuracy is $-0 +10\%$. This comes from BS 3243 which is superseded by EN 13157. Nevertheless it is an authoritative source and in the absence of any guidance from the Machinery Directive or EN 13157, is the best we have. It ensures that the force is never less than that required to sustain a stationary load but allows for some fluctuation arising from the machine and operator skill. To stay within this accuracy, allowance must be made for the accuracy of the machine. Thus for a class 2 machine ($\pm 2\%$) the indicated load should be in the range of $+2\%$ to $+8\%$ of the nominal load.

Although this is permitted by LEEA, it must be remembered that it comes from a manufacturing standard and that the actual force applied at the upper limit will be $1.65 \times$ Rated Capacity and not $1.5 \times$ Rated capacity. Whilst a manufacturer may allow this force to be applied to his products, anyone testing someone else's products should seek guidance from the manufacturer or aim to keep the indicated load to the lower limit.

The force can be measured in one of two ways, either by measuring the pressure in the cylinder or by a separate load cell. Those measuring cylinder pressure usually indicate the load with an analogue gauge. The diameter of the gauge and the size of the scale increments is often such that the resolution is not adequate. Also the gauge pointer often oscillates in response to pulses from the pump making it impossible to obtain an accurate reading.

Those using a separate load cell generally have a digital display. The method of determining the limit of resolution is as explain above for load cells used with un-calibrated weights.

Whatever method of force measurement is used, the hydraulic tester must be capable of maintaining the force within the required accuracy whilst permitting the necessary movement. The range of movement available must allow all working parts of the appliance under test to be loaded at least once in both the raising and lowering directions whilst the appliance is operated at normal speed.

Test facilities using a live load

Test facilities which lift a live load must be of a height that allows all working parts of the appliance under test to be loaded at least once.

5.2 Out of Commission/Redundant Test Machines and Facilities

Test machines/facilities which have been taken out of commission and are no longer in use, or where the calibration verification is out of date, shall be isolated, quarantined or clearly marked so that they are not inadvertently used.

Guidance:

Test machines which have been taken out of commission and are no longer in use must be isolated in such a way as to make their inadvertent use impossible, e.g. fuses removed, isolator locked off or suspension points bolted off. They must be clearly marked to the effect that they are not to be used until they have been verified and calibrated in accordance with the relevant Technical Requirements.

5.3 Test Weights

Test weights used without a load measuring device shall be periodically verified, or pre-weighed, so as to ensure the accuracy of the applied load is within that required by the standard being worked to and in all cases is within $\pm 2\%$ of the nominal load.

Guidance:

Where tests are made without the use of a load measuring device, non-verified weights must be pre-weighed, together with any slinging devices or other ancillary equipment used to suspend them, so as to ensure the accuracy of the applied load. Marked, verified steel or cast metal test weights, used in association with load multiplication devices or for direct live load tests must be re-verified at intervals of not more than 5 years.

Concrete and similar test weights, which are susceptible to damage, must be verified at intervals of not more than 12 months. (Note: It is advisable to paint concrete weights as this will both retard the ingress of water and act as a visual sign of any damage). Weighing and verification must be by means of a load weigher or scale certified and traceable back to national standards providing that the sum of the inaccuracies of the scale and weight does not exceed that of the standard being worked to and in no case is greater than 2%.

(Note: If the weighing device has been calibrated on a test machine the errors of the machine must be allowed for, e.g. for a grade 1 machine, $\pm 1\%$, 1% must be added to the error of the weighing device) A copy of the weighing/verification document must be retained for reference and inspection.

When using test weights and slinging devices, it is advisable to use a calibrated load measuring device to measure the applied load, i.e. weights and slinging devices, so as to ensure that it is within the required accuracy of the standard being worked to. This practice also removes the need for the weights to be periodically verified.

5.4 Instruments for Conducting Electrical Safety Tests

Instruments used for conducting electrical safety tests shall be verified and re-calibrated in accordance with the manufacturer's instructions at least annually, or at shorter periods if specified by the manufacturer.

Guidance:

Certain types of electrical test instruments are required to be calibrated by the user at regular intervals between the formal re-calibration periods. Similarly some regulatory bodies require intermediate calibrations.

Calibration and fault simulators intended for use by the user may not be suitable for the formal periodic re-calibration, which must be carried out in accordance with the specific manufacturers' instructions and often necessitate the return of the instrument to the manufacturer.

A record of the calibration must be retained for reference and inspection.

Similar instruments used for fault tracing and diagnosis, but not for the purpose of recorded safety tests, may be excluded from this requirement.

5.5 Non-Destructive Test Equipment

Non-destructive test equipment shall be verified at appropriate intervals in accordance with the manufacturers' instructions.

Guidance:

The scope of equipment covered by this requirement is very broad and the verification requirements will differ according to the item, further, the requirements for verification may vary from manufacturer to manufacturer. The manufacturer's instructions, which should be followed, must always be kept available for reference together with the verification record.

5.6 Dimensional Measuring Equipment

The member shall have in place a procedure for checking and verifying measuring devices at appropriate periods. The necessary accuracy of dimensional measuring equipment will depend on the member's scope of work and the nature of the measuring device.

Equipment used for measuring deflections of structures shall have a resolution such as to allow the measurement to within $\pm 5\%$ of the permitted deflection of the structure under test.

Guidance:

As a general rule, basic measuring equipment, e.g. steel tapes and rules, need only be checked to ensure that they are undamaged (particularly at the zero end), legible and graduated in increments suitable for the purpose. Precision measuring equipment will require periodic verification, e.g. against slip gauges, depending on the nature of the device and the duty for which it is used.

5.7 Examination Facilities

The person making the examination shall have available such cleaning materials, tools, gauges, measuring equipment, lighting and visual aids as necessary to enable the examination to be made in an objective manner.

Guidance:

In order to ensure all parts of the item under examination can be clearly seen, the area in which the examination is to be made should be well lit and, if necessary, the person making the examination should have a wander light or torch available. Visual aids as necessary, e.g. magnifying glass, dental mirror, should be available so that all parts under examination can be clearly seen.

The cleaning materials selected must not be harmful to the item under examination. The area itself must be clean and free of any pollutants which may contaminate or damage the item under examination.

The person making the examination must have available to him such tools, gauges and measuring equipment as might be required to complete the thorough examination.

Section 6 – Material Control

6.1 Control of Materials Etc. entering and Processed on Member's Premises

All materials, components, spare parts, factored goods, customer's equipment for examination, repair etc. and equipment returned off hire (all subsequently referred to simply as 'material') shall be controlled as outlined below so as to retain its identity and traceability to associated records.

Purchase orders for materials should clearly describe the goods required including, where appropriate, references to the applicable product standard, documentation required and any other statutory / regulatory requirements.

Goods inward material shall be received in a designated area, shall be identified and labelled as appropriate, checked for compliance with order/delivery information, checked for quality and routed to suitable storage.

Where traceability to supplier's documentation is required, appropriate measures shall be taken to ensure that this is possible.

Non-complying materials shall be isolated whilst awaiting corrective action.

Traceability is required when the safety of the end product depends upon any property of the material for which the supplier provides documented evidence of conformity and which is not subsequently verified by the member.

Such material must be traceable both to the source of supply and the point of disposal so that, in the event of a product re-call, all items from the same supply batch may be traced.

During storage, all materials shall retain its identity and traceability. It must be segregated as appropriate to avoid confusion with similar or other batches of material and be stored in a manner which preserves its quality.

When material is taken from storage for processing, its identity and, where appropriate, the quantity shall be recorded on the job record. Where traceability is required, there shall be cross references to the source of supply and from the source to the job record. During processing, the material shall retain its identity. When processing involves dismantling the lifting equipment, the procedure shall ensure that the components retain their identity with the complete item.

At the point of delivery/completion, all items of lifting equipment shall be marked with an identification number or mark which is directly traceable to the EC Declaration of Conformity, manufacturer's certificate or report of thorough examination as appropriate, and to the job record.

Guidance:

Goods inward - *A procedure must be in place to ensure goods received, including the necessary documentation, are checked for compliance with the purchase order, delivery note or returns note and that any non-complying items are segregated and identified for further action e.g. return/correction.*

Where relevant, members need to ensure that the EC Declaration of Conformity or other acceptable assurances of compliance with the Machinery Directive/Electromagnetic Compatibility Directive and/or standard is obtained.

Materials, components and assemblies provided on a free issue basis by the customer, including equipment received for service, repair or other processing, must be checked and identified upon receipt and remain identifiable whilst under the member's control.

Storage - *(Note: Storage is taken to mean any housing, however transient, between goods inward and processing).*

It is particularly important that, where similar looking items of differing strengths, grade and composition are kept in the stores or works, there is adequate segregation and identification. The system within the members' stores and works must be such that materials retain their identity and those of different specifications are segregated so as to eliminate the risk of incorrect selection or use and allow traceability to the source of supply.

Material issue - *The issue of materials, whether for use in the course of manufacture and repair, or for direct sale, must be controlled and documented in such a way as to allow traceability both to its source and destination.*

Legal obligations placed on manufacturers and suppliers require, in the event of a defect in the design or production or other potential dangerous situations arising, that they are able to issue warnings and/or implement a product recall. Lifting equipment must be traceable to its birth certificate e.g. EC Declaration of Conformity/ Manufacturer's Certificate etc. (dependent upon member's country), and to any subsequent Reports of Thorough Examination.

Unique identification of lifting equipment is therefore vital at the point of use so as to avoid confusion with other items from the same batch. This is of particular importance when in-service examinations are to be made.

6.2 Other Marking

The SWL/WLL shall be marked together with any other marking required by the standard or specification being worked to and with legal requirements.

6.3 Method of Marking

Marking shall be by stamping, stencilling, printing or similar appropriate means directly on the item, or on a securely attached tag, label, plate etc. in such a way that it does not affect the mechanical properties of the item or its method of use and is both clearly visible and legible to the user and is unambiguous.

Guidance:

The method of marking adopted will depend on the nature of the item and is often laid down in the product standard. Where this is by stamping directly onto the item, care is needed to ensure that the indentation is neither too sharp nor of excessive depth. To limit the adverse effects of direct stamping the size of stamps should be:

<u>For material diameter</u>	<u>Stamp size</u>
up to and including 12.5mm	3mm
over 12.5mm up to and including 26mm	4.5mm
over 26mm	6mm

The positioning of stamping also has to be considered and should be on a low stressed area directly on to the item. However, the amount of space available, and the possibility of damage to the item, will often require a tag label to be used. In such cases it is generally recommended that the identification mark is repeated directly on the item so that, should the tag be lost, the information can be traced from the documentation. This secondary marking may be in the form of an RFID tag with compatible reader and software.

Similarly, it is also advisable to hard stamp larger items which may have the information marked by painting and/or information labels, e.g. EOTC, as the original may become over-painted or lost.

Section7 – Hire Equipment**7.1 Inspection and Examination Requirements**

A member who supplies lifting equipment on hire shall inspect the equipment between each hire and thoroughly examine it in accordance with statutory requirements. To this end they shall keep such records as will enable them, by arrangement with the hirer, to either exchange equipment due for statutory examination or carry out such examination on site. Additionally, records as will enable the current status of equipment to be determined shall be maintained so that only equipment with a valid, current report of thorough examination is issued on hire.

Guidance:

Although the legal duty to have lifting equipment thoroughly examined by the date given on the report of thorough examination falls on the user, it is the view of the LEEA that members must take the responsibility and have systems in place to carry out the thorough examination of equipment they issue on hire.

7.2 Evidence of Thorough Examination

Equipment issued on hire shall be accompanied by evidence of the latest thorough examination.

Guidance:

Unlike previous legislation, which only required the existence of a report of thorough examination, paragraph 4 of LOLER regulation 9 requires physical evidence of the last thorough examination to accompany any item of lifting equipment that leaves one premises or enters another. This evidence must be traceable back to the original ROTE and state that the equipment is safe to use.

Guidance:

As with the sale and supply of equipment, section 6 of HSAWA, requires the supplier (hirer) to provide information on the care and safe use of equipment to the user.