

MARKING OF LIFTING EQUIPMENT (REG.7)

57 In a number of draft ENs, the term Working Load Limit (WLL) is replacing SWL as the load beyond which lifting equipment should not be used. WLL is the load value assigned to the 'maximum' safe working load under ideal conditions (by calculation) and in most cases WLL will be the same as the SWL. However, depending on the conditions of use, it may be necessary for the competent person to reduce the WLL to a practical SWL; it is this figure which should be marked on equipment to comply with reg.7 (and be used in determining its safe use for the purposes of reg.8). SWL may be the same or less than WLL but can never be more.

Marking of safe working load (reg.7(a))

58 The regulation requires that (a) machinery and (b) accessories are clearly marked to **indicate** their safe working loads (SWL). Most 'traditional' lifting equipment, ie machinery and 'conventional' accessories, should be marked *with* the SWL, as should other equipment which present similar risks.

59 On chain and wire slings the SWL should be marked legibly and indelibly on a durable tag or label attached to the sling, or marked on the ferrule or master link.

60 The marking need not show the SWL if there are other ways of 'indicating' the safe working criteria for the equipment. In some cases a 'surrogate' marking may be acceptable, such as a capacity indicator on an excavator. Colour coding alone to denote SWL, whilst not normally acceptable, is a useful additional feature, eg of textile slings, and may be a key element in the marking of some equipment, eg access and rescue ropes.

61 Parts of some earth moving machinery, eg attachments such as grabs, forks and buckets, are interchangeable equipment under the definition used in SMR. These attachments are not normally marked with their SWL because they may be used in conjunction with a variety of machinery, eg different FLT's or agricultural tractors. In such cases, both the machine, eg its maximum load moment and the attachment, eg maximum lift capacity, need to be considered in determining the SWL of the combination. The latter information should be available to the operator to ensure that the equipment may be used safely but it need not be marked on the attachment.

62 Marking should not be required for other types of equipment if it does not contribute significantly to reducing risks. **Pre-use check**

THOROUGH EXAMINATION AND INSPECTION (REG.9)

Circumstances requiring thorough examination

75 The ACOP and guidance paras 297-299 describes the 4 situations in which thorough examination may be required. These are:

- (1) when lifting equipment is first 'supplied', ie used for the first time by that employer);
- (2) when certain equipment, eg a tower crane, is 'installed';
- (3) periodically during the lifetime of equipment; and
- (4) following exceptional circumstances.

76 The thorough examination requirements carry forward long-standing procedures, eg FA 1961 s.27, and are essentially unchanged from those earlier provisions. Where a thorough examination was required for 'traditional' lifting equipment under previous legislation, then such examinations should now be required under LOLER reg.9. Thorough examinations will also be needed where such lifting equipment is used in premises (such as farms, universities) which were not previously subject to specific lifting law.

77 Other types of lifting equipment, such as MEWPs, also need a thorough examination as they present risks which are similar to those arising from the use of 'traditional' lifting equipment. Thorough examination will not be necessary for equipment used for lifting which presents only a low risk in the event of its failure. For example, the requirement relating to conditions causing deterioration applies where a 'dangerous situation' is more than the low, 'everyday' risks which are commonly experienced. Equipment definitely requiring thorough examination is that where a failure could foreseeably result in a major injury or worse.

Scope of thorough examination and inspection

78 A hoistway enclosure is part of a hoist. Therefore, the person making the report of an examination is required to notify defects not only of the parts of the hoist which move but also of the hoistway enclosure together with its gates and the guides for the hoist. This maintains the previous practice.

79 Devices fitted to machines, such as cranes, which cut-out hoisting, derricking or trolleying motions, eg when the SWL is exceeded, should be regarded as part of the lifting equipment and be included in the thorough examination. This applies also to any radius/load indicator fitted.

80 The thorough examination of a FLT should include at least the chains, forks, hoist mechanism, ie mast and cylinders, and any associated fork attachments, and will normally be limited to them. Other items may be included in the thorough examination as a result of risk assessment by the competent person or the equipment owner. Competent persons commonly include in the thorough examination other aspects of the truck, eg the counterbalance weights, the integrity of which needs to be maintained to ensure safety in

lifting operations. Other parts of the FLT, relating to its mobile equipment function, may need to be inspected for the purposes of PUWER reg.6.

Competent person

81 It is usual practice for the competent person carrying out a thorough examination to be employed by a separate company, eg a third party examining company. However, the regulation does not prohibit an employer from selecting a member of its own staff to carry out thorough examinations provided that he/she is competent. However, any competent person must be able to act with the necessary degree of impartiality and independence (see L113 para295) and inspectors should make this very clear to any company which wishes to use its own staff in this role.

82 A work platform designed for use with a FLT is an example of fairly simple lifting equipment to which inspectors should not take objection if thorough examinations are carried out 'in-house' by a competent employee who has adequate impartiality etc. However, such platforms are not appropriate for frequent and/or extensive use and may be suitable equipment for a scheme of examination, together with intermediate inspections (in-house) and pre-use checks by the operator.

83 Although the employer is responsible for ensuring that lifting equipment is thoroughly examined, eg under reg.9(3) "to ensure that health and safety conditions are maintained and that any deterioration can be detected and remedied in good time", they will normally look to the competent person to provide expert guidance to the extent of the examination needed to achieve this. The competent person has to make a professional judgment about the level and extent of examination on a particular installation, including what tests, if any, are necessary. For example, if a chain block is suspended from a roof beam or other part of a structure, they should decide the part played by the beam and building structure in ensuring safety and examine it as necessary. If appropriate they should seek assistance from someone with the necessary competence for that part of the task.

84 The competent person drawing up an examination scheme and the one carrying out the examination may be different persons. In both cases, they may need to draw on others for advice on specific issues, such as testing (proof, non-destructive testing, etc) as part of the examination regime.

Testing

85 Because proof testing can cause damage to machinery (which, increasingly, is built to fine tolerances), the decision to test is one which may need to be made by someone with substantial expertise, suitably informed by advice from the manufacturer.

86 Earlier legislation required certificates of test (of lifting appliances and tackle) to be produced as part of certain thorough examinations. Such documentation is now not required by LOLER, nor by SMR in relation to the supply of new lifting equipment. Test certificates are now prepared at the discretion of the competent person carrying out the thorough examination (and who alone makes the decision as to the need for a test). Any certificate of test is not required to be on a prescribed form but should be attached to, or easily identifiable from, the report of thorough examination to which it relates.

Initial thorough examination (reg.9(1))

87 This requirement replicates earlier legislation which dealt with the initial integrity of (traditional) lifting equipment, ie machinery and tackle. It now extends to other non-traditional lifting equipment which presents a significant risk.

88 A reg.9(1) thorough examination is not required if there is sufficient evidence that the equipment has received a thorough examination in the recent past. Acceptable evidence is a declaration of conformity if the equipment is new or, if it is second hand, an unexpired (current) report of a thorough examination obtained from its previous owner.

89 Purchasers of new lifting equipment may find that the EC declaration of conformity which accompanies the equipment is more than 12 months old. In these cases the need for and extent of a reg.9(1) thorough examination should be guided by when the equipment was made and likely deterioration during storage which could increase risks in use. If an examination is necessary, its extent should reflect the likelihood of failure and the actual risk which could arise from any such failure.

90 A certificate accompanying a new wire rope should be accepted as compliance with this regulation. Wire ropes supplied as individual items, eg intended to replace worn ones on a crane, do not fall within the scope of SMR (they are not relevant machinery, relevant safety components or interchangeable equipment) and there is no requirement for them to be accompanied by a declaration of conformity. However, SMR Schedule 3 para4.3.1 refers to the need for a certificate for a wire rope and this form of documentation should normally be available. There is no requirement for the lifting machine with the replacement part to be examined before it is returned to use.

91 The 'traditional' test certificate, Form F87 *Certificate of test and examination of wire rope*, has been obsolete for some years. The declaration of conformity acts as a replacement for this.

92 Although a person using hired lifting equipment, eg a crane, always has a duty to comply with the requirements for thorough examination, it is usually the case that such examinations are, in fact, carried out by, or on behalf of, the plant hire firm. The responsibility in law, however, rests upon the user and they

should, therefore, always satisfy themselves at the outset that there is a current report of thorough examination.

93 The requirement for lifting equipment obtained from the undertaking of another person to be accompanied by 'physical evidence' (before it is first put into service) complements the requirement in reg.9(4). L113 para344 describes what information should be available.

Thorough examination after installation (reg.9(2))

94 The guidance emphasises that interpretation of 'installation' is fairly restricted, ie generally limited to that equipment, such as tower and OHT cranes, which require a considerable degree of assembly at the location before it is ready for use. This is likely to be the case if a runway carrying a chain block is fitted between the beams of a building, because issues such as twisting are likely to be important. If a simple pulley block is properly secured to a beam then this should not be considered to be an 'installation' (although the user should have appropriate documentation for the pulley block to comply with reg.9(1)).

95 L113 para308 indicates that the use of an eye bolt as an anchorage for lifting purposes, eg rope access, is not an 'installation'. The competent person will, however, need to consider its integrity during each thorough examination under reg.9(3).

96 In reg.9(2)(b) the words "after assembly and before being put into service at a new site or in a new location" refer to reinstallation, eg when a tower crane is repositioned. On each such occasion the thorough examination should be repeated to ensure the equipment has been installed correctly and is safe to operate. For example, stability may have been affected either during erection or after removal or adjustment (which could involve changes in the counter-weighting, anchoring or other supports).

See [para117](#) for guidance on inspection following such changes.

98 It is sometimes necessary to interchange parts of cranes. This should not be regarded as a substantial alteration or repair provided that the replacement attachment is covered by the current thorough examination of the complete machine.

99 In some cases modification to, or repair of, lifting equipment is so substantial or significant that it effectively creates a new item of equipment. In such cases a thorough examination should be required after the modification or repair. Such action may also be required using reg.9(3)(a)(iv), 'exceptional circumstances'.

Periodic thorough examination (reg.9(3)(a))

100 L113 para298 advises that all lifting equipment deteriorates in use and should be thoroughly examined.

101 Even when an employer is using the fixed periods between thorough examination contained in reg.9(3)(a)(i) and (ii), the competent person should still confirm that those periods are appropriate by considering the use of the equipment, eg the number of hours it works and the conditions in which it is used.

102 Lifting equipment used in arduous conditions is likely to require a thorough examination more frequently than the maximum periods stated in reg.9(3)(a)(i) and (ii). The words 'at least' in those regulations give the competent person the facility to recommend shorter periods. Alternatively, they may prefer to recommend the adoption of a scheme of examination which formalises this need. L113 explains the factors to be taken into account when designing or amending a scheme of examination.

103 For equipment used in much less arduous conditions, employers can also make use of the flexibility which a scheme of examination allows in extending the 'traditional' periods of examination given in the regulation.

104 Inspectors should not insist on examination at fixed periods of lifting equipment used very infrequently as long as such equipment is thoroughly examined immediately before use. Such equipment may be most appropriate for inclusion under a scheme of examination, possibly supplemented by an (in-house) inspection immediately before use.

105 In sectors for which there was no specific lifting legislation, HSW Act was previously used as the legal basis for requiring the periodic thorough examination of some lifting equipment. Where, using that basis, an interval of 12 months between examinations was previously considered acceptable, there is likely to be little justification for now reducing it to 6 months, where that is the corresponding 'fixed period' determined by reg.9(3)(a). If the longer period is to be adopted, where that is justified on risk grounds, the equipment should be examined within a scheme of examination.

106 The frequency of thorough examination for certain lifting equipment may now alter. Some equipment, including wire ropes on vehicle service hoists and FLT chains, was classed as lifting accessories under earlier legislation (and received 6-monthly examinations) but is now considered to be part of the lifting machinery (annual examination, if no scheme of examination). Inspectors may find that 6-monthly examinations will continue to be requested by competent persons carrying out examinations, for example as a result of risk assessment of work carried out underneath a vehicle on a service hoist or to persons being lifted on it. Inspectors should not object to such requests if the risks justify them. See also OC 234/13

107 The 6-monthly period between thorough examinations specified in reg.9(3)(a)(i) applies to all lifting accessories, whether or not they are used for lifting persons. The regulation also applies to all other lifting equipment used for lifting persons. Such machinery, eg a crane or FLT, even if intended to be used only occasionally for lifting persons, should be examined in accordance with reg.9(3)(a)(i) unless the employer arranges to have the equipment examined in accordance with a scheme of examination.

Exceptional circumstances (reg. 9(3)(a)(iv))

108 'Exceptional circumstances' include some alterations and repairs, as well as incidents or use which may have affected the integrity of the equipment. It includes, for example, using equipment in demanding conditions, such as a crane used for piling or demolition work. The employer should advise the competent person of such exceptional circumstances so they can assess any effects on the condition of the equipment and consider if a thorough examination is necessary (as well as its extent).

109 Changes to the configuration of lifting machinery, which are within scope of a current report of thorough examination, should not be regarded as a substantial alteration requiring a further thorough examination (see ACOP L113 para304 to reg.9(1) and commentary on reg.9(2)).

Inspection (reg.9(3)(b))

110 The requirement for an inspection of lifting equipment, where this is appropriate, is new for many workplaces, including factories, but was previously required for certain lifting equipment by construction legislation.

111 An 'inspection' is something more than an operator check under LOLER reg.8 or a maintenance check under PUWER reg.5. Note that a record should be made of the inspection (see reg.10(2)).

112 The ACOP para332 refers to the need for inspection where a risk assessment (under MHSWR 1992 reg.3) has identified a 'significant' risk to the operator or other workers. In general, if lifting machinery receives a thorough examination it is presumed to present a significant risk and it should therefore, also be inspected as necessary at intervals between thorough examinations. An inspection is not required if it will not help identify defects. Further guidance on the purpose and extent of inspection can be found in the PUWER ACOP L22 paras 140-147 (FOD file 200).

113 Inspections would normally be carried out by an in-house competent person and include visual and functional checks, for example that the alarm operates correctly on a crane overload device. They may be weekly or less frequent (monthly, quarterly) and will normally be carried out on machinery, eg a crane, rather than accessories (it is considered that detachable chains and slings, etc should receive a pre-use check by the operator, rather than periodic inspections).

114 Inspections are, for most lifting **machinery**, a key part of ensuring lifting safety and there should be a very good reason if they are not carried out. However, reg.9(3)(b) refers to inspections being carried out between thorough examinations. There is therefore, no legal requirement in LOLER to inspect lifting equipment if it is not receiving a thorough examination.

115 Because lifting equipment is excluded from the inspection requirements of PUWER reg.6, it follows that there is no requirement to carry out any inspection of lifting equipment which is not subject to a thorough examination under LOLER reg.9. Where deficiencies are found in such lifting equipment, the maintenance requirements of PUWER will be relevant (and there may also be PUWER reg.6 inspection requirements in respect of any non-lifting parts of the equipment).

116 There are likely to be few machines subject to both PUWER and LOLER inspections. For example, an inspection (in between thorough examinations) of a FLT under LOLER may be limited to the lifting mechanism but other parts, such as brakes, lights and roll-over protection, may well need inspection under PUWER. In such cases, the LOLER and PUWER inspection procedures can sensibly be combined where appropriate.

117. Require a further thorough examination under reg.9(2). However, in these circumstances an inspection by an appropriate competent person should normally be carried out. Matters which should be checked after the height of a tower crane has been altered, for example, include the condition of the tower or mast extension, the condition of any extra rope brought into use, and the calibration and operation of the safety devices.

118 Although an inspection will normally be done by an 'in-house' employee, the person carrying it out must be competent to do so, ie they should be able to detect and appreciate the significance of defects and be able to draw attention to them. A suitable person may be a fitter or engineer or, with sufficient instruction, the equipment operator.

Transfer of equipment (reg.9(4))

119 This replicates earlier requirements to have available a copy of the report of the last thorough examination. The guidance advises how such information can be provided in the case of accessories, eg slings, for which it has not been normal practice to require reports.

European Machinery Directive article 1(1) the items fall under :

'**lifting accessory**' means a component or equipment not attached to the lifting machinery, allowing the load to be held, which is placed between the machinery and the load or on the load itself, or which is

intended to constitute an integral part of the load and which is independently placed on the market; slings and their components are also regarded as lifting accessories.

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The Lifting Operations and Lifting Equipment Regulations 1998

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Thorough examination and inspection

9.—(1) Every employer shall ensure that before lifting equipment is put into service for the first time by him it is thoroughly examined for any defect unless either—

(a) the lifting equipment has not been used before; and

(b) in the case of lifting equipment for which an EC declaration of conformity could or (in the case of a declaration under the Lifts Regulations 1997) should have been drawn up, the employer has received such declaration made not more than 12 months before the lifting equipment is put into service;

or, if obtained from the undertaking of another person, it is accompanied by physical evidence referred to in paragraph (4).

(2) Every employer shall ensure that, where the safety of lifting equipment depends on the installation conditions, it is thoroughly examined—

(a) after installation and before being put into service for the first time; and

(b) after assembly and before being put into service at a new site or in a new location,

to ensure that it has been installed correctly and is safe to operate.

(3) Subject to paragraph (6), every employer shall ensure that lifting equipment which is exposed to conditions causing deterioration which is liable to result in dangerous situations is—

(a) thoroughly examined—

(i) in the case of lifting equipment for lifting persons or an accessory for lifting, at least every 6 months;

(ii) in the case of other lifting equipment, at least every 12 months; or

(iii) in either case, in accordance with an examination scheme; and

(iv) each time that exceptional circumstances which are liable to jeopardise the safety of the lifting equipment have occurred; and

(b) if appropriate for the purpose, is inspected by a competent person at suitable intervals between thorough examinations,

to ensure that health and safety conditions are maintained and that any deterioration can be detected and remedied in good time.

(4) Every employer shall ensure that no lifting equipment—

(a) leaves his undertaking; or

(b) if obtained from the undertaking of another person, is used in his undertaking, unless it is accompanied by physical evidence that the last thorough examination required to be carried out under this regulation has been carried out.

(5) This regulation does not apply to winding apparatus to which the Mines (Shafts and Winding) Regulations 1993(1) apply.

(6) Where lifting equipment was before the coming into force of these Regulations required to be thoroughly examined by a provision specified in paragraph (7), the first thorough examination under paragraph (3) shall be made before the date by which a thorough examination would have been required by that provision had it remained in force.

(7) The provisions referred to in paragraph (6) are—

(a) section 22(2), 25(2), 26(1)(d) and 27(2) of the Factories Act 1961(2);

(b) regulations 34(2) and 37(1) of the Shipbuilding and Ship-repairing Regulations 1960(3);

(c) regulations 28(3), 40 and 46(1) of the Construction (Lifting Operations) Regulations 1961(4);

(d) regulations 3(1) and (2) and 6(1) of the Offices, Shops and Railway Premises (Hoists and Lifts) Regulations 1968(5);

(e) regulation 6(1)(c) of and Part III of Schedule 1 to the Offshore Installations (Operational Safety, Health and Welfare) Regulations 1976(6);

(f) Regulation 15 of the Docks Regulations 1988(7).

(1)

S.I. 1993/302.

(2)

1961 c. 34; sections 22(2) and 27(2) were amended by S.I. 1992/195.

(3)

1960/1932; amended by S.I. 1992/195.

(4)

1961/1581; amended by S.I. 1992/195.

(5)

1968/849; amended by S.I. 1992/195.

(6)

S.I. 1976/1019.

(7)

S.I. 1988/1655; amended by S.I. 1992/195.

Marking of lifting equipment

7. Every employer shall ensure that—

(a) subject to sub-paragraph (b), machinery and accessories for lifting loads are clearly marked to indicate their safe working loads;

(b) where the safe working load of machinery for lifting loads depends on its configuration—

(i) the machinery is clearly marked to indicate its safe working load for each configuration; or

(ii) information which clearly indicates its safe working load for each configuration is kept with the machinery;

(c) accessories for lifting are also marked in such a way that it is possible to identify the characteristics necessary for their safe use;

(d) lifting equipment which is designed for lifting persons is appropriately and clearly marked to this effect; and

(e) lifting equipment which is not designed for lifting persons but which might be so used in error is appropriately and clearly marked to the effect that it is not designed for lifting persons.

