

Lifting Equipment Engineers Association

Guide to Documentation and Marking – Part 6 General Accessories and Components for Slings

Document reference LEEA 059-6 version 2 dated 23.02.15

Introduction.

This guide is aimed at manufacturers, distributors and users of lifting equipment within the European Economic Area. It has been developed as a quick reference guide to ensure that lifting equipment is supplied with the correct documentation and marking as required by current legislation, standards and best practice guidance.

LEEA 059-6 is one of a series of guides related to documentation and marking of a range of generic forms of lifting equipment as listed below:

- Part 1 Manual Lifting Machines
- Part 2 Powered Lifting Machines
- Part 3 Lifting Machine Supporting Structures
- Part 4 Lifting Accessories, Non-fixed load lifting attachments.
- Part 5 Lifting Accessories, Slings
- Part 6 General accessories and Components for slings.

Item & Standard **Short Link Chain** Only short link chain allowed for lifting purposes. Fine tolerance for use in lifting machines, medium tolerance used generally in the manufacture of lifting slings.

Required Information

Documents to be supplied in accordance with the relevant legislation & relevant standard:

- EC Declaration of Conformity (guidance LEEA 030.1e)
- Manufacturers Certificate
- Manufacturer's instructions for use.

Note: the EC Declaration of Conformity & Manufacturers Certificate can be issued as a single document.

Manufacturers Certificate

The certificate of test & examination shall give at least the following information:

- The name & address of the manufacturer or his authorized representative, including date of issue of the certificate & authentication;
- Number & Part(s) of EN 818 (2)(3)(7);
- Quantity & description of the chain of which the test sample is representative;
- Identification of the chain of which the test sample is representative;
- Nominal size of chain, in millimetres;
- Manufacturing proof force, in kilo-Newtons;
- Breaking force, in kilo-Newtons (i.e. confirmation that the specified minimum breaking force was met or exceeded);
- Total ultimate elongation at fracture, as a percentage (i.e. confirmation that the specified minimum total ultimate elongation has been met or exceeded).

Manufacturer's instructions for use

The instructions for chain should contain the following general information:

- The intended use
- The limits of use.
- Instructions for handling, storing, cutting, assembly, use and maintenance

BS EN 818-2 (grade 8)

BS EN 818-3 (grade 4)

BS EN 818-7 (grade 8

machine chain)

Marking requirements. Grade mark stamped or embossed on every 20th link, or links at intervals of 1m whichever is the lesser distance. Manufacturers trade mark or symbol in the same manner and intervals as the grade. Any lot or other marking in the same manner as the grade. Additional marking that can be affixed to the drum of the bulk supply or by means of a tag: CE mark Business name and address of the manufacturer Reference to the manufacturers certificate Year of manufacture Steel Wire Rope for general Documents to be supplied in accordance with the relevant legislation & relevant standard: lifting EC Declaration of Conformity (guidance LEEA 030.1e) **Manufacturers Certificate** Manufacturer's instructions for use. Wire Strand Note: the EC Declaration of Conformity & Manufacturers Certificate can be issued as a single document. Core **Manufacturers Certificate** A certificate shall confirm conformance to the appropriate part of EN 12385-1:2008 Rope NOTE This is equivalent to inspection document 2.1 or 2.2 as described in EN 10204. BS EN 12385 Parts 1 to 4 The certificate shall give at least the following information: - certificate number;

- name & address of the manufacturer or his authorized representative;
- quantity & nominal length of rope;
- standard to which the rope conforms, e.g. EN 12385-4;
- rope designation in accordance with EN 12385-2;
- minimum breaking force (parts 4, 5, 6, 7, 8, 9 & 10) or minimum aggregate breaking force (part 6);
- date of issue of the certificate & authentication;
- an example of the maximum working load to which the rope shall be subjected in service at a given factor of safety or working load limit when the intended use is known.

The certificate number shall enable traceability of the rope.

Test results

When test results are given the certificate shall additionally give either or both of the following:

- a) Measured dimension(s) of rope measured diameter of rope (mm); or measured width & thickness (mm x mm).
- b) Measured breaking force of rope measured breaking force of rope Fm (kN); or measured aggregate breaking force of rope Fe.m (kN); or calculated measured (post-spin) breaking force of rope Fm.c (kN).

NOTE Together with the information as given in above, this is equivalent to inspection document 2.3 or 3.1B as described in EN 10204.

Note for other applications such as for Stranded hauling & carrying-hauling ropes for cableway installations designed to carry persons or for locked coil carrying ropes for cable way installations for carrying persons, additional information will be required & reference to the specific part of the standard should be made.

Manufacturer's instructions for use

The instructions for rope should contain the following general information:

- The intended use
- The limits of use.

	- Instructions for handling, cutting, storing, assembly, use and maintenance
	Marking requirements.
	marking requirements.
	Note: Marking can be affixed to the reel of the bulk supply or by means of a tag:
	- CE mark
	- Business name and address of the manufacturer
	- Reference to the manufacturers certificate
	- Batch number
	- Year of manufacture
	Documents to be supplied in accordance with the relevant legislation & relevant standard:
Fibre rope for general	- EC Declaration of Conformity (guidance LEEA 030.1e)
lifting.	 Manufacturers Certificate Manufacturer's instructions for use.
	- Manufacturer's instructions for use.
	Note: the EC Declaration of Conformity & Manufacturers Certificate can be issued as a single document.
	Manufacturers Certificate
	A certificate shall confirm conformance to the appropriate part of the standard that covers the fibre rope material type, for example:
	- EN 696, Fibre ropes for general service ± Polyamide
	- EN 697, Fibre ropes for general service ± Polyester
	- EN 698, Fibre ropes for general service ± Manila and sisal
	- EN 699, Fibre ropes for general service – Polypropylene
	- EN 1261, Fibre ropes for general service – Hemp
	Note: other materials such as Dyneema and HMPE may not have an EN standard attributed to them, in which
	case the certificate should contain the following information.

applicable standard:

The certificate shall give at least the following information, plus any additional information required by the

EN 696, Fibre ropes for general service ±
Polyamide

EN 697, Fibre ropes for general service ± Polyester

EN 698, Fibre ropes for general service ± Manila and sisal

EN 699, Fibre ropes for general service – Polypropylene

EN 1261, Fibre ropes for general service – Hemp

- certificate number:
- name & address of the manufacturer or his authorized representative;
- quantity & nominal length of rope;
- standard to which the rope conforms;
- minimum breaking force; i.e. 7:1
- date of issue of the certificate & authentication;
- an example of the maximum working load to which the rope shall be subjected in service at a given factor of safety or working load limit when the intended use is known.

The certificate number shall enable traceability of the rope.

Test results

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Manufacturer's instructions for use

The instructions for rope should contain the following general information:

- The intended use
- The limits of use.
- Instructions for handling, cutting, storing, assembly, use and maintenance

Marking requirements.

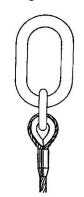
Note: Marking can be affixed to the reel of the bulk supply or by means of a tag:

- CE mark

- Business name and address of the manufacturer
- Reference to the manufacturers certificate
- Batch number
- Year of manufacture

Sling Components

Designed to be incorporated as a terminal fitting as part of a sling for attaching a load to a lifting machine.



Master link and intermediate link.



Hook with safety catch

- Manufacturers Certificate (guidance BS EN 1677 parts 1-6)

- Manufacturer's instructions for use. (guidance BS EN 1677 parts 1-6)

Documents to be supplied in accordance with the relevant legislation & relevant standard:

Manufacturers Certificate

The certificate shall include at least the following information.

- Business name & address of the manufacturer or authorised representative, including the date of issue of the certificate & authentication.
- The number and relevant part of the European standard, eg EN 1677-1.
- Code number
- The quantity & description of the component.
- The grade number
- The working load limit in tonnes
- The manufacturing proof force in accordance with the relevant part of the European standard in kilonewtons.
- Confirmation that the minimum proof force was met or exceeded.
- An identification of the quality system to EN ISO 9002 when in place & operating.

Manufacturer's instructions for use

The instructions for sling components should contain the following general information:

- The intended use
- The limits of use.
- Instructions for handling, storing, assembly, use and maintenance

Additional information for self-locking hooks:



'C' Hook

Note: chain slings will have the same end fittings, but more commonly than a welded connector link and mechanically assembled connector will be used instead.

BSEN 1677 Parts 1-6

- How to close the latch manually by the operator
- How to use the locking mechanism

Marking requirements:

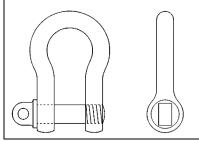
- Code number that identifies the WLL
- The grade number
- Manufacturers, name, symbol or mark
- **Traceability code**

Additional markings for load bearing pins:

Each removable load bearing pin of 13mm diameter and above must be legibly and indelibly marked with the relevant grade number and manufacturers symbol.

SHACKLES

Bow Shackle



Documents to be supplied in accordance with the relevant legislation & relevant standard:

- EC Declaration of Conformity (guidance LEEA 030.1e)
- **Manufacturers Certificate (guidance BS EN 13889)**
- Manufacturer's instructions for use. (guidance LEEA SI.6.3)

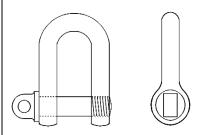
Note: the EC Declaration of Conformity & Manufacturers Certificate can be issued as a single document.

Manufacturer's certificate.

The certificate shall include at least the following information:

Designed for use with more than one attachment to the body to allow freedom of movement. Two main types – screw pin, & bolt, nut & split pin.

Dee Shackle



Designed to enable connection of 2 pieces of equipment in a straight line.

BS EN 13889

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- Name and address of the manufacturer.
- The number of the standard to which it was made
- Traceability code
- Quantity and description
- The grade number
- The working load limit in tonnes (t)
- Confirmation that the minimum breaking load was met or exceeded.
- Identification of the quality system to EN 9001 when in place an operating

Marking requirements

- CE Mark
- Working load limit in tonnes
- Grade number
- Manufacturers name, symbol or code
- Traceability code.

Additional marking for Shackle pins.

All shackle pins, 13mm diameter and above, must be marked with the relevant grade number, traceability code and manufacturers symbol. Pins below 13mm must be marked with at least the grade number or traceability code.

Information Which Should Be Exchanged Between the User & the Designer or Supplier

As shackles are frequently used for multi-purpose applications, precise details of the load to be lifted are not always available. In these circumstances, only a general specification can be given but should, as far as possible, include the following information:

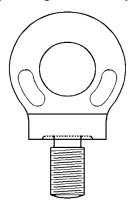
- 1. Type of shackle.
- 2. Type of pin and locking requirements if any.
- 3. Safe working load required.
- 4. Any exceptionally hazardous conditions of use.
- 5. Any limiting dimensions, such as pin size, opening in jaw, diameter of eye.
- 5. If required to be to British or other standard dimensions, give standard and table number or other

relevant reference.

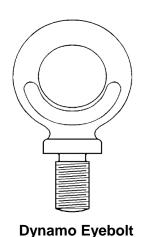
7. Any special marking requirements.

Eyebolts:

Designed for lifting or suspending a load. 3 Types:-



Collar eyebolts



Documents to be supplied in accordance with the relevant legislation & relevant standard:

- EC Declaration of Conformity (guidance LEEA 030.1e)
- Manufacturers Certificate (guidance BS EN ISO 3266)
- Manufacturer's instructions for use. (guidance LEEA SI.7.4 and BS EN ISO 3266 annex A)

Note: the EC Declaration of Conformity & Manufacturers Certificate can be issued as a single document.

Manufacturers certificate

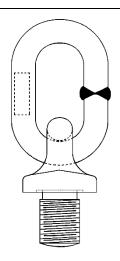
The manufacturer shall provide a declaration with each consignment of eyebolts giving the following information for the consignment:

- the business name & the full address of the manufacturer &, where applicable his authorized representative;
- the number of the International Standard, i.e. ISO 3266;
- the quantity & description of the eyebolt;
- the traceability code to enable any particular eyebolt or batch of eyebolts to be identified
- the working load limit, expressed in tonnes;
- the proof force applied, expressed in kilonewtons;

The declaration shall declare that each eyebolt complies with BS EN ISO 3266 & is within the manufacturer's specification of the type tested eyebolt(s). It shall also state the name & address of the testing establishment if different from the manufacturer.

The declaration shall be authenticated by a signature & shall state the name & status of the signatory.

NOTE: within Europe it is necessary to add regulatory mandatory marking, e.g. CE marking as defined in the



Eyebolt with link.

BS EN ISO 3266:2010 BS 4278

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Machinery Directive & issue the EC Declaration of conformity in addition to the above. Both the EC DoC & the manufactures certificate above can be supplied as a single document.

In addition to the information required by EN ISO 3266, BS 4278 requires the following information:

- the distinguishing mark or symbol (as marked on the eyebolt)
- the form & size of the screw thread
- proof load applied
- the safe working load.

The certificate shall declare that each eye bolt was proof load tested in accordance with clause 9 of BS 4278 & was subsequently examined by a competent person & that it complies with the standard. It shall state the name & address of the testing establishment & the status of the signatory.

Marking requirements

- CE Mark
- Manufacturer's identification mark or symbol
- Nominal size and diameter of thread
- Axial working load limit
- Traceability code.

Information Which Should Be Exchanged Between the User & the Designer or Supplier

As eyebolts are frequently used of multi-purpose applications, precise details of the load to be lifted are not always available. In these circumstances, only a general specification can be given but should, as far as possible, include the following information:

- British Standard reference.
- Maximum load to be lifted.
- Type required.
- 4. Number required.
- 5. If non axial loading is involved give details.
- 6. Thread form and diameter.
- 7. Any exceptionally hazardous conditions of use.
- 3. Special identification marks if required.

Rigging Screws & Turnbuckles

Documents to be supplied in accordance with the relevant legislation & relevant standard:

- EC Declaration of Conformity (guidance LEEA 030.1e)
- Manufacturers Test Certificate (guidance BS 4429 clause 1.12)
- Manufacturer's instructions for use.

Generally used to facilitate tensioning and fine adjustment of length in lifting assemblies where chain, wire rope or textile elements form the main component of the assembly. Also used for cargo restraint and suspension etc.

Note: the EC Declaration of Conformity & Manufacturers Test Certificate can be issued as a single document.

Manufacturer's certificate.

the manufacturer shall provide a certificate with each consignment giving at least the following information for each:

- The number & date of this British Standard, i.e. BS 4429: 1987
- A distinguishing mark to enable the particular rigging screw or turnbuckle to be identified with the test certificate:
- The proof load applied (see clause 1.10 of BS 4429:1987);
- The safe working load (SWL);
- The date of test:
- The quantity tested & covered by one certificate.

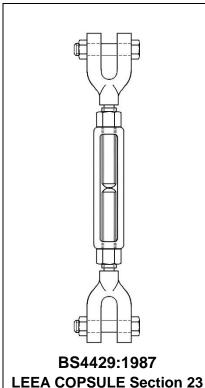
The certificate shall state that each rigging screw or turnbuckle was proof loaded in accordance with clause 1.10 of BS 4429 & was subsequently examined by a competent person & that it complies with the requirements of BS 4429.

The certificate shall state the name & address of the testing establishment, & the status of the signatory.

The certificate may be an appropriate statutory form, provided the required information is given.

Marking requirements

- CE mark
- Working load limit in tonnes (t)



- Business name and address of the manufacturer
- Identification mark
- Traceability code on all load bearing components, i.e. body, eyes, hooks, forks, etc.

Information Which Should Be Exchanged Between the User & the Designer or Supplier

The purchaser should ensure that any order includes the following information:

- 1. Type of component required, ie rigging screw or turnbuckle.
- 2. Finish required, ie self-colour or hot-dip galvanized.
- 3. Type of terminal fittings required.
- 4. Whether locknuts are required.
- 5. Thread diameter and/or WLL required.
- 6. Maximum and minimum length required or range of adjustment required.
- 7. Applicable manufacturing standard.
- 8. State that the item is to be used for a lifting application and should be verified and certified accordingly.
- 9. Details of the application if known.

APPENDIX 1

The following appendix has been developed as a guide to support the requirements of LEEA 059.

The relevant legislation is:

- Machinery Directive 2006/42/EC
- Supply of Machinery (Safety) Regulations 2008
- Provision and Use of Work Equipment Regulations 1998
- Lifting Operations and Lifting Equipment Regulations 1998
- Management of Health and Safety at Work Regulations 1999.

It is emphasised that this guidance applies to legal requirements only. If the equipment or service provided is to a standard or other specification, additional documents or marking may be required. For each product type within the guidance these marking requirements have been specified

Lifting equipment includes any manual or power operated lifting machine and any lifting accessory which can connect the load to the lifting machine or the lifting machine to its supporting structure.

The guiding principle for all documentation is that it must be legible, complete and accurate. Information which is untrue can result in prosecution. In particular the traditional practice of 'back to back' documentation is now unacceptable.

NEW EQUIPMENT

New lifting equipment must comply with The Supply of Machinery (Safety) Regulations 2008 as amended in 2011. (SOMSR) The Responsible Person must issue an EC Declaration of Conformity (DOC) and affix the CE marking. This document and marking are evidence that the Responsible Person has claimed compliance. The equipment must also be accompanied by instructions. The information to be contained in the EC Declaration of Conformity and the instructions and the other marking requirements are defined within the guidance for each product type.

Note: Some machinery and safety components are subject to special attestation procedures. These are listed in Annex IV of the Machinery Directive (Annex D of the Supply of Machinery (Safety) Regulations) In general, such special procedures only apply to lifting equipment if it is to be used for lifting persons.

An employer has a duty under Regulation 10 of PUWER98 to ensure that any new equipment has been designed and constructed in compliance with the essential requirements contained in SOMSR. The EC Declaration of Conformity and the CE marking are evidence that it complies.

An employer has a duty under Regulation 9 of LOLER to have lifting equipment thoroughly examined (which includes any appropriate supplementary testing) before first use. There is an exemption for new equipment if it has not been used and the employer has received an EC Declaration of Conformity made not more than 12 months before the equipment has been put into use. However if safety depends on the installation conditions, a thorough examination is required to ensure that it has been installed correctly and is safe to operate. Following any thorough examination, the person making the examination has a duty under Regulation 10 of LOLER to make a report of the examination. The information to be contained in that report is listed in LOLER Schedule 1 and LEEA have produced example templates, refer to LEEA 030.1a.

The simplest solution

In most cases, the simplest way to comply with the legal requirements is for the manufacturer to issue the EC Declaration of Conformity, affix the CE marking and provide instructions. If the equipment is not supplied direct to the end user, those in the supply chain should pass on the original documents and not alter any markings. The end user should obtain and keep the original documents. If the exemption applies, the equipment can be put into use. If, at the point of being put into use, the exemption does not apply or if safety depends on the installation conditions, the employer should have it thoroughly examined by a competent person and obtain and keep the report of that examination. Provided the report states that it is safe to operate, the equipment can be put into use.

Problems and alternative solutions

(1) Your supplier has not provided the DOC

The equipment should be rejected until it is provided.

(2) The DOC covers a bulk supply which you will sell in smaller quantities

Provide a copy to your customer. However it is likely that the exemption under LOLER will not apply so thoroughly examine the equipment and issue a LOLER report. Alternatively combine the two with a statement on the LOLER report to the effect that the Responsible Person issued a DOC for the item. Keep the DOC and let your customer see it if requested.

(3) Your supplier will sell direct to your customer so you do not wish to reveal your source

The marking requirements of SOMSR for lifting machines include the name and address of the manufacturer. For lifting accessories it includes identification of the manufacturer. You cannot therefore legally hide this information. If your supplier is not the manufacturer but has passed on the original documents, the simplest solution applies. If your supplier is the manufacturer then either use the alternative in (2) above or 'own brand' it as in (4) below.

(4) Equipment made by others but sold in your name

This is known as 'own branding'. The Commission guidance is that if you appear to be the manufacturer you must accept all the obligations of a manufacturer including assembly of the technical file, declaration of conformity, marking and compliance with the essential safety requirements. If you are not in possession of the technical file you should have a written mandate from the manufacturer that authorises you as their legal representative and details explicitly which obligations set out in article 5 are entrusted to you. As a minimum you must be made responsible for compiling the technical file and making it available to the authorities if requested during market surveillance.

Note: The technical file needn't be paper based, electronic records are acceptable and only a Member State can expect to have sight of it following a substantiated request.

(5) Equipment assembled from several items or modified

The person assembling equipment is regarded as the manufacturer of the assembly. If items within the assembly have a DOC, that forms part of the technical file for the assembly. Similarly anyone modifying equipment and/or changing its intended use is regarded as the real manufacturer. In both cases the obligations include assembly of the technical file, issuing of the DOC, marking and compliance with the essential requirements including provision of instructions.

(6) Equipment made by others which you are asked to test and certify

Be cautious about what you are being asked to do. Traditionally a certificate of test and examination was all that was required to take the equipment into service. Now it is only one ingredient of the technical file. If you are testing it on behalf of the manufacturer as part of his verification process, then he should provide a test specification for you to work to after which you should simply report the results. However some internet sources do not provide any documentation and customers will send such equipment or home made equipment expecting you to

test it and certify it as safe to use. In general, equipment which should be CE marked and have a DOC but hasn't, should be referred back to the manufacturer. If you go beyond simply testing, examining and reporting the results, you may be taking a risk.

If it is a test and examination of a new installation and safety depends upon the installation conditions, then Regulation 9 of LOLER applies. Check also that your customer has the DOC(s) from the manufacturer(s) and that the equipment has been installed in accordance with their instructions. If it is an assembly of items or includes a modified item, check who is responsible for the assembly or modification. See (5) above.

(7) Equipment supplied without instructions

There is a requirement under SOMSR that the equipment is accompanied by instructions for use. Therefore, as a general rule, the equipment should be rejected until such instructions are supplied. If it is general purpose equipment, without any characteristics particular to the design, then generic instructions are an acceptable alternative, eg the LEEA safety information leaflets.

(8) Equipment supplied without CE marking

In general, all complete items of lifting equipment should have the CE marking. Sub assemblies and components are not usually marked. Some items, such as shackles, may be made for non-lifting applications. If the item is supplied complete, intended for lifting applications and not marked, reject it.

(9) Equipment with a Declaration of Incorporation

An EC Declaration of Incorporation (DOI) is a device to legally market machinery which can function but is not complete and may not be safe. It is a statement that the machinery is not to be used until incorporated into an assembly for which a DOC is issued. If you buy and incorporate such machinery, you have the obligations of the manufacturer of the finished assembly.

IN-SERVICE EQUIPMENT

An employer has a duty under Regulation 9 of LOLER to have his lifting equipment thoroughly examined at specified maximum periods or in accordance with an examination scheme and after any exceptional circumstances which are liable to jeopardise the safety of the equipment. Following any thorough examination, the person making the examination has a duty under Regulation 10 of LOLER to make a report of the examination irrespective of whether or not the equipment is found safe to use.

The report must be made to the employer and any person from whom the equipment has been hired or leased. If the person making the examination is of the opinion that there is a defect involving an immediate or imminent risk of serious personal injury, he has a duty to send a

copy of his report to the relevant enforcing authority. (Generally the HSE) The information to be contained in that report is listed in LOLER Schedule 1 and LEEA have produced example templates, refer to LEEA 030.1a.