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Chain hoists

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PRELIMINARY NOTE

SQ Standards are intended to define the necessary quality levels of services provided within the event technology industry.

SQ Standards take into consideration the current legal positions and on that basis, provide a description of the industry's specialised working procedures. They contain a summary of the applicable legal standards and requirements in areas of work safety and health protection.

This Quality Standard has been developed by an igvw (Entertainment Technology Industry Association) working group in cooperation with DGUV (German Social Accident Insurance) and a working group consisting of safety engineers of the following institutions: ard.zdf.medienakademie, ARTE, BR, Bavaria, DR, DW, HR, IRT, MDR, NDR, ORF, RB, RBB, RBT, RTL, SF, SR, Studio Hamburg, SWR, WDR and ZDF.

The solutions described in this IGVW Standard do not rule out the validity of other solutions that guarantee the same standard of safety, as laid down within the technical regulations of other member nations of the European Union or Turkey, or other member states of the European Economic Area.

Please note: Wherever possible gender-free nouns and pronouns have been used. Where this is not possible, the male noun or pronoun has been used to improve readability, but also is meant to refer to females.

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1 | SCOPE

This Standard of Quality applies to the use of electric chain hoists and associated system components in the event industry.

The use of electric chain hoists implies any activity conducted with them. This includes planning, selection, supply and use. The use itself comprises storage, transportation, assembly, operation, maintenance, repair and inspection.

This document is intended for all persons who bear administrative or technical responsibility for planning, procurement or safe use of electric chain hoists and associated system components as well as for carrying out any respective orders.

2 | NORMATIVE AND INFORMATIVE REFERENCES

DIN EN 14492-2:2010-05

Cranes - Power driven winches and hoists - Part 2: Power hoists; German version EN 14492-2:2006+A1:2009

IN EN 818-7: 2008-09

Short link chain for lifting purposes – Safety – Part 7: Fine tolerance hoist chain – Grade T (Types T, DAT and DT):

DIN EN 60204-32: 2009-03

Safety of machinery – Electrical equipment of machines – Part 32: Requirements for hoisting machines

DIN 56950-1:2012-05

Entertainment technology – machinery installations – Part 1: Safety requirements and inspections

DIN 56950-5-5:2018-07

Entertainment technology – machinery installations – Part 5: Safety requirements for Electric chain hoist systems

DGUV Regulation 3/4

Electrical installations and equipment

DGUV Regulation 17/18

Staging and production facilities for the entertainment industry

DGUV Rule 115-002

Staging and production facilities for the entertainment industry

DGUV Regulation 54/55

Winches, lifting and pulling equipment

DGUV Information 215-313

Safety Aspects in Productions and Entertainment – Overhead loads

DGUV Principle 315-390

Principles for the testing of mechanical equipment on stages and in studios

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Entertainment Rigging Qualification

3 | DEFINITIONS

D8 Electric chain hoist

The D8 electric chain hoist for the purposes of this Standard of Quality conforms to the requirements set out in DIN EN 14492-2:2010-5 and must not be used for moving or holding loads overhead without additional safety measures.

D8 Plus Electric chain hoist

The D8 Plus Electric chain hoist for the purposes of this Standard of Quality is constructed, dimensioned and equipped in such a way that it is qualified for holding of overhead loads.

C1 Electric chain hoist

The C1 Electric chain hoist for the purposes of this Standard of Quality conforms to the requirements as defined in DIN 56950-1:2012-05 and is generally suitable for holding and moving overhead loads.

Note: The requirements for the components of C1 electric chain hoists and their controls depend on the application. Technical requirements and other necessary protective measures must be determined based on application-specific risk assessment.

Electric chain hoist system

System consisting of one or more electric chain hoists and associated controls, which form a single system with interacting components.

Group

At least two electric chain hoists, which can be set in motion simultaneously, triggered with one control unit (e.g. push-button).

Asynchronous group travel

Simultaneously started lifting process of a group, in which individual electric chain hoists operate independently or without influence from the control unit. Asynchronous group travel may be configured with or without group stop.

Synchronous group travel

Lifting process of a group of electric chain hoists, the travel distance and speed of which are determined by the control unit. Synchronous group travel is always controlled and configured with a group stop.

Distance-synchronous travel

Lifting process of a group of electric chain hoists, all of which travel the same distance with the same speed within the same time interval.

Time-synchronous travel

Lifting process of a group of electric chain hoists, which travel different distances with different speeds within the same time interval.

Group switch-off

A group switch-off is the stop of all electric chain hoists in a group by switching off the electric power supply due to a fault or setting-off of a safety device.

Rated capacity

Maximum load specified by the manufacturer of an electric chain hoist, which may be held or moved by the electric chain hoist in accordance with its specifications.

Safety device

Mechanical device (brakes, self-locking mechanism) that prevents unintended motion.

Protective devices

Electric circuits and electromechanical devices (e.g. limit switches, position switches, safety circuits) which monitor operating status and functions

Secondary safety device

Second independent safety component required for the use of D8 electric chain hoists to prevent unintended motion of the load when holding overhead loads.

Load system

Combination of load, load carrying device and lifting accessories.

Statically determinate load system

In a statically determinate load system, all loads and reactions (loads applied on individual electric chain hoists and anchor points) can be analysed using basic mathematical methods (three equations of equilibrium).

Note: Statically determinate load systems are:

- Loads on single electric chain hoists (point load)
- Line loads on two electric chain hoists (single span girders with or without cantilevers)
- Area loads on three electric chain hoists

Statically indeterminate load system

In a statically indeterminate load system, the reactions (loads applied on individual electric chain hoists and anchor points) can only be analysed using complex mathematical methods (more than three equations of equilibrium).

Note: Statically indeterminate load systems are for instance:

- Line loads on more than two electric chain hoists (multi-span girders)
- Area loads on more than three electric chain hoists
- Guided loads

4 | USE

Electric chain hoists are to be considered as work equipment in terms of the German industrial safety regulations (BetrSichV).

The use of electric chain hoists implies any activity conducted with them. This includes, in particular, assembly and installation, servicing, switching on or off or adjusting, operation, repairs, cleaning, inspections, rebuilds, tests, dismantling, transportation and monitoring.

Prior to placing electric chain hoists and accessory equipment in operation, evaluation of possible risks (risk assessment) must be carried out in order to define all necessary and appropriate safety measures.

Note: The existence of a CE mark on an electric chain does not discharge from the obligation of carrying out a mandatory risk assessment.

4.1 Risk assessment

The risk assessment must take account of all expectable hazards related to the use of electric chain hoists.

These hazards can be associated not only with the operation of electric chain hoists, but also with the work environment (e.g. weather conditions in outdoor applications).

4.1.1 Risk assessment prior to use

The risk assessment must be started before selection and procurement of electric chain hoists. In particular, it shall assess suitability of the electric chain hoists and accessory equipment for the application, work procedures and organisation. Only competent persons shall conduct the risk assessment. If the Contractor lacks the relevant expertise, he shall commission specialists to do the risk assessment.

The risk assessment shall be documented in writing.

4.1.2 Risk assessment before each individual application

Due to the large number of possible applications of electric chain hoists in the event industry, application related risk assessments shall be carried out.

The following essentially hazards shall be considered:

- ▶ Electrical hazards
- ▶ Mechanical hazards
- ▶ Workplace related hazards
- ▶ Physical load and work intensity
- ▶ Organizational issues

The following circumstances shall be particularly considered:

- ▶ Presence of other people underneath the load
- ▶ Type of load to be hoisted
- ▶ Emergencies or dangerous situations
- ▶ Qualification and experience of the users
- ▶ Time frame conditions

The assessment of risks takes place during the planning phase and shall be recorded in writing.

Note: Explanatory resources and tools on carrying out the risk assessment can be found at www.igvw.de

Technical safety measures can only limitedly minimize the risks pertaining to specific applications of electric chain hoists in the event industry.

In these applications, particular precautions must be taken when using electric chain hoists. These are mainly workplace related precautions and careful, conscious and proper operation, as well as necessary levels of qualification of users.

All measures described in the following paragraphs can be derived from the result of the risk assessment.

4.2. Supply

Electric chain hoists are available in a variety of designs and configurations and with different safety components and protective mechanisms. Selection of electric chain hoists is therefore of great importance, whereby attention must be paid to possible risks that can be anticipated in specific operating conditions.

Electric chain hoists used in permanent installations in venues should always conform to DGUV Regulation 17/18, DGUV Rule 115-002 and subordinated documents in respect of methods of use and the possible risks. Derogation from these requirements is only possible in case the risk assessment shows conclusively that other technical solutions provide adequate safety.

4.2.1 Applications of electric chain hoists

Different design and dimensioning variants of electric chain hoists can be used in the event industry. The variants described in this section should be particularly taken in account when planning and selecting electric chain hoists.

4.2.1.1 D8 Electric chain hoist

The D8 electric chain hoist equals a standard industrial electric chain hoist pursuant to DIN EN 14492-2:2010-05, with the difference that the D8 electric chain hoist usually has no connected manual control and is mostly used climbing on its chain in temporary applications.

D8 electric chain hoists must not be used to hold or move overhead loads people without additional safety devices. Generally, a secondary safety device shall always be installed for each D8 electric chain hoist.

This secondary safety device must be installed in such a way that it ensures the shortest possible or no drop height. Therefore, the secondary safety device shall be equipped with a shortening device.

The secondary safety device usually consists of a chain sling with shortening function and can be extended with wire rope slings.

The D8 electric chain hoist at rest, with the secondary safety device installed, can be loaded with the rated load specified for the electric chain hoist.

The secondary safety device is dimensioned in a way that guarantees inherent safety (see DGUV Information 215-313) and with two times the rated capacity of the D8 electric chain hoist.

Example: Lifting capacity of D8 electric chain hoist 1.0 t,
required chain slings: Nominal size 8-8, WLL 2.0 t,
additional wire rope slings that may be required: Diameter 14 mm, WLL 2.0 t,
slings e.g. on a truss: WLL 2.0 t,
high-strength shackles: minimum WLL 2.0 t, usually bow shape, WLL 3.25 t.

4.2.1.2. D8 Plus Electric chain hoist

The D8 Plus Electric chain hoist can be a regular D8 electric chain hoist equipped with an additional brake and may only be loaded with half of the rated capacity specified on the D8 electric chain hoist. Except for the brakes, D8 Plus electric chain hoist is thus dimensioned according to the inherent safety principle.

Equipped with the second brake, the D8 Plus electric chain hoist complies to the principle of single fault tolerance. The D8 Plus electric chain hoist is qualified to hold overhead loads without a secondary safety device.

The D8 Plus electric chain hoist can also be a specially designed electric chain hoist, dimensioned and constructed to hold overhead loads. In the situation of the D8 Plus electric chain hoist at rest, the operating coefficients of all elements of the electric chain hoist in the load path are determined and dimensioned for at least twice the rated capacity of the D8 Plus electric chain hoist. The load-carrying means (chain) has an operating coefficient of 8 in the at-rest-situation. Lower operating coefficients are permissible for the in-motion-situation, since persons are not allowed to be in the hazard area in this situation.

If a D8 Plus electric chain hoist is equipped with a direct-acting lifting load limiter (slip clutch), it may not be used for overload protection.

The D8 Plus electric chain hoists can be equipped with additional safety devices such as indirect-acting lifting force limiters (e.g. load measuring pins), limit switches and encoders.

Note: Adjustable direct-acting lifting force limiters shall always be set at a considerably high trigger-point to enable the hoist to lift a load equal to the rated capacity of the D8 Plus electric chain hoist (break free from the ground). Direct-acting lifting force limiters serve solely to protect the drive of an electric chain hoist.

4.2.1.3. C1 Electric chain hoist

An electric chain hoist conforming to DIN EN 14492- 2:2010-05A can be used as a basis for a C1 electric chain hoist and must be equipped with at least one additional brake, double limit switches and an overload shut-down. It can be loaded only with half of the rated capacity specified for the initial electric chain hoist. Depending on the intended use, further additional equipment may be required in accordance with DIN 56950-1:2012-05.

C1 electric chain hoist can also be specially designed and dimensioned to hold and move overhead loads. This type of C1 electric chain hoists shall meet the requirements of DIN 56950-1:2012-05.

4.2.2 Selection of electric chain hoists depending on the type of application

Type of use	People in the risk area	Minimum requirements for the electric chain hoists
Holding of loads	No	D8
Holding of loads	Yes	D8 Plus or D8 with secondary safety
Movement of loads	No	D8
Movement of loads	Yes	C1
Movement of people	Yes	C1

4.2.3 Electrical equipment and controls

The installation of the power supply, the control system, and the choice of electrical equipment must prevent the occurrence of dangerous operating conditions in the event of a malfunction.

The electrical equipment (e.g. contactor control, wiring, power distribution) of the supplied electric chain hoists must, in particular, fulfill the requirements of DIN EN 60204-32 (Safety of machinery – Electrical equipment of machines - Part 32: Requirements for hoisting machines; VDE 0113 Part 32).

The following minimum requirements shall be observed:

- ▶ Rotating field and phase sequence control
- ▶ Emergency stop devices within reach of the operator
- ▶ Protection against electric shocks
- ▶ Protection against accidental start-up and automatic restart after failure and restoration of power
- ▶ Protection against influences
- ▶ Selection of the motion direction
- ▶ Go-button

Additional requirements can be found in EN 60204-32.

If electronic or electronically programmable control systems are used, their safety-related features must fulfil the requirements of DIN 56950-1:2012-05.

4.2.4 Protection against overload

Protection against overload is always mandatory when using electric chain hoists. An overload shutdown is compulsory for C1 electric chain hoists.

There is a variety of overload protection methods, which depend on the type of application and the load system of D8 and D8 Plus electric chain hoists.

Based on the risk assessment, these methods can include technical, organisational or a combination of technical and organisational measures.

If load measurement is necessary as a result of the risk assessment, this may not be done by measuring the electrical current consumption of the motor, because a load measurement must be possible when the electric chain hoist is at rest and thus in a status free of electrical power.

A load measurement is always mandatory if there is a risk of overload of individual elements in the load path (e.g. supporting structures, attachment points, slings, electric chain hoists, load suspension devices).

The risk of overload of individual elements in the load path often exists in statically indeterminate load systems such as:

- ▶ Line loads on more than two electric chain hoists
- ▶ Area loads on more than three electric chain hoists

Automatic overload shutdown is required if the operator response is not sufficient to prevent a hazardous situation. For example, if the rated lifting speed is higher than 4 m/min or in case that electric chain hoists cannot be simultaneously monitored due to their quantity or location.

The necessity of an automatic overload shutdown shall be determined in the course of the risk assessment.

4.2.5 User Information and identification marking

All involved contractors shall ensure that the supplied electric chain hoists are marked and inspected and that the required documentation is available at the place of operation.

The minimum content of the required documentation in German language includes:

- ▶ Operating manual
- ▶ Inspection reports/certificates
- ▶ Risk assessment
- ▶ Safety instructions

Identification marking and inscriptions on the body of the electric chain hoist shall be permanently legible and in compliance with the EC Machinery Directive.

The identification marking can be supplemented by clear symbols that are visible in all operating conditions and which indicate permissible types of application in accordance with paragraph 4.2.2.

These symbols are:



4.3. Operation

Electric chain hoists shall be used in accordance with the following specifications.

Prior to each use of electric chain hoists, a risk assessment (see section 4.1) shall be carried out in order to ascertain all measures necessary for hazard-free use and safety instructions shall be communicated onsite.

These measures must guarantee workplace- and health- safety of all persons involved, as well as prevention of damage to buildings, furnishings and work equipment. The effectiveness of the measures must be checked at the site of operation.

4.3.1 Qualification and responsibility

The duties of the responsible persons must be defined and differentiated. The responsibility of the operator and/or owner of the venue remains unaffected. The qualification required for the planning, set-up and dismantling, as well as for the operation itself, depends on the degree of the risk involved.

The person responsible for the electric chain hoists gives permission for operation.

This approval may not be given until it is proved that the inspections listed in section 5 of this Standard of Quality have been duly carried out. A handover to another user shall be recorded in writing (see appendix II).

4.3.2. Safety measures for the use of electric chain hoists

The selection and dimensioning of all load-bearing elements in the load path (e.g. suspension point, girder clamp, shackle, steel wire rope sling, electric chain hoist, truss, etc.) must be made after consideration of the applied loads and risks that may occur in each specific case (see also DGUV Information 215-313).

Before each set-up it is compulsory to carry out visual inspections of the condition of the suspension points in the building and to find out the loading capacity of the suspension points according to the data specified in the documentation of the owner or operator of the building. The owner or operator of the venue is responsible for the design, load bearing capacity and quality of the suspension points provided in the building and to provide sufficient documentation (e.g. a load capacity plan).

Visual inspection of the electric chain hoists and all accessory parts and appliances must be made before each set-up (e.g. slings, load bearing equipment, controls, cables).

When D 8 electric chain hoists are used to hold overhead loads, secondary safety devices are generally required. (see Section 4.2.1.1).

When using D8 and D8Plus electric chains hoists, the drives and brakes must be disconnected from the power supply before people enter the hazard zone.

Electric chain hoists shall to be installed in such a way that the chains are not twisted or angled. It is particularly important when the load (e.g. a truss structure) is attached to more than one electric chain hoists.

When operating electric chain hoists, it must be ensured that the chain will run easily into the chain bags. Unloaded chain must also run easily in and out. The chain bag must be large enough to securely hold the entire chain and the loose end of the chain shall be securely attached to the chain hoist.

When multistrand electric chain hoists are used, it must be ensured that the chain strands are not twisted.

The operator shall always be able to observe the whole lifting process of the loaded electric chain hoists over the entire lifting distance. If this is not possible, appropriate measures for monitoring of the lifting process must be defined and applied.

Instructions to initiate the motion must be given clearly and unambiguously.

If a load is lifted with several electric chain hoists with different controls, it must be ensured that their motion is triggered by a common command unit and that the lifting operation can be interrupted by a common emergency stop. If there are more than one emergency-stop buttons, each of them must interrupt the lifting process of all electric chain hoists.

5 | INSPECTION

According to the German industrial safety regulations (BetrSichV), contractors must ensure that electric chain hoists are subject to inspection by competent persons prior to the first use, if the safety of the equipment depends on the installation conditions. Inspection includes:

1. checking the assembly or installation and the safe functioning of the electric chain hoists,
2. timely detection of defects,
3. verification of effectiveness of the undertaken safety measures.

Checks conducted and documented during the conformity assessment procedure do not have to be repeated.

The inspection must take place prior to each use after an installation.

5.1 Basic principles of inspections

Inspections of electric chain hoists/electric chain hoists systems as a minimum shall be based on:

- ▶ Manufacturer's guidance for inspection
- ▶ Industrial safety regulations (BetrSichV) and related Technical Rules and Announcements
- ▶ DGUV Regulation 17/18 „Staging and production facilities for the entertainment industry“
- ▶ DGUV Rule 115-002 „Staging and production facilities for the entertainment industry“
- ▶ DGUV Principle 315-390 „Principles for the testing of mechanical equipment on stages and in studios“
- ▶ DGUV Regulation 54/55 „Winches, lifting and pulling equipment“
- ▶ DGUV Regulation 3/4 „Electrical systems and equipment“
- ▶ DIN EN 818-7:2008-07 „Short link chain for lifting purposes – Safety – Part 7: Fine tolerance hoist chain – Grade T (Types T, DAT and DT)“
- ▶ DIN 56950-1:2012-05 „ Entertainment technology - Machinery installations - Part 1: Safety requirements and inspections“
- ▶ DIN 56950-5 „Entertainment technology – machinery installations – Part 5: Safety requirements for Electric chain hoist systems“

The inspection prior to each use after an installation may also be based on additional documents:

- ▶ Technical Drawings (e.g. of the load system)
- ▶ List of materials
- ▶ Load plans
- ▶ Structural reports
- ▶ Application-specific risk assessment for the electric chain hoist system

5.2 Periodic inspection

Electric chain hoists are exposed to influences that cause damage (e.g. wear). Periodic inspections by competent persons for inspection of electric chain hoists shall be carried out at least annually to ensure timely identification of deficiencies.

The contractor is obliged to select and assign competent persons to perform the inspection of electric chain hoists. It's the responsibility of the contractor to ensure that they carry out tests for which they show personal and professional aptitude, can work independently and are up-to-date with the latest technologies.

The contractor must also ensure that D8 Plus and C1 electric chain hoists are tested at least every four years by authorised experts (inspectors) in accordance with DGUV regulation 17/18.

The scope and depth of the periodic inspection generally depends on the information provided by the manufacturer of the electric chain hoists. Additional criteria for inspection may be derived from the DGUV regulations and rules, as well as state of the art standards.

Electrical and mechanical safety of an electric chain hoist shall be ensured in the course of periodic inspections. It is particularly important to check for any concealed damage, e.g. in chain guides of the electric chain hoist.

5.3 Inspection after assembly or installation

Prior to each use after an assembly or installation the components of D8 and D8 Plus electric chain hoist systems are subject to inspection at the place of use by a person qualified and competent to perform the inspection. The results of the inspection shall be recorded. The inspection consists of visual and functional checks, which can already be carried out during the assembly or installation of the components.

Generally, C1 electric chain hoists shall be inspected by authorised experts (inspectors) after the assembly or installation.

C1 electric chain hoists that are repeatedly assembled or installed in the same way on tours or in the course of continuous operation at the place of use shall be inspected in accordance with the German industrial safety regulations (BetrSichV), Annex 3, Paragraph 3, Table 1, Lines c) and d). This applies also to the inspection of C1 electric chain hoists which do not fall within the scope of the Machinery Directive (Ninth directive to the Product Safety Act). These inspections are typically carried out by authorised experts. Authorised experts are entitled to evaluate the equipment complexity, foreseeable hazards or dangerous situations and decide whether the inspection can be assigned to a competent person.

This person must act under the direction of the authorised expert (inspector). For this purpose, the authorised expert (inspector) shall supervise elaboration of an application-specific inspection procedure.

The application-specific inspection procedure shall be formulated in writing and meet at least the following criteria:

- ▶ Description of the planned procedure
- ▶ Designation of the responsible persons
- ▶ Justification for the use of the inspection method
- ▶ Name and qualification of the personnel appointed for the inspection
- ▶ Description of the work equipment, systems or elements to be checked
- ▶ Risk assessment and description of necessary safety precautions
- ▶ Inspection process and respective inspection criteria
- ▶ Definition of possible criterion for exclusion
- ▶ Scope of application (local, temporal) of the inspection method
- ▶ Name and signature of the responsible/leading authorised expert

Documentation used for the application-specific inspection procedure and inspection records shall be kept at the place of use.

5.4 Inspections in the event of alterations or exceptional circumstances

The contractor shall order the immediate special inspection of D8 Plus and C1 electric chain hoists to be carried out by an authorized expert (inspector) in case any major modifications or exceptional circumstances, which are liable to jeopardize safety and pose risk to people, have occurred. D8 electric chain hoists in this case may be inspected by competent persons.

Any modification that affects the safety of the electric chain hoist shall be checked. Repairs can also be considered as such modifications.

Inspection is required for example after:

- ▶ Alteration of the rated capacity
- ▶ Replacement of Safety devices (brakes)
- ▶ Modification of control systems

Typical examples of exceptional circumstances:

- ▶ Event of fault
- ▶ Prolonged periods of inactivity of the electric chain hoists
- ▶ Natural phenomena

5.5 Inspection records

The contractor makes sure that the results of the performed inspections are documented and kept available for the entire period of use. Inspection records shall include at least the following information:

- ▶ Identification of the electric chain hoist
- ▶ Type of inspection
- ▶ Date and place of inspection
- ▶ Inspection regulatory principles
- ▶ Inspection scheme
- ▶ Results
- ▶ Evaluation of identified deficiencies
- ▶ Recommendations on further use
- ▶ Date when the next inspection is due
- ▶ Name and signature of the competent person who conducted the inspection.

Inspection records may also be kept in electronic form. If electric chain hoists are used at different locations, the inspection records shall be maintained in such a way that the results of the latest inspection are available onsite.

The summary of all documents pertaining to inspections will be useful to present the complete history of the electric chain hoist.

Inspection reports can be supplemented with inspection stickers.

APPENDIX I A sample report of regular inspection

Sample Report - Checklist Periodic inspection of an electric chain hoist			
Customer/Operator		Date of previous inspection	
Manufacturer		Type	
Serial number		Year of manufacture	
Rated capacity		Model (climbing/non-climbing)	
Lifting height		Lifting speed	
Load chain		Chain strands	
Inspection records available		Inspection principles	
Inspection steps	Deficiencies		Remarks / Actions / Measured values
	Yes	No	
Document review User manual, Inspection reports, Inspection certificates, EU-Declaration of conformity			
General visual inspection Housing, Shape, Bolt connections, Type label, Leakage, Signs of wear, Rated capacity information, cable glands, Cable connection, etc.			
Electrical inspection (see DGUV Regulation 3 / DIN VDE 0701-0702)			
Specific inspection (Manufacturer's specification) Chain bag			
Chain guide / Sprocket wheel			
Load chain / Chain lubrication			
Chain hook / Hook block			
Connection cable / Control cable			
Electrical connections / Clamping units			
Gaskets / Oil outlet screw			
Break / Breaks			
Transport handles			
Functional check			
Noise emission			
Break test, Load test			
Load limiting device, Load test			
Limit switches			

There are (no) safety concerns preventing further operation. Reinspection is (not) required.

Comments / Remarks:

Date / Place

Inspector

Signature

APPENDIX II A sample handover protocol

Declaration concerning the correct installation and readiness for use of electric chain hoists

Description of the venue:

Place of installation:

Customer:

Name:

Address:

Responsible person:

Contractor:

Name:

Address:

Responsible person:

The supplier herewith declares to the customer that all electric chain hoist systems installed by him conform with the corresponding regulations and accepted technical standards.

The required user information and test certificates have been provided.

Date: _____

Signature of contractor: _____

Date: _____

Signature of customer: _____

Legend

Einige erklärende Hinweise zur Struktur der Standards:

- SQ** Standard of Quality
- O** Organisation
- P** Code of practice/working procedure
- Q** Qualification
- 1, 2, 3, ...** Consecutive numbering

O Organisation/Documentation

Internal set-up and organisation of operations/documentation and certification of processes

P Code of practice/working procedure

Supply and use of working materials

Q Qualification

Qualification of skilled workers and specialists

IGVW

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Veranstaltungswirtschaft

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