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Cranes — Wire ropes — Care and maintenance, inspection and discard

Appareils de levage à charge suspendue — Câbles — Entretien et maintenance, inspection et dépose



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Contents

Page

Foreword.....	iv
Introduction	v
1 Scope	1
2 Normative references	2
3 Terms and definitions.....	2
4 Care and maintenance.....	3
4.1 General.....	3
4.2 Rope replacement.....	3
4.3 Offloading and storing the rope	5
4.4 Condition of the rope prior to installation.....	5
4.5 Installing the rope	5
4.6 Running-in the new rope.....	8
4.7 Maintaining the rope.....	9
4.8 Maintenance of rope-related parts of the crane	9
5 Inspection	10
5.1 General.....	10
5.2 Daily visual inspection	10
5.3 Periodic inspection.....	10
5.4 Inspection following an incident.....	13
5.5 Inspection following period with crane out of operation.....	13
5.6 Non-destructive testing.....	13
6 Discard criteria	14
6.1 General.....	14
6.2 Visible broken wires	14
6.3 Decrease in rope diameter	17
6.4 Fracture of strands	19
6.5 Corrosion.....	19
6.6 Deformation and damage.....	20
Annex A (informative) Key areas requiring particular close inspection.....	23
Annex B (informative) Typical modes of deterioration.....	25
Annex C (informative) Internal examination of rope.....	34
Annex D (informative) Typical examples of inspection record.....	37
Annex E (informative) Useful information on rope deterioration and discard criteria.....	39
Annex F (informative) Combined effect assessment of rope condition and severity rating — One method	42
Annex G (informative) Examples of cross-sections of ropes and corresponding rope category number (RCN).....	45
Annex H (informative) Guidance on assessment and rating of external corrosion	51
Bibliography	53

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 4309 was prepared by Technical Committee ISO/TC 96, *Cranes*, Subcommittee SC 3, *Selection of wire ropes*.

This fourth edition cancels and replaces the third edition (ISO 4309:2004), which has been technically revised. It also incorporates the Amendment ISO 4309:2004/Amd.1:2008.

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Introduction

A wire rope on a crane is regarded as an expendable component, requiring replacement when the results of inspection indicate that its condition has diminished to the point where further use would be unwise from a safety standpoint.

By following well-established principles, such as those detailed in this International Standard, along with any additional specific instructions provided by the manufacturer of the crane or hoist and/or by the manufacturer of the rope, this point should never be exceeded.

In addition to encompassing the guidance on storage, handling, installation and maintenance, which was first introduced in the last revision, this International Standard also provides discard criteria for those running ropes which are subjected to multi-layer spooling, where both field experience and testing demonstrate that deterioration is significantly greater at the cross-over zones on the drum, than at any other section of rope in the system.

It also provides more realistic discard criteria covering decrease in rope diameter and corrosion, and gives one method for assessing the combined effect of deterioration at any position in the rope.

When correctly applied, the discard criteria given in this International Standard are aimed at retaining an adequate safety margin. Failure to recognize them can be extremely harmful, dangerous and damaging.

To assist those who are responsible for "care and maintenance" as distinct from those who are responsible for "inspection and discard", the procedures are conveniently separated.