Fourth edition
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Steel wire ropes — Requirements

Câbles en acier — Exigences

Reference number
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Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 105, *Steel wire ropes*.

This fourth edition cancels and replaces the third edition (ISO 2408:2004), which has been technically revised with the following main changes:

— "general purposes" and "minimum" have been deleted from the title;

— "oil and gas industry and fishing" has been deleted in the scope;

— the definitions of "calculated aggregate minimum breaking force of core, F_0" have been increased;

— in Table 1, Rope grade 2160 has been increased to 2 360 MPa;

— the sentence "All wires of the same nominal diameter in the same wire layer shall be of the same tensile strength grade." in 4.1.1 has been deleted;

— in 4.2.2, the sentence "Twisting for wires up to and including 0,4 mm, and brazing for wires over 0,4 mm," has been deleted and has been replaced with "the minimum distance between wire joints within one strand shall be 20 × d";

— "type" has been used to replace "duty" in 4.2.3, and the sentence "The purchaser should specify the rope duty or any particular lubrication requirements" has been deleted;

— "Zn-Al coated" has been increased in 4.2.7;

— note d) in 4.5.1 has been deleted;

— the "breaking force testing requirements without ISO quality system" column in Table 4 has been deleted;

— the requirement of measuring instrument for diameter measurement in 5.3 has been increased;

— these sentences in 5.4.1 have been deleted:

"a) the selected test piece shall have its ends secured to ensure that the rope does not unravel;

b) the minimum free test length excluding any rope terminations shall be 600 mm or 30 × nominal rope diameter, whichever is the greater;

c) after 80 % of the minimum breaking force has been applied, the force shall be increased at a rate of not more than 0,5 % of the minimum breaking force per second";

— the "measured aggregate breaking force, $F_{e.m}$" in 5.4.4 has been increased;

— in 6.1.1, g) maximum wire diameter and h) metallic cross-sectional area have been added;

— in 6.1.2 b) mass of coating, "(if applicable)" has been added;

— markings have been detailed in 6.2;

— the sentence "The value of wire exceeding the grades in the table should be agreed by the supplier and purchaser" has been added in Annex A;

— B.2 has been added in Annex B;

— in Annex C (previously Annex D), the metallic cross-section ratio, the weight ratio, and the calculating ratio for compacted strand wire rope columns have been added;

— in Annex D (previously Annex C), 6 × 19 M, 8 × 7, 18 × 19S, 18 × 19W, 36(M) × 7 have been added in rope construction and tables for 4 × 19 class, 4 × 36 class and K4 × 35N class have been added;

— "rope grade equivalents" has been changed to "rope grade approximations" in Annex G, and a note has been added;

— Annex H has been added;

— editorial revisions have been made.

Introduction

This document was developed in response to a worldwide demand for a specification giving requirements for steel wire ropes.

As in previous editions, this document specifies metric sizes and grades of rope for the more common classes of rope; see Annex F. A comparison of rope grades is provided in Annex G.