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Steel wire ropes — Test method — Determination of measured breaking force

Câbles en acier — Méthode d'essai — Détermination de la force de rupture mesurée

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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.

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).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

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 second edition cancels and replaces the first edition (ISO 3108:1974), which has been technically revised.

The main changes compared to the previous edition are as follows:

— the following clauses have been added:

  — Terms and definitions (see Clause 3);

  — Principle (see Clause 4);

  — Sample preparation (see Clause 5);

  — Testing machine requirements (see Clause 6);

  — Safety requirements (see 7.6);

  — Testing result justification (see 7.8);

— the test speed of the load applied at approximately 10 Mpa per second after 80 % of F_{min} achieved has been changed to the speed at the rate of not more than 0,5 % of F_{min} per second (see 7.6).

Steel wire ropes — Test method — Determination of measured breaking force

1 Scope

This document specifies a method of tensile test to destruction for determining the actual breaking force of steel wire ropes as given in ISO 2408.

It is also applicable for other ropes, unless the International Standard concerned specifically excludes its use, or gives another method.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 7500-1, *Metallic materials — Calibration and verification of static uniaxial testing machines — Part 1: Tension/compression testing machines — Calibration and verification of the force-measuring system*

ISO 17558, *Steel wire ropes — Socketing procedures — Molten metal and resin socketing*

ISO 17893, *Steel wire ropes — Vocabulary, designation and classification*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 17558, ISO 17893 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at http://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

3.1
force at first wire breaking
force value measured when breaking of the first wire occurs during the tensile testing process

3.2
minimum breaking force
$F_{\min}$
specified value, expressed in kilonewtons, below which the *measured breaking force* (F_m) (3.3) shall meet or exceed in a prescribed breaking force test and which is normally obtained by

$$F_{\min} = \frac{d^2 \times R_r \times K}{1\,000}$$