INTERNATIONAL STANDARD

ISO 7802

Second edition
2013-11-01

Metallic materials — Wire — Wrapping test

Matériaux métalliques — Fils — Essai d'enroulement

Reference number
ISO 7802:2013(E)

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

Contents

Page

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. 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. 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.

The committee responsible for this document is ISO/TC 164, *Mechanical testing of metals*, Subcommittee SC 2, *Ductility testing*.

This second edition cancels and replaces the first. edition (ISO 7802:1983), of which it constitutes a minor revision.

Metallic materials — Wire — Wrapping test

1 Scope

This International Standard specifies a method for determining the ability of metallic wire of diameter or thickness 0,1 mm to 10 mm inclusive, to undergo plastic deformation during wrapping.

2 Principle

The wrapping test consists of winding a wire to a specified number of turns around a mandrel of the diameter specified in the relevant standard to form a closely wrapped helix.

It may also include a specified sequence of winding and unwinding, or even rewinding.

3 Test equipment

The testing machine shall be constructed so the wire can be wound around the mandrel in a helix so that adjacent wraps of the coil are in contact. A piece of the wire to be tested may be used as the mandrel, provided it is of the specified mandrel diameter and of sufficient hardness.

4 Procedure

4.1 In general, the test is carried out at ambient temperature between 10 °C and 35 °C. Tests carried out under controlled conditions shall be made at a temperature of 23 °C ± 5 °C.

4.2 Without applying any torsion, wind the wire in a helix tightly around the mandrel at a constant rate not exceeding 1 wrap per second so that the adjacent wraps of the coil are in contact. If necessary, reduce the rate of wrapping to ensure that the heat generated does not affect the result of the test.

4.3 To ensure tight winding, a tensile stress not exceeding 5 % of the nominal tensile strength of the wire may be applied during winding.

4.4 When unwinding, or unwinding and rewinding, are specified, the rate shall be sufficiently slow to prevent any rise of temperature likely to affect the result of the test. At the end of the unwinding, at least one turn shall not be unwound.

4.5 The interpretation of the wrapping test is carried out according to the requirements of the relevant Standard. When these requirements are not specified, absence of cracks visible without the use of magnifying aids is considered as sufficient evidence that the test piece withstood the test. Wire with a thickness or diameter less than 0,5 mm shall be examined with approximately 10-times magnification.

5 Test report

The test report shall include the following information:

a) a reference to this International Standard;

b) identification of the test piece (type of material, type of coating, etc.);

c) diameter or thickness of the test piece;

d) diameter of the mandrel;

e) test conditions (number of turns, or the wound length);

f) test result.