
INTERNATIONAL STANDARD



136

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Steel — Simple torsion testing of wire

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FOREWORD

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO Member Bodies). The work of developing International Standards is carried out through ISO Technical Committees. Every Member Body interested in a subject for which a Technical Committee has been set up 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.

Draft International Standards adopted by the Technical Committees are circulated to the Member Bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 136 was drawn up by Technical Committee ISO/TC 17, *Steel*.

It was approved in July 1972 by the Member Bodies of the following countries :

Australia	Hungary	South Africa, Rep. of
Austria	India	Spain
Belgium	Iran	Sweden
Canada	Ireland	Switzerland
Chile	Italy	Thailand
Czechoslovakia	Netherlands	Turkey
Denmark	New Zealand	United Kingdom
Egypt, Arab Rep. of	Norway	U.S.A.
Finland	Pakistan	U.S.S.R.
France	Portugal	
Germany	Romania	

No Member Body expressed disapproval of the document.

This International Standard cancels and replaces ISO Recommendation R 136-1959.

Steel – Simple torsion testing of wire

1 SCOPE AND FIELD OF APPLICATION

This International Standard applies to the simple torsion testing of steel wire having a diameter or characteristic dimension equal to or greater than 0,4 mm (0.016 in). The diameter or characteristic dimension is usually not greater than 10 mm (0.4 in).

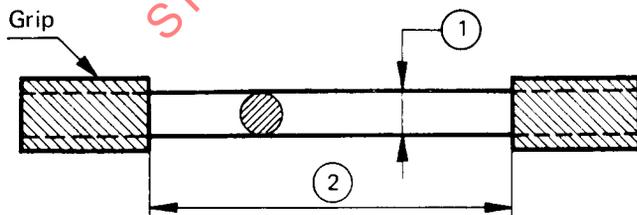
2 PRINCIPLE

Twisting a test piece round its own axis until the test piece breaks or until the specified number of twists have been made. The twisting is in one direction only during the test.

3 SYMBOLS AND DESIGNATIONS

Number	Symbol	Designation
1	d	Nominal diameter of round wire or characteristic dimension ¹⁾ for non-circular wires
2	L	Free length between grips
—	N_t	Number of turns

1) The characteristic dimension for non-circular wires is usually given in the standard for the material and is the maximum dimension of the cross-section.



4 TESTING MACHINE

4.1 The grips of the testing machine are to be arranged in such a way that, during testing, they remain on the same axis and do not apply any bending to the test piece.

4.2 The machine is to be so constructed that change of length between the grips during the test is not prevented.

4.3 One of the grips shall be capable of being rotated around the axis of the test piece while the other shall not be subject to any angular deflection, except for such deflection as may be necessary to measure the torque.

4.4 The distance between the grips shall be capable of adjustment for different test lengths.

4.5 The machine shall be so constructed that an appropriate tensile stress may be applied to the test piece.

5 TEST PIECE

5.1 The test piece, consisting of a piece of wire, shall be straight before being tested. If straightening is necessary, it shall be done by hand or, if this is not possible, by hammering on a level surface of wood, plastics material or copper using a hammer made of one of these materials.

5.2 The nominal free length between the grips of the machine shall be as follows :

Nominal size d		Free length between grips (nominal)
mm	in	
$0,4 \leq d < 1$	$0,016 \leq d < 0,040$	$200 d$
$1 \leq d < 3,6$	$0,040 \leq d < 0,142$	$100 d$
$3,6 \leq d < 5$	$0,142 \leq d < 0,200$	$100 d$
$5 \leq d \leq 10$	$0,200 \leq d \leq 0,400$	$50 d$

5.3 For wires of large size, in particular sizes over 5 mm, shorter lengths between grips may be used by special agreement. Where the recommended length is $100 d$, the alternative shorter length shall be $50 d$ and where the recommended length is $50 d$, the alternative shorter length shall be $30 d$.