

ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION R 167

BEND TEST ON STEEL TUBES
(standards.iteh.ai)

1st EDITION

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BRIEF HISTORY

The ISO Recommendation R 167, *Bend Test on Steel Tubes*, was drawn up by Technical Committee ISO/TC 17, *Steel*, the Secretariat of which is held by the British Standards Institution (B.S.I.).

At the fourth meeting of the Technical Committee, held in Stockholm, in June 1955, a draft proposal concerning a bend test on steel tubes, was first submitted. It was, however, suggested at that meeting that the drafts should be submitted to Technical Committee ISO/TC 5, *Pipes and Fittings*, for comments, and that these comments, together with those of the members of Technical Committee ISO/TC 17, should be considered by Working Group No. 1 with a view to establish the revised draft proposal.

At the time of the fifth meeting of the Technical Committee, held in London, in March 1957, this test, together with four others for steel tubes, was still under consideration by Working Group No. 1.

At the sixth plenary meeting, held in Harrogate, in June 1958, a new draft proposal was placed before Technical Committee ISO/TC 17 for consideration and, with one or two minor editorial amendments, was accepted as suitable for circulation to the members of the Technical Committee for postal approval.

As a result of that circulation, certain other minor amendments were made and a revised draft was sent to the General Secretariat as a Draft ISO Recommendation.

On 24 July 1959, the Draft ISO Recommendation (No. 290) was distributed to all the ISO Member Bodies and was approved by the following Member Bodies:

Australia	Germany	Norway
Austria	Greece	Poland
Belgium	Hungary	Portugal
Bulgaria	India	Romania
Burma	Israel	Spain
Chile	Italy	Sweden
Czechoslovakia	Japan	Switzerland
Denmark	Mexico	United Kingdom
Finland	Netherlands	U.S.S.R.
France	New Zealand	

No Member Body opposed the approval of the Draft.

The Draft ISO Recommendation was then submitted by correspondence to the ISO Council, which decided, in November 1960, to accept it as an ISO RECOMMENDATION.

BEND TEST ON STEEL TUBES

1. SCOPE

This ISO Recommendation applies to the bend test on steel tubes in full section, having an external diameter not greater than 60 mm (2.36 in).

If the external diameter exceeds 60 mm (2.36 in), the test is made by taking a transverse strip and testing it in accordance with the general specification for the bend test*; the strip is bent so that its original curvature is increased, i.e. that the radius of curvature is decreased.

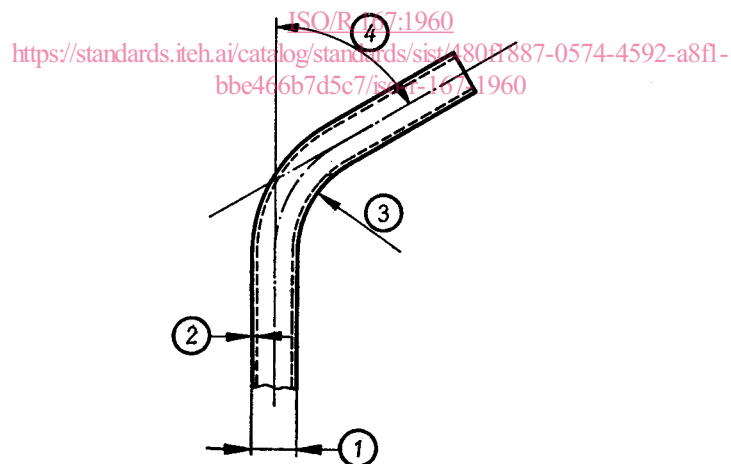
2. PRINCIPLE OF TEST

The test consists in bending a straight length of tube round a specified radius and to a specified angle.

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3. SYMBOLS AND DESIGNATIONS



Number	Symbol	Designation
1	D	External diameter of tube
2	a	Thickness of tube
3	r	Internal radius of bend
4		Angle of bend

* See ISO Recommendation R 85, *Bend Test for Steel*.

4. TEST PIECE

- 4.1** The test piece is a portion of tube of any length which will allow the test to be carried out on the bending machine.

5. PROCEDURE

- 5.1** The unfilled test piece is bent by means of a tube bending machine designed to limit as much as possible the development of ovality of the section of the tube. The radius and the angle of the bend are fixed by the relevant material specification.
- 5.2** The former of the machine has a groove corresponding in profile to the external diameter of the tube. The radius of the former, measured at the bottom of the groove corresponding to the internal radius of the bend, is as required by the relevant material specification.
- 5.3** Care should be taken to ensure contact between the test piece and the former over the length of the bend. In the case of welded tubes, the positions of the weld in relation to the plane of bending should be as required by the relevant material specification.

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6. TEST REQUIREMENTS

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- 6.1** The temperature of the test pieces should be equal to the ambient temperature (but in no case less than 10 °C) unless any other temperature is specified.
- 6.2** The interpretation of the appearance of the test piece after testing is a matter for the material specification.