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ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION R 374

RING EXPANDING TEST ON STEEL TUBES

1st EDITION
August 1964

Printed in Switzerland

Also issued in French and Russian. Copies to be obtained through the national standards organizations.

BRIEF HISTORY

The ISO Recommendation R 374, *Ring Expanding 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 (BSI).

Work on this question by the Technical Committee began in 1957 and led, in 1962, to the adoption of a Draft ISO Recommendation.

In November 1962, this Draft ISO Recommendation (No. 518) was circulated to all the ISO Member Bodies for enquiry. It was approved by the following Member Bodies:

Australia	Germany	Romania
Austria	Hungary	Spain
Belgium	India	Sweden
Brazil	Ireland	Switzerland
Burma	Italy	Turkey
Canada	Japan	United Kingdom
Chile	Netherlands	U.S.A.
Chechoslovakia	New Zealand	Yugoslavia
Denmark	Norway	
Finland	Poland	

Two Member Bodies opposed the approval of the Draft:

U.S.S.R.
France

The Draft ISO Recommendation was then submitted by correspondence to the ISO Council, which decided, in August 1964, to accept it as an ISO RECOMMENDATION.

ISO Recommendation R 374 August 1964

RING EXPANDING TEST ON STEEL TUBES

1. SCOPE

This ISO Recommendation applies to steel tubes of circular cross-section having an outside diameter of over 18 mm ($^{11}/_{16}$ in) up to and including 150 mm (6 in) and a thickness of not less than 2 mm (0.080 in).

2. PRINCIPLE OF TEST

2.1 The test consists in expanding a ring cut from an end of a tube over a conical mandrel.

2.2 The temperature of the test piece during the test should be equal to the ambient temperature, unless otherwise specified.

3. TEST PIECES

3.1 The test piece consists of a ring having a length of between 10 and 16 mm (0.4 to 0.63 in). The edges may be slightly rounded with a suitable tool.

3.2 The test pieces should be taken from the ends of trimmed tubes as manufactured before they are cut to length or lengths. The rings should be taken so that the planes of the end sections are parallel with each other, and square with the axis of the tube.

4. TESTING MACHINES

4.1 The test should be carried out only on variable speed presses or universal testing machines.

4.2 The working length of the conical mandrel has a taper on diameter of approximately 1 : 5 and its surface should be well polished and free from scores.

5. PROCEDURE

5.1 Before testing, the rings and the mandrels are well lubricated. Rings of the same size and same type of steel may be placed on top of one another, and care should be taken to ensure that the axis of these rings are coincidental with the axis of the mandrel.

5.2 The conical mandrel is then forced under pressure into these rings, expanding the rings in accordance with the requirements of the material specification. The rate of penetration of the mandrel should not exceed 30 mm per second (71 inches per minute), unless a lower maximum rate is specified in special cases.

6. ESTIMATION OF RESULTS

The interpretation of the appearance of the test piece after testing is a matter for the material specification.

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