

ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

~~ISO RECOMMENDATION R 953~~

iTeh STANDARD PREVIEW
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**DRIFT EXPANDING TEST
ON LIGHT METAL AND LIGHT METAL ALLOY TUBES**

ISO/R 953:1969

<https://standards.iteh.ai/catalog/standards/sist/947b03b8-83de-4daa-869f-ea7b2e4f04f8/iso-r-953-1969>

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BRIEF HISTORY

The ISO Recommendation R 953, *Drift expanding test on light metal and light metal alloy tubes*, was drawn up by Technical Committee ISO/TC 79, *Light metals and their alloys*, the Secretariat of which is held by the Association Française de Normalisation (AFNOR).

Work on this question led, in 1966, to the adoption of a Draft ISO Recommendation.

In March 1967, this Draft ISO Recommendation (No. 1133) was circulated to all the ISO Member Bodies for enquiry. It was approved, subject to a few modifications of an editorial nature, by the following Member Bodies :

Belgium	Israel	Switzerland
Canada	Italy	Thailand
Chile	Japan	Turkey
Czechoslovakia	Netherlands	U.A.R.
France	New Zealand	United Kingdom
Germany	Norway	U.S.A.
Greece	Poland	U.S.S.R.
Hungary	South Africa, Rep. of	Yugoslavia
India	Sweden	

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 January 1969, to accept it as an ISO RECOMMENDATION.

DRIFT EXPANDING TEST ON LIGHT METAL AND LIGHT METAL ALLOY TUBES

1. SCOPE

This ISO Recommendation relates to the drift expanding test on light metal and light metal alloy tubes, having an external diameter not greater than 100 mm (4 in) and a wall thickness not greater than 10 mm (0.4 in).

NOTE. – This test is not normally used for magnesium and magnesium alloy tubes.

2. PRINCIPLE OF TEST

The test involves expanding, by means of a conical mandrel, the end of a tube or the end of a test piece consisting of a piece of tube.

The expansion is continued until the maximum external diameter of the expanded portion of the tube has reached the value laid down in the specification for the material.

The test is carried out at ambient temperature unless otherwise specified.

3. SYMBOLS AND DESIGNATIONS

Reference number	Symbol	Designation
1	D	External diameter of tube or test piece
2	a	Thickness of wall of tube or test piece
3	L	Length of test piece
4	α	Conical angle of mandrel
5	x	Maximum external diameter of end of expanded tube

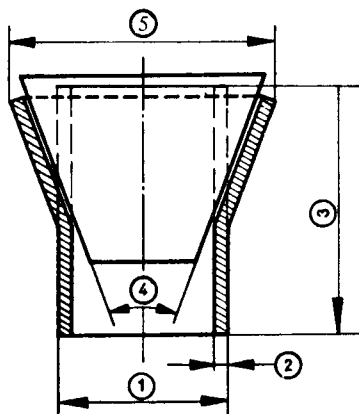


FIGURE – Drift expanding test

4. TEST PIECE

- 4.1 The test piece should consist of a piece of tube having a length equal to at least twice the external diameter of the tube.

NOTE. — Alternatively, except in cases of dispute, the test may be made on the end of the tube without removing the test piece.

- 4.2 Both ends of the test piece should be plane and perpendicular to the axis of the tube. The test piece should be cleaned, to remove any loose chips or dirt from the inside surface, and the end to be tested may be rounded by filing.

A test on a test piece, the edges of which have not been rounded, is acceptable provided that the test result is satisfactory.

5. METHOD OF TEST

- 5.1 A conical mandrel of polished steel of adequate hardness and having a conical included angle of 30° , 45° or 60° , as specified in the specification for the product concerned, should be forced under pressure into the open end of the test piece, so that the axis of the cone coincides with the axis of the test piece.

The pressure should be continued until the increase in the external diameter of the end of the test piece reaches the specified value.

- 5.2 The mandrel should be lubricated and should not rotate in relation to the tube during the test.
- 5.3 In cases of dispute, the rate of penetration of the mandrel should not exceed 50 mm (2 in) per minute.

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6. INTERPRETATION OF TEST RESULTS

The minimum increase in the external diameter of the end of the test piece and the interpretation of the visual appearance of the test piece after testing should be specified in the material specification.