SLOVENSKI STANDARD
SIST EN 10237:1998

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Kovinski materiali - Cev - Natezni preskus obroļ a

Metallic materials - Tube - Ring tensile test

Metallische Werkstoffe - Rohr - Ringzugversuch

Matériaux métalliques - Tubes - Essai de traction sur anneaux

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Metallic materials - Tube - Ring tensile test

Matériaux métalliques - Tubes - Essai de traction sur anneaux

Metallische Werkstoffe - Rohr - Ringzugversuch

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CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart,36 B-1050 Brussels

Contents

Foreword

This European Standard has been prepared by sub-committee ECISS/TC 29, the secretariat of which has been allocated to the United Kingdom (BSI).

No meeting of the sub-committee has been held but the following countries voted positively by the PQ-procedure on the acceptability of the reference document as a European Standard:
Belgium, Denmark, Finland, France, Germany, Greece, Italy, Netherlands, Norway, Spain, Sweden, Switzerland and the United Kingdom. No country voted negatively.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by April 1994, and conflicting national standards shall be withdrawn at the latest by April 1994.

In accordance with the CEN/CENELEC Internal Regulations, following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

Introduction

This standard is based on ISO 8496:1986 "Metallic materials - Tube - Ring tensile test" which has been editorially changed in the light of the comments received.

1 Scope

This European Standard specifies a method for a ring tensile test of tubes to reveal surface and internal defects by subjecting the test piece to strain until fracture occurs. This test may also be used to assess the ductility of tubes.

The ring tensile test is applicable to tubes having an outside diameter exceeding 150 mm and wall thickness not greater than 40 mm. The inside diameter should be greater than 100 mm.

2 Principle

Subjecting a ring cut from the tube to strain in the circumferential direction until fracture occurs (see figure 1).

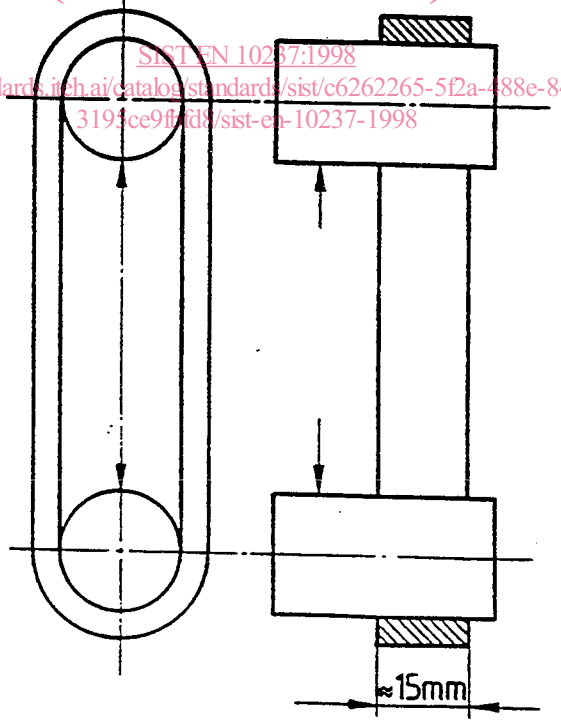

Figure 1: Test arrangement

3 Testing equipment

The testing equipment shall consist basically of two circular pins of equal diameter with parallel axes which shall be movable in relation to each other while still remaining parallel. In principle, the diameter of the pins shall be the minimum permissible from strength considerations but, provided that the inside diameter of the tube allows, should be at least 3 times the wall thickness of the tube to be tested (see figure 1).

4 Test piece

4.1 The test piece shall be a ring cut from the tube with the end faces perpendicular to the axis.

4.2 The length of the test piece (width of the ring) shall be approximately 15 mm. If the thickness exceeds 15 mm, the length of the test piece may be equal to the thickness.

4.3 The end of the test piece shall be free from burrs. The edges may be rounded by filing or chamfered by other methods.

NOTE - Non-rounded or non-chamfered edges are permissible, if the test result meets the requirements.

5 Procedure

5.1 In general, the test shall be carried out at ambient temperature within the limits of 10°C to 35 °C. The test carried out under controlled conditions shall be made at a temperature of (23 ± 5)°C.

5.2 Place the ring cut from the tube over the pins and subject it to strain until it fractures, by moving the pins away from each other at a measured rate. In cases of dispute this rate shall not exceed 5 mm/sec.

5.3 Interpretation of the ring tensile test shall be carried out according to the requirements of the relevant product standard. When these requirements are not specified, absence of cracks visible without the use of magnifying aids shall be considered as evidence that the test piece passed the test.

6 Test report

6.1 A test report shall be provided when so specified in the relevant product standard.

6.2 The test report shall include at least the following information:

a) reference to this European Standard;

b) identification of the test piece;

c) dimensions of the test piece;

d) result of the test.