

Metallic materials — Tube — Ring tensile test

The European Standard EN ISO 8496:2004 has the status of a
British Standard

ICS 77.040.10

National foreword

This British Standard is the official English language version of EN ISO 8496:2004. It is identical with ISO 8496:1998. It supersedes BS EN 10237:1994 which is withdrawn.

The UK participation in its preparation was entrusted by Technical Committee ISE/NFE/4, Mechanical testing of metals, to Subcommittee ISE/NFE/4/2, Ductility testing, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

A list of organizations represented on this subcommittee can be obtained on request to its secretary.

Cross-references

The British Standards which implement international or European publications referred to in this document may be found in the *BSI Catalogue* under the section entitled “International Standards Correspondence Index”, or by using the “Search” facility of the *BSI Electronic Catalogue* or of British Standards Online.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 23 November 2004

Summary of pages

This document comprises a front cover, an inside front cover, the EN ISO title page, the EN ISO foreword page, the ISO title page, page ii, pages 1 and 2, an inside back cover and a back cover.

The BSI copyright notice displayed in this document indicates when the document was last issued.

Amendments issued since publication

Amd. No.	Date	Comments

© BSI 23 November 2004

ISBN 0 580 44841 X

English version

Metallic materials - Tube - Ring tensile test (ISO 8496:1998)

Matériaux métalliques - Tubes - Essai de traction sur
anneaux (ISO 8496:1998)

Metallische Werkstoffe - Rohr - Ringzugversuch (ISO
8496:1998)

This European Standard was approved by CEN on 1 July 2004.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: rue de Stassart, 36 B-1050 Brussels

Foreword

The text of ISO 8496:1998 has been prepared by Technical Committee ISO/TC 164 "Mechanical testing of metals" of the International Organization for Standardization (ISO) and has been taken over as EN ISO 8496:2004 by Technical Committee EC/TC 29 "Steel tubes and fittings for steel tubes", the secretariat of which is held by UNI.

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 January 2005, and conflicting national standards shall be withdrawn at the latest by January 2005.

This document supersedes EN 10237:1993.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

Endorsement notice

The text of ISO 8496:1998 has been approved by CEN as EN ISO 8496:2004 without any modifications.

INTERNATIONAL STANDARD

ISO
8496

Second edition
1998-11-01

Metallic materials — Tube — Ring tensile test

Matériaux métalliques — Tubes — Essai de traction sur anneaux



Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established 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. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 8496 was prepared by Technical Committee ISO/TC 164, *Mechanical testing of metals*, Subcommittee SC 2, *Ductility testing*.

This second edition cancels and replaces the first edition (ISO 8496:1986), of which it constitutes a technical revision.

Metallic materials — Tube — Ring tensile test

1 Scope

This International 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 a wall thickness no greater than 40 mm. The inside diameter shall be greater than 100 mm.

2 Principle

Subjecting a ring cut from the end of a tube to strain in the circumferential direction until fracture occurs.

3 Apparatus

3.1 Two circular pins, of equal diameter with parallel axes, and 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).

Dimensions in millimetres

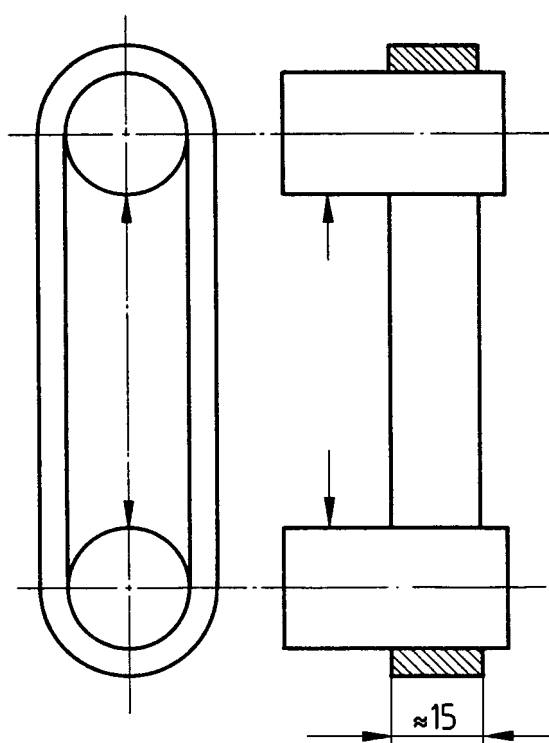


Figure 1

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 ends 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 test 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 °C ± 5 °C.

5.2 Place the ring cut from the tube over the pins. Subject the ring to strain by moving the pins away from each other at a specified rate until it fractures.

In cases of dispute, the rate shall not exceed 5 mm/s.

5.3 Interpretation of the ring tensile test shall be carried out in accordance with the requirements of the relevant product standard. When these requirements are not specified, the test piece shall be considered to have passed the test if no cracks are visible without the use of magnifying aids.

6 Test report

A test report shall be provided when so specified in the relevant product standard. In this case, the test report shall include at least the following information:

- a) reference to this International Standard, i.e. ISO 8496;
- b) identification of the test piece;
- c) dimensions of the test piece;
- d) result of the test.

BSI — British Standards Institution

BSI is the independent national body responsible for preparing British Standards. It presents the UK view on standards in Europe and at the international level. It is incorporated by Royal Charter.

Revisions

British Standards are updated by amendment or revision. Users of British Standards should make sure that they possess the latest amendments or editions.

It is the constant aim of BSI to improve the quality of our products and services. We would be grateful if anyone finding an inaccuracy or ambiguity while using this British Standard would inform the Secretary of the technical committee responsible, the identity of which can be found on the inside front cover.
Tel: +44 (0)20 8996 9000. Fax: +44 (0)20 8996 7400.

BSI offers members an individual updating service called PLUS which ensures that subscribers automatically receive the latest editions of standards.

Buying standards

Orders for all BSI, international and foreign standards publications should be addressed to Customer Services. Tel: +44 (0)20 8996 9001.
Fax: +44 (0)20 8996 7001. Email: orders@bsi-global.com. Standards are also available from the BSI website at <http://www.bsi-global.com>.

In response to orders for international standards, it is BSI policy to supply the BSI implementation of those that have been published as British Standards, unless otherwise requested.

Information on standards

BSI provides a wide range of information on national, European and international standards through its Library and its Technical Help to Exporters Service. Various BSI electronic information services are also available which give details on all its products and services. Contact the Information Centre.
Tel: +44 (0)20 8996 7111. Fax: +44 (0)20 8996 7048. Email: info@bsi-global.com.

Subscribing members of BSI are kept up to date with standards developments and receive substantial discounts on the purchase price of standards. For details of these and other benefits contact Membership Administration.
Tel: +44 (0)20 8996 7002. Fax: +44 (0)20 8996 7001.
Email: membership@bsi-global.com.

Information regarding online access to British Standards via British Standards Online can be found at <http://www.bsi-global.com/bsonline>.

Further information about BSI is available on the BSI website at <http://www.bsi-global.com>.

Copyright

Copyright subsists in all BSI publications. BSI also holds the copyright, in the UK, of the publications of the international standardization bodies. Except as permitted under the Copyright, Designs and Patents Act 1988 no extract may be reproduced, stored in a retrieval system or transmitted in any form or by any means – electronic, photocopying, recording or otherwise – without prior written permission from BSI.

This does not preclude the free use, in the course of implementing the standard, of necessary details such as symbols, and size, type or grade designations. If these details are to be used for any other purpose than implementation then the prior written permission of BSI must be obtained.

Details and advice can be obtained from the Copyright & Licensing Manager.
Tel: +44 (0)20 8996 7070. Fax: +44 (0)20 8996 7553.
Email: copyright@bsi-global.com.

BSI
389 Chiswick High Road
London
W4 4AL