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International Standard



8491

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INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

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**Metallic materials — Tube (in full section) — Bend test**

*Matériaux métalliques — Tubes — Essai de cintrage sur tronçon*

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Descriptors : metals, metal tubes, tests, bend tests.

## 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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 8491 was prepared by Technical Committee ISO/TC 164, *Mechanical testing of metals*.

It cancels and replaces ISO Recommendation R 167-1960, of which it constitutes a technical revision.

Users should note that all International Standards undergo revision from time to time and that any reference made herein to any other International Standard implies its latest edition, unless otherwise stated.

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## Metallic materials — Tube (in full section) — Bend test

### 1 Scope and field of application

This International Standard specifies a method for determining the ability of full-section metallic tubes of circular cross-section with an outside diameter not greater than 65 mm to undergo plastic deformation in bending. The range of the outside diameter for which this International Standard is applicable may be more exactly specified in the relevant standard.

Bend tests of the test pieces taken from tubes in the form of transverse strips shall be made in accordance with ISO 7438 so that the original curvature of the test piece is increased.

### 2 Principle

Bending a straight tube in full section around a grooved former of a specified radius  $r$  until the angle of bend  $\alpha$  (see the figure) reaches the value specified in the relevant standard.

### 3 Symbols, designations and units

Symbols, designations and units for the bend test of tubes in full section are given in the figure and the table.

Table — Symbols, designations and units

Symbol	Designation	Unit
$D$	Outside diameter of the tube	mm
$a$	Wall thickness of the tube	mm
$L$	Length of the test piece before the test	mm
$r$	Inside radius at the bottom of the groove	mm
$\alpha$	Angle of the bend	degree

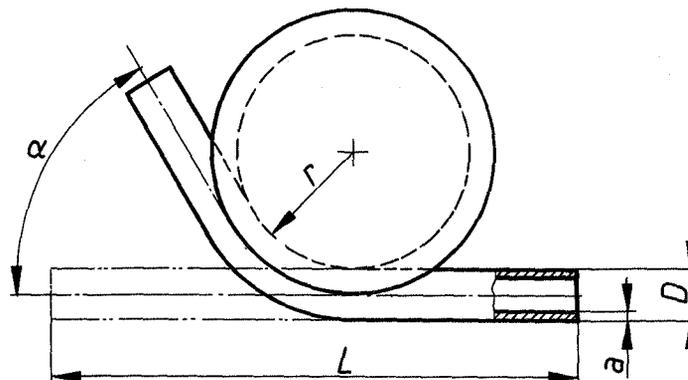


Figure — Symbols for bend test