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Metallische Werkstoffe - Prüfung von Prüfmaschinen für statische einachsige Beanspruchung - Teil 2: Zeitstandprüfmaschinen für Zugprüfbeanspruchung - Prüfung der Prüfkraft (ISO 7500-2:1996)

Metallic materials - Verification of static uniaxial testing machines - Part 2: Tension creep testing machines - Verification of the applied load (ISO 7500-2:1996)

Matériaux métalliques - Vérification des machines pour essais statiques uniaxiaux - Partie 2: Machines d'essai de fluage en traction - Vérification de la charge appliquée (ISO 7500-2:1996)

**Ta slovenski standard je istoveten z: EN ISO 7500-2:1999**

**ICS:**

77.040.10 Mehansko preskušanje kovin Mechanical testing of metals

**SIST EN ISO 7500-2:2000****en**

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English version

**Metallic materials - Verification of static uniaxial testing machines - Part 2: Tension creep testing machines - Verification of the applied load (ISO 7500-2:1996)**

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This European Standard was approved by CEN on 25 April 1999.

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, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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

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

## Foreword

The text of the International Standard from Technical Committee ISO/TC 164 "Mechanical testing of metals" of the International Organization for Standardization (ISO) has been taken over as an European Standard by Technical Committee ECISS/TC 1 "Steel testing", the secretariat of which is held by AFNOR.

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 December 1999, and conflicting national standards shall be withdrawn at the latest by December 1999.

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

## Endorsement notice

The text of the International Standard ISO 7500-2:1996 has been approved by CEN as a European Standard without any modification.

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INTERNATIONAL  
STANDARD

**ISO**  
**7500-2**

First edition  
1996-10-01

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**Metallic materials — Verification of static  
uniaxial testing machines —**

**Part 2:**

**Tension creep testing machines — Verification  
of the applied load**

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*Matériaux métalliques — Vérification des machines pour essais statiques  
uniaxiaux —*

*Partie 2: Machines d'essai de fluage en traction — Vérification de la charge  
appliquée*



Reference number  
ISO 7500-2:1996(E)

## 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.

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International Standard ISO 7500-2 was prepared by Technical Committee ISO/TC 164, *Mechanical testing of metals*, Subcommittee SC 1, *Uniaxial testing*.

SIST EN ISO 7500-2:2000

ISO 7500 consists of the following parts, under the general title *Metallic materials — Verification of static uniaxial testing machines*:

- Part 1: *Tensile testing machines*
- Part 2: *Tension creep testing machines — Verification of the applied load*

Annex A forms an integral part of this part of ISO 7500.

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# Metallic materials — Verification of static uniaxial testing machines —

## Part 2:

### Tension creep testing machines — Verification of the applied load

#### 1 Scope

This part of ISO 7500 specifies the verification of testing machines used for uniaxial creep testing in tension in accordance with ISO 204.

The verification consists of

- a general inspection of the testing machine;
- a verification of the load applied by the testing machine.

This part of ISO 7500 applies to dead weight and lever type creep testing machines. The machines with a load measuring system<sup>1)</sup> shall be verified in accordance with ISO 7500-1.

#### 2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 7500. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 7500 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 204:—<sup>2)</sup>, *Metallic materials — Uniaxial creep testing in tension.*

ISO 376:1987, *Metallic materials — Calibration of force proving instruments used for the verification of uniaxial testing machines.*

ISO 7500-1:1986, *Metallic materials — Verification of static uniaxial testing machines — Part 1: Tensile testing machines.*

#### 3 Symbols and their meanings

For the purposes of this part of ISO 7500, the symbols given in table 1 shall apply.

For the purposes of this part of ISO 7500 the following types of creep testing machines are recognized:

- deadweight machines, with or without guides (see figures 1 and 2);
- overslung or underslung lever machines (see figures 3, 4 and 5);
- jockey weight machines, either with overslung or underslung lever (see figures 6 and 7);
- any combination of the types of machines mentioned above (see figure 8).

#### 4 General inspection of the testing machine

The verification of the testing machine shall only be carried out if the machine is in good working order. For this purpose, a general inspection of the machine shall be carried out before verification of the load applied by the machine (see annex A).

1) For the purposes of this part of ISO 7500, a force measuring system comprises load cell plus conditioning plus indicator.

2) To be published. (Revision of ISO/R 204:1961 and ISO/R 206:1961)

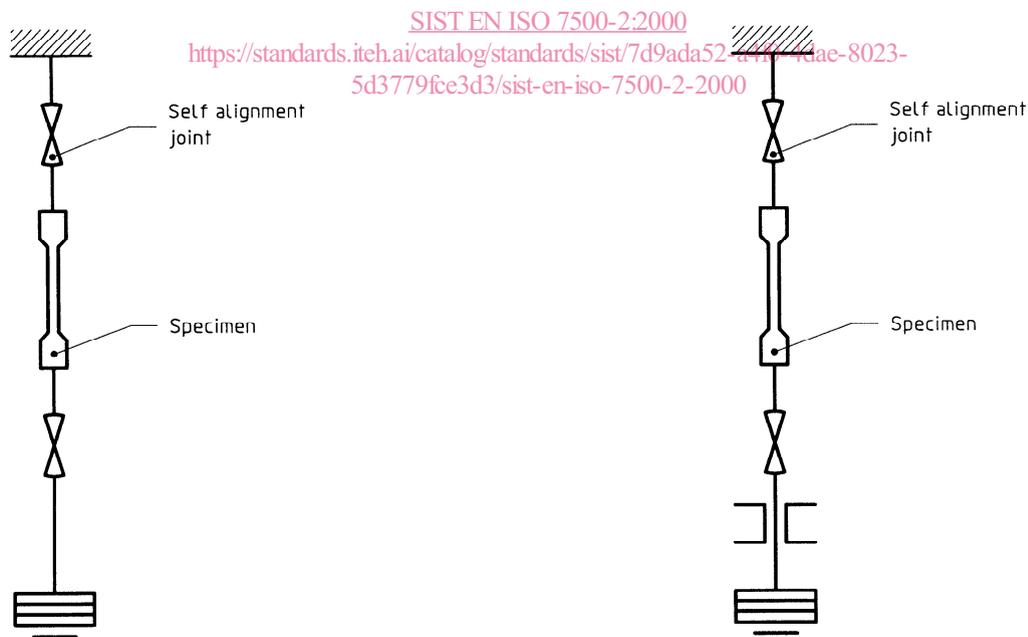
**Table 1 — Symbols and their meanings**

Symbol	Unit	Meaning
$F_N$	N	Maximum capacity of the load range of the testing machine
$F_i$	N	Load applied by the testing machine to be verified — for deadweight machines: $F_i = mg$ <sup>1)</sup> — for lever-type machines: $F_i = mgR$ <sup>1)</sup> — for jockey weight machines, the value of $F_i$ is indicated on the scale of the machine
$F$	N	True load indicated by the force-proving instrument
$\bar{F}$	N	Arithmetic mean of several measurements of $F$ for the same discrete load
$F_{max}, F_{min}$	N	Highest or lowest value of $F$ for the same discrete load
$F_M$	N	Force exerted by the masses on the scale pan of the machine
$F_V$	N	Lower limit of the verified load range
$R$	—	Lever ratio used for the verification
$b$	%	Relative repeatability error of the testing machine
$d$	N	Discrimination threshold
$d_1$	N	Discrimination threshold corresponding to 20 % of the maximum force range ( $F_N$ )
$a$	%	Relative discrimination threshold
$q$	%	Relative accuracy error of the testing machine

1)  $g$  = local acceleration due to gravity, in metres per second squared.

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**Figure 1 — Schematic representation of the operating principle of a deadweight tensile creep testing machine (example)**

**Figure 2 — Schematic representation of the operating principle of a deadweight tensile creep testing machine with guides (example)**

