



# SLOVENSKI STANDARD SIST EN ISO 26203-2:2012

01-januar-2012

---

**Kovinski materiali - Natezno preskušanje pri velikih hitrostih deformacije - 2. del:  
Servohidravlični in drugi preskusni sistemi (ISO 26203-2:2011)**

Metallic materials - Tensile testing at high strain rates - Part 2: Servo-hydraulic and other test systems (ISO 26203-2:2011)

Metallische Werkstoffe - Zugversuch bei hohen Dehngeschwindigkeiten - Teil 2:  
Servohydraulische und andere Systeme (ISO 26203-2:2011)

Matériaux métalliques - Essai de traction à vitesses de déformation élevées - Partie 2:  
Systèmes d'essai servo-hydrauliques et autres systèmes d'essai (ISO 26203-2:2011)

[https://standards.iteh.ai/catalog/standards/sist/c1f68302-fd3f-4392-8e4d-](https://standards.iteh.ai/catalog/standards/sist/c1f68302-fd3f-4392-8e4d-c73031654b21/sist-en-iso-26203-2-2012)

**Ta slovenski standard je istoveten z: EN ISO 26203-2:2011**

---

**ICS:**

77.040.10 Mehansko preskušanje kovin Mechanical testing of metals

**SIST EN ISO 26203-2:2012**

**en,fr**

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

SIST EN ISO 26203-2:2012

<https://standards.iteh.ai/catalog/standards/sist/c1f68302-fd3f-4392-8e4d-c73031654b21/sist-en-iso-26203-2-2012>

EUROPEAN STANDARD

EN ISO 26203-2

NORME EUROPÉENNE

EUROPÄISCHE NORM

October 2011

ICS 77.040.10

English Version

## Metallic materials - Tensile testing at high strain rates - Part 2: Servo-hydraulic and other test systems (ISO 26203-2:2011)

Matériaux métalliques - Essai de traction à vitesses de déformation élevées - Partie 2: Systèmes d'essai servo-hydrauliques et autres systèmes d'essai (ISO 26203-2:2011)

Metallische Werkstoffe - Zugversuch bei hohen Dehngeschwindigkeiten - Teil 2: Servohydraulische und andere Systeme (ISO 26203-2:2011)

This European Standard was approved by CEN on 17 September 2011.

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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

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

<https://standards.iteh.ai/catalog/standards/sist/c1f68302-fd3f-4392-8e4d-c73031654b21/sist-en-iso-26203-2-2012>



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

Management Centre: Avenue Marnix 17, B-1000 Brussels

**Contents**

Page

Foreword.....3

**iTeh STANDARD PREVIEW  
(standards.iteh.ai)**

[SIST EN ISO 26203-2:2012](https://standards.iteh.ai/catalog/standards/sist/c1f68302-fd3f-4392-8e4d-c73031654b21/sist-en-iso-26203-2-2012)  
<https://standards.iteh.ai/catalog/standards/sist/c1f68302-fd3f-4392-8e4d-c73031654b21/sist-en-iso-26203-2-2012>

## Foreword

This document (EN ISO 26203-2:2011) has been prepared by Technical Committee ISO/TC 164 "Mechanical testing of metals" in collaboration with Technical Committee ECISS/TC 101 "Test methods for steel (other than chemical analysis)" 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 April 2012, and conflicting national standards shall be withdrawn at the latest by April 2012.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

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

## iTeh STANDARD PREVIEW Endorsement notice (standards.iteh.ai)

The text of ISO 26203-2:2011 has been approved by CEN as a EN ISO 26203-2:2011 without any modification.

[SIST EN ISO 26203-2:2012](https://standards.iteh.ai/catalog/standards/sist/c1f68302-fd3f-4392-8e4d-c73031654b21/sist-en-iso-26203-2-2012)

<https://standards.iteh.ai/catalog/standards/sist/c1f68302-fd3f-4392-8e4d-c73031654b21/sist-en-iso-26203-2-2012>

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

SIST EN ISO 26203-2:2012

<https://standards.iteh.ai/catalog/standards/sist/c1f68302-fd3f-4392-8e4d-c73031654b21/sist-en-iso-26203-2-2012>

INTERNATIONAL  
STANDARD

ISO  
26203-2

First edition  
2011-10-15

---

---

**Metallic materials — Tensile testing at  
high strain rates —**

Part 2:

**Servo-hydraulic and other test systems**

*Matériaux métalliques — Essai de traction à vitesses de déformation  
élevées — Partie 2: Systèmes d'essai servo-hydrauliques et autres  
systèmes d'essai*

iTeh STANDARD PREVIEW  
(standards.iteh.ai)

[SIST EN ISO 26203-2:2012](https://standards.iteh.ai/catalog/standards/sist/c1f68302-fd3f-4392-8e4d-c73031654b21/sist-en-iso-26203-2-2012)

<https://standards.iteh.ai/catalog/standards/sist/c1f68302-fd3f-4392-8e4d-c73031654b21/sist-en-iso-26203-2-2012>



Reference number  
ISO 26203-2:2011(E)

© ISO 2011

## iTeh STANDARD PREVIEW (standards.iteh.ai)

SIST EN ISO 26203-2:2012

<https://standards.iteh.ai/catalog/standards/sist/c1f68302-fd3f-4392-8e4d-c73031654b21/sist-en-iso-26203-2-2012>



### **COPYRIGHT PROTECTED DOCUMENT**

© ISO 2011

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office  
Case postale 56 • CH-1211 Geneva 20  
Tel. + 41 22 749 01 11  
Fax + 41 22 749 09 47  
E-mail [copyright@iso.org](mailto:copyright@iso.org)  
Web [www.iso.org](http://www.iso.org)

Published in Switzerland



<b>Contents</b>	<b>Page</b>
<b>Foreword</b> .....	<b>iv</b>
<b>Introduction</b> .....	<b>v</b>
<b>1 Scope</b> .....	<b>1</b>
<b>2 Normative references</b> .....	<b>1</b>
<b>3 Terms and definitions</b> .....	<b>1</b>
<b>4 Symbols</b> .....	<b>1</b>
<b>5 Principle</b> .....	<b>3</b>
<b>6 Apparatus</b> .....	<b>3</b>
<b>7 Test pieces</b> .....	<b>3</b>
<b>7.1 Test piece geometry</b> .....	<b>3</b>
<b>7.2 Preparation of test pieces</b> .....	<b>4</b>
<b>8 Procedure and measurements</b> .....	<b>5</b>
<b>8.1 Velocity selection</b> .....	<b>5</b>
<b>8.2 Force measurement</b> .....	<b>5</b>
<b>8.3 Extension measurement</b> .....	<b>6</b>
<b>8.4 Data acquisition</b> .....	<b>6</b>
<b>9 Evaluation of tests</b> .....	<b>6</b>
<b>9.1 Stress-strain curve</b> .....	<b>6</b>
<b>9.2 Determination of key values</b> .....	<b>7</b>
<b>9.3 Strain rates</b> .....	<b>8</b>
<b>9.4 Determination of flow curves</b> .....	<b>8</b>
<b>10 Test report</b> .....	<b>9</b>
<b>Annex A (informative) Testing equipment</b> .....	<b>10</b>
<b>Annex B (informative) Examples of test piece geometries</b> .....	<b>12</b>
<b>Annex C (informative) Example of an engineering stress-strain curve</b> .....	<b>14</b>
<b>Bibliography</b> .....	<b>15</b>

## ISO 26203-2:2011(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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. 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.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 26203-2 was prepared by Technical Committee ISO/TC 164, *Mechanical testing of metals*, Subcommittee SC 1, *Uniaxial testing*.

ISO 26203 consists of the following parts, under the general title *Metallic materials — Tensile testing at high strain rates*:

- Part 1: *Elastic-bar-type systems*
- Part 2: *Servo-hydraulic and other test systems*

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

[SIST EN ISO 26203-2:2012](https://standards.iteh.ai/catalog/standards/sist/c1f68302-fd3f-4392-8e4d-c73031654b21/sist-en-iso-26203-2-2012)

<https://standards.iteh.ai/catalog/standards/sist/c1f68302-fd3f-4392-8e4d-c73031654b21/sist-en-iso-26203-2-2012>

## Introduction

The deformation behaviour of many technical materials shows a positive strain-rate effect up to ductile failure, i.e. with increasing strain rate, an increase of yield stress and strain to failure can be observed. This information is of great importance for the reliable assessment of crashworthiness of automobile structures, which is increasingly determined by numerical methods to minimize the need for cost-intensive and time-consuming crash tests. For the numerical simulation of crash-type loads, stress-strain curves determined at higher strain rates are required. The quasi-static values determined according to ISO 6892-1, i.e. strain rates lower than or equal to  $0,008 \text{ s}^{-1}$ , are not suitable for the description of the behaviour of the material of a component under dynamic load, i.e. at strain rates higher than those in quasi-static tests.

## iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST EN ISO 26203-2:2012](https://standards.iteh.ai/catalog/standards/sist/c1f68302-fd3f-4392-8e4d-c73031654b21/sist-en-iso-26203-2-2012)

<https://standards.iteh.ai/catalog/standards/sist/c1f68302-fd3f-4392-8e4d-c73031654b21/sist-en-iso-26203-2-2012>