



SLOVENSKI STANDARD
SIST EN 10250-1:2000
01-november-2000

Open die steel forgings for general engineering purposes - Part 1: General requirements

Freiformschmiedestücke aus Stahl für allgemeine Verwendung - Teil 1: Allgemeine Anforderungen

Pieces forgées en acier pour usage général - Partie 1: Exigences générales

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Ta slovenski standard je istoveten z: **EN 10250-1:1999**

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ICS:

77.140.85	Železni in jekleni kovani izdelki	Iron and steel forgings
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EUROPEAN STANDARD
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EUROPÄISCHE NORM

EN 10250-1

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Open die steel forgings for general engineering purposes - Part 1: General requirements

Pièces forgées en acier pour usage général - Partie 1:
Exigences générales

Freiformschmiedestücke aus Stahl für allgemeine
Verwendung - Teil 1: Allgemeine Anforderungen

This European Standard was approved by CEN on 16 July 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

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Foreword

This European Standard has been prepared by Technical Committee ECISS/TC 28 "Steel forgings", the secretariat of which is held by BSI.

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 February 2000, and conflicting national standards shall be withdrawn at the latest by February 2000.

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association. This European Standard is considered to be a supporting standard to those application and product standards which in themselves support an essential safety requirement of a New Approach Directive and which make reference to this European Standard.

The titles of the other Parts of this European Standard are:

Part 2 : Non-alloy quality and special steels

Part 3 : Alloy special steels

Part 4 : Stainless steels

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.

1 Scope

This Part of this European Standard specifies the general technical delivery conditions for open die forgings, forged bars, and products pre-forged and finished in ring rolling mills, for general engineering purposes.

General information on technical delivery conditions is given in EN 10021.

2 Normative references

This Part of EN 10250 incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to, or revisions of, any of these publications apply to this European Standard, only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

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|------------|--|
| EN 287-1 | Approval testing of welders. Fusion welding – Part 1: Steels |
| EN 288-1 | Specification and qualification of welding procedures for metallic materials – Part 1: General rules for fusion welding |
| EN 288-2 | Specification and qualification of welding procedures for metallic materials – Part 2: Welding procedure specification for arc welding |
| EN 288-3 | Specification and qualification of welding procedures for metallic materials – Part 3: Welding procedure tests for the arc welding of steels |
| EN 10002-1 | Metallic materials – Tensile testing – Part 1: Method of test |
| EN 10003-1 | Metallic materials – Brinell hardness test – Part 1: Test method |
| EN 10020 | Definition and classification of grades of steel |
| EN 10021 | General technical delivery requirements for steel and iron products |
| EN 10027-1 | Designation systems for steels – Part 1 : Steel names, principal symbols |
| EN 10027-2 | Designation systems for steels – Part 2 : Numerical system |
| EN 10045-1 | Metallic materials – Charpy impact test – Part 1: Test method |
| EN 10052 | Vocabulary of heat treatment terms for ferrous products |
| EN 10079 | Definition of steel products. |
| EN 10204 | Metallic products - types of inspection documents |

EN 10228-1	Non-destructive testing of steel forgings – Part 1: Magnetic particle inspection
EN 10228-2	Non-destructive testing of steel forgings – Part 2: Penetrant testing
EN 10228-3	Non-destructive testing of steel forgings – Part 3: Ultrasonic testing of ferritic or martensitic steel forgings
prEN 10228-4	Non-destructive testing of steel forgings – Part 4: Ultrasonic testing of austenitic and austenitic-ferritic stainless steel forgings
EN ISO 377	Steel and steel products – Location and preparation of samples and test pieces for mechanical testing (ISO 377:1997)
CR 10260	Designation systems for steels - Additional symbols
EN ISO 3651-2	Determination of resistance to intergranular corrosion of stainless steels – Part 2: Ferritic, austenitic and ferritic-austenitic (duplex) stainless steels - Corrosion test in media containing sulfuric acid (ISO 3651-2:1998)
CR 10261	ECISS Information Circular 11 - Iron and steel - Review of available methods of chemical analysis (standards.iteh.ai)
prEN 10168	Iron and steel documents – Inspection documents – Contents https://standards.iteh.ai/catalog/standards/sist/6abb0a50-db9e-4563-8b9-5518616e26cc/sist-en-10250-1-2000

3 Definitions

For the purposes of this Part of this European Standard the following definition applies in addition to the definitions in EN 10020, EN 10021, EN 10052, EN 10079 and EN ISO 377.

3.1 batch: Forgings of similar dimensions from the same cast, made by the same forging procedure and from the same heat treatment charge. 'Similar dimensions' are to be taken as forgings having dimensions within $\pm 10\%$ of the equivalent thickness.

4 Classification and designation

4.1 Classification

The steels covered by this European Standard are classified as follows:

- Part 2: Non-alloy quality and special steels;
- Part 3: Alloy special steels;
- Part 4: Stainless steels

4.2 Designation

The steels in Parts 2 to 4 of this European Standard shall be designated in accordance with the requirements of EN 10027-1 and -2 and CEN CR 10260.

5 Information to be supplied by the purchaser

5.1 Mandatory information

The purchaser shall select the steel type, the shape and dimensions of the forgings taking the intended use into account.

The purchaser shall provide in the order all the information necessary for describing the forging and its characteristics and details concerning delivery including the following:

- a) the quantity of forgings required;
- b) the forging dimensions, or the drawing number(s) containing the dimensions, tolerances and surface finish, with which the forging shall conform;
- c) the steel designation (name or number) of the material of which the forgings are made (see 4.2);
- d) whether the purchaser has any specific requirements on the hot working process or needs to be informed of the forging procedure (see A.2 and A.3);
- e) whether production and testing of the forgings is to be witnessed by the purchaser's representative, and if so, the particular stages in production and testing at which the purchaser's representative may require to be present (see clause 14);
- f) any required options (see 5.2 and annex A);
- g) if required, the type of inspection document in accordance with EN 10204.

5.2 Options

A number of options are available and these are detailed in annex A. Where any of the options given are specified at the time of the order, the forgings shall conform to the requirements of any such option, in addition to the mandatory requirements of this European Standard.

If the purchaser does not specify any options at the time of enquiry and order, the manufacturer shall supply in accordance with the basic specification.

6 Manufacture of the steel

6.1 Steelmaking process

The steel shall be produced by an electric process or one of the basic oxygen processes (see A.1).

6.2 Deoxidation

The steel shall be fully killed.

7 Manufacture of the product

7.1 Hot working

The choice of hot working process shall be at the discretion of the manufacturer (see A.2).

7.2 Forging reduction

The forging shall receive a sufficient forging reduction to completely consolidate the forging and remove the cast structure (see A.3).

7.3 Heat treatment

The forgings shall be delivered in a heat treated condition as specified in the relevant Part of prEN 10250, unless otherwise agreed at the time of enquiry and order.

7.4 Weldability

The steel in this European Standard are generally regarded as being weldable. Welding shall be carried out in accordance with EN 287 and EN 288.

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8 Surface condition and internal soundness sist-en-10250-1-2000

8.1 General

The forgings shall be sound and free from such segregation, cracks, laminations or defects that preclude their intended use (see A.4, A.5 and A.6).

8.2 Removal or surface defects

8.2.1 Conformity to 8.1

Before forgings are despatched or presented for acceptance, surface defects shall be removed in order to conform to 8.1.

8.2.2 Chipping and/or grinding

Surface defects shall be removed by chipping and/or grinding providing the residual thickness meets the minimum tolerance and that the resulting depression does not undercut the rest of the surface. If the thickness is to be reduced to below the minimum tolerance, the repair shall only be carried out following agreement with the purchaser.