



SLOVENSKI STANDARD
SIST EN 10254:2000
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Steel closed die forgings - General technical delivery conditions

Gesenkschmiedeteile aus Stahl - Allgemeine technische Lieferbedingungen

Pieces estampées en acier - Conditions techniques générales de livraison

Ta slovenski standard je istoveten z: **EN 10254:1999**

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 10254

September 1999

ICS 77.140.85

English version

Steel closed die forgings - General technical delivery conditions

Pièces estampées en acier - Conditions techniques
générales de livraison

Gesensschmiedeteile aus Stahl - Allgemeine technische
Lieferbedingungen

This European Standard was approved by CEN on 22 August 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of an identical text or by endorsement, at the latest by March 2000, and conflicting national standards shall be withdrawn at the latest by March 2000.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.

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.

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1 Scope

This European Standard specifies the general delivery conditions for steel closed die forgings.

These forgings are produced by blow or pressure of the heated product at a suitable temperature (hot or warm) in a die, which in the forming process shapes the material to the form of the die. Similar products such as warm extrusions and upset forgings, are also regarded as part of the process.

This European Standard applies also to closed die forgings when their surface is partially treated subsequently by cold forming or coining, in order to improve the surface quality or to obtain more precise dimensional accuracy.

This standard does not apply to open die forgings, process in which the tooling does not fully surround the components produced.

2 Normative references

This European Standard incorporates by reference provisions from specific editions of certain other publications. These normative references are cited at the appropriate points in the text and the publications are listed hereafter. Subsequent amendments to, or revisions of, any of these publications apply to this European Standard only when incorporated in it by amendment or revision. In the case of undated references, the most recent edition of publications referred to applies.

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EN 10002-1	Metallic materials - Tensile testing - Part 1: Method of test (at ambient temperature) <small>https://standards.iteh.ai/catalog/standards/sist/508d7f16-4172-4a85-be0d-9c36b65701be/sist-en-10254-2000</small>
EN 10002-5	Metallic materials - Tensile testing - Part 5: Method of test at elevated temperatures
EN 10003-1	Metallic materials - Hardness test - Brinell - Part 1: Test method
EN 10045-1	Metallic materials - Charpy impact test - Part 1: Test method
EN 10052	Vocabulary of heat treatment terms of ferrous products
EN 10109-1	Metallic materials - Hardness test - Part 1 Rockwell test (scales A - B - C - D - E - F - G - H - K) and Rockwell superficial test (scales 15 N, 30 N, 45 N, 15 T, 30 T and 45 T)
EN 10204	Metallic products - Type of inspection documents
EN 10243-1	Steel die forgings - Tolerances on dimensions - Part 1 : Drop and press forgings
EN 10243-2	Steel die forgings - Tolerances on dimensions - Part 2 : Upset forgings made on horizontal forging machines
CR 10261	ECISS Information Circular 11 - Iron and steel - Review of available methods of chemical analysis

EU 103	Micrographic examination of ferritic or austenite grain size of steel
EU 104	Determination of the depth of decarburization of non-alloy and low-alloy structural steels
ISO 3763	Wrought steels - Macrographic methods for assessing the content of non-metallic inclusions
ISO 4967	Steel - Determination of content of non-metallic inclusions - Micrographic method using standard diagram
ISO 4968	Steel - Macrographic examination by sulphur print (Baumann method)
ISO 4969	Steel - Macrographic examination by etching with strong mineral acid

3 Information to be supplied by the purchaser

The following information shall be supplied by the purchaser at the time of enquiry and order:

- a) full details of closed die forging through an approved drawing (see clause 4) ;
- b) quantity of closed die forgings to deliver ;
- c) all details about tooling as foreseen in clause 5 ;
- d) intended use of closed die forgings ;
- e) material and heat treatment (see clause 6).

Information supplied by the purchaser shall meet the characteristics required and shall preferably refer to European Standards.

NOTE: The informative annex A summarizes all the mandatory and optional information.

4 Reference drawing

The approved drawing provided by the purchaser is normally the definitive document for the production and delivery of closed die forgings.

The drawing of the closed die forging is :

- either provided by the forging manufacturer after the finished component definition, descriptive note, drawing or computer document, and approved by the purchaser, or
- supplied by the purchaser before the preparation of the tooling dies and approved by the forging manufacturer.

In the latter case the simultaneous delivery of a finished part definition is desirable.

As close as possible co-operation between the purchaser and the forging manufacturer will serve to enable the latter, on the basis of his experience, to meet the functional requirements of the purchaser in the best possible way from a technical and economic point of view.

This co-operation extends not only to the design of the closed die forging, the material and in certain cases also heat treatment, but also to the type and range of proposed testing of the determined qualities of the closed die forging for the assurance of consistent quality. The type and range of the planned tests must at the time of the order be specified and included in the order, or in the closed die forging drawing as the case may be.

Dimensions which have to be monitored by SPC (Statistical Process Control) must be agreed between forging manufacturer and purchaser and indicated on the drawing prior to the order.

The identification of surfaces for subsequent first machining are of decisive importance for the dimensioning and dimension control of the forging, and should therefore be indicated on the component drawing.

Dimensions are of importance in the function and dimensional control of the forging, and tolerances and agreed deviations from European Standard EN 10243 may only be applied to dimensions which are included in the forging drawing.

Dimensions for the greatest length, width, height and thickness of the forged component should always be inserted, as they are needed for the determination of tolerances.

Should the purchaser consider it necessary to apply special tolerances to particular dimensions, this must be stated in the order and be subject of an agreement between the forging manufacturer and the purchaser.

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5 Tooling

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5.1 General

The basis for the production of the tooling, in particular of the dies, is the approved forging drawing. In view of the experience and expertise of the forging manufacturer it is recommended that he should be entrusted with the design and implementation of tooling.

In special cases where the purchaser wishes to supply the tools, the conditions of this supply (inspection, modification, adaptation to the machines) should be agreed and made part of the order to take into account the suitability of the machine and the tooling (see 5.2 to 5.4).

5.2 Tools specific to a particular purchaser

In the case of tools specific to a particular purchaser, conditions for obtaining and using them, shall be defined in a specific contract. The forging manufacturer may use tools for which the purchaser has paid cost or part cost only for deliveries to this purchaser.

5.3 Tools not specific to a particular purchaser

Tooling for standard or other forgings which are not specific to a particular purchaser such as: standard forged bolts, hooks, forged flanges, ..., is manufactured and supplied by the forging manufacturer. The forging manufacturer can make use of this tooling without restriction.

5.4 Modification of the tools

Die and tool modifications at the purchaser's request will involve the purchaser in additional costs for labour, and other charges which may include the die material.

6 Material and heat treatment

6.1 Material

6.1.1 Steel grade

The designation of the steel grade is as far as possible to be taken from the appropriate material standards. In other cases materials with similar specification shall be used.

6.1.2 Purity standard, hardenability

Any special requirements about purity and hardenability of the material, which exceed those included in the appropriate material standards, must be stated at the time of order.

6.1.3 Forging reduction ratio

If a particular forging reduction ratio of the material (component or bar) is required, this forging reduction ratio shall be specified.

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6.1.4 Grain flow

If the purchaser requires a particular grain flow in the material in each section of the forging, this must be included in the drawing of the forging as it is of considerable importance in determining the forging method.

6.2 Heat treatment

If post forging heat treatment is required it must be stated by the purchaser and specified on the forged component drawing ¹⁾ and in particular if it is a direct treatment or separate conventional treatment.

If it is agreed to test mechanical properties with test pieces, then the agreed location of these test pieces and their position shall be given either on the drawing or in testing specification.

If heat treatment is required for the closed die forgings, this shall be quoted using the terminology in EN 10052.

¹⁾ The relative requirements for heat treatment are also applicable when the nature of the steel requires a fixed cooling rate (e.g. in the case of precipitation hardening steels).