



SLOVENSKI STANDARD
SIST EN 10250-3:2000
01-november-2000

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Open die steel forgings for general engineering purposes - Part 3: Alloy special steels

Freiformschmiedestücke aus Stahl für allgemeine Verwendung - Teil 3: Legierte
Edelstähle

iTeh STANDARD PREVIEW

Pieces forgées en acier pour usage général - Partie 3: Aciers spéciaux alliés
(standards.iteh.ai)

Ta slovenski standard je istoveten z: **EN 10250-3:1999**

SIST EN 10250-3:2000
<https://standards.iteh.ai/catalog/standards/sist/545846c5-359a-4256-b65c-cc9d0811bd0a/sist-en-10250-3-2000>

ICS:

77.140.20	Visokokakovostna jekla	Stainless steels
77.140.85	Železni in jekleni kovani izdelki	Iron and steel forgings

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en

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 10250-3

October 1999

ICS 77.140.20; 77.140.85

English version

Open die steel forgings for general engineering purposes - Part 3: Alloy special steels

Pièces forgées en acier pour usage général - Partie 3:
Aciers spéciaux alliés

Freiformschmiedestücke aus Stahl für allgemeine
Verwendung - Teil 3: Legierte Edelmetalle

This European Standard was approved by CEN on 9 September 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 April 2000, and conflicting national standards shall be withdrawn at the latest by April 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 1: General requirements
- Part 2: Non-alloy quality and 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 technical delivery requirements for open die forgings, forged bars and products pre-forged and finished in ring rolling mills, manufactured from alloy special steel and supplied in the quenched and tempered condition.

NOTE: The majority of steels listed in this Part of EN 10250 are identical to steels specified in EN 10083-1 and more extensive information on hardenability and technological properties is given in that European Standard.

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.

- iTeh STANDARD PREVIEW**
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- EN 10021 General technical delivery requirements for iron and steel products
- EN 10083-1 Quenched and tempered steels – Part 1: Technical delivery conditions for special steels <https://standards.iteh.ai/catalog/standards/sist/545846c5-359a-4256-b65c-cc9d0811bd0a/sist-en-10250-3-2000>
- EN 10250-1 Open die steel forgings for general engineering purposes – Part 1: General requirements

3 Chemical composition

3.1 Cast analysis

The chemical composition of the steel shall be determined by cast analysis and shall conform to the analysis given in table 1 (see A.7 and A.8, of EN 10250-1).

Measures should be taken to prevent the addition from the scrap, or other material used in the manufacture of the steels, of such elements which affect the hardenability, mechanical properties and applicability of the steel.

3.2 Product analysis

The product analysis shall not deviate from the specified cast analysis (see table 1) by more than the values specified in table 2. (see 9.2 to EN 10250-1).

4 Heat treatment

Heat treatment details are not given in table A1 for guidance

5 Mechanical properties

The mechanical properties determined on test pieces selected, prepared and tested in accordance with clauses 11 and 12 of EN 10250-1 shall conform to the property requirements given in table 3.

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Table 1: Steel grades and chemical composition¹⁾

Steel designation		C %	Si %	Mn %	P max %	S max %	Cr %	Mo %	Ni %	V %
Name	Number									
38Cr2	1.7003	0,35 to 0,42	≤ 0,40	0,50 to 0,80	0,035	0,035	0,40 to 0,60	-	-	-
46Cr2	1.7006	0,42 to 0,50	≤ 0,40	0,50 to 0,80	0,035	0,035	0,40 to 0,60	-	-	-
34Cr4	1.7033	0,30 to 0,37	≤ 0,40	0,60 to 0,90	0,035	0,035	0,90 to 1,20	-	-	-
37Cr4	1.7034	0,34 to 0,41	≤ 0,40	0,60 to 0,90	0,035	0,035	0,90 to 1,20	-	-	-
41Cr4	1.7035	0,38 to 0,45	≤ 0,40	0,60 to 0,90	0,035	0,035	0,90 to 1,20	-	-	-
25CrMo4	1.7218	0,22 to 0,29	≤ 0,40	0,60 to 0,90	0,035	0,035	0,90 to 1,20	0,15 to 0,30	-	-
34CrMo4	1.7220	0,30 to 0,37	≤ 0,40	0,60 to 0,90	0,035	0,035	0,90 to 1,20	0,15 to 0,30	-	-
42CrMo4	1.7225	0,38 to 0,45	≤ 0,40	0,60 to 0,90	0,035	0,035	0,90 to 1,20	0,15 to 0,30	-	-
50CrMo4	1.7228	0,46 to 0,54	≤ 0,40	0,50 to 0,80	0,035	0,035	0,90 to 1,20	0,15 to 0,30	-	-
36CrNiMo4	1.6511	0,32 to 0,40	≤ 0,40	0,50 to 0,80	0,035	0,035	0,90 to 1,20	0,15 to 0,30	0,90 to 1,20	-
34CrNiMo6	1.6582	0,30 to 0,38	≤ 0,40	0,50 to 0,80	0,035	0,035	1,30 to 1,70	0,15 to 0,30	1,30 to 1,70	-
30CrNiMo8	1.6580	0,26 to 0,34	≤ 0,40	0,30 to 0,60	0,035	0,035	1,80 to 2,20	0,30 to 0,50	1,80 to 2,20	-
36NiCrMo16	1.6773	0,32 to 0,39	≤ 0,40	0,30 to 0,60	0,030	0,025	1,60 to 2,00	0,25 to 0,45	3,60 to 4,10	-

Table 1: Steel grades and chemical composition (concluded)

Steel designation		C	Si	Mn	P Max	S Max	Cr	Mo	Ni	V
Name	Number	%	%	%	%	%	%	%	%	%
51CrV4	1.8159	0,47 to 0,55	≤ 0,40	0,70 to 1,10	0,035	0,035	0,90 to 1,20	-	-	0,10 to 0,25
33NiCrMoV14-5	1.6956	0,28 to 0,38	≤ 0,40	0,15 to 0,40	0,035	0,035	1,00 to 1,70	0,30 to 0,60	2,90 to 3,80	0,08 to 0,25
40CrMoV13-9	1.8523	0,35 to 0,45	0,15 to 0,40	0,40 to 0,70	0,035	0,035	3,00 to 3,50	0,80 to 1,10	-	0,15 to 0,25
18CrMo4	1.7243	0,15 to 0,21	≤ 0,40	0,60 to 0,90	0,035	0,035	0,90 to 1,20	0,15 to 0,25	-	-
20MnMoNi4-5	1.6311	0,17 to 0,23	≤ 0,40	1,00 to 1,50	0,035	0,035	≤ 0,50	0,45 to 0,60	0,40 to 0,80 ²⁾	-
30CrMoV9	1.7707	0,26 to 0,34	≤ 0,40	0,40 to 0,70	0,035	0,035	2,30 to 2,70	0,15 to 0,25	≤ 0,60	0,10 to 0,20
32CrMo12	1.7361	0,28 to 0,35	≤ 0,40	0,40 to 0,70	0,035	0,035	2,80 to 3,30	0,30 to 0,50	≤ 0,60	-
28NiCrMoV8-5	1.6932	0,24 to 0,32	≤ 0,40	0,15 to 0,40	0,035	0,035	1,00 to 1,50	0,35 to 0,55	1,80 to 2,10	0,05 to 0,15

1). At the option of the manufacturer the elements aluminium, titanium, vanadium and niobium may be added singly or in combination for grain control purposes. Elements not quoted in tables 1 and 2 shall not be added intentionally to the steel without the agreement of the purchaser, except for the purpose of finishing the heat.

2) For greater cross-sections up to 1,00 % Ni is admissible.