SLOVENSKI STANDARD

SIST EN 10052:1996

01-avgust-1996

Slovar izrazov iz toplotne obdelave izdelkov iz železovih zlitin

Vocabulary of heat treatment terms for ferrous products

Begriffe der Wärmebehandlung von Eisenwerkstoffen

Vocabulaire du traitement thermique des produits ferreux

Ta slovenski standard je istoveten z: **EN 10052:1993**

ICS:

25.200 Toplotna obdelava Heat treatment

SIST EN 10052:1996 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 10052:1993

October 1993

UDC 669.1:001.4:621.785

Descriptors: Metals, iron, iron alloys, heat treatment, vocabulary

English version

Vocabulary of heat treatment terms for ferrous products

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Begriffe der Wärmebehandlung von Eisenwerkstoffen

This European Standard was approved by CEN on 1993-10-15. 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.

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CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

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

Contents list

Foreword

This European Standard has been prepared by the Technical Committee ECISS/TC 21 "Vocabulary of heat treatment terms", the secretariat of which is held by AFNOR.

This European Standard shall be given the status of National Standard, either by publication of an identical text or by endorsement, at the latest by April 1994, and conflicting National Standards shall be withdrawn at the latest by April 1994.

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

NOTE: This European Standard contains different references to definitions and different statements in notes in each language version because of different terms used in national terminology.

1 Scope

The purpose of this European Standard is:

1.1 To define the terms in the ferrous products heat treatment vocabulary.

These terms are divided into a main part (3.2) and a complementary section (3.3)

- the main part gives an alphabetical list of the terms with their definitions and, where appropriate, comments. Definitions of foreign terms for which the language in question has no equivalents are given at the end of the main part under their reference number;

- the complementary section comprises the definitions of terms necessary to understand the main part.

NOTE: The comments are printed in italics in order to differentiate them from the definitions.

Any term defined in the main part of this European Standard and used elsewhere in a definition or a comment is printed in capital letters.

The reference numbers given with each term are identical in all the versions and correspond to the French alphabetical order. In order to avoid any confusion, the numbers of the terms in the annex are preceded by the letter A. clause 3.1 gives the terms in numerical order.

1.2 To facilitate translations using the tables of equivalent terms.

Table 1 gives the equivalent French and German terms for the English terms in the alphabetical list.

2 Normative references

This European standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate place 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.

EU 23-71 :	End quench hardenability test for steel (Jominy test)
EU 103-71 :	Micrographic determination of the ferritic or austenitic grain size of steels
EU 104-70 :	Determination of the decarburization depth of unalloyed and low alloy structural steels
EU 105-71 :	Determination and verification of the effective case depth after carburizing
EU 108-72 :	Round steel wire rod for cold formed nuts and bolts - Dimensions and tolerances
EU 114-72 :	Determination of resistance to intergranular corrosion of austenitic stainless steels. Corrosion test in a sulphate medium (Monypenny - Strauss test)
EU 116-72 :	Determination of the effective case depth after surface hardening
EN 10020	Definition and classification of grades of steel
EN 10083-1	Quenched and tempered steels Part 1. Technical conditions for special steels
EN 10083-2	Quenched and tempered steels Part 2. Unalloyed quality steels
prEN 10083-3	Quenched and tempered steels Part 3. Technical delivery conditions for boron steels

3 TERMS

3.1 List of terms in numerical order

1 Carbon activity

2 Softening

3 Grain refining

4 Aluminizing

5 Endothermic atmosphere

6 Exothermic atmosphere

7 Ausforming

8 Austenitizing

9 Auto-tempering

10 Self-quenching

11 Blueing

12 Boriding

13 Burning

14 Blacking

15 Maximum achievable hardness

16 Carbonitriding

17 Carburizing

18 Blank carburizing

19 Boost - diffuse carburizing

20 Heating

21 Heating curve

22 Heating time

23 Heating function

24 Heating schedule

25 Heating rate

26 Chromizing

27 Carbon mass transfer coefficient

28 Compound layer

29 Diffusion zone

30 Quench hardened layer

31 Carbon profile

32 Tempering curve

33 Cyaniding

34 Thermal cycle

35 Decarburization

36 Decarburizing

37 Distortion

38 Baking

39 Destabilization of retained austenite

40 Ageing treatment

41 Stress relief tempering

42 Time-Temperature-Transformation diagram (TTT diagram)

43 Continuous-Cooling-Transformation diagram (CCT diagram)

44 Equivalent ruling section

45 Diffusion treatment

46 Impulse hardening

47 Induction hardening

48 Local hardening

49 Precipitation hardening

50 Precipitation hardening treatment

51 Single quench hardening treatment

52 Quench hardening

53 Through-hardening

54 Surface hardening treatment

55 Quench hardening treatment

56 Direct hardening treatment

57 Double quench hardening treatment

58 Secondary hardening

59 Floor-to-floor time

60 Normalizing forming

61 Temper embrittlement

62 Spheroidization

63 Spheroidizing

64 Graphitization

65 Graphitizing

66 Grain coarsening

67 Homogenizing

68 Solution annealing

69 Impulse heating

70 Isoforming

71 Jominy test

72 Soaking

73 Malleablizing

74 Maraging

75 Medium

76 Solution treatment

77 Heating-up time

78 Nitrocarburizing

79 Nitriding

80 Blank nitriding

81 Two-stage nitriding

82 Normalizing

83 Operation

84 Internal oxidation

85 Patenting

86 Depth of transformation

87 Carbon potential

88 Quenching capacity

89 Preheating

90 Case depth

91 Effective case depth after carburizing

92 Depth of decarburization

93 Depth of hardening

94 Effective case depth after surface hardening

95 Depth of nitriding

96 Carbon restoration

97 Recrystallizing

98 Annealing

99 Bright annealing

100 Full annealing

101 Soft annealing

102 Inter-critical annealing

103 Isothermal annealing

104 Sub-critical annealing

105 Cooling

106 Cooling curve

107 Cooling time

108 Cooling function

109 Cooling conditions

110 Cooling schedule

111 Cooling rate

112 Critical cooling function

113 Critical cooling rate

114 Stress relieving

115 Recovery

116 Tempering

117 Sherardizing

118 Siliconizing

119 Stabilizing

120 Stabilization of retained austenite

121 Sulphidizing

122 Overcarburizing

123 Overheating and oversoaking

124 Thermal crack

125 Austenitizing temperature

126 Transformation temperature

127 Quenching temperature

128 Inter-critical treatment

129 Sub-zero treating

130 Heat treatment

131 Thermochemical treatment

132 Thermomechanical treatment

133 Hardenability

134 Quenching

135 Direct quenching

136 Step quenching

137 Austempering

138 Martempering

139 Interrupted quenching

140 Vanadizing

141 Case hardening

142 Limited ruling section

143 Stabilizing annealing

144 Term without an English definition (see definition)

145 Term without an English definition (see definition)

146 Term without an English definition (see definition)

147 Equalization

148 Term without an English definition (see definition)

149 Flame hardening

Terms in the annex

A 150 Acicular structure

A 151 Steel

A 152 Austenitic steel

A 153 Ferritic steel

A 154 Graphitic steel

A 155 Ledeburitic steel

A 156 Maraging steel

A 157 Alloy

A 158 Austenite

A 159 Retained austenite

A 160	Air-hardening steel
A 161	Bainite
A 162	Banded structure
A 163	Epsilon carbide
A 164	Cementite
A 165	Coalescence of a precipitate
A 166	Constituent
A 167	Nitrogen profile
A 168	Critical diameter
A 169	Low load hardness
A 170	Mass effect
A 171	Eutectoid transformation
A 172	Alpha iron
A 173	Gamma iron
A 174	Delta iron
A 175	Ferrite
A 176	Cast iron
A 177	Malleable cast iron
A 178	Grain
A 179	Crystallinity
A 180	McQuaid-Ehn grain size
A 181	Grain size
A 182	Grain growth
A 183	Hypereutectoid steel
A 184	Hypoeutectoid steel
A 185	Intermetallic compound
A 186	Transformation range
A 187	Grain boundary

A 188	Ledeburite
A 189	Martensite
A 190	Secondary martensite
A 191	Metastable
A 192	Microhardness
A 193	Pearlite
A 194	Phase
A 195	Parent phase
A 196	Proeutectoid constituent
A 197	Recalescence
A 198	Sensitization
A 199	Solid solution
A 200	Transformation temperature
A 201	Ageing
A 202	Widmannstaetten structure