

ISO 683-2:2016-06 (E)

Heat-treatable steels, alloy steels and free-cutting steels - Part 2: Alloy steels for quenching and tempering

Contents		Page
Foreword		v
1 Scope		1
2 Normative references		1
3 Terms and definitions		2
4 Classification and designation		3
4.1 Classification.....		3
4.2 Designation.....		3
5 Information to be supplied by the purchaser		3
5.1 Mandatory information.....		3
5.2 Options and/or supplementary or special requirements.....		3
5.3 Ordering example.....		4
6 Manufacturing process		4
6.1 General.....		4
6.2 Deoxidation.....		4
6.3 Heat-treatment condition and surface condition at delivery.....		4
6.3.1 Heat-treatment condition.....		4
6.3.2 Particular surface conditions.....		4
6.4 Traceability of the cast.....		4
7 Requirements		5
7.1 Chemical composition, mechanical properties and hardenability.....		5
7.1.1 General.....		5
7.1.2 Chemical composition.....		5
7.1.3 Mechanical properties.....		5
7.1.4 Hardenability.....		5
7.1.5 Surface hardness.....		5
7.2 Machinability.....		5
7.3 Cold shearability.....		5
7.4 Grain size.....		6
7.5 Non-metallic inclusions.....		6
7.5.1 Microscopic inclusions.....		6
7.5.2 Macroscopic inclusions.....		6
7.6 Internal soundness.....		6
7.7 Surface quality.....		6
7.8 Decarburization.....		7
7.9 Shape, dimensions and tolerances.....		7
8 Inspection		7
8.1 Testing procedures and types of documents.....		7
8.2 Frequency of testing.....		7
8.3 Specific inspection and testing.....		8
8.3.1 Verification of the hardenability, hardness and mechanical properties.....		8
8.3.2 Visual and dimensional inspection.....		8

9	Test methods	8
9.1	Chemical analysis.....	8
9.2	Mechanical tests.....	8
9.2.1	Tensile test.....	8
9.2.2	Impact test.....	8
9.3	Hardness and hardenability tests.....	8
9.3.1	Hardness in treatment conditions +A and +S.....	8
9.3.2	Verification of hardenability.....	9
9.3.3	Surface hardness.....	9
9.4	Retests.....	9
10	Marking	9
	Annex A (normative) Ruling sections for mechanical properties	31
	Annex B (normative) Supplementary or special requirements	35
	Annex C (informative) Designation of steels given in this part of ISO 683 and of comparable grades covered in various designation systems	37
	Annex D (informative) Dimensional standards applicable to products complying with this part of ISO 683	39
	Bibliography	40