

DIN EN ISO 683-2:2018-09 (E)

Heat-treatable steels, alloy steels and free-cutting steels - Part 2: Alloy steels for quenching and tempering (ISO 683-2:2016)

Contents	Page
European foreword	4
Foreword	6
1 Scope	7
2 Normative references	7
3 Terms and definitions	8
4 Classification and designation	9
4.1 Classification	9
4.2 Designation	9
5 Information to be supplied by the purchaser	9
5.1 Mandatory information	9
5.2 Options and/or supplementary or special requirements	9
5.3 Ordering example	10
6 Manufacturing process	10
6.1 General	10
6.2 Deoxidation	10
6.3 Heat-treatment condition and surface condition at delivery	10
6.3.1 Heat-treatment condition	10
6.3.2 Particular surface conditions	10
6.4 Traceability of the cast	10
7 Requirements	11
7.1 Chemical composition, mechanical properties and hardenability	11
7.1.1 General	11
7.1.2 Chemical composition	11
7.1.3 Mechanical properties	11
7.1.4 Hardenability	11
7.1.5 Surface hardness	11
7.2 Machinability	11
7.3 Cold shearability	11
7.4 Grain size	12
7.5 Non-metallic inclusions	12
7.5.1 Microscopic inclusions	12
7.5.2 Macroscopic inclusions	12
7.6 Internal soundness	12
7.7 Surface quality	12
7.8 Decarburization	13
7.9 Shape, dimensions and tolerances	13
8 Inspection	13
8.1 Testing procedures and types of documents	13
8.2 Frequency of testing	13
8.3 Specific inspection and testing	14
8.3.1 Verification of the hardenability, hardness and mechanical properties	14
8.3.2 Visual and dimensional inspection	14

9	Test methods	14
9.1	Chemical analysis.....	14
9.2	Mechanical tests.....	14
	9.2.1 Tensile test.....	14
	9.2.2 Impact test.....	14
9.3	Hardness and hardenability tests.....	14
	9.3.1 Hardness in treatment conditions +A and +S.....	14
	9.3.2 Verification of hardenability.....	15
	9.3.3 Surface hardness.....	15
9.4	Retests.....	15
10	Marking	15
Annex A (normative) Ruling sections for mechanical properties		37
Annex B (normative) Supplementary or special requirements		41
Annex C (informative) Designation of steels given in this part of ISO 683 and of comparable grades covered in various designation systems		43
Annex D (informative) Dimensional standards applicable to products complying with this part of ISO 683		45
Bibliography		46