

ISO 683-7:2023-11 (E)

Heat-treatable steels, alloy steels and free-cutting steels - Part 7: Bright products of non-alloy and alloy steels

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/Supplementary or special requirements	4
5.3	Ordering example	4
6	Manufacturing process	5
6.1	General	5
6.2	Treatment and surface condition at delivery	5
6.2.1	Treatment condition	5
6.2.2	Surface conditions	5
6.3	Traceability of the cast	5
7	Requirements	5
7.1	General	5
7.2	Chemical composition	5
7.3	Mechanical properties	6
7.4	Hardenability	6
7.5	Machinability	6
7.6	Grain size	7
7.7	Non-metallic inclusions	7
7.7.1	Microscopic inclusions	7
7.7.2	Macroscopic inclusions	7
7.8	Internal soundness	7
7.9	Decarburization	7
7.10	Shape, dimensions and tolerances	7
7.11	Surface quality	8
8	Inspection	8
8.1	Testing procedures and types of documents	8
8.2	Frequency of testing	9
8.3	Specific inspection and testing	10
8.3.1	Verification of the hardenability, hardness and mechanical properties	10
8.3.2	Visual and dimensional inspection	11
9	Test methods	11
9.1	Chemical analysis	11
9.2	Mechanical tests	11
9.2.1	Tensile test	11
9.2.2	Impact test	11

9.3	Hardness and hardenability tests	11
9.3.1	Hardness in treatment conditions +A and +FP	11
9.3.2	Verification of hardenability	12
9.4	Verification of dimensions	12
9.5	Retests	12
10	Marking	12
Annex A (informative)	Steel grades and chemical composition according to ISO 630-2, ISO 683-1, ISO 683-2, ISO 683-3 and ISO 683-4	39
Annex B (normative)	Determination of the diameter of the equivalent ruling section for mechanical properties	45
Annex C (normative)	Supplementary or special requirements	48
Annex D (normative)	Methods for evaluating straightness	50
Annex E (informative)	Designation of steels given in this document and of comparable grades covered in various designation systems	51
Bibliography	55