

ISO 683-3:2016-07 (E)

Heat-treatable steels, alloy steels and free-cutting steels - Part 3: Case-hardening steels

Contents		Page
Foreword		v
1	Scope	1
2	Normative references	1
3	Terms and definitions	2
4	Classification and designation	2
4.1	Classification	2
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	3
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	Normal condition at delivery	4
6.3.2	Particular heat-treatment condition	4
6.3.3	Particular surface conditions	4
6.4	Traceability of the cast	4
7	Requirements	4
7.1	Chemical composition, hardness and hardenability	4
7.1.1	General	4
7.1.2	Chemical composition	5
7.2	Machinability	5
7.3	Cold shearability	5
7.4	Grain size	5
7.5	Non-metallic inclusions	5
7.5.1	Microscopic inclusions	5
7.5.2	Macroscopic inclusions	5
7.6	Internal soundness	6
7.7	Surface condition	6
7.8	Shape, dimensions and tolerances	6
8	Inspection	6
8.1	Testing procedures and types of documents	6
8.2	Frequency of testing	7
8.3	Tests to be carried out for specific inspection	7
8.3.1	General	7
8.3.2	Visual and dimensional inspection	7
9	Test methods	7
9.1	Chemical analysis	7
9.2	Hardness and hardenability tests	7
9.2.1	Verification of hardness	7

9.2.2	Verification of hardenability	7
9.3	Retests	8
10	Marking	8
Annex A (normative) Supplementary or special requirements		29
grades covered in various designation systems		31
Annex C (informative) Dimensional standards applicable to products complying with this Annex D (informative) Classification of steel grades according to minimum tensile strength as a function of diameter after hardening and tempering at 200 °C		34
Bibliography		35