ISO 683-3:2019 (E)

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

Contents

Foreword

1 Scope

2 Normative references

3 Terms and definitions

4 Classification and designation

4.1 Classification
4.2 Designation

5 Information to be supplied by the purchaser

5.1 Mandatory information
5.2 Options and/or supplementary or special requirements
5.3 Ordering example

6 Manufacturing process

6.1 General
6.2 Deoxidation
6.3 Heat-treatment condition and surface condition at delivery
6.3.1 Normal condition at delivery
6.3.2 Particular heat-treatment condition
6.3.3 Particular surface conditions
6.4 Traceability of the cast

7 Requirements

7.1 Chemical composition, hardness and hardenability
7.1.1 General
7.1.2 Hardenability
7.1.3 Chemical composition
7.2 Machinability
7.3 Cold shearability
7.4 Grain size
7.5 Non-metallic inclusions
7.5.1 Microscopic inclusions
7.5.2 Macroscopic inclusions
7.6 Internal soundness
7.7 Surface condition
7.8 Shape, dimensions and tolerances

8 Inspection

8.1 Testing procedures and types of documents
8.2 Frequency of testing
8.3 Tests to be carried out for specific inspection
8.3.1 General
8.3.2 Visual and dimensional inspection

9 Test methods

9.1 Chemical analysis
9.2 Hardness and hardenability tests
9.2.1 Verification of hardness
9.2.2 Verification of hardenability

9.3 Retests

10 Marking

Annex A (normative) Supplementary or special requirements

A.1 Fine grain steel
A.2 Non-destructive tests
A.3 Product analysis
A.4 Reduction ratio and deformation ratio
A.5 Special agreements for marking

Annex B (informative) Designation of steels given in this document and of comparable grades covered in various designation systems

Annex C (informative) Dimensional standards applicable to products complying with this document

Annex D (informative) Classification of steel grades according to minimum tensile strength as a function of diameter after hardening and tempering at 200 °C

Page count: 36