ISO 185:2019-07 (E)

Grey cast irons - Classification

Contents

Page

Foreword iv

Introduction v

1 Scope 1

2 Normative references 1

3 Terms and definitions 1

4 Designation 2

5 Order information 2

6 Manufacture 2

7 Requirements 3
7.1 Mechanical properties 3
7.2 Tensile properties 3
7.2.1 General 3
7.2.2 Test pieces machined from cast samples 3
7.2.3 Test pieces cut from a casting 3
7.3 Hardness properties 5
7.4 Graphite structure 6

8 Sampling 6
8.1 General 6
8.2 Types of samples 7
8.3 Samples for tensile test 7
8.3.1 Size of cast samples 7
8.3.2 Frequency and number of test samples 7
8.3.3 Separately cast samples 7
8.3.4 Side-by-side cast samples 7
8.3.5 Cast-on samples 8
8.3.6 Samples cut from a casting 10
8.4 Samples for hardness test 11

9 Test methods 11
9.1 Tensile test 11
9.2 Brinell hardness test 13
9.3 Graphite structure 13
9.4 Alternative test procedures 13

10 Retests 13
10.1 Need for retests 13
10.2 Test validity 13
10.3 Nonconforming test results 14
10.4 Heat treatment of samples and castings 14

Annex A (informative) Information on mechanical and physical properties in addition to that given in Tables 1 and 2 15

Annex B (informative) Additional information on the relationship between hardness and tensile strength of grey cast irons 17

Annex C (informative) Additional information on the relationship between tensile strength, hardness and wall thickness of grey iron castings 20

grades of grey cast irons 24

Bibliography 26