ISO 898-2:2022-09 (E)

Fasteners - Mechanical properties of fasteners made of carbon steel and alloy steel - Part 2: Nuts with specified property classes

Contents

Page

Foreword ..... **v**

Introduction ..... **vii**

1 Scope **1**

2 Normative references **2**

3 Terms and definitions **2**

4 Symbols **2**

5 Designation systems **3**
5.1 Nut styles 3
5.2 Property classes 3
5.2.1 Regular nuts (style 1) and high nuts (style 2) 3
5.2.2 Thin nuts (style 0) 4

6 Design of bolt and nut assemblies **4**

7 Material, heat treatment, chemical composition and steel microstructure **4**
7.1 General 4
7.2 Heat treatment 5
7.3 Chemical composition 5
7.4 Steel microstructure 7
7.4.1 Non-quenched and tempered nuts 7
7.4.2 Quenched and tempered nuts 7

8 Mechanical and physical properties **7**
8.1 General 7
8.2 Proof load 8
8.3 Hardness 9
8.4 Surface integrity 11

9 Inspection **11**
9.1 Manufacturer's inspection 11
9.2 Supplier's inspection 11
9.3 Purchaser's inspection 11
9.4 Delivery of test results 12

10 Test methods **12**
10.1 Proof load test 12
10.1.1 General 12
10.1.2 Applicability 12
10.1.3 Apparatus 12
10.1.4 Testing device 12
10.1.5 Test procedure 13
10.1.6 Test results and requirements 14
10.2 Hardness tests 14
10.2.1 General 14
10.2.2 Applicability 14
10.2.3 Test methods 14
10.2.4 Test procedures for routine inspection 14
10.2.5 Hardness determined in the thread 16
10.2.6 Hardness determined in the core 17
10.2.7 Uniformity of hardness for quenched and tempered nuts (QT) 18

10.2.8 Requirements for non-quenched and tempered nuts (NQT) 18
10.2.9 Requirements for quenched and tempered nuts (QT) 18
10.3 Steel microstructure 19
10.3.1 General 19
10.3.2 Applicability 19
10.3.3 Test method 19
10.3.4 Test results and requirements 19
10.4 Retempering test 19
10.4.1 General 19
10.4.2 Test procedure 19
10.4.3 Test results and requirements 20
10.5 Surface discontinuity inspection 20
11 Marking and labelling 20
11.1 General requirements 20
11.2 Property class marking symbols for nuts with full loadability 20
11.3 Property class marking symbols for nuts with reduced loadability 21
11.4 Manufacturer's identification mark 21
11.5 Nut marking 21
11.6 Marking of the packages (labelling) 23
Annex A (normative) **Thread dimensions of the test mandrel 25**
Annex B (informative) **Design principles for nuts 27**
Annex C (informative) **Stress under proof load, S_P 29**
Bibliography 31