ISO 898-1:2009-04 (E)

Mechanical properties of fasteners made of carbon steel and alloy steel - Part 1: Bolts, scre ws and studs with specified property classes - Coarse thread and fine pitch thread

Contents

Page

Foreword iv

1 Scope 1

2 Normative references 2

3 Terms and definitions 3

4 Symbols and abbreviated terms 4

5 Designation system for property classes 5

6 Materials 6

7 Mechanical and physical properties 8

8 Applicability of test methods 12
8.1 General 12
8.2 Loadability of fasteners 12
8.3 Manufacturer's control 13
8.4 Supplier's control 13
8.5 Purchaser's control 13
8.6 Feasible tests for groups of fasteners and machined test pieces 14

9 Test methods 21
9.1 Tensile test under wedge loading of finished bolts and screws (excluding studs) 21
9.2 Tensile test for finished bolts, screws and studs for determination of tensile strength, Rm 25
9.3 Tensile test for full-size bolts, screws and studs for determination of elongation after fracture, Af, and stress at 0,004 8 d non-proportional elongation, Rpf 27
9.4 Tensile test for bolts and screws not expected to break in free threaded length due to head design 31
9.5 Tensile test for fasteners with waisted shank 32
9.6 Proof load test for finished bolts, screws and studs 33
9.7 Tensile test for machined test pieces 35
9.8 Head soundness test 38
9.9 Hardness test 39
9.10 Decarburization test 41
9.11 Carburization test 44
9.12 Retempering test 46
9.13 Torsional test 46
9.14 Impact test for machined test pieces 47
9.15 Surface discontinuity inspection 48

10 Marking 48
10.1 General 48
10.2 Manufacturer's identification mark 48
10.3 Marking and designation of fasteners with full loadability 49

10.4 Marking and designation of fasteners which, because of their geometry, have reduced loadability 53
10.5 Marking of packages 53

Annex A (informative) Relation between tensile strength and elongation after fracture 54

Annex B (informative) Influence of elevated temperatures on mechanical properties of fasteners ... 55

Annex C (informative) Elongation after fracture for full-size fasteners, f 56

Bibliography 57