ISO 11118:2025-01 (E)

Gas cylinders - Non-refillable metallic gas cylinders - Specification and test methods

Contents

Page

Foreword v

Introduction vi

1 Scope 1

2 Normative references 1

3 Terms and definitions 2

4 Symbols 3

5 Materials 3
5.1 General requirements 3
5.2 Material types 4
5.2.1 Carbon and low-alloy steels 4
5.2.2 Aluminium and aluminium alloy 4
5.2.3 Austenitic stainless steels 4
5.3 Chemical compositions 5
5.3.1 Carbon and low-alloy steels 5
5.3.2 Aluminium and aluminium alloys 6

6 Inspection and testing 6

7 Design 6
7.1 General requirements 6
7.2 Calculation of pressure containing parts 6
7.3 Design drawings 7

8 Construction and workmanship 7
8.1 Construction 7
8.1.1 Types of construction of cylinder shell 7
8.1.2 Cylinder non-refillability 11
8.1.3 Pressure relief devices 11
8.2 Workmanship 11

9 Type approval procedure 12
9.1 General requirements 12
9.2 Prototype tests 12
9.2.1 General 12
9.2.2 Material tests 12
9.2.3 Tensile tests 13
9.2.4 Burst tests 14
9.2.5 Drop tests 16
9.2.6 Dimension checks 17
9.2.7 Valve to cylinder interface test 18
9.3 Design type approval 18

10 Batch tests 18
10.1 General requirements 18
10.2 Failure to meet test requirements 18

11 Tests on every cylinder 19
11.1 Inspection 19
11.2 Proof pressure test 19
11.3 Leak testing 19
11.4 Rejection criteria 19
11.5 Repairs 19

12 Markings 19
12.1 General 19
12.2 Manufacturing and operational markings 19
12.3 Other markings 20

13 Test reports and certificate of conformance 20

Annex A (normative) Non-refillable sealing devices -- Specifications and prototype testing 21

Annex B (informative) Type approval certificate 27

Annex C (informative) Certificate of conformance 29

Annex D (informative) Yield point elongation (YPE) 31

Bibliography 34