DIN EN 12806:2022-12 (E nglisch)

LPG equipment and accessories - Automotive liquefied petroleum gas components - Other than containers

Contents

Page

European foreword 5

Introduction 6

1 Scope 7

2 Normative references 7

3 Terms, definitions and abbreviations 8
3.1 Terms and definitions 8
3.2 Abbreviations 11

4 Technical requirements 12
4.1 General 12
4.2 General design rules 13
4.3 Materials 14
4.4 Design temperature 14

5 Classification of components 14
5.1 General 14
5.2 Classification of automatic valves 15

6 Construction and workmanship 15

7 Tests 15
7.1 General 15
7.2 Overpressure test 17
7.3 External leak tests 17
7.4 Seat leak test 18
7.5 Operational tests 19
7.6 Endurance test 22
7.7 Vibration test 22
7.8 LPG compatibility test (for rubber materials) 24
7.9 Corrosion resistance test 25
7.10 Resistance to dry heat test 25
7.11 Ozone ageing test 26
7.12 Creep test 26
7.13 Temperature cycle test 26

8 Markings 27

Annex A (informative) Classification of automotive LPG components 28

Annex B (normative) Requirements for the components fitted in or on the container 29

B.1 80 % stop valve 29
B.2 Level indicator 30
B.3 Float 31
B.4 Pressure relief valve 32
B.5 Remote-controlled service valve with excess flow valve 33
B.6 Excess flow valve 34

B.7 Pressure Relief Device (PRD) 35
B.8 Manual shut-off container valve 37

Annex C (normative) Requirements for the fuel pump 38

C.1 Design criteria 38
C.2 Specific design rules 38
C.3 Test procedures 38

Annex D (normative) Requirements for the gas-tight housing 40

D.1 Design criteria 40
D.2 Specific design rules 40
D.3 Applicable tests 40

Annex E (normative) Requirements for the power supply bushing 41

E.1 Design criteria 41
E.2 Specific design rules 41
E.3 Applicable tests 41

Annex F (normative) Requirements for the non-return valve 42

F.1 Design criteria 42
F.2 Specific design rules 42
F.3 Applicable tests 42

Annex G (normative) Requirements for the multi-valve 43

G.1 Design criteria 43
G.2 Specific design rules 43
G.3 Applicable tests 43

Annex H (normative) Requirements for the vaporizer/pressure regulator 44

H.1 Design criteria 44
H.2 Specific design rules 44
H.3 Applicable tests 44

Annex I (normative) Requirements for the remote-controlled shut-off valve 46

I.1 Design criteria 46
I.2 Specific design rules 46
I.3 Applicable tests 46

Annex J (nor mative) Requirements for LPG injectors and the mixing unit 47

J.1 Injector 47
J.2 Mixing unit 48

Annex K (normative) Requirements for the LPG dosage unit 49

K.1 Design criteria 49
K.2 Specific design rules 49
K.3 Applicable tests 49

Annex L (normative) Requirements for the flexible hoses 50

L.1 Design criteria 50
L.2 Specific design rules 50
L.3 Tests 51
L.4 Markings 57

Annex M (normative) Requirements for the hydrostatic relief valve 58

M.1 Design criteria 58
M.2 Specific design rules 58
M.3 Applicable tests 58

Annex N (normative) Requirements for the filter unit 59

N.1 Design criteria 59
N.2 Specific design rules 59
N.3 Applicable tests 59

Annex O (normative) Requirements for the pressure and/or temperature sensor 61

O.1 Design criteria 61
O.2 Specific design rules 61
O.3 Applicable tests 61

Annex P (normative) Requirements for the service coupling 63

P.1 Design criteria 63
P.2 Specific design rules 63
P.3 Applicable tests procedure 63

Annex Q (normative) Requirements for the Electronic Control Unit (ECU) 64

Q.1 Design criteria 64
Q.2 Specific design rules 64

Annex R (normative) Requirements for the fuel rail 65

R.1 Design criteria 65
R.2 Specific design rules 65
R.3 Applicable tests 65

Annex S (normative) Requirements for the filling unit 67

S.1 Design criteria 67
S.2 Specific design rules 67
S.3 Applicable tests 68
S.4 Main dimensions of different types of vehicle filling units in use in Europe 70

Annex T (normative) Gas tube(s) 74

T.1 General provisions 74
T.2 Gas tubes of seamless type made of either copper or stainless steel or steel with corrosion-resistant coating 74
T.3 Gas tube(s) of non-seamless type, gas tube(s) made of materials other than copper, stainless steel, and steel with corrosion-resistant coating, and their couplings 74

Annex U (normative) Interconnected LPG systems 77

U.1 Specific provisions for components of interconnected LPG-systems 77

Bibliography 80