

DIN EN 1458-1:2012-02 (E)

Domestic direct gas-fired tumble dryers of types B22D and B23D, of nominal heat input not exceeding 6 kW - Part 1: Safety

Contents

Page

Foreword	5
1 Scope	6
2 Normative references	6
3 Terms and definitions	7
4 Classification	16
4.1 Classification of gases	16
4.2 Classification of appliances	17
4.2.1 Classification according to the gases capable of being used	17
4.2.2 Classification according to the mode of evacuation of the combustion products/supply of combustion air	19
5 Construction and design requirements	19
5.1 General	19
5.1.1 Conversion to different gases	19
5.1.2 Materials and method of construction	20
5.1.3 Screws	21
5.1.4 Maintenance and use	21
5.1.5 Thermal insulation	21
5.1.6 Gas connections	22
5.1.7 Soundness of the gas circuit	22
5.1.8 Supply of combustion air and evacuation of combustion products	23
5.1.9 Lint collection	23
5.1.10 Flame visibility	23
5.1.11 Electrical equipment	23
5.1.12 Motors and fans	23
5.1.13 Operational safety in the event of fluctuation, interruption and restoration of the auxiliary energy	24
5.1.14 Combustion air flow failure	24
5.2 Requirements for adjusting, control and safety devices	24
5.2.1 General	24
5.2.2 Automatic shut-off valves	24
5.2.3 Multifunctional controls	25
5.2.4 Flame supervision devices	25
5.2.5 Regulators	26
5.2.6 Preset gas rate adjusters	26
5.2.7 Automatic burner control systems	27
5.2.8 Gas strainers	27
5.3 Ignition devices	27
5.3.1 General	27
5.3.2 Ignition device for the main burner	27
5.3.3 Ignition burners	27
5.4 Ignition burner or start-gas flame establishment	27
5.5 Main flame establishment	28
5.5.1 Establishment by means of an ignition burner or start-gas flame	28
5.5.2 Direct establishment of the main flame e.g. spark ignition, hot surface igniter	28
5.6 Burners	28
5.7 Thermostats and control of air temperature	29

5.7.1	General requirements	29
5.7.2	Overheat cut-off device	29
5.8	Clocks and timing devices	29
5.9	Pressure test points	29
5.10	Mechanical hazards	29
5.10.1	General	29
5.10.2	Requirements for appliances with an opening dimension exceeding 200 mm and a drum having a volume exceeding 60 dm	29
6	Operational safety	30
6.1	General	30
6.1.1	Characteristics of test gases: reference and limit gases	30
6.1.2	Conditions for preparation of test gases	31
6.1.3	Practical application of test gases	32
6.1.4	Test pressures	34
6.1.5	Use of test gases	36
6.1.6	Test room	37
6.1.7	Preparation of the appliance	37
6.1.8	Test conditions	37
6.2	Screws	38
6.2.1	Requirements	38
6.2.2	Tests	38
6.3	Manually operated devices of the automatic burner control systems	38
6.3.1	Requirements	38
6.3.2	Tests	39
6.4	Mechanical hazards	39
6.4.1	General	39
6.4.2	Appliances with an opening dimension exceeding 200 mm and a drum having a volume exceeding 60 dm	39
6.5	Stability of appliances	39
6.6	Soundness of the gas circuit	39
6.6.1	Requirements	39
6.6.2	Tests	39
6.7	Heat inputs	40
6.7.1	Nominal heat input	40
6.7.2	Reduced rate	42
6.7.3	Heat input of ignition burners	43
6.8	Burners	43
6.8.1	Resistance to overheating	43
6.8.2	Escape of unburnt gas	43
6.9	Limiting temperature of various parts of the appliance	44
6.9.1	Requirements	44
6.9.2	Tests	44
6.10	Limiting temperature of floor, walls and worktop	45
6.10.1	Requirements	45
6.10.2	Tests	45
6.11	Limiting temperature of components	46
6.11.1	Normal operation	46
6.11.2	Severe operation	46
6.11.3	Abnormal operation	46
6.12	Motor temperatures	47
6.12.1	Motor bearings	47
6.12.2	Motor windings	47
6.13	Ignition, cross-lighting and flame stability	48
6.13.1	Ignition and cross-lighting	48
6.13.2	Flame stability	50
6.13.3	Supplementary requirements and tests	51
6.14	Flame supervision devices	51
6.14.1	Manual devices	51
6.14.2	Automatic devices	52
6.15	Regulators	52
6.15.1	Requirements	52

6.15.2	Tests	52
6.16	Combustion	53
6.16.1	General	53
6.16.2	Requirements	54
6.16.3	Tests under normal conditions	55
6.16.4	Supplementary tests under special conditions	56
6.17	Sooting	59
6.17.1	Requirements	59
6.17.2	Tests	59
6.18	Cyclic operation	59
6.18.1	Requirements	59
6.18.2	Tests	59
7	Marking	60
7.1	Marking of the appliance	60
7.1.1	Data plates	60
7.1.2	Warning notices	61
7.1.3	Other marking	61
7.2	Marking of the packaging	61
7.3	Utilization of symbols on the appliance and packaging	61
7.3.1	Electrical supply	61
7.3.2	Type of gas	61
7.3.3	Gas supply pressure	62
7.3.4	Country of destination	62
7.3.5	Category	63
7.3.6	Other optional information	63
7.4	Instructions	64
7.4.1	General	64
7.4.2	Technical instructions for installation and adjustment	64
7.4.3	Instructions for use and maintenance	66
7.5	Presentation	66
Annex A (informative)	National situations	76
A.1	General	76
A.2	Categories listed in the body of the standard and marketed in different countries	76
A.3	Appliance supply pressures corresponding to the categories given in A.2	79
A.4	Special categories marketed nationally or locally	80
A.4.1	General	80
A.4.2	Definition of special categories	83
A.4.3	Gas rate adjusters, aeration adjusters and regulators	86
A.4.4	Conversion to different gases	86
A.5	Test gases corresponding to the special categories given in A.4	86
A.6	Gas connections in the various countries	89
A.7	Equivalence rules	90
A.7.1	General	90
A.7.2	Conversion to categories within a restricted Wobbe index range	90
A.7.3	Conversion to categories within an identical Wobbe index range	90
A.7.4	Conversion to categories within a wider Wobbe index range	91
Annex B (normative)	Special national conditions	92
B.1	Special national conditions	92
B.2	Belgium	92
B.3	Italy	92
B.4	Poland	92
Annex ZA (informative)	Relationship between this European Standard and the Essential Requirements of EU Directive 90/396/EEC on the approximation of the laws of Member States concerning gas appliances	93
Bibliography		97