

DIN EN 203-1:2014-07 (E)

Gas heated catering equipment - Part 1: General safety rules

Contents		Page
Foreword		6
1	Scope	8
2	Normative references	8
3	Terms and definitions	9
3.1	Terminology referring to gases and pressures	9
3.2	General terminology referring to appliance design	10
3.3	Terminology referring to appliance operation	15
4	Classification	17
5	Constructional requirements	19
5.1	General	19
5.1.1	Conversion to different gases	19
5.1.2	Materials and methods of construction	20
5.1.3	Use, cleaning and maintenance	21
5.1.4	Gas connections	21
5.1.5	Soundness	21
5.1.6	Supply of combustion air and evacuation of combustion products	22
5.1.7	Flame visibility	24
5.1.8	Electrical safety	24
5.1.9	Construction requirements for gas cylinder compartment	24
5.2	Particular requirements for components in the gas circuit	25
5.2.1	General	25
5.2.2	Gas rate control and shut-off device	25
5.2.3	Auxiliary equipment	27
5.2.4	Burners	29
5.2.5	Gas rate adjusters	29
5.3	Particular requirements	29
5.3.1	Food spillage	29
5.3.2	Stability and mechanical safety	30
5.3.3	Safety from fire risk	30
5.3.4	Appliances connected to a potable water supply	30
6	Performance requirements	30
6.1	Soundness	30
6.1.1	Soundness of the gas circuit	30
6.1.2	Soundness of combustion product circuit of type B appliances	30
6.2	Obtaining the gas rate	31
6.2.1	Nominal heat input (Q _n)	31
6.2.2	Full calorific rate	31
6.2.3	Reduced heat input	31
6.2.4	Ignition burner heat input	31
6.3	Safety of operation	31
6.3.1	Burners	31
6.3.2	Temperature limits	32
6.3.3	Ignition - cross-lighting - flame stability	33
6.3.4	Combustion products safety devices for type B11BS appliances	34
6.3.5	Pre-purge	34
6.4	Influence of burners on each other	34

6.5	Auxiliary equipment	35
6.5.1	Flame shut off device	35
6.5.2	Ignition device	36
6.6	Air proving device	36
6.6.1	General	36
6.6.2	Supervision of the combustion air or combustion products rate	36
6.6.3	Supervision of the combustion air pressure or combustion products pressure	36
6.6.4	Air/gas ratio controls	37
6.7	Combustion	37
6.7.1	All appliances (in calm air)	37
6.7.2	Special conditions	37
6.8	Particular requirements	37
6.8.1	Stability and mechanical safety	37
6.8.2	Pressurized parts	37
6.8.3	Lack of heat-bearing fluid	38
6.9	Auxiliary energy	38
6.9.1	General	38
6.9.2	Electrical energy fluctuation	38
6.9.3	Other auxiliary energy	38
6.10	Rational use of energy	38
6.11	Operating requirements - Temperature of the LPG cylinder and its compartment	38
6.11.1	Temperature of the walls of the compartment	38
6.11.2	Temperature of the LPG cylinder	39
7	Test conditions	39
7.1	General	39
7.1.1	Characteristics of the test gases	39
7.1.2	Requirements for making up test gases	39
7.1.3	Test room	39
7.1.4	Preparation of the appliance	39
7.1.5	Practical method of test	40
7.1.6	Test pressures	41
7.1.7	Carrying out the tests	41
7.2	Soundness	41
7.2.1	Soundness of the gas circuit	41
7.2.2	Soundness of the combustion circuit and correct evacuation of the combustion products for type B appliances	42
7.3	Obtaining gas rates	43
7.3.1	General	43
7.3.2	Nominal heat input	43
7.3.3	Full rate	45
7.3.4	Reduced rate	45
7.4	Operational safety	45
7.4.1	Burners	45
7.4.2	Limit temperatures	46
7.4.3	Ignition - cross- lighting - flame stability	47
7.5	Auxiliary equipment	51
7.5.1	Flame shut off device	51
7.5.2	Ignition device	53
7.6	Combustion	53
7.6.1	General	53
7.6.2	Tests carried out under normal conditions	54
7.6.3	Specific test for type B appliances	55
7.6.4	Test with sooting limit gas	56
7.7	Air-proving device	56
7.7.1	General	56
7.7.2	Supervision of the combustion air or the combustion products rate	56
7.7.3	Supervision of the combustion air or the combustion products pressure	57
7.8	Special tests	57
7.8.1	Stability and mechanical safety	57
7.8.2	Pressurized parts	57
7.8.3	Lack of heat bearing fluid	58

7.9	Test method - Overheating of the LPG cylinder and its compartment	58
8	Designation	58
9	Marking and instructions	59
9.1	General	59
9.2	Marking on the appliance	59
9.2.1	Data plates and labels	59
9.2.2	Other marking on the appliance	59
9.3	Instructions	60
9.3.1	General	60
9.3.2	Instructions for use and maintenance	60
9.3.3	Instructions for installation and adjustment	60
9.3.4	Instructions for conversion to different gases	62
9.4	Packaging	62
Annex A (informative) National situations		69
A.1	Connection requirements in force in various countries (see 5.1.4)	69
A.2	Requirements for flue connection in force in various countries (see 5.1.6.5)	70
A.3	Categories, test gases and test pressures	71
Annex B (normative) Use of symbols on appliances and packaging		72
B.1	General	72
B.2	Electric power supply	72
B.3	Type of gas	72
B.4	Gas supply pressure	72
B.5	Country of destination	73
B.6	Category	73
B.7	Other optional information	73
B.8	Nominal heat input of burner	73
B.9	Nominal heat input of set of burners on appliance	73
Part 2	74
Annex D (normative) Non pneumatic air/gas control devices		75
D.1	Requirements	75
D.1.1	Endurance	75
D.1.2	Leakage of non-metallic control tubes	75
D.1.3	Safety of operation	75
D.1.4	Adjustment of air/gas ratio	75
D.2	Tests	76
D.2.1	Endurance	76
D.2.2	Leakage of non-metallic control tubes	76
D.2.3	Safety of operation	76
D.2.4	Adjustment of the air/gas ratio controls	77
Annex E (informative) Composition of the gas circuit		78
E.1	Minimum requirements for:	78
E.2	Minimum requirements for appliances with fan, without permanent or alternating ignition burner and without pre-purge	79
Annex ZA (informative) Clauses of this European Standard addressing essential requirements or other provisions of EU Directives		80
Bibliography		82