

DIN EN 1-1:2025-07 (E)

Residential liquid fuel burning appliances - Part 1: General requirements and test methods

Contents		Page
European foreword		5
Introduction		6
1	Scope	7
2	Normative references	7
3	Terms and definitions	7
4	Descriptive features	10
4.1	Heat output	10
4.2	Construction and materials	10
4.3	Combustion chamber	11
4.4	Filter	11
4.5	Fuel regulator	11
4.6	Marking of operating settings	11
4.7	Safety device	11
4.8	Fan for the supply of combustion air	11
4.9	Fuel lines	11
4.10	Storage tank	12
4.11	Fuel-level indicator	12
4.12	Drip tray	12
4.13	Flue gas outlet components	12
4.14	Damper	12
4.15	Draught regulators and combustion air limiters	12
4.16	Assembly	12
4.17	Maintenance	13
4.18	Additional requirements for appliances with automatic burners	13
4.19	Cleaning of heating surfaces	14
5	Performance and operating requirements	14
5.1	General	14
5.2	Maximum fuel flow	14
5.3	Minimum fuel flow	14
5.4	Ignition	14
5.5	Efficiency	14
5.5.1	General	14
5.5.2	Seasonal space heating efficiency	14
5.5.3	Energy efficiency index (EEI)	14
5.5.4	Energy efficiency class	14
5.6	Appliance classes for efficiency and emissions	15
5.7	Flue gas temperature	15
5.8	Fuel temperature	15
5.9	Protection of combustible materials	16
5.9.1	Floor temperature	16
5.9.2	Wall temperature	16
5.10	Temperature of the operating components	16
5.11	Electrical safety	16
5.12	Auxiliary electrical energy consumption	16
5.13	Emissions	17

5.13.1	General	17
5.13.2	Smoke number	17
5.13.3	Carbon monoxide emission	17
5.13.4	NOx emissions	17
5.13.5	Emission of organic gaseous carbon (OGC)	17
5.14	Flue draught	17
5.15	Flue gas mass flow	17
5.16	Space heat output	18
6	Marking and instructions	18
6.1	General	18
6.2	Installation instructions	18
6.3	User operating instructions	19
6.4	Marking	20
6.5	Production documentation	20
7	Environmental sustainability	21
7.1	General	21
7.2	Calculation rules	21
7.2.1	Declared and functional unit	21
7.2.2	Reference lifetime	21
7.3	Product stage	22
7.3.1	General	22
7.3.2	Production processes	22
7.3.3	Processes to be reported	22
7.3.4	Transport from the manufacturer to the site of use	23
7.4	Use stage	24
7.5	End-of-life stage	24
7.5.1	General	24
7.5.2	Scenarios for end-of-life	24
7.5.3	Transport to waste processing	25
7.6	Data collection/quality/basis	25
7.7	Content of environmental sustainability information	25
Annex A (normative) Test methods		28
A.1	Test apparatus	28
A.2	Measurement equipment	28
A.3	Testing of stoves having several possible outlet connections	29
A.4	Test fuel	29
A.5	Verification of construction	29
A.6	Testing of leak-tightness of the fuel circuit	30
A.7	Operational tests	30
A.8	Calculations from the measurements	35
A.9	Test report	40
Annex B (normative) Measuring method for determining the smoke number		52
B.1	Equipment required for the determination of the smoke number	52
B.2	Determination of the smoke number	53
Annex C (normative) Fluid method for detecting oil derivatives		54
C.1	Equipment required for the detection of oil derivatives	54
C.2	Sampling	54
C.3	Procedure and evaluation	55
Annex D (normative) Measuring procedure for nitrogen oxides (NOx)		56
D.1	General procedure	56
D.2	Measuring principle of analysers	56
D.3	Description of measuring equipment	59

D.4	Setting of measurement system	60
D.5	Calculation method	62
Annex E (normative) Measuring procedure for organic gaseous carbon (OGC)		64
E.1	General procedure	64
E.2	Description of measuring equipment	64
E.3	Setting of measurement system	65
E.4	Calculation of OGC	67
Annex F (normative) Energy label		68
Bibliography		73