

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

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

---

<b>Contents</b>		<b>Page</b>
European foreword .....		5
Introduction .....		6
<b>1</b>	<b>Scope .....</b>	<b>7</b>
<b>2</b>	<b>Normative references .....</b>	<b>7</b>
<b>3</b>	<b>Terms and definitions .....</b>	<b>7</b>
<b>4</b>	<b>Descriptive features .....</b>	<b>10</b>
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
<b>5</b>	<b>Performance and operating requirements .....</b>	<b>14</b>
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
<b>Annex E (normative) Measuring procedure for organic gaseous carbon (OGC) .....</b>		<b>64</b>
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
<b>Annex F (normative) Energy label .....</b>		<b>68</b>
<b>Bibliography .....</b>		<b>73</b>