

DIN EN 16510-2-4:2023-11 (E)

Residential solid fuel burning appliances - Part 2-4: Independent boilers - Nominal heat output up to 50 kW

Contents		Page
European foreword		4
1	Scope	6
2	Normative references	6
3	Terms and definitions	6
4	Characteristics	6
4.1	Protection of combustible materials	7
4.2	Carbon monoxide emission (CO)	8
4.3	Nitrogen oxides (NO _x) emissions	8
4.4	Emission of organic gaseous compounds (OGC)	9
4.5	Particulate matter (PM) emissions	9
4.6	Safety and accessibility in use	10
4.6.1	General	10
4.6.2	Flue gas outlet temperature at nominal heat output	10
4.6.3	Flue gas outlet temperature at part load heat output	10
4.6.4	Minimum flue draught	10
4.6.5	Flue gas mass flow at nominal heat output	12
4.6.6	Flue gas mass flow at part load heat output	12
4.6.7	Fire safety of installation to the chimney	12
4.7	Energy economy and heat retention	12
4.7.1	Space heat output at nominal heat output	12
4.7.2	Water heat output, if existing at nominal heat output	12
4.7.3	Efficiency at nominal heat output	13
4.7.4	Space heat output at part load heat output	13
4.7.5	Water heat output, if existing at part load heat output	13
4.7.6	Efficiency at part load heat output	13
4.7.7	Seasonal space heating efficiency at appliance's nominal heat output	13
4.7.8	Energy efficiency	14
4.7.9	Electric power consumption at nominal heat output, if existing	14
4.7.10	Electric power consumption at part load heat output, if existing	14
4.7.11	Standby mode power consumption, if existing	15
4.8	Environmental sustainability	15
5	Descriptive features	16
5.1	Data for potential use with room ventilation systems: type of appliance (in relation to its tightness to the room)	16
5.2	Data for the building's statics: appliance's mass	16
5.3	Materials and construction elements	16
5.3.1	General	16
5.3.2	General stresses	17
5.3.3	Integral boiler or heat exchanger	17
5.4	Risk of burning fuel falling out	17
5.5	Temperature rise in the fuel storage	17
5.6	Temperature rise of the operating components	17
5.7	Spillage of flue gases into the room	17
5.7.1	Possible spillage of CO, if relevant for the fuel type	17
5.7.2	Open operation	17
5.8	Cleanability	17

5.8.1	Heating surfaces	17
5.8.2	Flueways	17
5.8.3	Ashpan	18
5.8.4	Bottomgrate	18
5.8.5	Damper	18
5.8.6	Fan-cut-out-device	18
5.9	Strength and leak tightness of boiler shells	18
6	Assessment and verification of constancy of performance - AVCP	18
6.1	General	18
6.2	Assessment of performance	18
6.2.1	General	18
6.2.2	Test samples, testing and compliance criteria	19
6.3	Verification of constancy of performance	21
6.3.1	Factory production control (FPC)	21
Annex A (normative) Test methods		25
A.1	Test environment	25
A.2	Test assembly	25
A.3	Measurement equipment	25
A.4	Test procedures	25
A.5	Test results	28
A.6	Calculation methods	28
A.7	Test report	28
Annex ZA (informative) Relationship of this European Standard with Regulation (EU) No. 305/2011		29
ZA.1	Scope and relevant characteristics	29
ZA.2	System of Assessment and Verification of Constancy of Performance (AVCP)	32
ZA.3	Assignment of AVCP tasks	33