

DIN EN 16510-2-2:2023-02 (E)

Residential solid fuel burning appliances - Part 2-2: Inset appliances including open fires

Contents		Page
European foreword		4
1	Scope	6
2	Normative references	6
3	Terms and definitions	6
4	Characteristics	7
4.1	Protection of combustible materials	7
4.2	Carbon monoxide emission (CO)	8
4.3	Nitrogen oxides (NO _x) emissions	9
4.4	Emission of organic gaseous compounds (OGC)	9
4.5	Particulate matter (PM) emissions	10
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 at nominal heat output	11
4.6.5	Minimum flue draught at part load heat output	11
4.6.6	Flue gas mass flow at nominal heat output	11
4.6.7	Flue gas mass flow at part load heat output	11
4.6.8	Fire safety of installation to the chimney	11
4.7	Energy economy and heat retention	11
4.7.1	Space heat output at nominal heat output	11
4.7.2	Water heat output, if existing at nominal heat output	12
4.7.3	Efficiency at nominal heat output	12
4.7.4	Space heat output at part load heat output	12
4.7.5	Water heat output, if existing at part load heat output	12
4.7.6	Efficiency at part load heat output	12
4.7.7	Seasonal space heating efficiency at appliance's nominal heat output	13
4.7.8	Energy efficiency	13
4.7.9	Electric power consumption at nominal heat output, if existing	13
4.7.10	Electric power consumption at part load heat output, if existing	14
4.7.11	Standby mode power consumption, if existing	14
4.8	Environmental sustainability	14
5	Descriptive features	15
5.1	Data for potential use with room ventilation systems: type of appliance (in relation to its tightness to the room)	15
5.2	Data for the building's statics: appliance's mass	15
5.3	Materials and construction elements	16
5.3.1	General	16
5.3.2	General stresses	16
5.3.3	Integral boiler or heat exchanger	16
5.4	Risk of burning fuel falling out	16
5.5	Temperature rise in the fuel storage	16
5.6	Temperature rise of the operating components	16
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	Safety test for spillage of combustion gas and discharge of embers	17

5.7.3	Open operation	17
5.8	Cleanability	17
5.8.1	Heating surfaces	17
5.8.2	Flueways	17
5.8.3	Ashpan	17
5.8.4	Bottomgrate	17
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	20
6.3.1	Factory production control (FPC)	20
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	32
A.6	Calculation methods	32
A.7	Test report	32
Annex BA (informative) Example for the possibility to extrapolate the steady-state condition from a curve of temperature measurements of at least 8 h		35
Annex ZA (informative) Relationship of this European Standard with Regulation (EU) No. 305/2011		37
ZA.1	Scope and relevant characteristics	37
ZA.2	System of Assessment and Verification of Constancy of Performance (AVCP)	40
ZA.3	Assignment of AVCP tasks	40
Bibliography		42