



Strojírenský zkušební ústav, s.p.
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Testing Laboratory 1045.1 accredited by the CAI pursuant to ČSN EN ISO/IEC 17025:2018

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INITIAL TYPE TEST REPORT

30-17833/4/T

Product:	Pellet stove
Type designation:	442.08-C, 442.08-ST, 443.08-C, 443.08-ST, 444.08-C, 444.08-ST, 445.08, 445.08-C, 445.08-ST
Customer:	Haas+Sohn Ofentechnik GmbH Urstein Nord 67 5412 Puch Austria
Manufacturer:	Haas+Sohn Ofentechnik GmbH Urstein Nord 67 5412 Puch Austria
Report issue date:	2025-10-13
Distribution list:	1 copy to the Customer 1 copy to the Engineering Test Institute

I. Description of products tested

Tested products - type designation **442.08-C, 442.08-ST, 443.08-C, 443.08-ST, 444.08-C, 444.08-ST, 445.08, 445.08-C, 445.08-ST** are intended for heating of living and social rooms, are for common environment. The steel combustion chamber is lined with heat-resistant fittings. The deflector is made of heat-resistant material. For all types mentioned above are the combustion chamber and the flue gas duct identical. The combustion air is transported into the combustion chamber via the supply air pipe by means of an induced draught fan. The heat is released via a convection air duct between the combustion chamber and the outer wall at the sides and rear. A glow plug is used to ignite the pellets. The burner pot can be removed for cleaning.

Appliance classification "TYPE BE" according to Table 1 of ČSN EN 16510-1 (444.08-C, 444.08-ST, 445.08, 445.08-C, 445.08-ST).

Appliance classification "TYPE CC" according to Table 1 of ČSN EN 16510-1 (442.08-C, 442.08-ST, 443.08-C, 443.08-ST).

A detailed description is given in the operating and installation instructions.

Basic technical specifications of products:

Type	Main dimensions (mm)			Nominal heat output (kW)	Fuel consumption (kg/h) wood pellets	Diameter of flue gas connector (mm)	Operating draught (Pa)
	Height	Width	Depth				
442.08-C	1082	805	417	8.0	1.95	80	11
442.08-ST							
443.08-C	1082	805	417				
443.08-ST	1082	805	417				
444.08-C	1082	805	417				
444.08-ST	1082	805	417				
445.08	1083	808	417				
445.08-C	1082	805	417				
445.08-ST	1082	805	417				

II. Sample tested

SZU reg. no.	Product name	Date of submission
Prototype	442.08-C, 442.08-ST, 443.08-C, 443.08-ST, 444.08-C, 444.08-ST, 445.08, 445.08-C, 445.08-ST	-

The visual inspection, tests and verification were carried out by Müller, S., Günther, M. at the test station of **RRF Rhein-Ruhr Feuerstätten Prüfstelle GmbH**.

A further test and verification was carried out by Dipl.-Ing. D. Weisgerber at the test station TÜV SÜD Industrie Service (see test report W-O 1497-00/17).

The tests were performed using measuring and testing equipment with valid calibration.

The product has been selected in accordance with ČSN EN 16510-1 ed. 2:2024, supporting the choice of appliances tested enabling them to represent the family of appliances covered by the type test reports with reference to the characteristics detailed in Table G.

III. Measuring and test equipment:

No.	Name	Inventory number:
1.	Barometer	022435/P2
2.	Thermometer – ambient	022435/T2
3.	Hygrometer	022435/T2
4.	Draught gauge	118510
5.	Scale	022333
6.	THERM 2285.2	021763
7.	Analytical scale Sartorius	021458
8.	Calliper	ME 543
9.	Combustion product analyser	022317
10.	Elemental analyser	022305
11.	Gravimat	022380

Note: X ... Verified with the use of calibration standards prior to measurement
 + ... ± 5 % of measured values

Measurement uncertainty:

Parameter measured	Uncertainty of measurement
Gas analysis	
CO	≤ 6 % of the limit values in Table 8
CO ₂	≤ 2 %
O ₂	≤ 2 %
Temperature	
Flue gas	≤ 5 K
Ambient room	≤ 1.5 K
Water	≤ 0.5 K
Surface	≤ 2 K
Touchable Area	≤ 2 K
Water flow	≤ 0.005 m ³ /h
Static pressure	≤ 2 Pa
Mass	
- fuel consumption	± 20 g
- residue	± 5 g
- fuel load ≤ 7.5 kg	± 5 g
> 7.5 kg	± 10 g

Note: The stated extended measurement uncertainties are calculated as a factor of the measurement uncertainty and the extension coefficient $k=2$, corresponding to the coverage certainty of 95% as regards standard classification.
 If a statement of conformity is provided, the decision rule pursuant to ILAC-G8:09/2019, Art. 4.2.1 - binary statement for the simple acceptance rule shall apply.

IV. Methods, results of tests and verifications

No.	Test objective	Requirement	Method of test	Test evaluation/ verification *
1.	Mechanical resistance and stability	ČSN EN 16510-2-6:2025, Art. 4.1	ČSN EN 16510-1 ed.2:2024, Art. A.4.10.2	+
2.	Safety in case of fire	ČSN EN 16510-2-6:2025, Art. 4.2 ČSN EN 16510-1 ed.2:2024, Art. 5.6	ČSN EN 16510-1 ed.2:2024, Art. A.2.2, A.4.10	+
3.	Hygiene, health and the environment	ČSN EN 16510-2-6:2025, Art. 4.3, 4.4, 4.5, 4.6	ČSN EN 16510-1 ed.2:2024, Art. A.4, A.4.1, A.4.2, A.4.3, A.4.4, A.4.5, A.4.6, A.4.7, A.4.8	+
4.	Safety and accessibility in use	ČSN EN 16510-2-6:2025, Art. 4.7.2, 4.7.4, 4.7.6, 4.7.8 ČSN EN 16510-1 ed.2:2024, Art. 5.5	ČSN EN 16510-1 ed.2:2024, Art. A.4.7, A.4.8, A.4.10.4, A.4.11	+
5.	Energy economy and heat retention	ČSN EN 16510-2-6:2025, Art. 4.8.1, 4.8.3, 4.8.7, 4.8.8, 4.8.9, 4.8.10, 4.8.11	ČSN EN 16510-1 ed.2:2024, Art. A.4.7, A.4.8, A.6.2.1	+
*) Evaluation / statement of conformity: + Requirement fulfilled - Requirement not fulfilled 0 Not applicable x Not evaluated				

Test objective:	Hygiene, health and the environment Safety and accessibility in use Energy economy and heat retention
Exact name of the test procedure:	1.4*, 1.5* - Tests of tightness, pressure resistance, thermal technical parameters, combustion efficiency, safety functions
Test method:	ČSN EN 16510-1 ed. 2:2024, Art. A.4, A.4.1, A.4.2, A.4.3, A.4.4, A.4.5, A.4.6, A.4.7, A.4.10.4, A.4.11, A.6.2.1
Sample tested:	442.08-ST, 442.08-C, 443.08-ST, 443.08-C, 444.08-ST, 444.08-C, 445.08-ST, 445.08-C
Measuring equipment used:	see Chapter III
Date of test:	2015-01-21, 2017-11-15
Ambient conditions:	24 °C -% -kPa Temperature Relative humidity Barometric pressure

Variables measured and calculated: Rated capacity Nominal heat output	Unit	Tests n.			Limit according to: ČSN EN 16510-2-6:2025
		1	2	Average	
Fuel used: pellet	mm	6 mm			
Combustion air setting – primary/secondary	mm	Automat			
Fuel consumption	kg/hour	1.93	1.97	1.95	
Ambient temperature in the room and combustion air temperature	°C	24	24	24	
Chimney draught	Pa	11	11	11	
Combustion product average temperature	°C	167	168	167	
Flue gas outlet temperature	°C	200			
CO ₂	%	11.0	11.6	11.3	
CO – measured	%	0.007	0.005	0.010	
CO – at O ₂ = 13%	%	0.005	0.003	0.004	
CO – at O ₂ = 13%	mg/Nm ³	63	38	50	≤ 300
NO _x – at O ₂ = 13 %	mg/Nm ³	143	146	144	≤ 200
OGC– at O ₂ = 13 %	mg/Nm ³	<5	<5	<5	≤ 60
Chimney loss	%	10.1	9.7	9.9	
Loss of gas underburning	%	0.0	0.0	0.0	
Loss of solid underburning	%	0.2	0.2	0.2	
Efficiency	%	90	90	90	
Total heat capacity achieved	kW	8.4	8.6	8.5	
Nominal capacity	kW	8.0			
Mass flow rate of dry combustion products	g/s	5.9	5.7	5.8	
CO ₂	%	10.6	11.3	11.0	
Dust– at O ₂ = 13 %	mg/Nm ³	19	19	19	≤ 20

Energy efficiency			Limit according to: ČSN EN 16510-2-6:2025
At nominal heat output (e_{lmax})	kW	0.050	
At minimum heat output (e_{lmin})	kW	0.019	
In standby mode (e_{lso})	kW	0.003	
Permanent pilot flame power requirement (P_{pilot})	kW	-	
correction factor F2	%	0	
correction factor F3	%	0	
correction factor F4	%	0.864	
correction factor F5	%	0	
Seasonal space heating energy efficiency η_s	%	79	≥ 79
Energy Efficiency Index (EEI)	-	120	
Energy Efficiency Class	-	A+	

Fuel analysis

442.08-ST, 442.08-C, 443.08-ST, 443.08-C, 444.08-ST, 444.08-C, 445.08,
445.08-ST, 445.08-C

Type of fuel	Wood pellets		
Analytical indicator	Symbol	Unit	Value
All water in original state	W	% of mass	7.1
Ash	A	% of mass	0.10
Carbon	C	% of mass	48.59
Hydrogen	H	% of mass	6.40
Sulphur	S	% of mass	<0.1
Volatile fuel and ash components	VOC	% of mass	84.0
Caloric value	Hu	KJ/kg	17493

445.08

Type of fuel	Wood pellets		
Analytical indicator	Symbol	Unit	Value
All water in original state	W	% of mass	7.9
Ash	A	% of mass	0.42
Carbon	C	% of mass	46.42
Hydrogen	H	% of mass	6.60
Sulphur	S	% of mass	0.20
Volatile fuel and ash components	VOC	% of mass	83.3
Caloric value	Hu	KJ/kg	16630

Testing according to the approval principles for the testing and assessment of room-sealed combustion appliances for solid fuels (DIBt Notices 6/2012) for the space heater burning wood pellets

Pellet stove type 442.08-ST, 443.08-ST, 442.08-C, 443.08-C

Fireplace type class		FC _{61x}		
Test pressure	Pa	5	10	15
Leakage rate as delivered (LA)	m ³ n/h	0.38	0.58	0.75
Leakage rate after mechanical stress (Lm)	m ³ n/h	0.43	0.65	0.90
Leakage rate after mechanical) ¹ and thermal stress (Lmt)	m ³ n/h	0.45	0.65	0.90
Leakage rate difference (LA - Lmt)	m ³ n/h	0.07	0.07	0.15
¹ after 6000 openings/closings of the fire door				

Product of CO concentration (ppm) in the exhaust gas and gas permeability (m³/h) at 10 Pa)² after thermal and mechanical stress

CO rel. to 13% O ₂	ppm	40
CO (ppm) x gas permeability L _{mt} (m ³ /h) at 10 Pa	ppm m ³ /h	26
² Permissible limit 2400 (ppm m ³ /h)		

Combustion air quantity at standard conditions and nominal heat output	m ³ n/h	14.4
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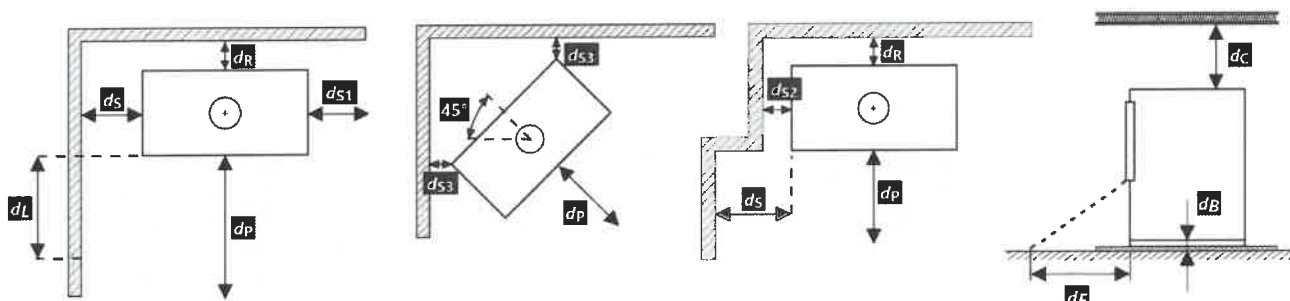
Test objective:	Safety in case of fire Mechanical resistance and stability
Exact name of the test procedure:	1.4*, 1.5* - Tests of tightness, pressure resistance, thermal technical parameters, combustion efficiency, safety functions
Test method:	ČSN EN 16510-1 ed. 2:2024, Art. A.2.2, A.4.10; (ČSN EN 16510-2-6:2025, Art. A.4.10.4)
Sample tested:	442.08-ST, 442.08-C, 443.08-ST, 443.08-C, 444.08-ST, 444.08-C, 445.08, 445.08-ST, 445.08-C
Measuring equipment used:	see Chapter III
Date of test:	2015-01-21

Ambient conditions:	23 °C	-%	-kPa
	Temperature	Relative humidity	Barometric pressure

Flue draught (Pa) 4 Pa
Load bearing capacity during thermal overload test 0 kg

Protection of combustible materials	Minimum distances to combustible materials, in mm		Maximum temperature rise, in K
	bottom (d_B)	0	27
	floor in front (d_F)	0	-
	ceiling (d_C)	>750	-
	rear (d_R)	20	24
	side (d_S)	90	63
	side radiation area (d_L)	-	-
	adjacent combustible materials (e.g. furniture) (d_P)	800	63
	material type and thickness of protective insulation material (s), (if any)	-	-

Note: The tables show the highest values measured.
Limit is 65 K above room temperature at the hottest point of any adjacent walls.
After the overload tests, there was no permanent deformation or damage to the appliance.



Reviewed and approved by: Ing. Radek Machara

Date: 2025-10-13

Signed: *Machara*

V. A list of referenced documents

- Order of 2025-04-25 (Order reg. no. B-85172, received on 2025-05-22)
- Contract B-85172/30
- Test reports RRF – 85 15 3849-1 of 2017-10-11, RRF – 85 19 5256 of 2019-11-04, W-O_1497-00_17_TÜV_Süd_442_08 of 2017-11-20, RRF-BZ 12 3008 of 2012-10-17, RRF-BZ 15 3849 of 2015-12-02 and DIBt Z-43.12-330 of 2020-02-05.
- Regulation (EU) No 305/2011 of the European Parliament and of the Council of 9 March 2011 laying down harmonised conditions for the marketing of construction products and repealing Council Directive 89/106/EEC
- ČSN EN 16510-1 ed. 2:2024 - Residential solid fuel burning appliances - Part 1: General requirements and test methods
- ČSN EN 16510-2-6:2025 - Residential solid fuel burning appliances - Part 2-6: Mechanically by wood pellets fed roomheaters, inset appliances and cookers
- Technical documentation (drawings, manual)

Test Report compiled by:

Eliška Puki



Test Report approved by:


Milan Holomek
Combustion Equipment Manager

– End of Test Report –