

MANTUA

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. 2:2023, Art. A.4, A.4.1, A.4.2, A.4.3, A.4.4, A.4.6, A.4.7, A.4.11, A.4.10.4, A.6.2.1
Sample tested:	MANTUA
Measuring equipment used:	see Chapter III
Date of test:	2022-07-18
Ambient conditions:	26.0 °C 25.0 % 99.5 kPa Temperature Relative humidity Barometric pressure

Variables measured and calculated: Nominal heat output	Unit	Tests n.				Limit according to:
		1	2	3	Average	ČSN EN 16510-2-1:2023
Fuel used: Hornbeam wood	mm	330				
Combustion air setting – primary/secondary	%	60				
Fuel consumption	kg/hour	3.12	3.08	3.10	3.10	
Achieved input	kW	13.4	13.2	13.3	13.3	
Ambient temperature in the room and combustion air temperature	°C	27	26	26	26	
Chimney draught	Pa	13	13	13	13	
Combustion product average temperature	°C	271	266	246	261	
Flue gas outlet temperature	°C	313				
CO ₂	%	9.40	8.84	7.72	8.66	
CO – measured	%	0.0609	0.0942	0.1289	0.0947	
CO – at O ₂ = 13 %	%	0.0480	0.0798	0.1260	0.0846	
CO – at O ₂ = 13 %	mg/Nm ³	600	997	1575	1057	≤ 1500
CO – at O ₂ = 0 %	mg/MJ	426	708	1118	751	
NO _x – measured	ppm	55	57	48	53	
NO _x – at O ₂ = 13 %	mg/Nm ³	89	99	96	95	≤ 200
NO _x – at O ₂ = 0 %	mg/MJ	63	70	68	67	
OGC – measured	ppm	44	84	68	65	
OGC – at O ₂ = 13 %	mg/Nm ³	63	127	118	103	≤ 120
OGC – at O ₂ = 0 %	mg/MJ	44	90	84	73	
Chimney loss	%	20.4	21.2	21.7	21.1	
Loss of gas underburning	%	0.4	0.7	1.1	0.7	
Loss of solid underburning	%	0.5	0.5	0.5	0.5	
Efficiency	%	78.6	77.6	76.8	77.7	
Total heat capacity achieved	kW	10.5	10.2	10.2	10.3	
Uncertainty of total heat output	kW	0.3	0.2	0.2	0.2	
Nominal capacity	kW	10.0				
Mass flow rate of dry combustion products	g/s	9.8	10.2	11.7	10.6	

CO ₂	%	10.22	9.38	7.96	9.19	
Dust – measured	mg/Nm ³	88	33	24	48	
Dust – at O ₂ = 13 %	mg/Nm ³	64	27	23	38	≤ 40
Dust – at O ₂ = 0 %	mg/MJ	49	20	17	29	