

Notified Body 1880 – Regulation (EU) No 305/2011

TEST REPORT n.1880-CPR-017-002-17

Initial Test Typing – Leak test

Residential solid fuel burning appliances - Part 1: General requirements and test methods
prEN 16510-1:2016

Residential solid fuel burning appliances — Part 2-6: Mechanically by wood pellets fed
roomheaters, inset appliances and cookers prEN 16510-2-6:2016

Manufacturer:

Type designation: **Interstoves Marina 11 kW**

Type of appliance: Residential space heating appliances fired by wood pellets without
water heat exchanger

Receipt date: April 20, 2017

Start test date: April 26, 2017

End test date: May 3, 2017

Testing laboratory: ACTECO SRL
via Amman, 41
33084 Cordenons (PN)
Italy

Issue date: June 26, 2017

Head of Test Laboratory
Dr. Claudia Marcuzzi



Firmato digitalmente da
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The results of the tests relate only to the tested appliance.
This test report shall not be reproduced except in full, without written approval of the laboratory.
The appliance was returned to the manufacturer after the end of tests.

All data is stored for 10 years

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Test method and results

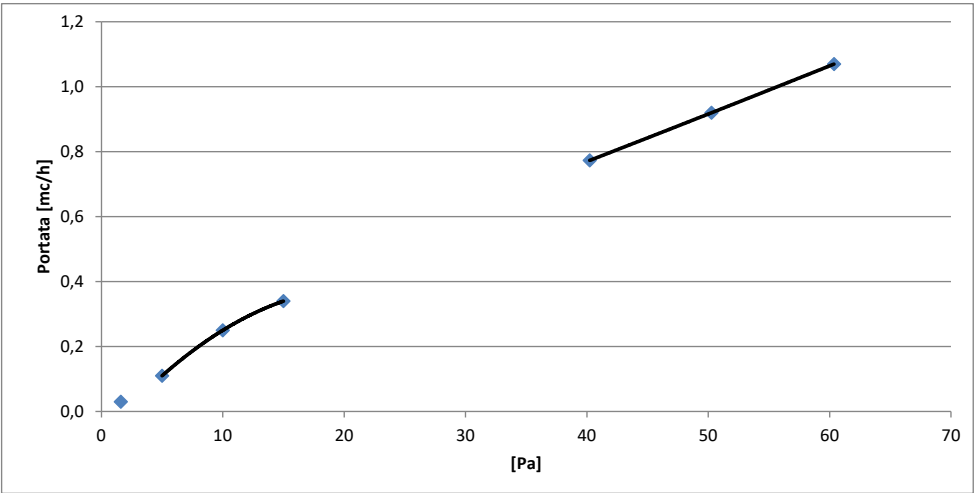
The instrument used to perform the leak test consists of a pressure gauge and air flow pipe that are sealed to the appliance flue gas outlet; the combustion air inlet is plugged with a rubber stopper.

The leakage rate is measured at different static overpressures between 1 and 50 Pa and the leakage rate at 10 Pa and 50 Pa are calculated by polynomial interpolation.

Classification of appliance and system boundary for roomsealed appliance	CC and CC50
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Leak tightness test on receipt of appliance

Pressure P (Pa)	Leakage L (Nm ³ /h)
1,6	0,03
5,0	0,11
10,0	0,25
15,0	0,34
25,0	0,52
40,2	0,77
50,3	0,92
60,4	1,07



	10 Pa	50 Pa	LIMIT
leakage of the appliance at static overpressure of 10 and 50 Pa [Nm ³ /h]	0,25	0,92	3

mean value of CO concentration measured in the flue gas of the appliance at nominal heat output [ppm at 13% O ₂]	129
mean value of CO concentration measured in the combustion products of the appliance at partial load heat output [ppm at 13% O ₂]	673

	10 Pa	50 Pa	LIMIT
product of the mean value of CO concentration in the flue gas of the appliance at nominal heat output [ppm at 13 % O ₂] and the leakage of the appliance [Nm ³ /h]	32	118	2400
product of the mean value CO concentration in the flue gas of the appliance at partial load heat output [ppm at 13 % O ₂] and the leakage of the appliance [Nm ³ /h]	168	617	2400

		LIMIT ¹⁾
heat input [kW]	11,1	-
leakage of the appliance at static overpressure of 50 Pa [Nm ³ /h]	0,92	2,78

¹⁾ limit for EN 613: for appliances less or equal to 12 kW heat input, 0.25 m³/h per kW of heat input; for appliances greater than 12 kW heat input, a maximum of 3 m³/h.

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Task

ACTECO SRL was instructed to execute initial type testing to establish compliance according to the:

- UNI EN 14785:2006 Residential space heating appliances fired by wood pellets.
- UNI CEN/TS 15883:2009 Residential solid fuel burning appliances. Emission test methods
- Client's documents

The practical tests were performed in the laboratory in Cordenons (PN), via Amman, 41

Sampling of the appliance

The sampling of the appliance was performed by the manufacturer and was received by the testing laboratory on April 20, 2017

Description of the appliance

Residential space heating appliances fired by wood pellets.
The combustion air is taken from the test room.

Key data of appliance

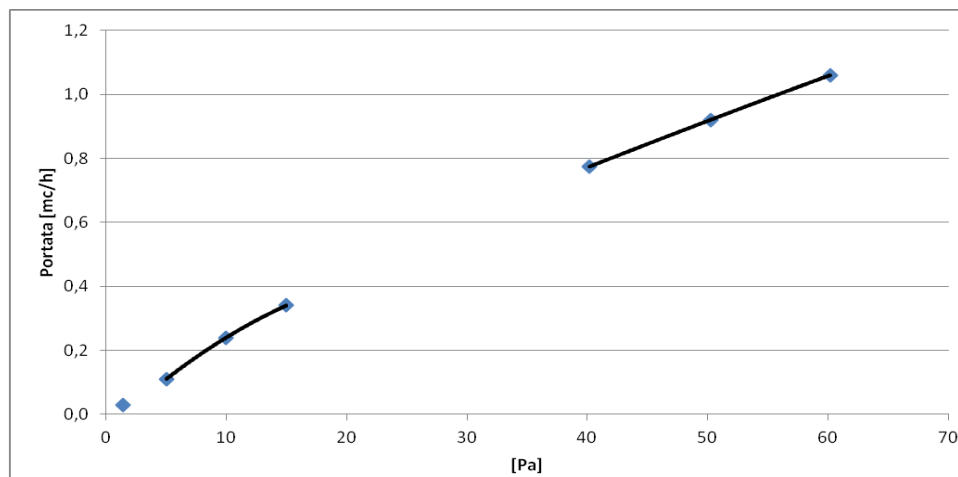
Appliance	MILÙ 11	
Fuel		Wood pellet
Fuel throughput	kg/h	2,2
Total heating output	kW	10,0
CO emission based on 13% O ₂	mg/m ³	129
Efficiency	%	90,0
Flue gas temperature	°C	163,6
Necessary flue draught	Pa	11,9
Flue gas mass flow	g/s	6,9
Minimum clearance distances from exposed / combustibile materials	from rear wall from side walls	250 mm 250 mm

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Leak tightness test after mechanical load: the fuel hopper lid was opened to a typical refueling position and manually in a tight manner for 1 000 open-close cycles; the door of the combustion chamber was opened and closed in the same way for 500 open-close cycles

Pressure P (Pa)	Leakage L_2
1,4	0,03
5,0	0,11
10,0	0,24
15,0	0,34
25,0	0,53
40,1	0,77
50,2	0,92
60,2	1,06



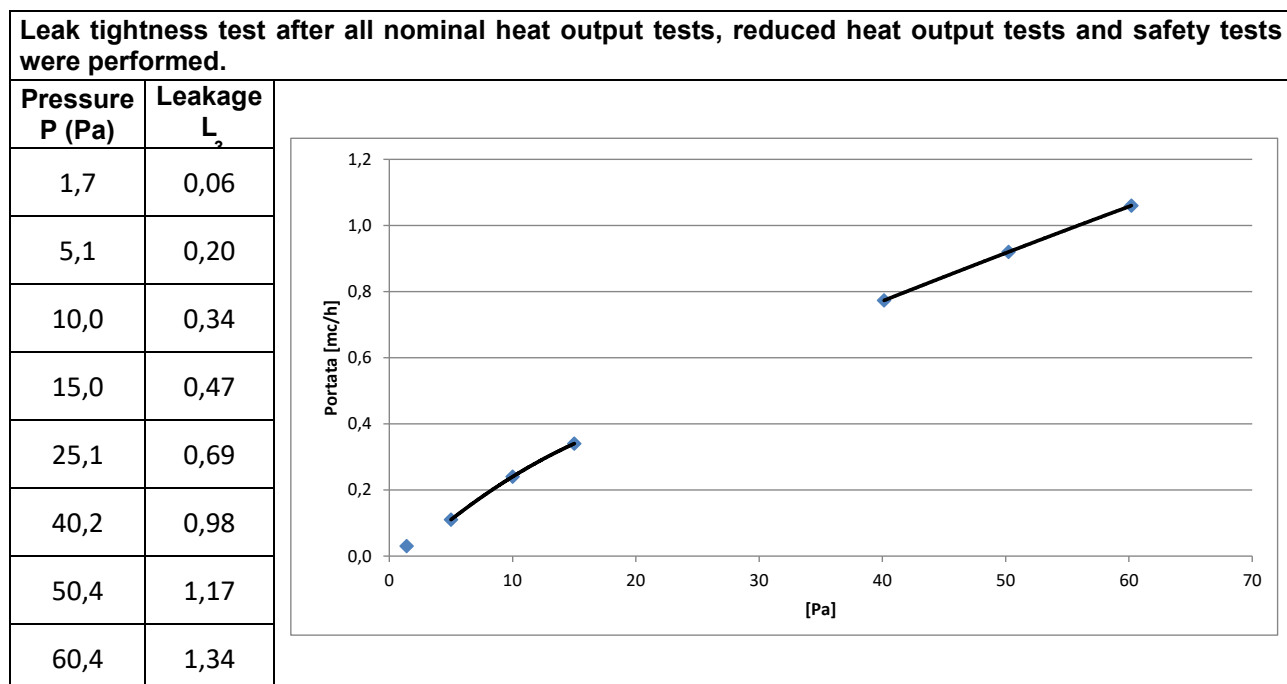
	10 Pa	50 Pa	LIMIT
leakage of the appliance at static overpressure of 10 and 50 Pa [Nm^3/h]	0,24	0,92	3

mean value of CO concentration measured in the flue gas of the appliance at nominal heat output [ppm at 13% O_2]	129
mean value of CO concentration measured in the combustion products of the appliance at partial load heat output [ppm at 13% O_2]	673

	10 Pa	50 Pa	LIMIT
product of the mean value of CO concentration in the flue gas of the appliance at nominal heat output [ppm at 13 % O_2] and the leakage of the appliance [Nm^3/h]	31	118	2400
product of the mean value CO concentration in the flue gas of the appliance at partial load heat output [ppm at 13 % O_2] and the leakage of the appliance [Nm^3/h]	162	617	2400

		LIMIT ¹⁾
heat input [kW]	11,1	-
leakage of the appliance at static overpressure of 50 Pa [Nm^3/h]	0,92	2,78

¹⁾ limit for EN 613: for appliances less or equal to 12 kW heat input, 0.25 m^3/h per kW of heat input; for appliances greater than 12 kW heat input, a maximum of 3 m^3/h .



	10 Pa	50 Pa	LIMIT
leakage of the appliance at static overpressure of 10 and 50 Pa [Nm ³ /h]	0,34	1,16	3

mean value of CO concentration measured in the flue gas of the appliance at nominal heat output [ppm at 13% O ₂]	129
mean value of CO concentration measured in the combustion products of the appliance at partial load heat output [ppm at 13% O ₂]	673

	10 Pa	50 Pa	LIMIT
product of the mean value of CO concentration in the flue gas of the appliance at nominal heat output [ppm at 13 % O ₂] and the leakage of the appliance [Nm ³ /h]	44	150	2400
product of the mean value CO concentration in the flue gas of the appliance at partial load heat output [ppm at 13 % O ₂] and the leakage of the appliance [Nm ³ /h]	229	781	2400

		LIMIT ¹⁾
heat input [kW]	11,1	-
leakage of the appliance at static overpressure of 50 Pa [Nm ³ /h]	1,16	2,78

¹⁾ limit for EN 613: for appliances less or equal to 12 kW heat input, 0.25 m³/h per kW of heat input; for appliances greater than 12 kW heat input, a maximum of 3 m³/h.

STATEMENTS OF THE TEST RESULTS

The appliance

Interstoves Marina 11 kW

- prEN 16510-1:2016 “Residential solid fuel burning appliances - Part 1: General requirements and test methods”
- prEN 16510-2-6:2016 Residential solid fuel burning appliances — Part 2-6: Mechanically by wood pellets fed roomheaters, inset appliances and cookers
- EN 613:2000 + EN 613:2000/A1:2003 Independent gas-fired convection heaters

Compliance with the clauses of the standard prEN 16510-1:2013 confers a presumption of fitness of the appliance covered by annex ZA for the intended uses indicated by the quoted above normative; reference shall be made to the information accompanying the CE marking.

MEASURING DEVICES

Parameter measured	Company / model	range	precision
leakage [Nmc/h]	Wohler DP 600	0 - 200 Nmc/h	2.5 Nmc/h (1.25% F.S.)
		0 – 10 Nmc/h	50 l/h (0.5% F.S.)
		0 – 18 l/min	0.05 l/min (0.3% F.S.)
static pressure [Pa]		±900 Pa	±0.5 Pa
		±7000 Pa	±0.5% F.S.

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