



Rhein-Ruhr Feuerstätten Prüfstelle

Rhein-Ruhr Feuerstätten Prüfstelle • Am Technologiepark 1 • 45307 Essen

- ❖ State recognized testing laboratory, registered No. NRW 15 in accordance with construction supervision directives
- ❖ Recognized testing laboratory in construction supervision licensing procedures
- ❖ Recognized DIN CERTCO testing laboratory, registered No. PL 139
- ❖ European Commission recognized testing laboratory, notified body number: 1625

Test report No. RRF – 40 10 2422

Testing method

Test according to DIN EN 13240 and the requirements made by the BStV of the City of Munich and the City of Regensburg, in compliance with the certification program DINplus and its amendment according to Art. 15a B-VG, the LRV of Switzerland and the proposed requirements of 1. and 2. level of BImSchV.

Tested products:

Roomheaters **Andorra Exclusive**, Typ no. **F 9489 O** (intermittent burning)

Type:

Double allocation is acceptable.

Manufacturer:

Thorma Výroba k.s., Sávolská Cesta 1, SK-98601 Filakovo

Thermal rating:

7,5 kW

Description:

Roomheater (production model) in sheet steel with inspection window in the self-closing combustion compartment door, grate, ash pan, primary and secondary air flue.

Test results:

The CO content of the flue gases emitted by the above-mentioned fireplace – at nominal heating capacity and under the testing conditions stipulated by the DIN EN 13240, using wood logs as fuel – is 0,08 Vol.-%, referring to 13 % O₂ (equal to 1000 mg/m³).

The dust-like emissions in the flue gas – under the conditions described above - are 23 mg/m³, the NO_x content is 107 mg/m³, the C_nH_m content is 45 mg/m³, for wood logs referring to 13 % O₂.

Under the conditions described above, the level of efficiency is 80,4 %.

This certificate is a translation of our certificate no. RRF – 40 10 2422, dated on 13.07.2010.

Head of Testing Laboratory

Dr. Lückner

Essen, 17.05.2011

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Test report on a fireplace in accordance with DIN EN 13240: 2001 + A2:2007

<u>Testing station</u> Name, Address	RRF Rhein-Ruhr Feuerstätten Prüfstelle GmbH Am Technologiepark 1 D-45307 Essen Phone: +49(0)201-821 736 0, Fax: +49(0)201-821 736 28
Reference No.	RRF - 40 10 2422
<u>Initiator</u> Name, Address	Thorma Výroba k.s. Sávolská Cesta 1, SK-98601 Filakovo
<u>Appliance</u> Type, Serial number	Roomheater (intermittent burning) Andorra Exclusive, Typ no. F 9489 O
Total heating output	7,7 kW
Space heating output	7,7 kW
Water heating output	---
Description	Roomheater (production model) in sheet steel with inspection window in the self-closing combustion compartment door, grate, ash pan, primary and secondary air flue. Double allocation is acceptable.
Manufacturer	Initiator
Date of delivery	---
Means of acquisition	---
Technician	Droll, H.

Brief summary by testing laboratory:

This test report is valid only in connection with test report no. RRF – 40 09 1930, dated on 20.04.09 for the typ tested roomheater Andorra. The roomheater Andorra Exclusive, Typ no. F 9489 O in contrast to the type tested roomheater Andorra with pedestal instead of fuel storage compartment below the combustion chamber. Combustion chamber and flue gas ways are identical. So the roomheater Andorra Exclusive, Typ no. F 9489 O also fulfils all requirements according to this standard.

This test report has been drawn up without prejudice to the rights of third parties in respect of private trademark rights of the initiator or manufacturer.

The test report consisting of pages 1 to 15 and the appended test documentation a to e contains the results of the testing relating to this standard.

This test report is a translation of our test report no. RRF – 40 10 2422, dated on 13.07.2010.



Rhein-Ruhr Feuerstätten Prüfstelle

(Dr. Lückner)

Essen, 17.05.2011

(Place and date)

(Official stamp and signature of testing station)

Testing the standard thermal rating, the degree of efficiency and the duration of burning according to section, A.4.7 *)

		Require- ment according to	Test period 1	Test period 2	Test period 3	Average value from 1 to 2	Require- ment fulfilled
Day of test, date			06.04.2009				
Test fuel		Tab. B1	lignite briquettes				yes
Type of appliance			Intermittend burning				
Mass of test fuel per charge	kg	A.4.2	2,2	2,2	---	2,2	yes
<u>Setting of the controls for</u>							
- Primary air			open	open	---	open	
- Secondary air			closed	closed	---	closed	
- Tertiary air			---	---	---	---	
Flue draught	Pa	6.4	12	12	---	12	yes
Mean room temperature	°C		23	23	---	23	
Mean flue gas temperature ta-tr	K		288	284	---	286	
Mean CO ₂ -content	%		8,3	8,4	---	8,4	
Mean CO-content	%		0,03	0,03	---	0,03	
Mean CO-content of the flue gases based on 13 % O ₂	%	6.2	0,03	0,03	---	0,03	yes
Test duration	h	6.6	1,13	1,10	---	1,10	yes
Target test duration	h		1,00	1,00	---	1,00	
Variance to target	%	A.5	< 15	< 15	---	< 15	yes
Thermal heat loss	%		25,5	24,8	---	25,1	
Chemical heat loss	%		0,2	0,2	---	0,2	
Loss of combustible fuel by drop through grate and ranking	%		1,0	1,0	---	1,0	
Efficiency	%	6.3	73,3	74,0	---	73,7	yes
Space heating output	kW	6.7	7,6	7,9	---	7,7	yes
Total heating output	kW	A.5	7,6	7,9	---	7,7	yes
Nominal heating output according to manufacturer	kW		7,5	7,5	---	7,5	
Mass of test fuel hourly	kg/h		1,95	2,00	---	1,97	
Water carrying components *)							
Flow/return temperature	°C	A.4.7.3	---	---	---	---	n/a
Water flow rate	kg/h	A.4.7.3	---	---	---	---	n/a
Water heating output	kW	A.4.5	---	---	---	---	n/a
System leak tightness		5.3	---	---	---	---	n/a
Stability of components		5.3	---	---	---	---	n/a
Comment:							
*) delete non-applicable expression							

Testing the fire safety according to sections A.4.9.2 and/or A.4.7 *)

	Requirement according to	Test result	Requirement according to	Test result	Requirement fulfilled
Day of test, date		31.03.09		---	
Test fuel	A.4.9.2.2.1	Profile wood	A.4.7	---	yes
Combustion chamber open / closed		closed		---	
Test amount (total) kg	A.4.9.2.2.1	12,0	A.4.2	---	yes
Number of test amounts		7		---	
Setting of the controls for					
- Primary air		open		---	
- Secondary air		open		---	
- Tertiary air				---	
Mean manometric pressure Pa	6.4	15	6.4	---	yes
Mean ambient temperature °C		23		---	
<u>Max. surface temperature</u>					
On the test base K	5.6	---	5.6	---	n/a
On the rear test wall K	5.6	53	5.6	---	yes
Distance **) cm		15		---	
On the side test wall K	5.6	54	5.6	---	yes
Distance **) cm		25		---	
Distance in range of the inspection window cm		80		---	
On the roof K	5.6	---	5.6	---	n/a
In fuel storage compartment K	5.4	---	5.4	---	n/a
Drop-through of embers	5.2	no	5.2	---	yes
Flue gas emission	5.2	no	5.2	---	yes
Damage to the fireplace caused by the test: None discernible					
Comments: *) delete non-applicable expression **) applies only for components made of combustion material with thermal conductivity $\leq 1,2 \text{ m}^2/\text{KW}$					