

Determination of non-combustibility according to IMO FTPC Part 1

PAROC Hvac Section



FINAS
Finnish Accreditation Service
T001 (EN ISO/IEC 17025)

| Requested by: Paroc Oy Ab

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P.O.Box 47
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Order 29 December 2010 / Tuomo Hjelt

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Assignment **Determination of non-combustibility of a mineral wool product**

Product The customer gave following information about the product:

Product name: **PAROC Hvac Section**
Manufacturer: Paroc Oy Ab, Lappeenranta, Finland
Product description: stone wool pipe section
Nominal density of stone wool: 85...120 kg/m³ (depending of insulation thickness and inner diameter)
Dimensions:
Insulation thickness: 20...160 mm
Inner diameter: 15...1016 mm
Length: 1200 mm
Binder content of stone wool: ≤ 2,5 %

Sample Date of delivery: 30 December 2010
Nominal density according to the customer: 85 kg/m³ (controlled by VTT)
Dimensions of the sample:
Insulation thickness: 60 mm
Inner diameter: 48 mm
Length: 1200 mm

The sample of the product was chosen by the customer.

Specimens From the sample, without the facing, five test specimens were made with a diameter of 45 mm and a height of 50 mm.

Test method IMO FTPC Part 1 - Non-combustibility test
A description of the method and requirements are presented in Appendix 1.



The test results relate only to the sample tested.

Date of test 19 January 2011

Test results The test results are shown in Appendix 2.

Note The test results relate to the behaviour of the test specimens of a product under the particular conditions of the test; they are not intended to be the sole criterion for assessing the potential fire hazard of the product in use.

Classification The tested stone wool product, **PAROC Hvac Section** (85 kg/m³), met the requirements of non-combustible material imposed by IMO FTPC Part 1.

The stone wool product, **PAROC Hvac Section** (85 kg/m³) as described in this report may be regarded as a

non-combustible material

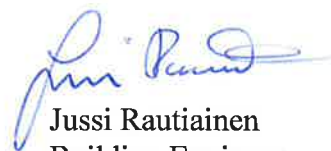
according to IMO FTPC Part 1.

Approval of the material may be obtained only on application to the appropriate Administration.

Espoo, 26 January 2011



Tiia Rynänen
Team Leader



Jussi Rautiainen
Building Engineer

APPENDICES Appendix 1, Description of the test method and requirements
Appendix 2, Test results

DISTRIPUTION Customer Original (2)
Archive Original



The test results relate only to the sample tested.

DESCRIPTION OF THE METHOD

IMO FTPC Part 1 (IMO Resolution MSC.61(67) Annex 1 Part 1) *Non-combustibility test*

Test procedure EN ISO1182:2002 *Reaction to fire tests for building products - Non-combustibility test*

Test specimens

φ 45 mm, height 50 mm, 5 pcs.

Test specimens are kept prior to the tests 20...24 h in a room with a temperature of 60 ± 5 °C.

Test procedure

The test specimen is placed in a vertical tube furnace with a temperature of about 750 °C. Temperature alterations caused by possible burning of the test specimen are monitored with three thermocouples, of which one is in the furnace, one on the specimen surface and one in the specimen centre. During the test the flaming time of the test specimen is also measured.

The evaluation criteria

The material is deemed non-combustible according to IMO FTPC Part 1 if all the following criterias are satisfied.

- the average of the temperature differences between the maximum furnace thermocouple temperature and the final furnace thermocouple temperature does not exceed 30°C,
- the average of the temperature differences between the maximum specimen surface thermocouple temperature and the final specimen surface thermocouple temperature does not exceed 30°C,
- the mean duration of sustained flaming does not exceed 10 s.
- the average mass loss does not exceed 50 %.

6.2.2006

TEST RESULTS

Method: IMO FTPC Part 1 – Non-Combustibility Test
(IMO resolution MSC.61(67) Part 1)
Test procedure EN ISO1182:2002

Product name: PAROC Hvac Section

Test	Mass loss %	Temperatures °C							Temperature rises °C			Duration of sustained flaming s
		T _f	T _f (max)	T _s (max)	T _c (max)	T _f (final)	T _s (final)	T _c (final)	Δ T _f	Δ T _s	Δ T _c	
1	1,72	750	796	812	786	778	796	767	18	16	19	0
2	2,55	750	798	817	794	793	811	786	5	6	8	0
3	1,67	750	803	801	781	798	798	776	5	3	5	0
4	1,64	750	798	808	781	796	806	778	2	2	3	0
5	1,87	750	797	809	785	794	807	783	3	2	2	0
mean	1,89								7	6	7	0

T_f = the initial furnace thermocouple temperature
T_f(max) = the maximum furnace thermocouple temperature
T_f(final) = the final furnace thermocouple temperature
ΔT_f = T_f(max) - T_f(final)
T_s(max) = the maximum specimen surface thermocouple temperature
T_c(max) = the maximum specimen centre thermocouple temperature
T_s(final) = the final specimen surface thermocouple temperature
T_c(final) = the final specimen centre thermocouple temperature
ΔT_s = T_s(max) - T_s(final)
ΔT_c = T_c(max) - T_c(final)

Criteria:

Temperature rises:

The average Δ T_f ≤ 30 °C

The average Δ T_s ≤ 30 °C

The mean duration of sustained flaming < 10 s

The average mass loss < 50 %