Determination of non-combustibility according to IMO FTPC Part 1; MSC.61(67)

PAROC Pro Section 100

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

Requested by: Paroc Group Holding Oy

VTT EXPERT SERVICES LTD

Requested by	Paroc Group Holding Oy P.O.Box 47 FI-00621 Helsinki, Finland
Order	Quality control agreement Dno. VTT-V-21057-07
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Assigment **Determination of non-combustibility of a mineral wool product**

Product

The customer gave following information about the product:
Product name: **PAROC Pro Section 100**
Manufacturer: Paroc Oy Ab, Lappeenranta, Finland
Product description: stone wool pipe section
Nominal density of stone wool: 100 kg/m^3
Binder content of stone wool: 1,8 %
Dimenssions
Thickness: 20 - 160 mm
Pipe section length: 1200 mm
Inner diameter: 12 - 1016 mm

Sample

Date of delivery: 16 December 2011
Dimenssions
Thickness: 50 mm
Pipe section length: 1200 mm
Inner diameter: 133 mm
Density of the stone wool measured by VTT: 106 kg/m^3

The quality control sample of the product was chosen 15 December 2011 by VTT at the stock of Paroc Oy Ab, Lappeenranta, Finland.

Specimens

From the sample 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
(IMO Resolution MSC.61(67) part 1)
Test procedure EN ISO 1182:2002

A description of the method and requirements are presented in Appendix 1.

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The test results relate only to the sample tested.

Date of test 4 January 2012

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 Pro Section 100**, met the requirements of non-combustible material imposed by IMO FTPC Part 1.

The stone wool product, **PAROC Pro Section 100**, as described in this report may be regarded as a

non-combustible material

according to IMO FTPC Part 1 (IMO Resolution MSC.61(67) Part 1).

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

Espoo, 9 January 2012

Tiia Ryynänen
Senior Expert

Jussi Rautiainen
Expert

APPENDICES Appendix 1, Description of the test method and requirements (IMO FTPC, Part 1)
Appendix 2, Test results

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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 exeed 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 Pro Section 100

Test	Mass loss	Temperatures °C							*Temperature rises* °C			Duration of sustained flaming
	%	T_f	T_f (max)	T_S (max)	T_C (max)	T_f (final)	T_S (final)	T_C (final)	ΔT_f	ΔT_S	ΔT_C	s
1	1,61	750	794	807	776	787	800	766	7	7	10	0
2	1,59	750	794	801	768	788	796	759	6	5	9	0
3	1,45	750	795	806	772	789	800	763	6	6	9	0
4	1,60	750	793	799	765	787	791	752	6	8	13	0
5	1,54	750	793	810	771	789	808	766	4	2	5	0
mean	1,56								6	6	9	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 $\Delta T_f \leq 30$ °C
The average $\Delta T_s \leq 30$ °C

The mean duration of sustained flaming < 10 s
The average mass loss < 50 %