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Dresden, 30 October 2013
70-em/pe

Test report
Order no. 2713281

Customer:	Unilin Flooring BV Ooigemstraat 3 8710 Wielsbeke Belgium
Date of order:	July 09th 2013
Order:	Testing of 3-layer parquets for CE-labelling
Institution:	EPH – Laboratory Surface Testing
Engineer in charge:	Dipl.-Ing. (FH) M. Peter

Dr.-Ing. R. Emmler
Head of Laboratory Surface Testing

The test report contains 4 pages and 1 annex with 48 pages. Any duplication in part requires written approval from EPH. These test results are exclusively related to the tested material.

1 Task

The Development and Examination Laboratory for Wood Technology Ltd. (EPH) as Notified Body (No. 0766) was instructed by Unilin Flooring / BELGIUM to carry out tests of selected properties of 2-layer parquets according to EN 14342 for CE-labelling.

2 Test material

The customer has sent following variants of 3-layer parquets (arrival at the EPH-laboratory: 21 June 2013 / 18 July 2013 / 15 August 2013 and 23 September 2013):

Var. 1:	3-layer parquet, 13 mm top layer: oak, spruce core
Var. 2:	3-layer parquet, 14 mm top layer: oak, spruce core
Var. 3:	3-layer parquet, 13 mm top layer: oak, pine core
Var. 4:	3-layer parquet, 14 mm top layer: oak, pine core

3 Test performance

3.1 Reaction to fire tests

The test procedures were carried out at the Development and Examination Laboratory for Wood Technology Ltd. (EPH) in Dresden in accordance with the following in DIN EN 13501-1:2010 for floor coverings issued reaction to fire tests:

DIN EN ISO 11925-2: Reaction to fire test – Ignitability of products subjected to direct impingement of flame – Part 2: Single-flame source test;

DIN EN ISO 9239-1: Reaction to fire tests for floorings – Part 1: Determination of the burning behaviour using a radiant heat source.

The products were tested with loose laying at 20 mm particle board according to DIN EN 13238 as substrate layer, i.e. the results are valid for products used as a horizontal floor covering installed on a wooden or mineral subfloor, using adhesive or not.
The final classification for the reaction to fire performance was determined according to EN 13501-1 based on the results of the both tests for the specified field of application.

3.2 Determination of the thermal resistance

The determination of thermal resistance was carried out according to EN 12664.
The tested 2-layer parquets were categorised as a material, which is rectangular layered to the heat flow. The determination of the thermal resistance was carried out according to this categorisation. For determination of the thermal resistance a two-plate-device
"TLP 900-H" was used.
The samples were stored in a climate of 23 °C and 50 % rH, until mass stability.
Directly after the storage, the specimens were tested.

4 Results

The tested variants attained the following results:

Variant	Testing procedure according to EN 13501-1			Fire class according to EN 13501-1
	Single-flame source test according to DIN EN ISO 11925-2	Burning behaviour using a radiant heat source according to DIN EN ISO 9239-1		
	Requirement max. extent of flame ≤ 150 mm	Critical heat flow in kW/m²	Smoke production in % x min	
1 + 2	Yes	3.84	79.8	D_{fl}-s1
3 + 4	Yes	3.37	178.4	D_{fl}-s1

Critical heat flow ≥ 3.0 kW/m² ⇒ Fire class D_{fl}
Critical heat flow ≥ 4.5 kW/m² ⇒ Fire class C_{fl}
Critical heat flow ≥ 8.0 kW/m² ⇒ Fire class B_{fl}

Smoke production ≤ 750 % * min ⇒ Smoke parameter s1
else ⇒ Smoke parameter s2

The corresponding test and classification reports with the detailed results of the tested variants are enclosed in annex 1 of this report.

4.2 Determination of the thermal resistance

Variant	Thermal conductivity λ in W/(m*k)	Thermal resistance R in (m²K)/W
2	0,114	0,0717

* The requirement of R ≤ 0.15 (m²K)/W for floor heating suitability of materials, which was fixed by the German Federal Association Radiant Panel Heating, was fulfilled by the tested variant.

5 Evaluation

The tested variants of 3-layer parquets can be classified regarding to several properties according to EN 14342 (CE-labelling) as follows:

Variant	Property	Result	Declaration according to EN 14342
	Reaction to fire performance according to EN 9239-1 and EN ISO 11925-2, classification according to EN 13501-1		
1 + 2	- critical heat flux - smoke obscuration	3.8 kW/m² 80 % x min	D_{fl}-s1
3 + 4	- critical heat flux - smoke obscuration	3.4 kW/m² 178 % x min	D_{fl}-s1
2	Thermal conductivity according to EN 12664	0.114 W/(m•K)	0.11 W/(m•K)*

* The result can be transferred on the other variants.

Dipl.-Ing. (FH) M. Peter
Engineer in charge