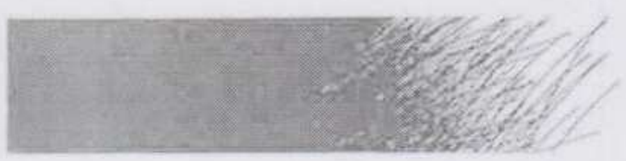

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TYPE EXAMINATION CERTIFICATE

No. 13-221 of 22/04/13

Name of organization: **UGent, Department of Textiles** issue this certificate.

1. Product name: Semirigid polyvinyl chloride floor tiles
2. Product material: PVC
3. Product type:
   a) thickness: 2 mm - 6 mm
   b) density: 1950 ± 50 kg/m³
4. Numerical code of product classification:
   a) fire behaviour: **B fl s1**
   b) formaldehyde: **E1**
   c) slip resistance: **DS**
5. Usage of the product: Used as the flooring indoor buildings, family, public area and so on
6. Manufacturer:
7. Address:

This certificate assures the compliance of properties of the product, which complies with the technical requirements referenced in EN 14041 – EN 9239 -1 and EN 717-1. The certificate only applies to materials that correspond to the tested sample.

The results of tests and findings on conformity of the properties of the given type with technical requirements given in EN 14041 – EN 9239 -1 and EN 717-1 are referenced in classification report CR-13-221/1, Test Reports 13-221A, 13-221B, 13-211C and FCHL-262/13.

Date of issuing: 22/04/13

Valid until: 2018

Department of Textiles of Ghent University is recognized as notified laboratory 1611 for the European Products directive 89/106/EEC.

i.o.

LIEDTS Eddy
Technician

Didier Van Daele
Head of floorcovering/fire tests

Prof. Dr. Paul KIEKENS, dr. h. c.
Head of Department

EN 9239

Fire tests to Floorings – EN ISO 9239-1

1. EN ISO 9239-1 Fire tests for Flooring - Standard Title：

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

2. EN ISO 9239-1 Fire tests for Flooring - Standard Brief：

EN ISO 9239-1 for the exposed surface flooring, determination of the burning behaviour using horizontal a radiant heat source and the subsequent result.

3. EN ISO 9239-1 Fire tests for Flooring - Products Scope：

EN ISO 9239-1 be used for all the type of floorings in Construction Product Directive (CPD) scope

4. EN ISO 9239-1 Fire tests for Flooring - Test Method：

> Test condition

Speed of flue gas flow in box：（2.5±0.2）m/s。

Radiant flux：Calibrated heat radiant flux distribution requirements:

Distance to zero point of specimen（mm）	Heat flux（kW/m^2）	Tolerances（kW/m^2）
110	10.9	±0.4
210	9.2	±0.4
310	7.1	±0.4
410	5.1	±0.2
510	3.5	±0.2
610	2.5	±0.2
710	1.8	±0.2
810	1.4	±0.2
910	1.1	±0.2

Blackbody temperature: by calibration comparison with temperature recorded，blackbody temperature deviation should be within ±5℃, box temperature deviation should be within ± 10℃

Flaming gas: propane

Gas flow rate：（0.026±0.002）L/s

Flaming time：30min

> Evaluation Criteria

Sample classification according to BS EN 13501-1:2007, with the test results mean that the grading

standard are as follows (Note: Non-sufficient and necessary criterion for classification).

Class	Classification standard
$A2_{fl}$、B_{fl}	Critical heat fluxCHF≥8.0 KW/m^2, Additional classificationS_1=smoking≤750%×min
C_{fl}	Critical heat fluxCHF≥4.5 KW/m^2, Additional classificationS_1=smoking≤750%×min
D_{fl}	Critical heat fluxCHF≥3.0KW/m^2, Additional classificationS_1=smoking≤750%×min

5. EN ISO 9239-1 Fire tests for Flooring - Material under products Scope:

> Wood flooring
> Plastic-wood flooring
> Rubber flooring
> Textile / Carpet
> Aluminum honeycomb slab
> Etc

6. EN ISO 9239-1 Fire tests for Flooring - Reference Standard:

> EN13238 Reaction to fire tests for building products. Conditioning procedures and general rules for selection of substrates

> EN60584-1 Thermocouples — Part 1: Reference tables

> EN ISO 13943 Fire safety -- Vocabulary

7. EN ISO 9239-1 Fire tests for Flooring - Similar standard:

> DIN 4102-14 Fire behaviour of building materials and elements; determination of the burning behaviour of floor covering systems using a radiant heat source

> ASTM E 648 Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Sourc