



**TECHNICKÝ A ZKUŠEBNÍ ÚSTAV STAVEBNÍ PRAHA, s.p.**  
**Technical and Test Institute for Construction Prague**  
Akreditovaná zkušební laboratoř, Autorizovaná osoba, Notifikovaná osoba, Oznámený subjekt, Subjekt pro technické posuzování, Certifikační orgán, Inspekční orgán / Accredited Testing Laboratory, Authorized Body, Notified Body, Technical Assessment Body, Certification Body, Inspection Body, Prosecká 811/76a, 190 00 Praha 9 - Prosek, Czech Republic

Branch 0100 – Praha

# EVALUATION REPORT

No. 010-034582

Name of product:

**Decorative wall coverings according to EN 15102+A1: 2007+A1:2011 - LG HAUSYS  
WALLCOVERING**

**Type/variation: GRACIA**

Manufacturer:

**LG Hausys, Ltd**

Address: LG Hausys, Ltd  
10, Gukjegeumyung-ro, Yeongdeungpo-gu, Seoul, South Korea  
Plant: LG Hausys, Ltd  
10, Gukjegeumyung-ro, Yeongdeungpo-gu, Seoul, South Korea  
Order: Z010140412

Number of pages including the front page: 3    Annex (es) : 2

The person taking responsibility for the content of the evaluation report:

  
Ing. Klára Bednářová  
Chief Assessor

The person taking overall responsibility for the evaluation report:

Stamp of the Branch 0100 - Praha



Praha, February 27, 2015

  
Ing. Iveta Jiroutová  
director of Branch TZÚS – 0100

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Bank Name: KB Praha 1 Czech Republic, Account Number: 1501-931/0100, INO: 000 15679, VAT: CZ00015679

## 1. General

### 1.1. Information about the manufacturer

Name: LG Hausys, Ltd  
Adress: 10, Gukjegeumyung-ro, Yeongdeungpo-gu, Seoul, South Korea

### 1.2. Definition of the product and intended use

**Decorative wall covering according to EN 15102+A1: 2007+A1:2011 –  
LG HAUSYS WALLCOVERING**

Type/variation: GRACIA

Decorative wall coverings LG HAUSYS WALLCOVERING consist of backing paper, synthetic resin and printed layer. They are manufactured by using eco friendly inks.

Thickness: (0.3-0.5) mm

Weight per unit area: (320-330) g/m<sup>2</sup>

Width: 1060 mm

### 1.3. List of documentation provided by the manufacturer to the product

- Material safety data sheet of the product
- Product introduction of LG Hausys Wallcovering

### 1.4. Technical specifications and technical regulations relating to the product

EN 15102:2007+A1:2011	Decorative wall coverings - Roll and panel form
EN 13501 +A1:2010	Fire classification of construction products and building elements - Part 1: Classification using test data from reaction to fire tests
EN 12149:1997	Wallcoverings in roll form - Determination of migration of heavy metals and certain other elements, of vinyl chloride monomer and of formaldehyde release

## 2. Technical requirements

The technical requirements were designed according to standard EN 15102:2007+A1:2011

Tests/classification which apply to this product:

- Reaction to fire according to (EN 13501-1+A1)
- Release of formaldehyde (EN 12149)
- Release of vinylchloride (EN 12149)
- Release of hard metals (EN 12149)

## 3. Test results

### 3.1 An inventory of tests reports and assessments:

- Reaction to fire classification report No. PK1-01-15-010-E-0 of 20.02.2015, issued by PAVUS,a.s., Notified Body 1391
- Test protocol No. 100-050972 of 05.02.2015, issued by TZÚS Praha s.p. – branch office ZÚLP, Accredited testing laboratory 1018.9.

### 3.2 Evaluation of the results of tests and assessment of the product

Table No. 1: Test results:

Characteristic	Obtained data value	Test Report Nr.
Reaction to fire class	E	PK1-01-15-010-E-0
Release of formaldehyde	0.08 mg/kg Complies with the requirements of EN 15102:2007 +A1:2011	100-050972
Release of vinylchloride	< 0.1 mg/kg Complies with the requirements of EN 15102:2007 +A1:2011	
Release of hard metals(migration):	Complies with the requirements of EN 15102:2007 +A1:2011	
Sb	< 5.0 mg/kg	
As	< 10 mg/kg	
Ba	< 5.0 mg/kg	
Cd	< 0.2 mg/kg	
Cr	< 5.0 mg/kg	
Pb	< 1.0 mg/kg	
Hg	< 0.01 mg/kg	
Se	< 5.0 mg/kg	

### 4. Annexes

- Reaction to fire classification report No. PK1-01-15-010-E-0 of 20.02.2015, issued by PAVUS,a.s., Notified Body 1391
- Test protocol No. 100-050972 of 05.02.2015, issued by TZÚS Praha s.p. – branch office ZÚLP, Accredited testing laboratory 1018.9.



**PAVUS, a.s.**

AUTHORIZED BODY 216  
NOTIFIED BODY 1391  
ACCREDITED CERTIFICATION BODY FOR  
PRODUCTS N° 3041

Branch: FIRE TESTING LABORATORY  
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## REACTION TO FIRE CLASSIFICATION REPORT

The object of  
classification:

*Construction products excluding floorings and  
linear pipe thermal insulation products in  
accordance with CSN EN 13501-1, clause 11*

Issue number:

**PK1-01-15-010-E-0**

Product name and type:

**LG HAUSYS WALLCOVERING (GRACIA)**

Sponsor:

**Technický a zkušební ústav stavební Praha, s.p.**  
Pobočka Praha  
Prosecká 811/76a  
190 00 Praha 9  
Czech Republic

For company:

**LG Hausys, Ltd**  
10, Gukjegeumyung-ro  
Yeongdeungpo-gu  
Seoul  
South Korea

Issuing organization:

**PAVUS, a.s.**  
Authorized Body 216  
Notified Body 1391  
Accredited certification body for products No 3041  
- Accreditation issued by Czech Accreditation Institute,  
Public Service Company  
- Certificate of Accreditation N° 542/2014  
Prosecká 412/74  
190 00 PRAHA 9  
Order no. Z210150048

Date of issue:

2015-02-20

Copies in total:

4

Copy number:

2

Pages in total:

3



## 1. INTRODUCTION

- 1.1. This Classification Report specifies classification method for the product LG HAUSYS WALLCOVERING (GRACIA) in conformity with the procedures set forth in CSN EN 13501-1+A1: 2010.
- 1.2. This Classification Report has 3 pages and it can be used or reproduced as a whole only.

## 2. DETAILED INFORMATION ON THE ELEMENT TO BE CLASSIFIED

### 2.1. General

The product – LG HAUSYS WALLCOVERING (GRACIA) is made by the company LG Hausys, Ltd, 10, Gukjegeumyung-ro, Yeongdeungpo-gu, Seoul, South Korea. It is used as a wall covering.

### 2.2. Product description

It is a wall covering with thickness of (0.3–0.5) mm, mass per unit area of (320-330) g/m<sup>2</sup> made by printing of wall covering paper.

## 3. REPORTS AND RESULTS IN SUPPORT OF CLASSIFICATION

### 3.1 Reports

Name of the Laboratory Address Accreditation number:	Name of sponsor of the Test Report	Report number Date of issue	Test method
PAVUS, a. s. Veselí nad Lužnicí ATL No. 1026	Technický a zkušební ústav stavební Praha, s.p. Pobočka Praha Prosecká 811/76a 190 00 Praha 9 Česká republika	Pr-15-1.016 2015-02-20	ČSN EN ISO 11925-2:2011

### 3.2 Results

Test method	Parameter	Number of tests	Results	
			Continuous parameter-mean	Compliance with parameters
CSN EN ISO 11925 - 2 Surface exposure – clause 7.3.3.1	$F_s \leq 150$ mm up to 60 s Filter paper non-ignition	6	35 -	yes yes

## 4. CLASSIFICATION AND FIELD OF APPLICATION

### 4.1. Classification references

This classification was carried out in conformity with CSN EN 13501-1+A1: 2010.

### 4.2 Classification

The product – **LG HAUSYS WALLCOVERING (GRACIA)** - in conformity with its behaviour under the reaction-to-fire tests, is classified as follows:

**Reaction to fire class: E**

### 4.3. The field of application

This classification applies for the following parameters of the product:

**Parameters** noticed in the clause 2.2.

This classification applies for the following end-use applications:

The product **LG HAUSYS WALLCOVERING (GRACIA)** is intended for using as a wall covering with gypsum plaster board substrates and any substrates with class of A1 and A2-s1,d0 with density at least of 450 kg/m<sup>3</sup>.

## 5. RESTRICTIONS

This Classification Report does substitute neither the type approval nor the product certificate.

This classification is valid, unless the conditions, under which it was issued, have been changed. The sponsor may request the issuing authority to review the influence of changes to the classification validity.

Therefore the Testing Laboratory has no part in preparing the product specimens for tests although the Laboratory provides, on manufacturer's request, a suitable certification that the Laboratory took part in monitoring the preparation of specimens for tests.

In the case of a dispute wording of the Czech version of the test report is decisive.-

Elaborated by:



Ing. Pavla Hejná

Fire testing laboratory

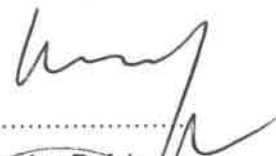
PAVUS, a.s.

Autorizovaná osoba AO 215

Pobočka

391 81 Veselí nad Lužnicí

Approved by:



Ing. Jaroslav Dufek



# TEST PROTOCOL

Number: 100-050972

dated: 2015-02-05

**Name and address of the customer:** Technický a zkušební ústav stavební Praha s.p.  
Pobočka Praha – 0100  
Prosecká 811/76a  
190 00 Praha 9-Prosek

**Product name:** Decorative wallcovering LG HAUSYS WALLCOVERING

**Test subject and method:**

Determination of formaldehyde - formaldehyde emissions:

method No. 100607

- stated by spectrophotometer

Determination of certain elements migration:

method No. 100608-01

(As, Ba, Cd, Cr, Pb, Sb, Se) - AAS

(ČSN EN 71-3)

Determination of Hg migration:

method No. 100608-02

- AMA

(ČSN EN 71-3)

Determination of vinylchloride:

method No. 100663

- GC-MS

**Test legal basis:** EN 15102:2007 +A1:2011 - Decorative wallcoverings - Roll and panel form products.


**Date of sample receipt for testing:** 2015-01-06

**Tests were carried out:** from: 2015-01-06 to: 2015-02-05

**Test was carried out by the laboratory:** Analytic Chemistry Laboratory

**Name and function of the person entitled to sign this Test Protocol:**



  
Libuše Pražáková, M.Sc.  
Technical Head of Laboratory





**Description and identification of the sample:**

Decorative wallcovering LG HAUSYS WALLCOVERING - (type: GRACIA)

**Devices used:** spectrophotometer Specord 210, AAS PU 9400, mercury-meter AMA 254,  
gas chromatograph GC-MS FOCUS

**Test results:**

Determination of formaldehyde release by the flask method according to the standard EN 12149:1997:  
Formaldehyde release was determined by hanging samples tested above distilled water in a shut bottle at the temperature of 40°C for the period of twice 24 hours. Formaldehyde absorbed by distilled water during second 24 hours period was determined with spectrophotometer against a blank solution, using acetyl acetone as an agent.

Sample No.	Sample name	Units	Formaldehyde	Max. value acc. to ČSN EN 15102
7	Decorative wallcovering LG HAUSYS WALLCOVERING	mg/kg	0.08	120
Extended uncertainty in % rel.			8	-

Determination of certain element migration according to the standard EN 12149:1997:

By measuring an extract of hydrochloric acid with AAS method using PU 9400 following values of given migration elements were measured. Mercury was determined using mercury-meter AMA 254.

Results are given in mg of element/kg of material:

Sample No.	Sample name	Sb	As	Ba	Cd	Cr	Pb	Hg	Se
7	Decorative wallcovering LG HAUSYS WALLCOVERING	< 5.0	< 10	< 5.0	< 0.2	< 5.0	< 1.0	< 0.01	< 5.0
Maximum migration acc. to ČSN EN 15102		No upper limit	25	500	25	60	90	20	165

Determination of vinylchloride to the standard EN 12149:1997:

Sample No.	Sample name	Units	Vinylchloride	Max. value acc. to ČSN EN 15102
7	Decorative wallcovering LG HAUSYS WALLCOVERING	mg/kg	< 0.1	< 0.2
Extended uncertainty in % rel.			-	-



**Conclusion:**

Tested wallpapers Decorative wallcovering LG HAUSYS WALLCOVERING **comply** with requirements of the standard EN 15102:2007 +A1:2011 Decorative wallcoverings - Roll and panel form products, regarding formaldehyde release - point 4.2 and egarding dangerous substances release - heavy metals and certain elements - point 4.3.1 and regarding onomeric vinylchloride (VCM) - point 4.3.2.

The uncertainty mentioned is the extended uncertainty calculated by using the extension coefficient equalling 2 and so it corresponds to the significance level by approx. 95%.

Tests carried out by: J. Motis, M.Sc., J. Malkovská, P. Vodrážka, M.Sc., R. Velíšková  
Protocol completed by: T. Salivarová

Note:

*This Test Protocol can be copied as the whole only, in case of using its part, a written approval is necessary of the testing laboratory.*

*Test results are valid for the sample tested only and this Test Protocol does not replace any other documents.*

- **END OF TEST PROTOCOL** -