



Laboratório Nacional de Engenharia Civil

Departamento de Edifícios

Núcleo de Revestimentos e Isolamentos
Laboratório de Ensaios de Reacção ao Fogo

RC-RF nº : 14/2011-LNEC/LERF

Página : 1/6

Pedido nº : 5/2011

Visto

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CLASSIFICATION OF REACTION TO FIRE PERFORMANCE IN ACCORDANCE WITH EN 13501-1: 2007+A1:2009

SPONSOR:

NAME: DECEUNINCK, N.V.

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PRODUCT NAME: DECEUNINCK PVCu windows, system ZENDOW, with double glazing

CLASSIFICATION REPORT No.: 14/2011-LNEC/LERF

DATE OF ISSUE: 21st April 2011

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1 – INTRODUCTION

This classification report defines the classification assigned to DECEUNINCK PVCu windows, system ZENDOW, with double glazing, in accordance with the procedures given in EN 13501-1: 2007+A1:2009 - *"Fire classification of construction products and building elements – Part 1: Classification using data from reaction to fire tests"*.

LNEC's Reaction to Fire Testing Laboratory (LNEC/LERF) is accredited (L0488-Ensaios) by IPAC for the testing (vd. 3) used as the basis for the assignment of the reaction to fire classification.

2 – DETAILS OF CLASSIFIED PRODUCT

2.1 – General

The product is defined as double glazed windows built with DECEUNINCK PVCu profiles, system ZENDOW.

It is assumed that the tested product is representative – in what concerns reaction to fire behaviour – of different double glazed window and door solutions installed in the new **Loures Hospital**, consisting of PVCu profiles (DECEUNINCK, system ZENDOW) and double glazing units.

2.2 – Product description

The tested and classified product, marketed and assembled by CAIXIAVE – Indústria de Caixilharia, S. A. is fully described bellow (and in the test reports provided in support of classification listed in Clause 3.1)..

Product description:

In accordance with the information supplied by the sponsor, the tested and classified product is a window consisting of DECEUNINCK profiles, system ZENDOW, used in the manufacture different types and sizes of windows (Fig. 1).

The elements that compose those windows have the following generic characteristics:

FRAME

- *PVCu profiles*
PVCu profiles ref. DECEUNINCK, system ZENDOW: P3006; P3051, P3081, P3024.
- *Steel reinforcement*
Galvanised steel reinforcement profiles, 1,5 mm wall thickness
- *Gaskets and seals*
EPDM seals/gaskets

GLASS UNITS

Double glazing units: 6 mm SGG Planitherm / air space 12 / 4+4 mm SGG colourless laminated

cont.



cont.



Fig.1 – General view of windows of windows with PVCu profiles ref. DECEUNINCK, system Zendow, with double glazing

3 – REPORTS AND RESULTS IN SUPPORT OF THIS CLASSIFICATION

3.1 – Reports

Name of Laboratory	Name of sponsor	Report ref. no.	Test method and date
LNEC/LERF	DECEUNINCK, N.V.	64/2011-LNEC/LERF	EN ISO 11925-2:2010 + AC:2011
		66/2011-LNEC/LERF	EN 13823:2010



3.2 – Results

Test method & test number	Parameter	No. test specimens	Results	
			Continuous parameter - mean (m)	Compliance with parameters
EN 13823:2010 (SBI test)	FIGRA _{0,2MJ} (W/s)	3	43	Compliant
	FIGRA _{0,4MJ} (W/s)		42	Compliant
	LFS < edge		YES	Compliant
	THR _{600s} (MJ)		6,0	Compliant
	SMOGRA (m ² /s ²)		14,2	Compliant
	TSP _{600s} (m ²)		165	Compliant
	FDP		NO	Compliant
EN ISO 11925-2:2010 + AC:2011 Surface and edge flame attack Exposure time: 30 s	Fs	6 + 6	< 150	Compliant (Fs ≤ 150 mm)
	Flaming droplets or particles		NO	Compliant
	(Ignition of the filter paper)		(NO)	(Compliant)

4 – CLASSIFICATION AND FIELD OF APPLICATION

4.1 – Reference of classification

This classification has been carried out in accordance with clause 11 of EN 13501-1+A1:2009, September 2009.

4.2 – Classification

Windows (vd. 2) assembled with PVCu profiles, ref. DECEUNINCK, system ZENDOW, double glazed, in relation to its reaction to fire behaviour are classified:

B

The additional classification in relation to smoke production is:

s2



The additional classification in relation to flaming droplets/particles is:

d0

The format of the reaction to fire classification, excluding floorings and liner pipe thermal insulation products is:

Fire behaviour		Smoke production			Flaming droplets	
B	-	s	2	,	d	0

i. e. **B-s2, d0**

Reaction to fire classification: B-s2, d0

4.3 – Field of application

Considering that the published relevant European standards (EN 14351-1:2006+A1:2010) do not define yet the European rules for testing procedures enabling a *harmonized* classification (in discussion in CEN TC 127 - *Fire safety in buildings*), test samples configuration and mounting and fixing procedures were defined by LNEC.

These tests intended to obtain information that enabled the assessment and classification of the reaction to fire behaviour of PVCu windows (DECEUNINCK, system ZENDOW) installed in the new Loures Hospital.

Direct field of application of this classification is valid for the following product and end use application:

- Product as described in 2.2 (vd. 2), when used as double glazed windows existing in a single façade plane, excluding corner windows, whether perpendicular or not
- windows (DECEUNINCK, system ZENDOW), with openable or fixed frames, white profiles with characteristics (colour, dimensions, profile surface density, linear mass) that do not differ significantly from those of the tested specimens;
- window frames with double glazed units with characteristics similar to those defined in 2.2 (6 mm / air space 12 / 4+4 mm laminated).



5 – LIMITATIONS

This classification document does not represent type approval or certification of the product.

Test procedures (*e. g. mounting and fixing*) of window profiles/frames or glazed windows that, eventually, will be defined by CEN or by other relevant European body, may diverge from those adopted in the tests performed which led to the reaction to fire classification presented in this report.

LISBON, 21st April 2011

The Head of the Testing Laboratory

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