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## Reaction to fire classification report

### 1 Introduction

This classification report defines the classification assigned to the products “Makrolon UV clear 2099”, “Makrolon ClimateControl UV green 2655” and “Makrolon UV white 2150” in accordance with the procedure given in EN 13501-1:2007+A1:2009.

This classification report replace SP classification report P902844, dated October 7, 2009.

### 2 Details of classified product

#### 2.1 General

The products “Makrolon UV clear 2099”, “Makrolon ClimateControl UV green 2655” and “Makrolon UV white 2150” are defined as polycarbonate sheets. Their classification is valid for the following end use applications:

Wall claddings, walls, ceilings, window panes, advertisement, roofs, light domes, light covers and design.

According to the owner of this classification report, these products comply with the European product specification EN 1873 and EN 12101-2. Attestation of conformity, AOC: system 1.

All samples except “Makrolon UV clear 2099” with nominal thickness 6 mm were sampled by a notified body (Belgian Construction Certification Association, number 0749) at the factory in Tielt, Belgium, see sampling forms “PVE 08/04/09 nr 1 to 6”.

#### 2.2 Product description

According to the client:

Clear transparent sheet called “Makrolon UV clear 2099” consisting of 100 % polycarbonate, foreseen with UV protection coex layer with polycarbonate as basis. The product has a nominal density of 1200 kg/m<sup>3</sup> and a nominal thickness of 1 to 6 mm.

Green tinted transparent sheet called “Makrolon ClimateControl UV green 2655” consisting of 95 % polycarbonate and about 5 % masterbatch to get green tint, foreseen with UV protection coex layer with polycarbonate as basis. The product has a nominal density of 1200 kg/m<sup>3</sup> and a nominal thickness of 1 to 6 mm.

Opal white sheet called “Makrolon UV white 2150” consisting of 95 % polycarbonate and about 5 % white masterbatch, foreseen with UV protection coex layer with polycarbonate as basis. The product has a nominal density of 1200 kg/m<sup>3</sup> and a nominal thickness of 1 to 3 mm.

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### 3 Test reports, extended application reports & test results in support of classification

#### 3.1 Test reports and extended application reports

This classification is based on the test reports listed below:

Name of laboratory	Name of sponsor	Test report ref no	Accredited test method / extended application rules & date
SP	Bayer Sheet Europe N.V.	P902844	EN 13823 + EN ISO 11925-2
WFRGENT N.V. Ghent, Belgium	Bayer Sheet Europe N.V.	11748E	EXAP report in accordance with CEN/TS 15117

#### 3.2 Test results

The test results listed below show the worst case as found in the test programme performed and reported according to the table above. The tests have been carried out on products covering the thickness range of the product group. The “Guidance on direct and extended application” CEN/TS 15117 has been applied in the process of selecting suitable products for testing.

Test method	Parameter	Number of tests	Results	
			Continuous parameter mean (m)	Compliance with parameters
EN ISO 11925-2		6		
Surface flame attack*				
30 s exposure	$F_s \leq 150$ mm		(-)	Compliant
Flaming droplets/particles	Ignition of filter paper		(-)	No ignition of filter paper
EN 13823		3		
	$FIGRA_{0,2MJ}$ (W/s)		33	Compliant
	$LFS < edge$		(-)	Compliant
	$THR_{600s}$ , (MJ)		1.7	Compliant
	$SMOGRA$ , ( $m^2/s^2$ )		6	Compliant
	$TSP_{600s}$ , ( $m^2$ )		49	Compliant
	Flaming droplets/particles		(-)	No flaming droplets/particles

\* : as required to the end use application of the product

(-) : not applicable

## 4 Classification and field of application

### 4.1 Reference and direct field of application

This classification has been carried out in accordance with clause 11 and 15 of EN 13501-1:2007+A1:2009.

### 4.2 Classification

The products called “Makrolon UV clear 2099”, “Makrolon ClimateControl UV green 2655” and “Makrolon UV white 2150” in relation to their reaction to fire behaviour are classified:

B

The additional classification in relation to smoke production is:

s1

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

d0

The format of the reaction to fire classification for construction products excluding floorings and linear pipe thermal insulation product is:

Fire Behaviour		Smoke Production			Flaming Droplets	
<b>B</b>	-	<b>s</b>	<b>1</b>	,	<b>d</b>	<b>0</b>

**Reaction to fire classification: *B-s1,d0***

#### 4.3 Field of application:

This classification is valid for the following product parameters:

- Nominal thickness: 1 - 6 mm for “Makrolon UV clear 2099” and “Makrolon ClimateControl UV green 2655”.
- Nominal thickness: 1 - 3 mm for “Makrolon UV white 2150”.
- Nominal density: 1200 kg/m<sup>3</sup>.
- Colour: Transparent clear, transparent green and white.

This classification is valid for the following end use conditions:

- Freestanding with the edges protected by a metal frame.

#### 5 Limitations

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

#### SP Technical Research Institute of Sweden Fire Research - Fire Dynamics

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#### Revision

Reference to EN 13501-1:2007 has been changed to EN 13501-1:2007+A1:2009, under Introduction and Classification and field of application.

Company name has been changed.