

The following sample(s) was/were submitted and identified on behalf of the client as:

Sample Description : **Vistaflex Frontlit PVC Banner 510gr/m2**

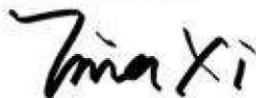
Test Performed : Selected test(s) as requested by applicant

Sample Receiving Date : Apr 25, 2013

Testing Period : Apr 25, 2013 TO May 21, 2013

Test Result(s) : For further details, please refer to the following page(s).

Signed for and on behalf of
SGS-CSTC Ltd.



Tina Xi
Account Executive

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Test Result

Flammability Test

Test Requested:

EN 13501-1:2007+A1:2009 Fire classification of construction products and building elements — Part 1: Classification using data from reaction to fire tests, class B.

I. Test conducted

This test is conducted as per EN 13501-1:2007+A1:2009 Fire classification of construction products and building elements — Part 1: Classification using data from reaction to fire tests. And the test methods as following:

1. EN 13823:2010 Reaction to fire tests for building products - Building products excluding floorings exposed to the thermal attack by a single burning item.
2. EN ISO 11925-2:2010 Reaction to fire tests — Ignitability of building products subjected to direct impingement of flame — Part 2: Single-flame source test.

II. Details of classified product

a) Nature and end use application

The product **Vistaflex Frontlit PVC Banner 510gr/m²** defined as a decorative sheet. Its end use application:

“Outdoor bill-boards”

b) Description

The details of the product given above have been prepared from information provided test.

Color	White
Mass per unit area	496g/m ²

Mounting and fixing:

Calcium silicate board, with its density approximate 900kg/m³, thickness 9mm, is as the substrate. The test specimens are fixed mechanically to the substrate with no cavity behind it. No joint in the long wing.

III. Test results

Test method	Parameter	Number of tests	Results
EN 13823	FIGRA (W/s)	3	53.1
	LFS < edge of specimen		Yes
	THR _{600s} (MJ)		2.1

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	SMOGRA (m ² /s ²)		10.1
	TSP _{600s} (m ²)		14.3
	Flaming particles or droplets		No

To be continued...

Test method	Parameter	Specimen number	Results
EN ISO 11925-2 Exposure = 30 s	$F_s \leq 150$ mm	6	Yes
	Ignition of the filter paper		No

IV. Classification and direct field of application

This classification has been carried out in accordance with **EN 13501-1:2007+A1:2009**.

a) Classification

The product, **Vistaflex Frontlit PVC Banner 510gr/m²** classification is as following,

Fire behaviour		Smoke production		Flaming droplets
B	—	s	1	, d 0

Reaction to fire classification: B—s1, d0

Remark: The classes with their corresponding fire performance are given in annex A.

b) Field of application

This classification for the submitted sample is valid for the following end use condition:

- With all substrate classified A1 and A2
- With mechanically fixing
- No joint

This classification is valid for the following product parameters:

- Characteristics are described in § II b of this test reports.

Statement: The test results relate to the behaviour of the test specimens of a product under the particular conditions of the test; they are not intended to be the sole criterion for assessing the potential fire hazard of the product in use.

Warning:

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

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The test laboratory has, therefore, play no part in sampling the product for the test, although it holds appropriate references to the manufacturer's factory production control that is aimed to be relevant to the samples tested and that will provide for their traceability.

Annex A

Classes of reaction to fire performance for construction products excluding floorings and linear pipe thermal insulation products

Class	Test method(s)	Classification criteria	Additional classification
A1	EN ISO 1182 ^a and	$\Delta T \leq 30^{\circ}\text{C}$, and $\Delta m \leq 50\%$, and $t_f = 0$ (i.e. no sustained flaming)	-
	EN ISO 1716	$PCS \leq 2.0\text{MJ/kg}$ ^a and $PCS \leq 2.0\text{MJ/kg}$ ^{b c} and $PCS \leq 1.4\text{MJ/m}^2$ ^d and $PCS \leq 2.0\text{MJ/kg}$ ^e	-
A2	EN ISO 1182 ^a or	and $\Delta T \leq 50^{\circ}\text{C}$, and $\Delta m \leq 50\%$, and $t_f \leq 20\text{ s}$	-
	EN ISO 1716		-
	EN 13823	$FIGRA \leq 120\text{W/s}$ and $LFS < \text{edge of specimen}$ and $THR_{600s} \leq 7.5\text{MJ}$	Smoke production ^f and Flaming droplets/particles ^g
B	EN 13823 and	$FIGRA \leq 120\text{W/s}$ and $LFS < \text{edge of specimen}$ and $THR_{600s} \leq 7.5\text{MJ}$	Smoke production ^f and Flaming droplets/particles ^g
	EN ISO 11925-2 ⁱ Exposure = 30s	within 60s $F_s \leq 150\text{mm}$	
C	EN 13823 and	$FIGRA \leq 250\text{W/s}$ and $LFS < \text{edge of specimen}$ and $THR_{600s} \leq 15\text{MJ}$	Smoke production ^f and Flaming droplets/particles ^g
	EN ISO 11925-2 ⁱ Exposure = 30s	$F_s \leq 150\text{mm}$ within 60 s	
D	EN 13823 and	$FIGRA \leq 750\text{W/s}$	Smoke production ^f and Flaming droplets/particles ^g
	EN ISO 11925-2 ⁱ Exposure = 30s	$F_s \leq 150\text{mm}$ within 60 s	
E	EN ISO 11925-2 ⁱ Exposure = 15s	$F_s \leq 150\text{mm}$ within 20 s	flaming droplets/particles ^h

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F	No performance determined
<p>^a For homogeneous products and substantial components of non-homogeneous products.</p> <p>^b For any external non-substantial component of non-homogeneous products.</p> <p>^c Alternatively, any external non-substantial component having a $PCS \leq 2,0 \text{ MJ/m}^2$, provided that the product satisfies the following criteria of EN 13823: $FIGRA \leq 20 \text{ W/s}$, and $LFS < \text{edge of specimen}$, and $THR_{600s} \leq 4,0 \text{ MJ}$, and $s1$, and $d0$.</p> <p>^d For any internal non-substantial component of non-homogeneous products.</p> <p>^e For the product as a whole.</p> <p>^f In the last phase of the development of the test procedure, modifications of the smoke measurement system have been introduced, the effect of which needs further investigation. This may result in a modification of the limit values and/or parameters for the evaluation of the smoke production.</p> <p>$s1 = \text{SMOGR} \leq 30 \text{ m}^2/\text{s}^2$ and $TSP_{600s} \leq 50 \text{ m}^2$; $s2 = \text{SMOGR} \leq 180 \text{ m}^2/\text{s}^2$ and $TSP_{600s} \leq 200 \text{ m}^2$; $s3 = \text{not } s1 \text{ or } s2$</p> <p>^g $d0 = \text{No flaming droplets/ particles in EN 13823 within 600 s}$; $d1 = \text{no flaming droplets/ particles persisting longer than 10 s in EN 13823 within 600 s}$; $d2 = \text{not } d0 \text{ or } d1$. Ignition of the paper in EN ISO 11925-2 results in a $d2$ classification.</p> <p>^h Pass = no ignition of the paper (no classification); Fail = ignition of the paper ($d2$ classification).</p> <p>ⁱ Under conditions of surface flame attack and, if appropriate to the end-use application of the product, edge flame attack.</p>	

Photo Appendix:



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Before test

After test

This test was carried out by SGS Anji flammability lab.

*** End of Report ***

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Classification Européenne

L'arrêté du 21 novembre 2002 (modifié)¹ relatif à la réaction au feu des produits de construction et d'aménagement, introduit désormais les « euroclasses » de réaction au feu. Celles-ci sont plus complètes que l'ancien classement français, prenant en compte les fumées dégagées ainsi que d'éventuelles gouttelettes projetées. Cette classification n'est valable toutefois que pour les produits de construction avec trois distinguos, les matériaux de sols (indice « fl » pour « *floorings* »), les matériaux longilignes (indice « l ») et les autres produits de construction.

Les euroclasses, définies dans la norme européenne EN 13501-1+A1, sont un système de classement en cinq catégories d'exigence : A1, A2, B, C, D, E, F (F correspondant au NC du classement M).

Les euroclasses tiennent aussi compte de deux autres critères essentiels (après tests en laboratoire) :

l'opacité des fumées (quantité et vitesse) notée s pour *smoke*

s1 : Quantité et vitesse de dégagement faibles

s2 : Quantité et vitesse de dégagement moyenne

s3 : Quantité et vitesse de dégagement haute

les gouttelettes et débris enflammés notées d pour *droplets*

d0 : aucun débris

d1 : aucun débris dont la combustion ne dure pas plus de 10 secondes

d2 : ni d0 ni d1

En annexe à cet arrêté, il y a trois tableaux donnant les EUROCLASSES admissibles au regard des catégories M mentionnées dans les règlements de sécurité contre l'incendie (valable tant que la réglementation française n'a pas été révisée pour intégrer directement les euroclasses):

Tableau de correspondance (produits de construction autres que sols)²

Classes selon NF EN 13501-1+A1			Exigence
A1	-	-	Incombustible
A2	s1	d0	M0
A2	s1	d1	M1
A2	s2 s3	d0 d1	
B	s1 s2 s3	d0 d1	
C	s1 s2 s3	d0 d1	M2
D	s1 s2 s3	d0 d1	M3
			M4 (non gouttant)
Toutes classes autres que E-d2 et F			M4