ZHEJIANG TERASUN AIR DUCT CO., LTD

MAREN VILLAGE, CHONGREN INDUSTRIAL ZONE, CHONGREN TOWN, SHENGZHOU CITY, ZHEJIANG PROVINCE, CHINA

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

Sample Description: TSM (TERASUN SILICATE MAGNESIUM BOARD)

SGS Ref No.: SHCCM140501044

Manufacturer: ZHEJIANG TERASUN AIR DUCT CO., LTD

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 A1

Test Results: -- See attached sheet --

Test Period:

Sample Receiving Date	:	JUN.03, 2014
Test Performing Date	:	JUN.03, 2014 TO JUN.13, 2014

Signed for and on behalf of
SGS-CSTC Co., Ltd.

Allen Zou
Technical Manager

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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 ISO 1182-2010, Reaction to fire tests for building products — Non-combustibility test;
2. EN ISO 1716-2010, Reaction to fire tests for building products — Determination of the heat of combustion.

II. Details of classified product

Color	Grey

III. Test results

Test method	Parameter	Number of tests	Results
EN ISO 1182	△T/K	5	7.4
	△m/%		28.28
	t_f/s		0
EN ISO 1716	PCS/ MJ/kg [a]	3	1.44
	PCS/ MJ/kg [b]		---
	PCS/ MJ/kg [c]		---
	PCS/ MJ/kg [d]		---

Note:

△T — temperature rise [K]
△m — mass loss [%]
tf — duration of sustained flaming [s]
PCS — gross calorific potential [MJ/kg or MJ/m^2]

To be continued…

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IV. Classification

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

Conclusion: The product, "TSM (TERASUN SILICATE MAGNESIUM BOARD)", classification is as following,

Reaction to fire classification: A1

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

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.
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		$\Delta T \leq 30℃$, and $\Delta m \leq 50\%$, and t_f=0(i.e. no sustained flaming)	-
	EN ISO 1716		*PCS*≤2.0MJ/kg [a] and *PCS*≤2.0MJ/kg [b c] and *PCS*≤1.4MJ/m^2 [d] and *PCS*≤2.0MJ/kg [e]	-
A2	EN ISO 1182 [a] or	and	$\Delta T \leq 50℃$, and $\Delta m \leq 50\%$, and $t_f \leq 20$ s	-
	EN ISO 1716		*PCS*≤3.0MJ/kg [a] and *PCS*≤4.0MJ/m^2 [b] and *PCS*≤4.0MJ/m^2 [d] and *PCS*≤3.0MJ/kg [e]	-
	EN 13823		*FIGRA*≤120W/s and *LFS*＜edge of specimen and THR_{600s}≤7.5MJ	Smoke production [f] and Flaming droplets/particles [g]

To be continued…

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Class	Test method(s)	Classification criteria	Additional classification
B	EN 13823 and	*FIGRA*≤120W/s and *LFS*＜edge of specimen and THR_{600s}≤7.5MJ	Smoke production [f] and Flaming droplets/particles [g]
	EN ISO 11925-2 [i] Exposure =30s	60s 内 *F*s≤150mm	
C	EN 13823 and	*FIGRA*≤250W/s and *LFS*＜edge of specimen and THR_{600s}≤15MJ	Smoke production [f] and Flaming droplets/particles [g]
	EN ISO 11925-2 [i] Exposure=30s	*F*s≤150mm within 60 s	
D	EN 13823 and	*FIGRA*≤750W/s	Smoke production [f] and Flaming droplets/particles [g]
	EN ISO 11925-2 [i] Exposure=30s	*F*s≤150mm within 60 s	
E	EN ISO 11925-2 [i] Exposure =15s	*F*s≤150mm within 20 s	flaming droplets/particles [h]
F	No performance determined		

[a] For homogeneous products and substantial components of non-homogeneous products.
[b] For any external non-substantial component of non-homogeneous products.
[c] Alternatively, any external non-substantial component having a PCS ≤ 2,0 MJ/m^2 , provided that the product satisfies the following criteria of EN 13823: FIGRA ≤ 20 W/s, and LFS < edge of specimen, and THR_{600s} ≤ 4,0 MJ, and s1, and d0.
[d] For any internal non-substantial component of non-homogeneous products.
[e] For the product as a whole.
[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.
s1 = SMOGRA ≤ 30m^2/s^2 and TSP_{600s} ≤ 50m^2 ; s2 = SMOGRA ≤ 180m^2/s^2 and TSP_{600s} ≤ 200m^2; s3 = not s1 or s2
[g] d0 = No flaming droplets/ particles in EN 13823 within 600 s;
d1 = no flaming droplets/ particles persisting longer than 10 s in EN 13823 within 600 s;
d2 = not d0 or d1.
Ignition of the paper in EN ISO 11925-2 results in a d2 classification.
[h] Pass = no ignition of the paper (no classification);
Fail = ignition of the paper (d2 classification).
[i] Under conditions of surface flame attack and, if appropriate to the end–use application of the product, edge flame attack.

To be continued…

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Photo Appendix:

End of Report

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