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Testing. Advising. Assuring.

Title:

EXTENDED APPLICATION
REPORT IN ACCORDANCE
WITH EN/TS 15117

Notified Body No:

0833

Product Name:

“Styrolite Insulation”

Report No:

WF 398642

Issue No:

1

Prepared for:

Custompac Ltd,
Delta Works,
27 Methley Road,
Castleford,
West Yorkshire,
WF10 1PA

Date:

16th April 2018

1. Introduction

This report extends the field of application of test results obtained for “Styrolite Insulation”, an expanded polystyrene insulation. Extended application is a process which may incorporate calculation procedures which enables the prediction of fire performance, on the basis of one or more test results to the same test standards and enables the classification of product groups and product families.

2. Details of Product Group

A product group is a range of products within defined limits of variability of the product parameters, and, if relevant, end-use parameters, for which the reaction to fire performance remains unchanged (i.e. does not get worse).

The products referenced as “Styrolite Insulation”, an expanded polystyrene insulation. The product properties which vary within this product group are the following:

- Thickness

These product variations will be assessed to determine their influence on the fire performance of the product when tested in accordance with EN 13823 and EN ISO 11925-2 in relation to their classification in accordance with EN 13501-1.

2.2 Product description

The product, “Styrolite Insulation”, an expanded polystyrene insulation, is fully described below and in the test reports provided in support of classification listed in Clause 3.1.

General description	Expanded Polystyrene Insulation (EPS)
Product reference	“Styrolite Insulation”
Name of manufacturer	Custompac Ltd
Thickness	10 - 200mm
Density	15kg/m ³
Colour reference	“White”
Trade name of flame retardant	“Emerald 3000, Greencrest and FR-122P”
Generic type of flame retardant	Brominated polymeric flame retardant
Amount of flame retardant	1%
Mounting and fixing details	The specimens were tested with a calcium silicate backing board butted up against the reverse face
Brief description of manufacturing process	<ol style="list-style-type: none"> 1. Pre-expansion- Raw material is heated with steam. The raw material’s compact beads (containing the FRA) turn into cellular plastic beads. 2. Intermediate maturing and stabilisation- The beads are matured and dried in silos to allow for greater expansion. 3. Expansion and final moulding- The stabilised pre-expanded beads are transported to moulds where they are once again subjected to steam, so that the beads bind together. In this way, moulded shapes or large blocks are obtained (that are later cut to the required shape).

3. Test reports test results in support of classification

3.1 Test reports

Name of Laboratory	Name of sponsor	Test reports/extended application report Nos.	Test method / extended application rules & date
Exova warringtonfire	Custompac Ltd	WF 395234	EN ISO 11925-2
Exova warringtonfire	Custompac Ltd	WF 395232 WF 395233 (indicative)	EN 13823
Exova warringtonfire	Custompac Ltd	WF 398641	EN 13501-1

3.2 Test results

Test method & test number	Parameter	No. tests	Results	
			Continuous parameter - mean (m)	Compliance parameters
EN ISO 11925-2 (30s exposure - surface)	F _s	6	Nil	Compliant
	Flaming droplets/ particles		None	Compliant
EN ISO 11925-2 (30s exposure - edge)	F _s	6	Nil	Compliant
	Flaming droplets/ particles		None	Compliant
EN 13823	FIGRA _{0.2MJ}	1, 3	42.33, 210.81	Compliant
	FIGRA _{0.4MJ}		0.00, 0.00	Compliant
	THR _{600s}		0.94, 0.57	Compliant
	LFS		None	Compliant
	SMOGRA		0.00, 0.00	Compliant
	TSP _{600s}		13.33, 16.51	Compliant

4. Classification and field of application

4.1 Definition of Limits of Extended Application

The products referenced "Styrolite Insulation", an expanded polystyrene insulation. Two tests were conducted in accordance with EN 13823, one indicative and one full, and one in accordance with EN ISO 11925-2 using both surface and edge application.

The reaction to fire performance characteristics of the product vary within this product group with variations of the following product properties:

- Thickness

4.2 EN ISO 11925-2

This product was tested formally in accordance with EN ISO 11925-2 using surface, edge and turned at 90° flame application, there was no flame spread from the point of flame application. The average flame front was 100% below the maximum allowed for a Class C.

4.3 EN 13823

The SBI test measures the following fire parameters, Fire Growth Rate (FIGRA), Total Heat Release (THR_{600s}), Smoke Growth Rate (SMOGRA) and Total Smoke Production (TSP_{600s}). These parameters were evaluated to assess what influence the various product parameters could have on the test results. The available test evidence is graphically represented in the graphs given in the annex.

The FIGRA_{0.4MJ} values were within the limit for a C-classification. The results for the THR were well within the limit for a C-classification (at about 6% of the limit value for a C Class). The measured results relating to smoke parameters, SMOGRA and TSP_{600s}, are well within the limit value for s1 at about 33% of the limit value for TSP_{600s} and 0% of the limit value for SMOGRA.

Flaming droplets/particles, were not observed during any of the fire tests.

These results clearly indicate that the products show consistent behaviour in this test with the two different types of insulation.

4.4 Field of application


This classification is valid for the following end use applications:

- i) Construction applications other than flooring or linear pipe insulation, used over any substrate with a thickness of 11m of greater, a density equal to or greater than 870kg/m³ and a fire performance of A2-s1-d0 or better.

This classification is also valid for the following product parameters:

Product thickness	10mm - 200mm
Product weight per unit area	15kg/m ³
Product composition	No variation allowed
Product construction	No variation allowed

SIGNED

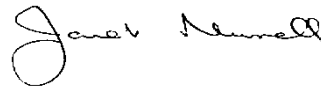


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Figure 1 - Effect of varying the product specification on FIGRA and TSP600s

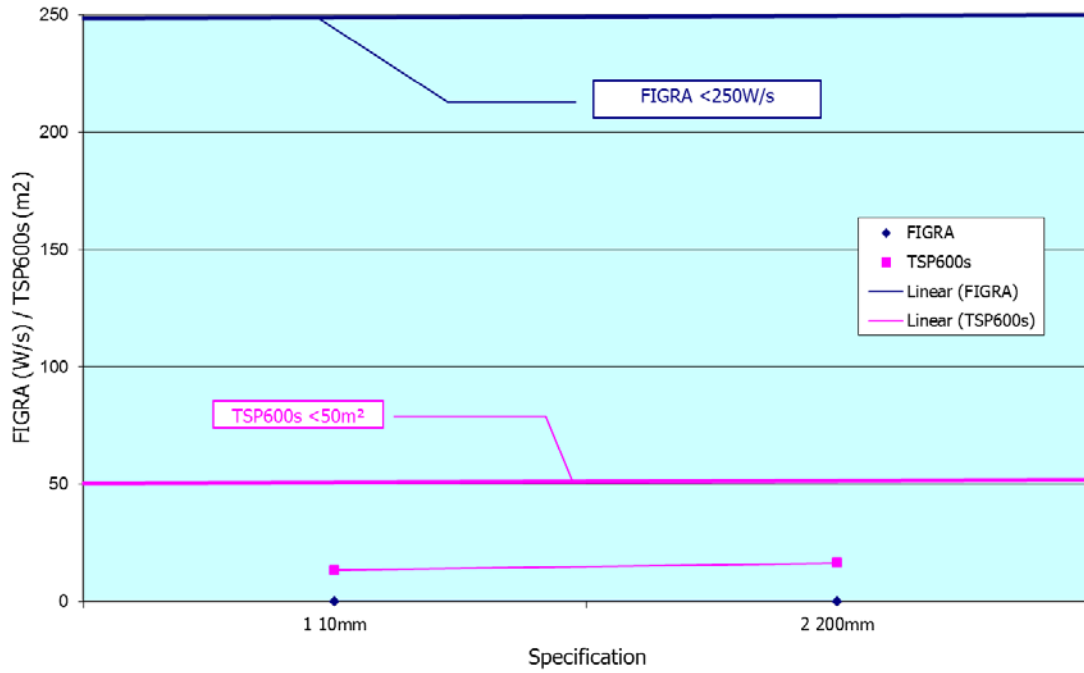


Figure 2 - Effect of varying the product specification on THR600s and SMOGRA

