



**FIRE
TECHNOLOGY
SERVICES**

Confidential Report

Our Ref: 27/02809L/05/13

Notified Body
for PPE Directive,
Construction Products Directive
& Marine Equipment Directive
I.D. No. 0338 & 0339

**Fire Technology Services
A division of BTTG T & C Ltd
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26 June 2013

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Client: Eco-Sol Ltd
Cardiff House
Cardiff Road
Barry
Vale of Glamorgan
CF63 2AW

Job Title: **Fire Test on One Sample of Fabric**

Clients Order Ref: ---

Date of Receipt: 10 May 2013

Description of Sample: One sample of cut pile, Axminster carpet, referenced: **80/20 Wool/Nylon.**

Work Requested: Fire Technology Services were requested to carry out a fire test on the sample supplied to IMO FTP Code 2010:Part 5.





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Eco-Sol Ltd

IMO INTERNATIONAL CODE FOR APPLICATION OF FIRE TEST PROCEDURES, 2010 FTP CODE, PART 5

Fire test procedures for surface flammability of bulkhead, ceiling, deck finish materials and primary deck coverings.

Date of Test: 24/06/13

Introduction

The test specifies a procedure for measuring fire characteristics of bulkhead, ceiling, deck finish materials and primary deck coverings as a basis for characterising their flammability and thus their suitability for use in marine construction.

Cleaning Procedure

The sample was subjected to the laboratory spray extraction cleaning procedure according to BS ISO 11379:2009, as specified in BS EN 14041:2004, with the following conditions:-

The sample was cleaned three times, each at an interval of two hours between cycles with each cleaning cycle consisting of two strokes. The first stroke consisted of the spray extraction machine with simultaneous spray and extraction and the second stroke was with the extraction only.

The first cycle was cleaned with Prochem Liquid Woolsafe carpet shampoo solution at an ambient temperature $25\text{ }^{\circ}\text{C} \pm 10\text{ }^{\circ}\text{C}$ and the second and third cleaning cycles with water at ambient temperature without any addition of chemicals.

Sampling

The sponsor sampled the material and the specimens were cut from the sample received to the dimensions set out in the standard.

Conditioning

The sample was conditioned to constant mass at a temperature of $23\pm 2^{\circ}\text{C}$ and a relative humidity of $50\pm 5\%$.





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Principle of Test

This test provides a method for evaluating flammability characteristics of specimens in the vertical orientation when exposed to a graded radiant flux field supplied by a natural gas-fired radiant panel. This method provides a means to evaluate the lateral spread of a flame across the surface along with a process for determining the heat released by the specimen.

Three specimens of 155mm x 800mm were selected from the sample. The specimens were tested loose laid over a 12mm calcium silicate board. The specimens were tested individually with the face as the exposed side. Each specimen was placed in a cool specimen holder, away from the heat of the radiant panel and backed by a single sheet of specified Aluminium foil.

The time of ignition, spread of flame, its final extinguishment distance and time and heat for sustained burning were measured along with number of burning droplets.

The propane/air mix pilot light flame impinged over the top half of the exposed specimen height.

Duration of Test

The test was terminated, the specimen removed, and the dummy specimen in its holder reinserted when one of the following applied:

1. The specimens fails to ignite after a ten minute exposure
2. Three minutes passed after all flaming from the specimen ceased





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Requirements

Materials giving average values for all the surface flammability criteria not exceeding those found in the table for their respective uses are considered

	Bulkhead, wall and ceiling linings	Floor coverings	Primary deck coverings
CFE (kW/m ²)	≥20.0	≥7.0	≥7.0
Qsb (MJ/m ²)	≥1.5	≥0.25	≥0.25
Qt (MJ)	≤0.7	≤2.0	≤2.0
Qp (kW)	≤4.0	≤10.0	≤10.0
Burning Droplets	Not produced	No more than 10 burning drops	Not produced

CFE = Critical flux at extinguishment
Qsb = Heat for sustained burning
Qt = Total heat release
Qp = Peak heat release rate

Results

The test results relate only to the behaviour 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.

Parameter	Specimen 1	Specimen 2	Specimen 3	Mean Value
Critical flux at extinguishment (kW/m ²)	21.46	6.7	7.18	11.78
Heat for sustained burning (MJ/m ²)	0.453	1.835	0.445	0.91
Total heat release (MJ)	1.46	1.872	1.716	1.68
Peak heat release rate (kW)	3.6	4.71	3.82	4.04
Burning Droplets	0	4	5	3



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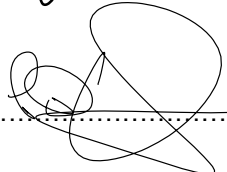
Eco-Sol Ltd

Comment

In our opinion, based on the test carried out on the sample supplied; the results indicate the sample meets the requirements for floor coverings according to IMO 2010 FTP Code, Part 5.

An estimation of uncertainty of measurement has not been taken into account when making a judgement to any pass/fail criteria.

Reported by:.....  R Ryan, Fire Technician

Countersigned by:.....  P Doherty, Operational Head

Enquiries concerning this report should be addressed to Customer Services.

