

# *W*arrington **FIRE** *research*

**Test Report**  
**WARRES No. 133851**  
**ASTM E662-97; Standard Test Method For**  
**Specific Optical Density Of Smoke**  
**Generated By Solid Materials**  
**Sponsored By**  
**Acourete**

### **Purpose Of Test**

To determine the performance of specimens of a product when they are subjected to the conditions of the test specified in the ASTM E662-97 "Standard test method for specific optical density of smoke generated by solid materials".

### **Description Of Test Specimens**

The description of the specimens given below has been prepared from information provided by the sponsor of the test. All values quoted are nominal, unless tolerances are given.

The specimens comprised "ACOURETE FIBER" (colour reference "White"), a sound absorption blanket having an overall thickness of 5mm and a density of 600 g/m<sup>3</sup>.

The sponsor stated that the main material utilised in the production of the blanket was polypropylene based fibers and the remainder (<5%) was polyester resin. The blanket was produced utilising a melt-blown process at high temperature, high pressure and high speed.

The specimens were supplied by the sponsor. Warrington Fire Research Centre was not involved in any selection or sampling procedure.

### **Conditioning Of Specimens**

The specimens were received on the 28' July 2003.

Three specimens were conditioned at  $60 \pm 3^{\circ}\text{C}$  for 24 hours and then conditioned to constant mass at a temperature of  $23 \pm 3^{\circ}\text{C}$  and a relative humidity of  $50 \pm 10\%$  prior to testing.

### **Date Of Test**

The test was performed on the 12' August 2003.

### **Test Procedure**

The test was performed in accordance with the procedure specified in ASTM E662-97, and this report should be read in conjunction with that Standard. Both the flaming and non-flaming mode procedures were conducted.

### **Specimen Orientation**

The decorative face of the specimens was exposed to the radiant heat of the test when the specimens were mounted in the test position.

### **Test Results**

The results of the tests are given below.

These results relate only to the behaviour of the specimens of the product under the particular conditions of test; they are not intended to be the sole criterion for assessing the potential smoke obscuration hazard of the product in use, and are based on the first 20 minutes of the tests as specified in paragraph 11.13 of the Standard.

### A. Flaming Mode

	SPECIMEN NUMBER			Mean
	1	2	3	
Time to Max. Specific Optical Density (min)	19	19.5	16.5	18.3
Max. Specific Optical Density $D_s$ max (corrected). $D_m$ (corrected)	108	101	121	110
Mass Loss (%)	2.1	2.1	2.0	2.1

### A. Non Flaming Mode

	SPECIMEN NUMBER			Mean
	1	2	3	
Time to Max. Specific Optical Density (min)	Not applicable	Not applicable	Not applicable	Not applicable
Max. Specific Optical Density $D_s$ max (corrected). $D_m$ (corrected)	73*	36*	69*	59*
Mass Loss (%)	**	**	**	**

\*Uncorrected  $D_s$  at 20 minutes quoted due to extended test period.

\*\* Unable to calculate because of extended test period, refer to note below

Because the minimum light transmittance levels were not reached during the first 20 minutes of the tests, for each of the specimens tested in the non-flaming mode, the duration of these tests were extended to identify the time at which such levels were attained. The results obtained from this extended exposure are attached as Appendix I.

A tabulation of time versus  $D_s$  (specific optical density) for each run of the three test specimens in both the flaming and non flaming modes is given in Appendix II.

### **Validity**

The specification and interpretation of fire test methods are the subject of ongoing development and refinement. Changes in associated legislation may also occur. For these reasons it is recommended that the relevance of test reports over five years old should be considered by the user. The laboratory that issued the report will be able to offer, on behalf of the legal owner, a review of the procedures adopted for a particular test to ensure that they are consistent with current practices, and if required may endorse the test report.

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#### **Responsible Officer**



**B KINSELLA**  
Testing Officer  
Reaction to Fire Testing

#### **Approved**



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**WARRINGTON FIRE RESEARCH CENTRE**

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