

2395 SPEAKMAN DRIVE, MISSISSAUGA, ONTARIO CANADA L5K 1B3 • TEL: (905) 822-4111 • FAX: (905) 823-1446

ASTM E 662 Rate of Smoke Generation of "7500 Series Glo Brite" Material

A Report To: **Jessup Manufacturing Company**
2815 West Route 120
McHenry, Illinois 60050
USA

Phone: (815) 385-6650
Fax: (815) 385-0079

Attention: Al Carlson

Submitted By: Fire Testing

Report No. 06-02-605(B)
3 pages + 1 appendix

Date: September 7, 2006

ACCREDITATION Standards Council of Canada, Registration #1.

REGISTRATION ISO 9001:2000, registered by QMI, Registration #001109.

SPECIFICATIONS OF ORDER

Determine rate of smoke generation according to ASTM E 662, as per your P.O. #18083-00 and our Quotation No. 06-02-04856 accepted July 21, 2006.

IDENTIFICATION

Photoluminescent material with self-adhesive backing (peel and stick), approximately 0.2 mm in thickness, identified as "7500 Series Glo Brite".

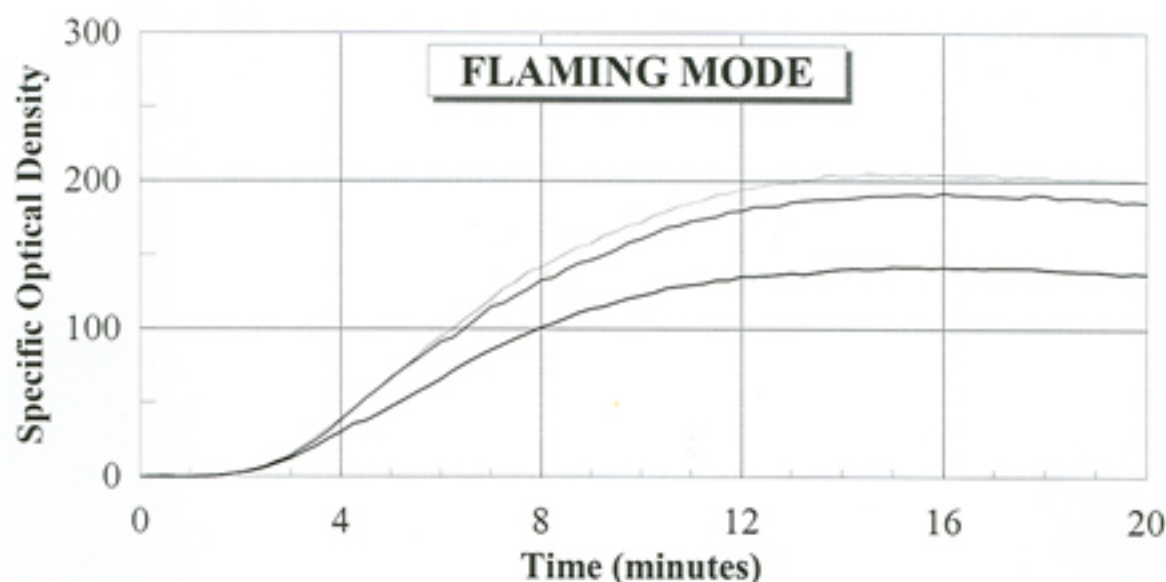
(Bodycote sample identification number 06-02-S0605)

TEST RESULTS

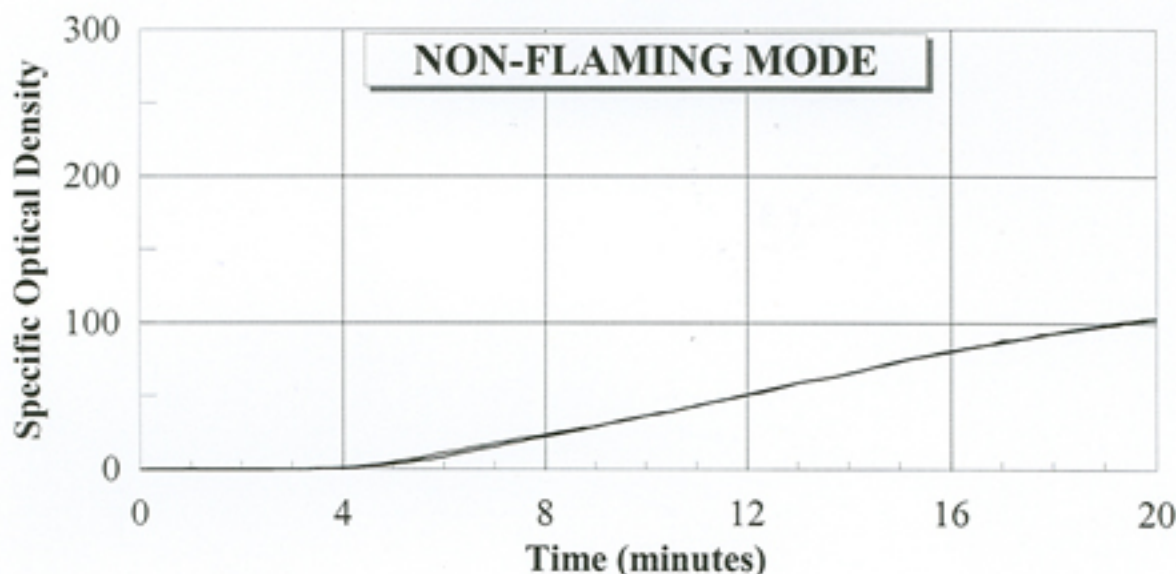
Note: Prior to testing the material was adhered to 6 mm thick fiberglass reinforced cement board.

ASTM E 662-06

Specific Optical Density of Smoke Generated by Solid Materials



Flaming Mode	Test	#1	#2	#3	Average	Specified Maxima
Specific Optical Density at 1.5 minutes		1	1	1	1	100
Specific Optical Density at 4.0 minutes		30	38	38	36	200
Maximum Specific Optical Density		142	193	205	180	-
Maximum Corrected Optical Density		136	188	199	175	-

TEST RESULTS (Cont..)**ASTM E 662-06**Specific Optical Density of Smoke Generated by Solid Materials

Non-Flaming Mode	Test	#1	#2	#3	Average	Specified Maxima
Specific Optical Density at 1.5 minutes		0	0	0	0	100
Specific Optical Density at 4.0 minutes		1	1	1	1	200
Maximum Specific Optical Density		104	103	102	103	-
Maximum Corrected Optical Density		102	101	101	102	-

CONCLUSIONS

The photoluminescent material identified in this report, when tested adhered to cement board at an approximate thickness of 0.2 mm, meets The Federal Railroad Administration requirements as they pertain to rate of smoke generation (ASTM E 662).

M. Garces,
Fire Testing.

Richard J. Lederle,
Fire Testing.

Note: This report consists of 3 pages, including the cover page, that comprise the report "body". It should be considered incomplete if all pages are not present. Additionally, the Appendix of this report comprises a cover page, plus 1 page.

APPENDIX

(1 Page)

Summary of Test Procedure

ASTM E 662-06

Specific Optical Density of Smoke Generated by Solid Materials (NBS Smoke Chamber)

This method of test covers a procedure for measuring the smoke generated by solid materials and assemblies in thickness up to and including 1 inch (25.4 mm). Measurement is made of the attenuation of a light beam by smoke (suspended solid or liquid particles) accumulating within a closed chamber due to nonflaming pyrolytic decomposition and flaming combustion. Results are expressed in terms of specific optical density (Ds), which is derived from a geometrical factor and the measured optical density (absorbance).

Specimens are dried for 24 hours at 60°C and conditioned to equilibrium at 50% RH and 23°C.

Three specimens, 3" square, are exposed to each mode of combustion. The % light transmittance during the course of the combustion is recorded. These data are used to express the quantity of smoke in the form of Specific Optical Density based on the following formula which assumes the applicability of Bouguer's law:

$$Ds = (V/AL) \cdot \log(100/T) = G \cdot \log(100/T) = 132 \cdot \log(100/T)$$

Where: Ds = Specific Optical Density

T = % Transmittance

V = Chamber Volume (18 ft³)

A = Exposed Area of the Sample (0.0456 ft²)

L = Length of Light Path in Chamber (3.0 ft)

G = Geometric Factor

Among the parameters normally reported are:

Ds	
1.5	- specific optical density after 1.5 minutes
Ds	
4.0	- specific optical density after 4.0 minutes
Dm	- maximum specific optical density at any time during the 20 minute test
Dm	
(corr)	- Dm corrected for incidental deposits on the optical surfaces

Transit authorities generally specify a maximum Ds 1.5 of 100 and a maximum Ds 4.0 of 200 in either flaming or non-flaming test mode.