

# Special Reference Material Report

## GM 39

### Rigid Polyurethane Foam Sprayed on Asbestos Cement Board (Freon Blown, Polymeric Isocyanate)

This material was prepared to provide a uniform lot of cellular plastic for use in fire research. Produced under the sponsorship of the Products Research Committee (PRC) on the Fire Safety Aspects of Cellular Plastic Products, these materials are being distributed by the NBS Office of Standard Reference Materials as Special Reference Material, GM 39.

The chemical and physical information provided for this material has been derived from data submitted to the PRC by the manufacturers of the material and/or independent testing laboratories. Neither PRC nor NBS assumes any responsibility for the accuracy of this information.

Applicable American Society for Testing and Materials (ASTM) test methods are indicated.

<u>Property<sup>(1)</sup></u>	<u>ASTM Test</u>	<u>Rating</u>
Apparent Density, lb/ft <sup>3</sup>	D-1622	2
Thermal Conductivity, K-Factor, BTU·in/h·ft <sup>2</sup> ·°F	C-177	0.12-0.14
Closed Cell Content, % <sup>(2)</sup>	D-1940	95
Compressive Strength, psi	D-1621	
Parallel		30
Perpendicular		21
Compressive Modulus, psi	D-1621	
Parallel		940
Perpendicular		450
Tensile Strength, psi	D-1623	
Parallel		45
Perpendicular		ND*
Flexural Strength, psi	C-203	52.6
Shear Strength, psi	C-273	
Parallel		ND
Perpendicular		36
Shear Modulus, psi	C-273	
Parallel		ND
Perpendicular		ND
Coefficient of Linear Expansion, in/in·°F	NA	ND
Water Absorption, % by volume, 96h under 5.1 cm (2 in) head	D-2842	ND
Water Vapor Permeability, Perm-in	C-355	ND

<sup>(1)</sup> To serve only as a guide for engineering design. Values shown are average values obtained from laboratory specimens. All test methods taken from 1971 ASTM Book of Standards unless otherwise noted. Properties measured to direction of rise as indicated.

<sup>(2)</sup> Taken from 1968 ASTM Book of Standards.

\* ND = Not Determined.

(over)

<u>Property<sup>(1)</sup></u>		<u>ASTM Test</u>	<u>Rating</u>
Dimensional Stability		D-2126	
Net Change in Volume, %		70±1°C, 90-100% R.H.	
1 day			2.5
7 day			4.2
14 day			5.4
Surface Burning Characteristics		E-84	
	Flame Spread Classification**	Smoke Density	Fuel Contribution
<u>Thickness</u>			
1 in	50**	180	10
2 in	50**	350-450	ND
3 in	50**	Over 500	ND

\*\* THIS NUMERICAL FLAME SPREAD RATING IS NOT INTENDED TO REFLECT HAZARDS PRESENTED BY THIS OR ANY OTHER MATERIAL UNDER ACTUAL FIRE CONDITIONS.