

# Special Reference Material Report

## GM 49 and GM 50

### Polystyrene Expanded with Fire Retardant

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 Materials, GM 49 and GM 50.

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</u>	<u>ASTM Test</u>	<u>Rating</u>
Density, lb/ft <sup>3</sup>	NA	1.0 ± 0.1
Thermal Conductivity, K-Factor, BTU·in/h·ft <sup>2</sup> ·°F,	C-177	
40°F Mean		0.24
70°F Mean		0.26
Closed Cell Content, %	D-2856	ND*
Compressive Strength, psi	D-1621	
5% Deflection		10
10% Deflection		13
Compressive Modulus, psi	D-1621	ND
Tensile Strength, psi	D-1623	
Parallel		ND
Perpendicular		ND
Flexural Strength, psi	C-203	25
Shear Strength, psi	C-273	
Parallel		ND
Perpendicular		ND
Shear Modulus, psi	C-273	
Parallel		ND
Perpendicular		ND
Coefficient of Linear Expansion, in/in·°F	D-696	3.5 × 10 <sup>-5</sup>
Water Absorption, % by volume	C-272	2.5
Water Vapor Permeability, Perm-in	C-355	3.0
Dimensional Stability	D-2126	ND
Surface Burning Characteristics	E-84	ND

\* ND = Not Determined.