

Special Reference Material Report

GM 29 and GM 30

Rigid Polyurethane Foam

(Fluorocarbon 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 Materials, GM 29 and GM 30.

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> ⁽¹⁾	<u>ASTM Test</u>	<u>Rating</u>
Apparent Density, lb/ft ³	D-1622	2.1 - 2.3
Thermal Conductivity, K-Factor, BTU·in/h·ft ² ·°F	C-177 or D-518	0.11 (initial) to 0.14 (aged)
Closed Cell Content, %	D-2856	ND*
Compressive Strength, psi	D-1621	
Parallel ⁽²⁾		33
Perpendicular		22
Compressive Modulus, psi	D-1621	
Parallel		700
Perpendicular		500
Tensile Strength, psi	D-1623	
Parallel		40
Perpendicular		35
Flexural Strength, psi	C-203	ND
Shear Strength, psi	C-273	
Parallel		ND
Perpendicular		25
Shear Modulus, psi	C-273	
Parallel		ND
Perpendicular		ND
Coefficient of Linear Expansion, in/in·°F	NA	5×10^{-5}
Water Absorption, % by volume, 96h under 5.1 cm (2 in) head	D-2842	0.05
Water Vapor Permeability, Perm-in	C-355	2.0

* ND = Not Determined.

⁽¹⁾ To serve only as a guide for engineering design.

⁽²⁾ Properties measured to direction of rise as indicated.

(over)

<u>Property⁽¹⁾</u>	<u>ASTM Test</u>	<u>Rating</u>
Dimensional Stability	D-2126	
Net Change in Volume, %	70±1°C amb R.H.	
1 day		1.2
7 day		1.7
28 day		2.7
Average Linear Change, %		
1 day		0.6
7 day		0.8
28 day		1.4
Net Change in Volume, %	70±1°C 90-100%R.H.	
1 day		1.6
7 day		3.0
28 day		4.5
Average Linear Change, %		
1 day		0.8
7 day		1.7
28 day		2.5
Surface Burning Characteristics	E-84	ND