Polyurethanes

Baydur®

Polyurethane
Structural Foam RIM

Typical Properties*	ASTM Test Method (Other)	U.S. Conventional Units	646			660 IBS		730 IBS		726 IBS	
			Density 15 pcf	Density 20 pcf	Density 25 pcf	Density 30 pcf	Density 40 pcf	Density 35 pcf	Density 40 pcf	Density 40 pcf	Density 55 pcf
GENERAL											
Specific Gravity	D 792		0.24	0.32	0.40	0.48	0.64	0.56	0.64	0.64	0.88
Density	D 1622	lb/ft³	15	20	25	30	40	35	40	40	55
Thickness		in	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250
Shore Hardness	D 2240	A or D	28 D	37 D	46 D	55 D	67 D	60 D	65 D	66 D	81 D
Mold Shrinkage	(Bayer)	%	0.3-0.5	0.3-0.5	0.3-0.5	0.3-0.5	0.3-0.5	0.7-0.9	0.7-0.9	0.7-0.9	0.7-0.9
MECHANICAL											
Tensile Strength, Ultimate	D 638/D 412	lb/in²	560	880	1,200	1,950	3,200	2,100	2,700	3,100	4,800
Elongation at Break	D 638/D 412	%	7	7	7	7	7	10	10	8	8
Flexural Modulus	D 790	lb/in²	32,000	44,000	67,000	104,000	173,000	110,000	140,000	160,000	240,000
Flexural Strength	D 790	lb/in²	950	1,200	2,000	3,500	3,700	4,000	50,000	5,600	9,000
Compressive Strength	D 395	lb/in²	430	880	1,150	2,500	4,500	2,000	2,800	4,000	6,000
Impact Strength:											
Charpy Impact	(Bayer)	ft·lb/in²	1.8	2.5	3.5	4.5	6.8	10	13	8	15
Notched Izod	D 256	ft·lb/in									
Unnotched	D 256	ft·lb/in									
THERMAL											
Deflection Temperature Under Load:	D 648										
264 psi		°F									
66 psi		°F				171	185	158	176	181	212
Heat Sag:	D 3769										
6-in Overhang, 1 hr at 250°F		in									
4-in Overhang, 1 hr at 250°F		in									
Coefficient of Linear Thermal Expansion	D 696	in/in/°F						44 E-06	50 E-06	44 E-06	50 E-06
Relative Temperature Index:	(UL746B)										
0.125-in Thickness:											
Electrical		°C									
Mechanical with Impact		°C									
Mechanical without Impact		°C									
FLAMMABILITY†											
UL94 Flame Class:	(UL94)										
0.125-in (3.18-mm) Thickness		Rating									
0.250-in (6.35-mm) Thickness		Rating						HB	HB	V-0/5VA	V-0/5VA
ELECTRICAL											
Volume Resistivity	D 257	ohm·cm								2.9 E+14	2.9 E+14
Surface Resistivity	D 257	ohm								1.0 E+15	1.0 E+15
Dielectric Strength	D 149	V/mil								320	320
Dielectric Constant (Tinfoil Electrodes): 1 MHz	D 150									2.69	2.69

* These items are provided as general information only. They are approximate values and are not part of the product specifications.
† Flammability results are based on small-scale laboratory tests for purposes of relative comparison and are not intended to reflect the hazards presented by this or any other material under actual fire conditions.
[1] Milled glass fiber, OCF 737, 1/16 in.
[2] Continuous strand fiberglass mat.
[3] Directed chopped fiber preform.

Note 1
All directional properties are listed parallel to flow.

Note 2
IBS: Interactive Blowing System.
IMR: Internal Mold Release.
RIM: Reaction Injection Molding.