



Material Properties of Sorbothane®

EFFECTIVE 1/27/15

PROPERTY	DUROMETER (Shore 00)			UNITS	NOTES
	30	50	70		
Tensile Strength at Break	110	172	173	psi	ASTM D 412-06a
Elongation at Break	645	653	395	%	ASTM D 412-06a
Tensile Strength at 100% Strain	13	23	47	psi	ASTM D 412-06a
Tensile Strength at 200% Strain	26	38	81	psi	ASTM D 412-06a
Tensile Strength at 300% Strain	37	53	118	psi	ASTM D 412-06a
Compressive Stress at 10% Strain	1.8	3.7	10.7	psi	ASTM D 575-91, Method A
Compressive Stress at 20% Strain	4.7	8.9	23.9	psi	ASTM D 575-91, Method A
Compression Set	6	5	3	%	ASTM D 395
Tear Strength	16	20	31	lb/in	ASTM D 624-00, Die C
Bulk Modulus	4.71	3.84	4.14	gPascal	
Poisson's Ratio	0.4066	0.4856	0.4947		
Density	81.91	81.78	82.28	lb/ft ³	ASTME D 792-13
Specific Gravity	1.312	1.310	1.318		ASTME D 792-13
Optimum Performance Temperature Range	-20° to +140°	-20° to +150°	-20° to +160°	°F	Reduced strength and damping up to 200°F. Increased spring rate down to glass transition temperature.
Glass Transition	-36	-37	-38		ASTM E 1640-09 by Peak Tan Delta
Flash Ignition Flammability	570°	570°	570°		
Self Ignition Flammability	750°	750°	750°		
Tested Flammability Rating with Retardant	V2*	V2*	V2*		Underwriters Laboratory UL-94 (burns but self-extinguishing when flame removed)
Resilience Test Rebound Height	11	15	29	%	ASTM D 2632-92
Resilience Test Rebound Height	11	13	28	%	ASTM D 2632-92. Modified for the effects of material tackiness.
Dielectric Strength	277	256	273	V/ml	ASTM D 149-13, Method A
Dyanmic Young's Modulus at 5 Hertz	44, 50, 58	89, 101, 118	180, 204, 238	psi	Dyanmic Young's Modulus at 5 Hertz at 10%, 15%, 20%
Dyanmic Young's Modulus at 15 Hertz	65, 74, 85	121, 135, 156	223, 252, 294	psi	Dyanmic Young's Modulus at 15 Hertz at 10%, 15%, 20%
Dyanmic Young's Modulus at 30 Hertz	85, 95, 110	147, 165, 190	258, 291, 338	psi	Dyanmic Young's Modulus at 30 Hertz at 10%, 15%, 20%
Dyanmic Young's Modulus at 50 Hertz	103, 116, 133	172, 191, 220	289, 325, 377	psi	Dyanmic Young's Modulus at 50 Hertz at 10%, 15%, 20%
Tangent Delta at 5 Hz Excitation	0.58	0.40	0.20		
Tangent Delta at 15 Hz Excitation	0.64	0.46	0.28		
Tangent Delta at 30 Hz Excitation	0.68	0.50	0.33		
Tangent Delta at 50 Hz Excitation	0.69	0.52	0.36		
Bacterial Resistance	No Growth	No Growth	No Growth		ASTM G 21-09
Fungal Resistance	No Growth	No Growth	No Growth		ASTM G 22
Heat Aging	Stable	Stable	Stable		72 hours @ 158°F shows no change in size, appearance or durometer
Ultraviolet	Good	Good	Good		
Ozone					Can be compounded for resistance
Acoustic Properties: Transmission Loss in Air	greater than 40	greater than 40	greater than 40	decibel/cm	At 50 Hz. Transmission loss increases with frequency

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Chemical Resistance to Distilled Water	78.1	67.0	49.2	% wt change	ASTM D 543, 7-day immersion
Chemical Resistance to City Water	74.6	65.3	47.8	% wt change	ASTM D 543, 7-day immersion
Chemical Resistance to Hydraulic Fluid	-3.4	-3.2	-2.6	% wt change	ASTM D 543, 7-day immersion
Chemical Resistance to Kerosene	2.3	2.6	3.3	% wt change	ASTM D 543, 7-day immersion
Chemical Resistance to Diesel	-0.9	-0.5	0.5	% wt change	ASTM D 543, 7-day immersion
Chemical Resistance to 50% Ethanol	104.0	94.6	69.0	% wt change	ASTM D 543, 7-day immersion
Chemical Resistance to Soap Solution	128.1	108.0	67.1	% wt change	ASTM D 543, 7-day immersion
Chemical Resistance to Gasoline	30.1	28.9	25.6	% wt change	ASTM D 543, 7-day immersion
Chemical Resistance to Turpentine	17.5	16.8	15.6	% wt change	ASTM D 543, 7-day immersion
Chemical Resistance to Motor Oil 15W40	-4.3	-4.1	-3.4	% wt change	ASTM D 543, 7-day immersion
Chemical Resistance to Hexane	3.1	3.7	4.0	% wt change	ASTM D 543, 7-day immersion
Chemical Resistance to IRM 903	-2.9	-3.1	-2.1	% wt change	ASTM D 543, 7-day immersion
Chemical Resistance to 1N Acetic Acid	40.6	27.2	14.1	% wt change	ASTM D 543, 7-day immersion
Chemical Resistance to Ethylene Glycol	2.7	2.8	2.5	% wt change	ASTM D 543, 7-day immersion
Chemical Resistance to 1N NaOH	24.2	23.8	20.5	% wt change	ASTM D 543, 7-day immersion