GENERALPLASTICS MANUFACTURING COMPANY

LAST-A-FOAM® FR-3700 RIGID POLYURETHANE FOAM (Metric Units)

PROPERTY	Test Method	FR-3703	FR-3704	FR-3705	FR-3706	FR-3707	FR-3708	FR-3710	FR-3712	FR-3715	FR-3718	FR-3720	FR-3725	FR-3730	FR-3740
Density (kg/m^3)	ASTM D-1622	48	64	80	96	112	128	160	192	240	288	320	400	481	641
Compressive Strength (kPa)															
Parallel to Rise															
-54°C	ASTM D-1621	480	830	1,250	1,650	2,050	2,500	3,450	4,150	7,600	11,000	13,400	20,300	27,200	40,000
24°C		310	480	760	1,050	1,250	1,500	2,050	2,550	5,000	7,600	8,600	15,200	20,300	31,000
93°C		240	410	550	690	860	1,034	1,450	1,650	2,900	4,150	4,950	8,600	11,700	13,800
121°C		170	280	410	520	620	760	1,050	1,300	2,150	2,950	3,400	5,600	7,600	11,400
Perpendicular to Rise															
-54°C	ASTM D-1621	450	690	1,150	1,600	2,050	2,500	3,500	4,250	7,600	11,000	13,100	21,400	29,000	44,100
24°C		280	450	760	1,050	1,300	1,600	2,200	2,750	5,200	7,600	9,000	15,200	20,300	31,000
93°C		210	340	480	690	830	1,050	1,400	1,700	3,100	4,400	5,200	8,900	12,100	18,600
121°C		170	280	380	520	660	850	1,100	1,400	2,200	3,100	3,450	5,800	7,900	11,700
Compressive Modulus (kPa)															
Parallel to Rise															
-54°C	ASTM D-1621	12,100	20,300	29,300	37,900	44,800	55,800	75,800	92,400	152,000	211,000	272,000	312,000	383,000	514,000
24°C		8,600	14,100	22,800	31,000	37,900	47,600	66,200	80,700	131,000	181,000	218,000	282,000	355,000	498,000
93°C		6,800	11,400	17,200	23,400	27,600	35,900	50,300	60,000	102,000	144,000	175,000	265,000	352,000	526,000
121°C		4,900	8,300	13,400	18,600	22,100	29,000	39,300	49,600	81,000	112,000	124,000	197,000	258,000	381,000
Perpendicular to Rise															
-54°C	ASTM D-1621	11,000	16,900	26,200	35,200	43,400	53,800	74,500	91,000	154,000	216,000	270,000	325,000	404,000	557,000
24°C		7,600	12,100	20,700	29,000	36,500	46,200	64,100	80,700	133,000	186,000	221,000	283,000	352,000	488,000
93°C		5,700	9,000	15,200	21,700	26,900	34,100	47,600	60,000	104,000	148,000	173,000	273,000	363,000	543,000
121°C		4,500	7,600	12,400	17,200	21,400	27,200	37,900	46,900	81,000	114,000	125,000	204,000	268,000	399,000
Tensile Strength (kPa)															
Parallel to Rise	ASTM D-1623 Type A Specimens	520	690	900	1,150	1,250	1,500	2,000	2,350	3,700	5,100	5,700	9,700	12,800	19,000
Perpendicular to Rise		480	660	860	1,100	1,250	1,550	2,050	2,400	3,800	5,200	5,500	9,700	13,100	20,000
Shear Strength (kPa)															
Rise Parallel to Specimen Width	ASTM C273 in Compression *Modified sample size = 0.64cm x 2.54cm x 7.62cm	280	450	620	690	950	1,150	1,550	1,800	3,050	3,950	4,750	6,700	9,000	13,800
Shear Modulus (kPa)															
Rise Parallel to Specimen Width	ASTM C273 in Compression *Modified sample size = 0.64cm x 2.54cm x 7.62cm	13,800	24,100	32,400	37,900	50,300	60,000	79,300	101,000	133,000	172,000	186,000	255,000	262,000	421,000
Flexural Strength (kPa)															
Rise Parallel to Test Span	ASTM D-790 Method 1-A	450	690	1,100	1,450	1,700	2,150	2,950	3,450	5,700	7,900	8,600	14,500	19,000	28,600
Rise Parallel to Beam Thickness		410	690	1,100	1,500	1,850	2,300	3,100	3,850	5,900	7,900	8,600	14,500	17,200	28,600
Flexural Modulus (kPa)															
Rise Parallel to Test Span	ASTM D-790 Method 1-A	14,800	23,100	33,400	42,700	51,700	62,100	88,900	119,000	182,000	245,000	288,000	441,000	578,000	862,000
Rise Parallel to Beam Thickness		16,900	24,800	37,600	50,300	58,600	75,800	97,200	121,000	187,000	252,000	292,000	451,000	585,000	876,000
Thermal Conductivity (W/m·K)	ASTM C-518 at 24°C mean temp.	0.030	0.030	0.030	0.033	0.034	0.035	0.037	0.040	0.044	0.049	0.052	0.059	0.067	0.082
Coefficient of Thermal Expansion (m/m·K)	From -45 to +93°C, GP Method							63 x 10^{-6}							
Poisson's Ratio	Literature (Gibson & Ashby)							~ 0.3							
Specific Heat @25°C (J/g°C)	ASTM E-1269							1.477							
Heat of Combustion (MJ/kg)	ASTM D-240							27.16							
Glass Transition Temp, Tg (°C)	ASTM E-1824							138							
Maximum Use Temperature (°C)								127							
Fire Safety	Self-extinguishing via FAR 25.853 (A) App. F (a)(1)(i) & (ii) tested vertically on 1.27 cm thick specimen using 12- and 60- second ignition with a Bunsen burner														

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