

TYPICAL PHYSICAL PROPERTIES OF FROTH PAK FOAMS

	1.25 pcf HCFC	1.5 pcf HCFC	1.75 pcf HCFC	1.75 SR HCFC	1.75-25FS/ MSHA NCFC	1.75-25FS SR NCFC	1.75 B-2 HFC	1.75 B2 SR HFC	2.75 HCFC	2.75 B-2 NCFC	4.0 pcf NCFC
Flexural Strength ASTM C203											
Parallel, psi	17.1	29.8	23.0	39.0	18.7	19.9	15.1	n/a	46.1	50.3	64.1
Perpendicular, psi	26.2	34.3	42.6	73.6	35.1	46.3	n/a	n/a	63.7	75.2	81.9
Apparent K-Factor ASTM C518, (BTU·in)/(ft ² ·hr·°F)											
Initial	0.134	0.141	0.143	0.143	0.153	0.155	0.130	0.160	0.193	0.149	0.169
Aged 6 Months	0.182	0.172	0.187	0.181	0.226	0.207	n/a	0.203	0.231	0.186	0.212
Aged 12 Months	0.192	0.183	0.196	0.196	0.229	0.207	n/a	0.206	0.229	0.189	0.214
Aged 18 Months	0.196	0.187	0.204	0.204	0.230	0.213	n/a	0.206	0.241	0.189	0.217
Aged 24 Months	0.200	0.191	0.208	0.209	0.231	0.210	n/a	0.208	0.242	0.189	0.219
Accelerated Service Conditions ASTM D756											
Procedure A											
% Volume Change	10.45	6.57	2.97	0.26	3.62	3.75	3.65	n/a	3.2	3.61	8.51
% Weight Change	-1.45	-0.70	-1.75	-2.08	-1.78	-1.44	-1.17	n/a	-0.17	-0.83	-1.56
Procedure B											
% Volume Change	6.71	0.14	1.05	0.04	1.46	1.10	1.77	n/a	-0.1	0.10	1.56
% Weight Change	-1.78	-1.59	-2.19	-2.11	-2.82	-3.81	-1.29	n/a	-1.57	-0.87	-1.22
Procedure E											
% Volume Change	-7.07	21.40	9.91	6.64	2.84	4.28	15.88	n/a	4.65	2.57	5.74
% Weight Change	-5.42	-2.83	-2.84	-3.93	-1.84	-3.93	-2.69	n/a	-1.62	-1.87	-3.87
Compressive Strength ASTM D1621											
Parallel, psi	10.2	13.4	22.0	20.7	15.6	20.2	17.7	20.9	31.0	44.8	50.0
Perpendicular, psi	5.9	7.9	8.4	16.6	7.3	12.1	10.8	12.3	23.2	32.0	52.3
Apparent Density ASTM D1622, pcf	1.33	1.57	1.70	1.83	1.67	1.92	1.7	1.97	2.50	2.74	3.90
Water Absorption ASTM D2842											
% Water Absorbed	3.4	2.2	2.5	2.7	2.3	3.4	1.93	n/a	3.61	2.0	3.9

TYPICAL PHYSICAL PROPERTIES OF FROTH PAK FOAMS CONTINUED

	1.25 pcf HCFC	1.5 pcf HCFC	1.75 pcf HCFC	1.75 SR HCFC	1.75-25FS/ MSHA NCFC	1.75-25FS SR NCFC	1.75 B-2 HFC	1.75 SR HFC	2.75 HCFC	2.75 B-2 NCFC	4.0 pcf NCFC
Dimensional Stability ASTM D2126, % Vol Change											
100°F/100%RH@1wk	9.07	1.42	0.38	0.03	2.25	1.60	1.65	3.31	1.49	2.82	1.28
100°F/100%RH@2wks	9.66	1.84	0.91	-0.28	2.31	1.34	1.42	4.32	1.87	2.86	1.37
158°F/100%RH@1wk	0.00	11.91	15.57	3.18	2.90	2.38	4.96	0.43	2.31	2.14	13.42
158°F/100%RH@2wks	-0.42	10.61	14.02	3.33	1.81	1.67	4.98	-0.66	1.71	1.23	10.14
-40°F/amb RH@1wk	-3.72	1.32	-0.40	0.16	0.64	0.11	-0.36	-0.52	0.06	n/a	-0.02
-40°F/amb RH@2wks	-4.17	1.09	-0.04	0.36	0.60	0.05	0.00	-0.17	-0.61	n/a	0.03
-100°F/ambRH@1wk	-0.05	-3.86	-3.70	0.76	0.33	0.13	-1.24	-0.42	0.17	0.00	0.08
-100°F/ambRH@2wks	0.38	-5.09	-1.13	0.45	0.33	0.00	-2.14	-0.21	0.02	-0.03	0.07
158°F/amb RH@1wk	5.99	3.49	3.70	0.35	-0.09	1.12	1.81	2.31	0.09	0.47	2.73
158°F/amb RH@2wks	5.65	3.73	3.65	0.27	-0.43	0.69	1.40	1.56	0.01	0.72	1.66
212°F/amb RH@1wk	5.30	6.54	1.48	1.45	-0.10	0.55	8.83	1.17	1.8	1.01	9.02
212°F/amb RH@2wks	5.00	5.59	1.16	1.36	-1.75	-0.02	7.96	1.26	1.48	-0.22	6.22
Open Cell Content ASTM D2856											
% Open Cell Content	<1	<11	<8	<1	<2	<1	<4.5	2	<1	9	5
Tensile Strength ASTM D1623											
Parallel, psi	29.0	32.0	40.1	30.7	36.1	31.7	32.1	n/a	55.8	42.4	52.9
Perpendicular, psi	20.3	24.0	27.2	27.8	22.7	21.1	19.1	n/a	41.3	36.1	65.6
Shear Strength ASTM C273											
Parallel, psi	16.0	24.3	23.9	23.3	12.8	19.4	20.9	n/a	35.8	25.2	43.1
Perpendicular, psi	15.5	18.1	19.8	25.3	10.6	21.9	23.8	n/a	24.9	29.5	49.9
Water Vapor Transmission ASTM E96, perm-in	4.1	2.7	3.0	4.0	9.8	7.7	1.6	n/a	5.8	3.9	4.2

TYPICAL PHYSICAL PROPERTIES OF FROTH PAK FOAMS-METRIC

English Metric (kg/cubic m)	1.25 pcf HCFC 20 kg/m ₃	1.5 pcf HCFC 24 kg/m ₃	1.75 pcf HCFC 28 kg/m ₃	1.75 SR HCFC 28 kg/m ₃	1.75-25FS/ MSHA NCFC 28 kg/m ₃	1.75-25FS SR NCFC 28 kg/m ₃	1.75 B-2 HFC 28 kg/m ₃	1.75 SR HFC 28 kg/m ₃	2.75 HCFC 44 kg/m ₃	2.75 B-2 NCFC 44 kg/m ₃	4.0 pcf NCFC 64 kg/m ₃
Flexural Strength ASTM C203											
Parallel, kPa	117.9	205.4	158.6	268.9	128.9	137.2	104.1	n/a	317.8	346.8	441.9
Perpendicular, kPa	180.6	236.5	293.7	507.4	242.0	319.2	0.0	n/a	439.1	518.4	564.6
Apparent K-Factor ASTM C518, W/(m·K)											
Initial	0.019	0.020	0.021	0.021	0.022	0.022	0.019	0.023	0.028	0.021	0.024
Aged 6 Months	0.026	0.025	0.027	0.026	0.033	0.030	0.000	0.029	0.033	0.027	0.031
Aged 12 Months	0.028	0.026	0.028	0.028	n/a	n/a	0.000	0.030	0.033	0.027	n/a
Aged 18 Months	0.028	0.027	0.029	0.029	n/a	n/a	0.000	0.030	0.035	0.027	n/a
Aged 24 Months	n/a	n/a	0.030	n/a	n/a	n/a	0.000	0.030	0.035	0.027	n/a
Accelerated Service Conditions ASTM D756											
Procedure A											
% Volume Change	10.45	6.57	2.97	0.26	3.62	3.75	3.65	n/a	3.20	3.61	8.51
% Weight Change	-1.45	-0.70	-1.75	-2.08	-1.78	-1.44	-1.17	n/a	-0.17	-0.83	-1.56
Procedure B											
% Volume Change	6.71	0.14	1.05	0.04	1.46	1.10	1.77	n/a	-0.10	0.10	1.56
% Weight Change	-1.78	-1.59	-2.19	-2.11	-2.82	-3.81	-1.29	n/a	-1.57	-0.87	-1.22
Procedure E											
% Volume Change	-7.07	21.40	9.91	6.64	2.84	4.28	15.88	n/a	4.65	2.57	5.74
% Weight Change	-5.42	-2.83	-2.84	-3.93	-1.84	-3.93	-2.69	n/a	-1.62	-1.87	-3.87
Compressive Strength ASTM D1621											
Parallel, kPa	70.3	92.4	151.7	142.7	107.5	139.3	122.0	144.1	213.7	308.9	344.7
Perpendicular, kPa	40.7	54.5	57.9	114.4	50.3	83.4	74.5	84.8	159.9	220.6	360.6
Apparent Density ASTM D1622, kg/cubic m	21.29	25.14	27.22	29.30	26.74	30.74	27.22	31.54	40.03	43.87	62.44
Water Absorption ASTM D2842											
% Water Absorbed	3.4	2.2	2.5	2.7	2.3	3.4	1.9	n/a	3.6	2.0	3.9

TYPICAL PHYSICAL PROPERTIES OF FROTH PAK FOAMS-METRIC CONTINUED

English Metric	1.25 pcf HCFC 20 kg/m ₃	1.5 pcf HCFC 24 kg/m ₃	1.75 pcf HCFC 28 kg/m ₃	1.75 SR HCFC 28 kg/m ₃	1.75-25FS/MSHA NCFC 28 kg/m ₃	1.75-25FS SR NCFC 28 kg/m ₃	1.75 B-2 HFC 28 kg/m ₃	1.75 SR HFC 28 kg/m ₃	2.75 HCFC 44 kg/m ₃	2.75 B-2 NCFC 44 kg/m ₃	4.0 pcf NCFC 64 kg/m ₃
Dimensional Stability ASTM D2126, % Vol Change											
38°C/100%RH@1wk	9.07	1.42	0.38	0.03	2.25	1.60	1.65	3.31	1.49	2.82	1.28
38°C/100%RH@2wks	9.66	1.84	0.91	-0.28	2.31	1.34	1.42	4.32	1.87	2.86	1.37
70°C/100%RH@1wk	0.00	11.91	15.57	3.18	2.90	2.38	n/a	0.43	2.31	2.14	13.42
70°C/100%RH@2wks	-0.42	10.61	14.02	3.33	1.81	1.67	n/a	-0.66	1.71	1.23	10.14
-40°C/amb RH@1wk	-3.72	1.32	-0.40	0.16	0.64	0.11	-0.36	-0.52	0.06	n/a	-0.02
-40°C/amb RH@2wks	-4.17	1.09	-0.04	0.36	0.60	0.05	0.00	-0.17	-0.61	n/a	0.03
-73°C/ambRH@1wk	-0.05	-3.86	-3.70	0.76	0.33	0.13	n/a	-0.42	0.17	0.00	0.08
-73°C/ambRH@2wks	0.38	-5.09	-1.13	0.45	0.33	0.00	n/a	-0.21	0.02	-0.03	0.07
70°C/amb RH@1wk	5.99	3.49	3.70	0.35	-0.09	1.12	1.81	2.31	0.09	0.47	2.73
70°C/amb RH@2wks	5.65	3.73	3.65	0.27	-0.43	0.69	1.40	1.56	0.01	0.72	1.66
100°C/amb RH@1wk	5.30	6.54	1.48	1.45	-0.10	0.55	8.83	1.17	1.80	1.01	9.02
100°C/amb RH@2wks	5.00	5.59	1.16	1.36	-1.75	-0.02	7.96	1.26	1.48	-0.22	6.22
Open Cell Content ASTM D2856											
% Open Cell Content	<1	<11	<8	<1	<2	<1	<4	2	<6	<9	<5
Tensile Strength ASTM D1623											
Parallel, kPa	199.9	220.6	276.4	211.6	248.9	218.5	221.3	n/a	384.7	292.3	364.7
Perpendicular, kPa	139.9	165.5	187.5	191.7	156.5	145.5	131.7	n/a	284.7	248.9	452.2
Shear Strength ASTM C273											
Parallel, kPa	110.3	167.5	164.8	160.6	88.2	133.7	144.1	n/a	246.8	173.7	297.1
Perpendicular, kPa	106.9	124.8	136.5	174.4	73.1	151.0	164.1	n/a	171.7	203.4	344.0
Water Vapor Transmission ASTM E96											
x 10 ⁻¹² kg/(Pa·s·m ₂)	5.98	3.94	4.38	5.84	14.30	11.23	2.33	n/a	8.46	5.69	6.13