TECHNICAL DATA

EPS Geofoam · R-Values · Polyurea Performance · Wind Load · Fire Safety · Acoustic

1 EPS GEOFOAM DATA — ASTM D6817 PROPERTIES

EPS Geofoam per ASTM D6817 — applicable for geotechnical, below-grade, and structural fill applications. Also reference basis for high-density EPS specified in structural architectural applications.

Property	Units	EPS14 Type IX	EPS16 Type I	EPS19 Type VIII	EPS22 Type II	EPS39 Type XIV	EPS39 Type XIV	EPS46 Type XV
Min. Density	lb/ft³	0.70	0.90	1.15	1.35	1.80	2.40	2.85
Min. Density	kg/m³	11	14	18	22	29	38	45
Comp. Res. @10% def.	psi	5.6	10.2	16.0	19.6	29.0	40.0	50.0
Comp. Res. @1% def.	psi	0.4	0.7	1.1	1.4	2.7	3.5	4.3
Comp. Res. @5% def.	psi	2.2	3.0	5.6	7.3	10.9	15.0	18.8
Flexural Modulus	psi	220	400	540	730	1010	1500	1900
Flexural Str. (min.)	psi	10	25.0	30.0	30.0	50.0	60.0	75.0
Water Absorption (max.)	vol%	4.0	4.0	3.0	3.0	2.5	2.0	2.0
Oxygen Index (min.)	%	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Buoyancy Force	lb/ft³	61.7	61.5	61.3	61.1	60.0	60.0	59.5

2 EPS & PU FOAM R-VALUES BY TYPE & THICKNESS (ASTM C518 75°F)

Thickness (in)	EPS Type I 0.9 pcf	EPS Type II 1.35 pcf	EPS Type IX 1.80 pcf	PU Open-cell 0.5 lb	PU Closed-cell 2.0 lb	PU Rigid PIR 3.0 lb
1"	3.9	4.2	4.3	3.7	6.2	6.3
1-1/2"	5.8	6.3	6.5	5.5	9.3	9.4
2"	7.7	8.3	8.7	7.4	12.4	12.6
3"	11.6	12.5	13.0	11.1	18.6	18.9
4"	15.4	16.7	17.4	14.8	24.8	25.2
5"	19.2	20.9	21.8	18.5	31.0	31.5
6"	23.1	25.0	26.1	22.2	37.2	37.8
8"	30.8	33.4	34.8	29.6	49.6	50.4

3 FIRE SAFETY DATA SUMMARY — ASTM E84 / IBC 2603

ASTM Type	Density (lb/ft³)	Compressive Str. (psi)	Allow. Roof Uplift (psf)	Max Wind Speed Exp C (mph)	IBC Reference
EPS Type I	0.90	10–14	18–23	90–100	1-30 to 1-45
EPS Type II	1.35	15–21	27–35	110–120	1-60 to 1-75
EPS Type IX	1.80	25–33	33–45	120–135	1-75 to 1-90
PU CC SPF 2.0	2.0	20–35	38–47	125–135	1-60 to 1-75
PU Rigid 3.0	3.0	45	53–60	140–155	1-90 to 1-120
PU HD 6.0	6.0	125	80–88	165–175	1-120 to 1-150+

Values based on ICC-ES AC71 methodology, SF = 3.0. Actual design pressures are site-specific and must be calculated by licensed PE using ASCE 7-22 for project location, risk category, and exposure.

4 WIND LOAD QUICK REFERENCE — ASCE 7-22 / ICC-ES AC71

ASTM Type	Density (lb/ft³)	Compressive Str. (psi)	Allow. Roof Uplift (psf)	Max Wind Speed Exp C (mph)	IBC Reference
EPS Type I	0.90	10–14	18–23	90–100	1-30 to 1-45
EPS Type II	1.35	15–21	27–35	110–120	1-60 to 1-75
EPS Type IX	1.80	25–33	33–45	120–135	1-75 to 1-90
PU CC SPF 2.0	2.0	20–35	38–47	125–135	1-60 to 1-75
PU Rigid 3.0	3.0	45	53–60	140–155	1-90 to 1-120
PU HD 6.0	6.0	125	80–88	165–175	1-120 to 1-150+

Values based on ICC-ES AC71 methodology, SF = 3.0. Actual design pressures are site-specific and must be calculated by licensed PE using ASCE 7-22 for project location, risk category, and exposure.

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