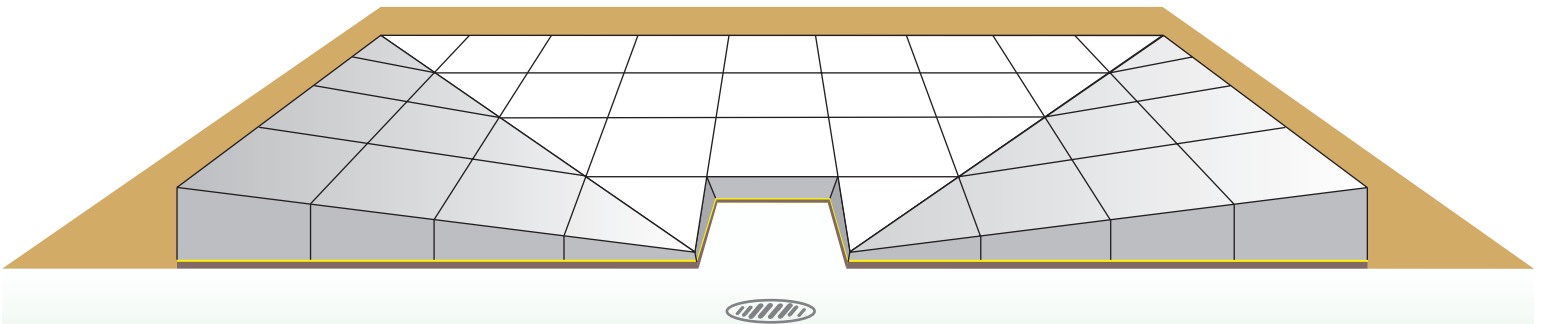




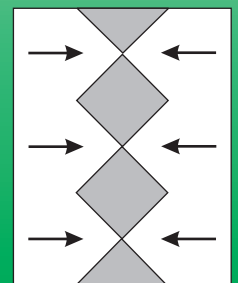
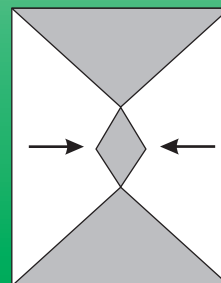
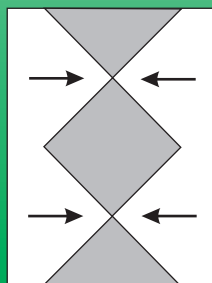
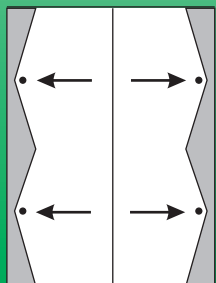
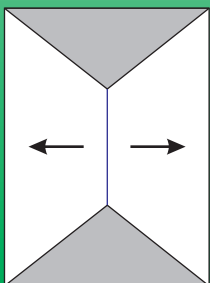
cellofoam®

# Tapered/Expanded Polystyrene Roof Insulation



## TAPERED ROOF INSULATION

- ▶ Designed to provide positive drainage of water. The added thickness to produce slope to drain is a positive factor in today's energy conscious society.
- ▶ The roof consists of pre-designed pieces of expanded polystyrene having a slope of 1/8", 3/16" or 1/4" per foot as required.
- ▶ This product can be supplied in various densities. (See product description or physical properties chart).
- ▶ Each piece is labeled as it is manufactured to coincide with the actual shop drawing, thus eliminating guess-work by the installers as to the placement of the insulation.
- ▶ Saddles and crickets are available as required.



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**1/8" per ft. Taper Average R Factors at Various Thicknesses**

	4.17	5.21	6.26	7.30	8.34	9.38	10.43	11.47	12.51	13.55	14.60
Number of Feet From Drain	0	4	8	12	16	20	24	28	32	36	40
Thickness of Insulation	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6
C-Factor	.24	.19	.16	.137	.12	.107	.096	.087	.08	.074	.068

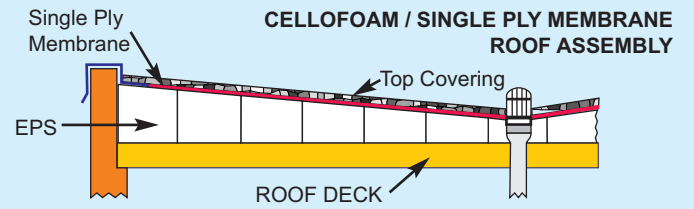
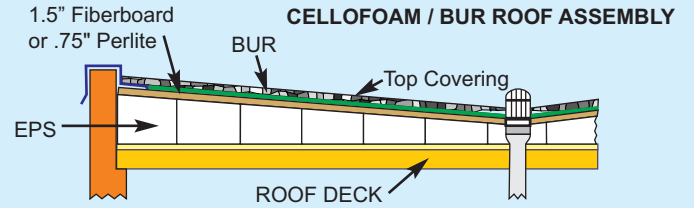
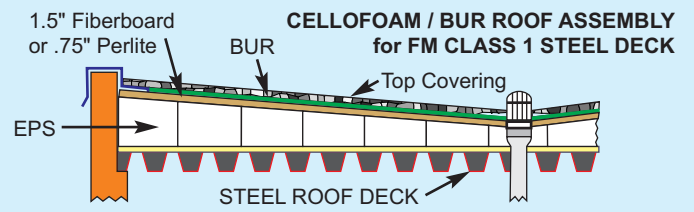
**3/16" per ft. Taper Average R Factors at Various Thicknesses**

	4.17	5.73	7.30	8.86	10.43	11.99	13.55	15.12	16.68	18.24	19.81
Number of Feet From Drain	0	4	8	12	16	20	24	28	32	36	40
Thickness of Insulation	1	1.75	2.5	3.25	4	4.75	5.5	6.25	7	7.75	8.5
C-Factor	.24	.175	.137	.113	.096	.083	.074	.066	.06	.055	.05

**1/4" per ft. Taper Average R Factors at Various Thicknesses**

	4.17	6.26	8.34	10.43	12.51	14.60	16.68	18.77	20.85	22.94	25.00
Number of Feet From Drain	0	4	8	12	16	20	24	28	32	36	40
Thickness of Insulation	1	2	3	4	5	6	7	8	9	10	11
C-Factor	.24	.16	.12	.10	.08	.07	.06	.053	.048	.044	.04

Data shown is computed from published K Factors, and based on 1.0 PCF density Expanded Polystyrene @ 40° F. Higher R values will be obtained if density of EPS is increased. Consult factory for additional information.



**Typical Physical Properties of EPS Insulation**

Property	Units	ASTM Test	Density (pcf)				
			1.0	1.25	1.5	2.0	
Thermal Conductivity	at 25F	BTU/ (hr.)	C177 or	0.23	0.22	0.21	0.20
K Factor	at 40F	(sq. ft.) (F/in.)	C518	0.24	0.235	0.22	0.21
	at 75F			0.26	0.255	0.24	0.23
Thermal Resistance Values (R)	at 25F	per inch		4.35	4.54	4.76	5.00
	at 40F	thickness		4.17	4.25	4.55	4.76
	at 75F			3.85	3.92	4.17	4.35
<b>Strength Properties</b>							
Compressive 10% Deformation	psi	D1621	10-14	13-18	15-21	25-33	
Flexural	psi	C203	25-30	32-38	40-50	55-75	
Tensile	psi	D1623	16-20	17-21	18-22	23-27	
Shear	psi	D732	18-22	23-25	26-32	33-37	
Shear Modulus	psi		280-320	370-410	460-500	600-640	
Modulus	psi		180-220	250-310	320-360	460-500	
<b>Moisture Resistance</b>							
WVT	perm in.	C355	1.2-3.0	1.1-28	0.9-2.5	0.6-1.5	
Absorption (vol.)	%	C272	< 2.5	< 2.5	< 2.0	< 1.0	
Capillarity			none	none	none	none	
<b>Coefficient of Thermal Expansion</b>							
	in./(in.) (F)	D696	0.000035	0.000035	0.000035	0.000035	
<b>Maximum Service Temperature</b>							
Long Term	°F		167	167	167	167	
Intermittent			180	180	180	180	

**Thermal Efficiency- EPS Roof Insulation**

Thickness	R Value	C Factor
2"	8.3	.12
2.5"	10.4	.10
3"	12.5	.08
3.5"	14.6	.07
4"	16.6	.06
5"	20.8	.05
6"	25.0	.04
8"	33.2	.03

NOTE: Values based on thermal conductivity (k) at 40° F mean test temperature for normal 1.0 pcf density EPS.

**Typical "U" Values - Roof Systems**

Deck Type	EPS or EPS/Composite C Factor		
	.10	.05	.03
Metal deck	.090	.047	.029
Poured gypsum (2.5")	.077	.043	.028
Lightweight concrete (2.5")	.072	.042	.027
Structural concrete (4")	.087	.046	.029
Wood (nominal 1")	.083	.045	.029

NOTE: Calculations based on ASHRAE handbook procedures and assume winter heat flow conditions.

The performance data herein reflects Cellofoam's expectation based on tests conducted in accordance with recognized standard methods. The sale of these products shall be subject to the terms and Conditions of Sale, INCLUDING those LIMITING WARRANTIES, as set forth in Cellofoam's invoices.

No agent, employee or representative of Cellofoam or its subsidiary or affiliated companies is authorized to modify this disclaimer.

Like many construction materials, expanded polystyrene insulation is combustible. It should not be exposed to flame or other ignition sources. **Consult installation instructions and current model building code requirements before use.**

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