

Expanded Polystyrene (EPS)

Cost-Effective & Versatile Insulation

In addition to its excellent insulation properties, expanded polystyrene (EPS) is an innovative building material that is well suited for the design and structural integrity of many building projects. EPS has become a popular choice for insulating roofs, walls and foundations for a wide variety of commercial and residential construction projects because it is:

- Economical
- Durable
- Functional
- Environmentally safe

EPS offers measurable energy savings, long-term R-value, effective water resistance, dimensional stability and strength when properly installed and protected from moisture.

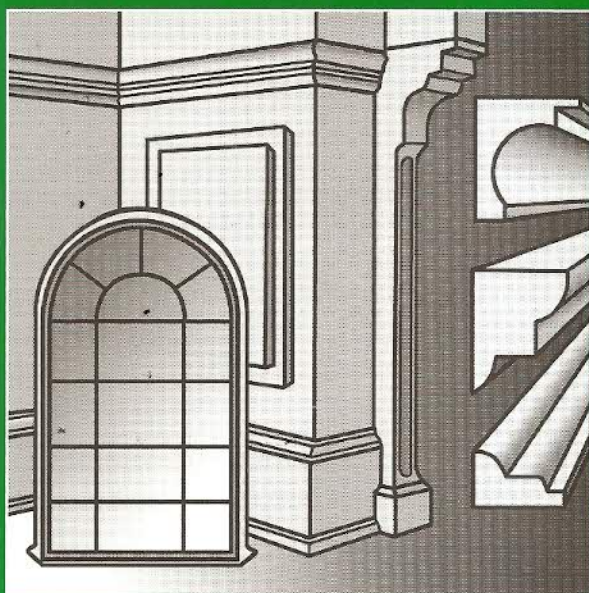
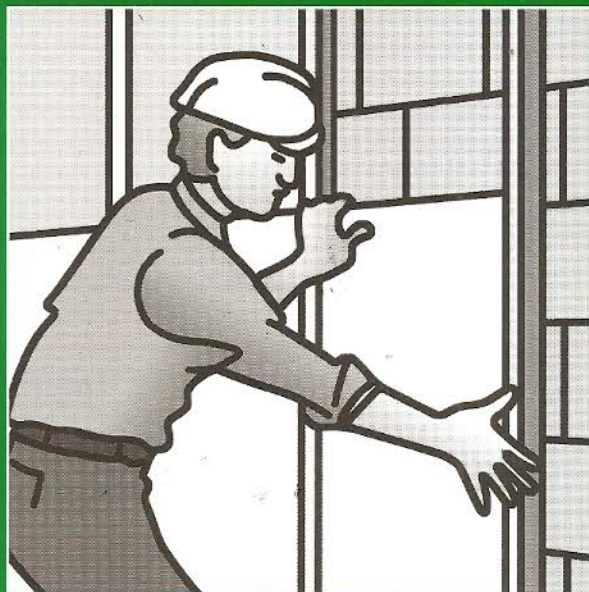
OPCO

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ROOFING INSULATION

The roofing system can be the most important and expensive aspect of a construction project. EPS meets the needs of the most demanding building requirements, can be used in almost any roofing system and is capable of providing cost-effective and consistent thermal performance. These systems may include flat and/or tapered foam insulation for use in traditional built-up assemblies and most single ply membrane systems.

WALLS

EPS foam-insulating sheathing is favored for its versatility, ease of installation and consistent performance. It's compatible with wood and steel framing as well as masonry applications. A wide variety of sidings and finishes can be easily attached through the exterior sheathing to produce the desired appearance of the building's exterior.

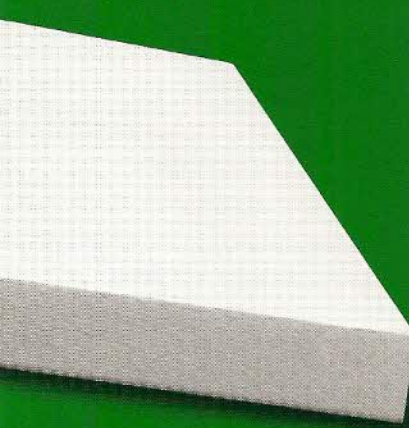
EIFS

Using EPS as an Exterior Insulating and Finish System (EIFS) offers numerous advantages for commercial buildings. With broad design and color flexibility, the stucco-like appearance of EIFS provides high curb appeal that's durable and energy efficient. Recently, the residential marketplace has also begun taking advantage of the many benefits of EIFS.

FOUNDATIONS

EPS insulation is an efficient method to conserve heating and cooling energy. The closed cell structure of EPS assures long-lasting thermal insulation properties and water resistance, and will not support the growth of bacteria or decay over time. Several compressive strengths are available to suit load and backfill force requirements.

TYPICAL PHYSICAL PROPERTIES OF EPS



PROPERTY	UNITS	DENSITY				ASTM TEST	
		(PCF)	1.0	1.25	1.5		2.0
Thermal Resistance R. Value	at 25°F	per inch	4.35	4.54	4.76	5.00	
	at 40°F	thickness	4.17	4.25	4.55	4.76	
	at 75°F		3.85	3.92	4.17	4.35	
Thermal Conductivity K Factor	at 25°F	BTU/(hr)	0.23	0.220	0.21	0.20	C-177 or
	at 40°F	(sq. ft.) (F/in.)	0.24	0.235	0.22	0.21	C158
	at 75°F		0.26	0.255	0.24	0.23	
Strength Properties							
Compressive (10% Deformation)	psi		10-14	13-18	15-21	25-33	D1621
Flexural	psi		25-30	32-38	40-50	55-75	C203
Tensile	psi		16-20	17-21	18-22	23-27	D1623
Shear	psi		18-22	23-25	26-32	33-37	D732
Shear Modulus	psi		280-320	370-410	460-500	600-640	-
Modulus of Elasticity	psi		180-220	250-310	320-360	460-500	-
Coefficient of Thermal Expansion	in./in./°F		0.000035	0.000035	0.000035	0.000035	D696
Moisture Resistance							
Water Vapor Transmission	Perm. In.		1.2-3.0	1.1-2.8	0.9-2.5	0.6-1.5	C355
Absorption (Vol.)	%		Less than 2.5	Less than 2.5	Less than 2.0	Less than 1.5	C272
Capillarity	-		None	None	None	None	-
Maximum Service Temperature	Long Term Intermittent °F		167	167	167	167	-
ASTM Classification			Type I	Type VIII	Type II	Type IX	

BENEFITS

- Easy to handle, lightweight, durable, heat resistant
- Saves time and labor cost
- Available in standard or custom-cut sizes and standard or specified thicknesses
- Maintains a constant R value
- Long-term thermal performance
- Effective vapor transmission
- Reduces air infiltration
- Resists water absorption
- Environmentally safe and recyclable
- UL listed

ADDITIONAL CONSTRUCTION APPLICATIONS

- Residing underlayment
- Wall cavity and block fill insulation
- Concrete slab-on-grade vapor retarder
- Exterior aged board

LIMITATIONS

Even though EPS is fire retardant and will not support combustion, it should not be exposed to open flames or other direct or indirect ignited sources



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