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## Typical Properties of Imperial Foam Expanded Polystyrene

ASTM C578	Units	XI	I	VIII	II	IX
Nominal Density	Cubic Ft	.70#	1.0#	1.25#	1.5#	2.0#
ASTM Density Range	# Per CF	.70-.89	.90-1.14	1.15-1.34	1.35-1.79	1.80-2.20
<b>Thermal Resistance</b>						
@ 75° F per inch thick	per inch thick	3.3	3.86	3.92	4	4.2
@ 40° F per inch thick	per inch thick	3.6	4.2	4.25	4.55	4.76
<b>Strength Properties</b>						
Compressive 10% Defromation	psi	5	10-14	13-18	15-21	25-33
Flexural	psi	10	25-30	32-38	40-50	55-75
Tensile	psi	14	16-20	17-21	18-22	23-27
Shear	psi	11	18-22	23-25	26-32	33-37
Shear Modulus	psi	190	280-320	370-410	460-500	600-640
Modules of Elasticity	psi	110	180-220	250-310	320-360	460-500
Water Vapor Permeability @ 1"	perm-in; max	1.9	5	3.5	3.5	2.5
Water Absorption (max volume)	% by volume	<4.0%	<3.5%	<3.0%	<3.0%	<2.0%
Flame Spread Index		<20	<20	<20	<20	<20
Smoke Develop Index		150-300	150-300	150-300	150-300	150-300

### Many uses of Imperial EPS

- Structural Insulated Panels (SIPs)
- Insulated Concrete Forms (ICFs)
- Exterior Insulation and Finish Systems
- (EIFs) Architectural Shapes
- Packaging
- GEOFOAM – Below grade insulation
- Walk in freezers and cold storage
- Flotation
- Roofing – Tapered roof insulation/flute filler

### Features and Benefits of Imperial EPS

- Excellent Thermal Resistance
- Permanent Insulation values
- Low water absorption
- 100% recyclable
- Excellent Compressive Strength
- Contains No CFCs or HCFCs
- Nontoxic, Chemically inert, oderless
- Strong and durable
- Earns points as a LEED® project
- Easy to install

With 40+ years of experience in manufacturing the highest quality Expanded Polystyrene, Imperial Foam & Insulation prides itself on providing the best quality, service and on-time delivery possible.

***We are a family run business that operates with the highest level of integrity and values that puts our customers first.***



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### Flammability

Like many construction materials, EPS is combustible. It should not be exposed to flame or other ignition sources. Current model building code requirements should be met for adequate protection or separation from occupied areas.

### Solvent Attack

EPS is subject to attack by petroleum based solvents and coal tar products. Care should be taken to prevent contact between EPS, these materials and their vapors.

### Ultraviolet Degradation

Prolonged exposure to sunlight will cause a slight discoloration and surface dusting of EPS insulation. Though the insulating properties will not be significantly affected unless exposure is so excessive the thickness is lost. EPS should be covered to prevent ultraviolet degradation if it is to be stored in the open for extended periods.

### Fungi and Bacteria

Fungus attack has not been observed on EPS and it does not support bacterial growth. Fungal or bacterial growth on EPS is evidence that the surface of the foam has been soiled. Only the soilage supplies nutrient for fungal or bacterial growth.

### Ants, Termites, Rodents, Marine Borers

Since it has no food value, EPS does not attract ants, termites or rodents. However, it is not a barrier to them. Ants, termites and rodents will chew through foamed polystyrene to reach food or establish a comfortable home. Marine borers can attack polystyrene foam, as they do wood, and foam should be protected by an anti-fouling paint over a suitable primer.

**WARNING:** Expanded Polystyrene is a flammable material. Do not expose EPS to open flame or high temperature ignition sources. When burning, EPS will release great heat, smoke and potentially toxic gasses such as carbon monoxide and carbon dioxide. Only install or store EPS in strict compliance with BOCA, ICBO or SCCC codes as well as any fire related laws. Failure to comply with these codes may increase risk of fire and result in personal injury or property damage from smoke, flames or water.

**Warranty:** Imperial Foam & Manufacturing warrants that its products and materials are manufactured to the highest standards and meet all guidelines set forth by the (American Society for Testing and Materials) ASTM C578 guidelines.