

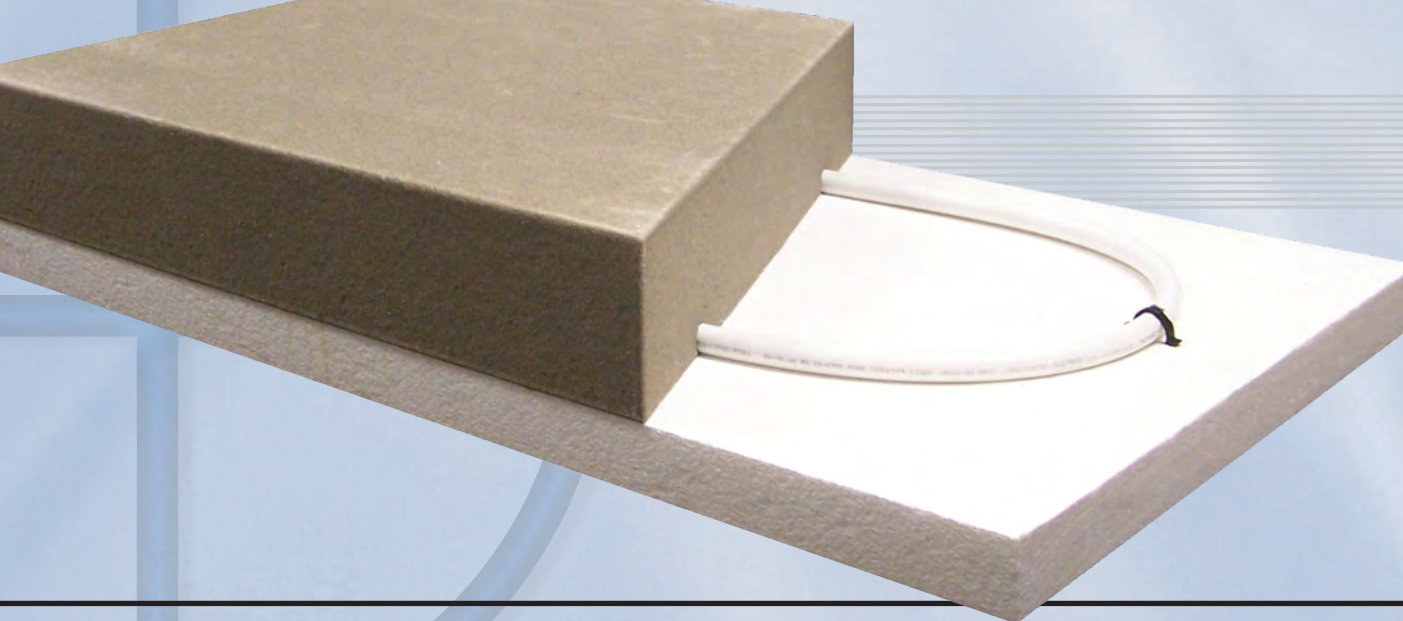
HIGH DENSITY EPS

by Benchmark Foam



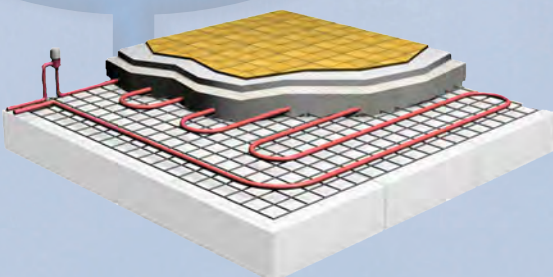
Benchmark Foam's High-Density EPS is ideal for many applications requiring high-strength insulation board. Benchmark Foam's high quality expanded polystyrene (EPS) is less expensive than alternative forms of rigid insulation, giving you the best value in the industry. When you choose Benchmark Foam, you receive superior and versatile products from a Midwest manufacturer with the only **On-Time Guarantee** in the industry, combining the best in quality, service and value for you and your customers.

 **BENCHMARK FOAM INC.**
Quick response is our guarantee.



HIGH DENSITY EPS ADVANTAGES

Benchmark Foam's closed-cell High-Density EPS expanded polystyrene is ideal for many applications requiring high-strength insulation board. This quality product is less expensive than alternative forms of rigid insulation, giving you the best value in the industry.



DESIGN FLEXIBILITY

- Versatility of EPS allows customers to choose specific size, shape and thickness to fulfill demands.
- Choose standard 4' x 8' sheets or order up to 4' x 18'.
- Adaptable to various applications, including underneath in-floor heat systems, pre-cast walls and many more.



ENERGY EFFICIENT

- Maintains a stable R-Value of 4.17 or above per inch.
- Acts as a thermal barrier to conserve heat in cold climates and air conditioning in warm climates.

COST EFFECTIVE

- Offers higher R-Value per dollar spent when compared to other rigid insulation boards.
- Provides high compressive strength for less money than alternatives.
- Save material costs by only paying for what your project requires.



DURABLE

- Assures long lasting thermal properties and water resistance.
- Ensures physical properties meet or exceed ASTM C578-08 by third party testing.

Call Benchmark Foam at 800-658-3444

or visit us online at www.BenchmarkFoam.com

HIGH DENSITY EPS APPLICATIONS

SUB-SLAB THERMAL BARRIER

- Achieve a comparable R-Value and compressive strength for less money than other rigid insulation boards.
- Prevent possible frost heaving with added insulating value.
- Capable of retaining stable, permanent thermal performance.

FOUNDATION/PERIMETER

- Prevent frost penetration and frost heaves on poured concrete basement walls.
- Save energy costs by limiting heat loss to a minimum.
- Protects from cold weather damage with Frost-Protected Shallow Foundation (FPSFs) building.
- Increase overall energy efficiency of building.

IN-FLOOR HEAT SYSTEMS

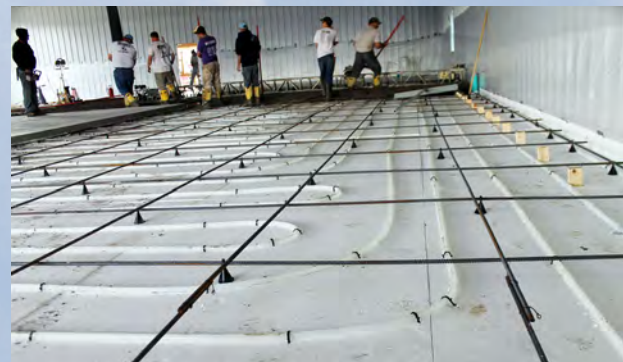
- Easy installation with a more durable grip on staples used to secure pex tubing.
- Appreciate a steady temperature in lower levels with less heat loss through concrete slab.

PRE-CAST WALLS

- Retains stronger bond with concrete when compared to alternatives, such as extruded polystyrene (XPS).
- Meet project needs with fully customizable sizes and shapes.

ON TIME GUARANTEE

- Guarantees delivery by agreed-to date or 10 percent off.
- Gives customer confidence, even if order needs to be rushed.
- Truckload orders not required.
- Only On-Time Guarantee in the industry.
- Assures customer needs with quick response customer service.
- Serving a regional area means short shipments reduce the environmental impact caused by long-haul trucking.



PHYSICAL PROPERTIES OF EPS

Specification Reference ASTM C578-08			Type II	Type IX	
Property		Units	ASTM Test		
Density, nominal			1½#	2#	
Density, minimum		(pcf)	C303 or D1622	1.35	1.80
Thermal Conductivity "K Factor"	@ 25F	BTU/hr.	C177 or C518	0.21	0.20
	@ 40F	(sq. ft.)		0.22	0.21
	*@ 75F	(°F/in.)		0.24	0.23
Thermal Resistance "R Value"	@ 25F	at 1 in. thickness		4.76	5.00
	@ 40F			4.55	4.76
	*@ 75F			4.17	4.35
Strength Properties, minimum					
Compressive 10% deformation		psi	D1621	15.0+	25.0+
Flexural		psi	C203	35	50
Tensile		psi	D1623	18	23
Shear		psi	D732	26	33
Shear Modulus		psi		460	600
Subgrade Modulus		pci		280	460
Moisture Resistance, maximum					
WVT (water vapor transmission)		perm/in	E96	< 3.5	< 2.5
Absorption (volume)		%	C272	< 3.0	< 2.0
Capillarity		--		none	none
Coefficient of Thermal Expansion		in./in.) (°F)	D696	0.000035	0.000035
Maximum Service Temperature					
Long-term		°F		167	167
Intermittent				180	180
Flame Spread		UL®	E84	20	20
Smoke Development		UL®	E84	300	300

All values are based on data available from Flint Hills Resources, NOVA Chemical Company and BASF Corporation.

*Federal Trade Commission ruling: Use the 75° R-Value when calculating R-Values for residential construction (fact sheet available upon request).

DESIGN CONSIDERATIONS

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

Water Absorption Properties: EPS water absorption is low. The closed-cell structure of EPS reduces the absorption of moisture, although it does not act as a vapor barrier. Rather, it breathes and therefore does not require costly venting as do other insulation materials, which would otherwise trap moisture within walls and roof structures.

Water Vapor Transmission: EPS has low permeability, but is not considered a vapor barrier.

Solvent Exposure: EPS is subject to attack by petroleum-based solvents and adhesives, and coal-tar pitch products. Care should be taken to prevent EPS direct contact with these products and their vapors. Use only adhesives approved for EPS applications.

UV Exposure: In cases where EPS is exposed to extended UV sunlight, the EPS should be covered or finished to protect the EPS from surface dusting and/or discoloration.

ON-TIME GUARANTEE

Benchmark Foam knows your business depends on our product arriving on time. Our service response is so dependable we back it with our On-Time Guarantee. Your product will be shipped and arrive on the agreed-to arrival date or we will discount your invoice 10 percent. We work to accommodate customer needs, giving you confidence when you place an order, even if it needs to be rushed. And we do not have truckload quotas, so no matter how large or small, your order will ship on time.

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401 Pheasant Ridge Drive
Watertown, SD 57201
Phone: 605-886-8084 • 800-658-3444
Fax: 605-886-8099
www.BenchmarkFoam.com