GEOFOAM (EPS Blocks 20' x 48" x 40")

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dP GEOFOAM

GeoFoam consists of rigid cellular foam blocks highly effective in geotechnical engineering applications. GeoFoam has relatively low density yet high strength, good insulation value, low hydraulic conductivity, and superior strength deformation properties that complement soil behavior.

GeoFoam has a wide variety of benefits. GeoFoam accelerates construction, expands possible solutions for difficult soil problems, has excellent load distribution characteristics, and reduces construction costs.

Uses include bridge construction, highway construction, landscaping, parking structures, airport runways, earthen dams, and load control on buried pipes.

Dyplast Products can assist with project specific design criteria with the assistance of the GeoFoam Research Center. The GeoFoam Research Center is directed by Dawit Negussey, Ph.D., P.Eng. Design considerations can be modeled to determine potential design problems prior to specifications being written. The GeoFoam Research Center is the nation's leading authority on the use and applications of GeoFoam. Dyplast Products can provide material in blocks up to 20' in length, 4' wide and 40" thick to maximize the construction process. Dyplast Products Company manufacturing facility is located in Miami, Florida. With this facility we can effectively handle any project in the Southeast United States. GeoFoam has many different applications, including:

- Slope Stabilization
- Landscape Design
- Utility Protection
- Shallow Foundations
- Embankments
- Retaining Structures
- Pavement Insulation
- Under Slabs

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SLOPE STABILIZATION

Geotechnical engineers have long recognized the utility of lightweight fill to reduce mass and associated gravitational driving forces EPS GeoFoam is up to 50 times less massive than other lightweight fills.

EMBANKMENTS

The use of GeoFoam does not require pre-loading and removal normally associated with embankment construction on soft ground. Side slopes at 2:1 or even in vertical finish can be developed because GeoFoam imposes very light loads on the foundation.

LANDSCAPE DESIGN

The use of GeoFoam expedites the design and construction of decorative formations without adding weight.

Dyplast Products is the preeminent manufacturer of polyisocyanurate and expanded polystyrene rigid foam products, and also distributes a variety of complementary products. With new world-class production facilities in Miami, Florida, Dyplast Products offers its customers unsurpassed technology, responsiveness, wide-ranging product configurations, and state-of-the-art quality control. Our customer-focused staff, combined with our sound financial footing, ensure we deliver incomparable value to our customers far into the future. **For information on Dyplast Products or additional technical data on this product, visit our website at www.dyplastproducts.com.**

RETAINING STRUCTURES

Placement of GeoFoam behind retaining structures and below-grade wall can offer advantages of reduced lateral pressure, lower settlements, improved waterproofing, and better insulation.

UTILITY PROTECTION

GeoFoam has been used to control loading on rigid buried pipes by development of an induced trench condition.

PAVEMENT INSULATION

The design of highway or airport pavements may be governed by subgrade stress/deformation criteria or frost heave protection requirements. When considering GeoFoam as a subgrade insulation element, care should be exercised to minimize development of differential icing.

SHALLOW FOUNDATIONS

The use of GeoFoam allows construction of buildings with frost-protected shallow foundations.

UNDER SLABS

The use of GeoFoam is appropriate for use aboveground, underground, and under concrete structures. It's performance will not degrade over time. GeoFoam can be used under slab-on-grade, in a sandwich slab application. It has been designed to support the weight of cast-in-place concrete, construction activity, working loads, machinery and heavy vehicle loading where the concrete slab has been designed for such purposes.

SUSTAINABILITY

Concerned about the environment? So is Dyplast Products! That's why all our products are manufactured in a CFC/HCFC-free environment. EPS rigid foam insulation is an inert, organic material produced from petroleum and natural gas by-products. It provides no nutritive value to plants, animals or micro-organisms. It will not rot, is highly resistant to mildew, and is recyclable.

EPS GEOFOAM (Expanded Polystyrene Blocks for Civil/Marine Applications)

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Physical Properties[1]	ASTM Method	Units	TYPE I	TYPE VIII	TYPEII	TYPE IX
Density, minimum	D 303 or 1622	lb/ft^3	0.9	1.15	1.35	1.8
Density Range		lb/ft^3	0.90 to 1.14	1.15 to 1.34	1.35 to 1.79	1.80 to 2.20
Compressive Strength (1% deformation)	D 1621	lb/in^2	>3.6	>5.8	11.30 (7.3 min[4])	13.00 (10.9 min)
Compressive Strength (5% deformation)	D 1621	lb/in^2	>8.0	>13.1	21.50 (16.7 min)	26.50 (24.7 min)
Compressive Strength (10% deformation)	D 1621	lb/in^2	>10.2	>16.0	24.20 (19.6 min)	29.70 (29.0 min)
Shear Strength	C 273	lb/in^2	18 to 22	23 to 25	26 to 32	33 to 37
Shear Modulus		lb/in^2	280 to 320	370 to 410	460 to 500	600 to 640
Modulus of Elasticity	D 1623	lb/in^2	180 to 220	250 to 310	320 to 360	460 to 500
Tensile Strength	C 203	lb/in^2	16 to 20	17 to 21	18 to 22	23 to 27
Flexural Strength	C 518	lb/in^2	25 to 30	30 to 38	40 to 50	50 to 75
K-Factor: Thermal Conductivity		BTU • in/hr • ft^2 • F				
25 F			0.23	0.22	0.21	0.20
40 F			0.24	0.235	0.22	0.21
75 F	C518		0.26	0.255	0.24	0.23
R-Value: Thermal Resistance (1" thick)		hr • ft^2 • F/BTU				
25 F			4.35	4.54	4.73	5.00
40 F			4.17	4.25	4.55	4.76
75 F			3.85	3.92	4.17	4.35
Water Absorption	C 272 E 96	% by Volume	<4.0	<3.0	<3.0	<2.0
Water Vapor Transmission	-	perm-inch	2.0 to 5.0	1.5 to 3.5	1.0 to 3.5	0.6 to 2.0
Capillarity	D 696	-	none	none	none	none
Coefficient of Thermal Expansion		in/in • F	0.000035	0.000035	0.000035	0.000035
Maximum Service Temperature		F				
Long term exposure			167	167	167	167
Intermittent exposure	D 2863		180	180	180	180
Oxygen Index		%	24	24	24	24
Surface Burning Characteristics:	E84	UL Rating:				
Flame Spread		6 inch max.	20	20	20	20
Smoke Developed			300	300	300	300

1. These are nominal values obtained from representative samples, subject to normal manufacturing variances. For additional ranges and specifications, contact Dyplast Products.
2. Installed in a thickness or stored in an effective thickness, as indicated, for a density of 1.0 to 2.0 lb/ft3.
3. All types meet Class 1 UL Classified.
4. "minimum" per GeoFoam requirements per ASTM D6817

FABRICATION AND INSTALLATION

GeoFoam is easily fabricated during manufacture to meet specific design and dimensional requirements. Further, because of its light weight and other properties, it is easily stored, handled, and installed. It can be cut to shape with ordinary tools to assure tight joints.

COST EFFICIENCY

GeoFoam is typically more cost-efficient than alternatives based on cost versus benefit analysis. When evaluating cost effectiveness, insulating value, longevity, strength, and environmental issues should be considered.

OTHER EPS PRODUCTS

View www.dyplastproducts.com for other EPS products; additional EPS products include:

- EPS insulation for wall, floor, and roof applications
- Architectural Shapes for decorative and architectural applications; excellent alternative to wood and concrete
- Holey-Board roof insulation for lightweight concrete roof applications.

LIMITATIONS AND DISCLAIMER OF WARRANTIES AND LIABILITIES

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