

When safety & success must be **Absolutely Assured**



BORATED POLYETHYLENE

Neutron Shielding

Borotron® high density borated polyethylene, supplied by MarShield, is a lightweight, cost-effective shielding solution to attenuate and absorb neutron radiation.

Our borated polyethylene contains 5% boron content (by weight). We also offer low density polyethylene (LDPE) with no boron content.

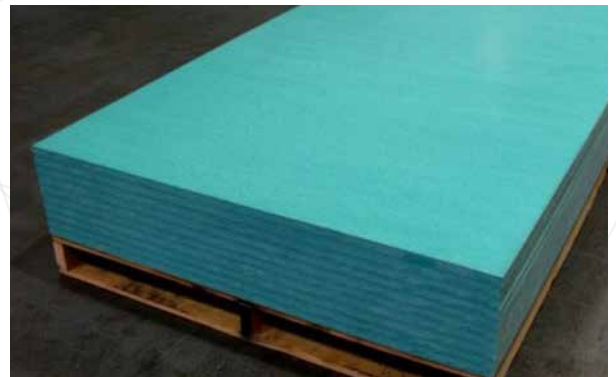
Used in the medical, nuclear, and industrial marketplaces borated polyethylene is ideal for medical vaults and doors, particle accelerators, hot cells, nuclear storage and transport containers, and nuclear detection systems.

For easy installation, MarShield's borated polyethylene comes in a standard sheet size of 48" x 96" x 1" thick. You can easily cut this polymer material using standard woodworking tools.

KEY FEATURES

- Available in 5% boron content (by weight) or low density polyethylene with no boron content
- Standard sheet size of 48" x 96" x 1" thick
- Durable over a wide temperature range
- Easy to install and fabricate
- Consistent density and homogeneity

Learn More About
Borated Polyethylene





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DATA SHEET

PHYSICAL PROPERTIES	METRIC	IMPERIAL	COMMENTS
Specific Gravity	1.01 g/cc	1.01 g/cc	ASTM D792
MECHANICAL PROPERTIES			
Hardness, Shore D	71	71	ASTM D2240
Tensile Strength	16.60 MPa	2407 psi	ASTM D638
Tensile Strength at 65°C (150 °F)	2.76 MPa	400 psi	ASTM D638
Elongation at Break	4.0%	4.0%	ASTM D638
Tensile Modulus	0.7667 GPa	111.2 ksi	ASTM D638
Flexural Yield Strength	29.1 MPa	4220 psi	ASTM D790
Flexural Modulus	0.8729 GPa	126.6 ksi	ASTM D790
Compressive Strength	6.60 MPa	957 psi	10% Def.; ASTM D695
	11.70 MPa	1697 psi	2% Def.; ASTM D695
	19.1 MPa	2770 psi	5% Def.; ASTM D695
	24.50 MPa	3553 psi	10% Def.; ASTM D695
Compressive Modulus	0.6718 GPa	97.44 ksi	ASTM D695
Izod Impact, Notched	0.481 J/cm	0.900 ft-lb/in	ASTM D256
ELECTRICAL PROPERTIES			
Surface Resistivity per Square	>= 1.0e+12 ohm	>= 1.0e+12 ohm	ASTM D257
THERMAL PROPERTIES			
CTE, linear	198 µm/m-°C @Temperature - 40.0 - 150°C	110 µin/in-°F @Temperature - 40.0 - 302°F	ASTM E831
Melting Point	128C °C	262C °F	ASTM D3418
Deflection Temperature at 1.8 MPa (264psi)	46.7 °C	116 °F	ASTM D648
COMPLIANCE PROPERTIES			
3A-Dairy	No	No	
Canada AG	No	No	
FDA	No	No	
NSF	No	No	
USDA	No	No	
USP Class VI	No	No	
CHEMICAL RESISTANCE PROPERTIES			
Acids, Strong (pH 1-3)	Acceptable	Acceptable	
Acids, Weak	Acceptable	Acceptable	
Alcohols	Acceptable	Acceptable	
Alkalies, Strong (pH 11-14)	Acceptable	Acceptable	
Alkalies, Weak	Acceptable	Acceptable	
Chlorinated Solvents	Unacceptable	Unacceptable	
Conductive / Static Dissipative	Yes	Yes	
Continuous Sunlight	Limited	Limited	
Hot Water / Steam	Limited	Limited	
Hydrocarbons - Aliphatic	Unacceptable	Unacceptable	
Hydrocarbons - Aromatic	Unacceptable	Unacceptable	
Inorganic Salt Solutions	Acceptable	Acceptable	
Ketones, Esters	Unacceptable	Unacceptable	
MISCELLANEOUS PROPERTIES			
Targeted Usage	Structural Uses	Structural Uses	

Note: All statements, technical information and recommendations contained in this database are presented in good faith, based upon tests believed to be reliable and practical field experience. The reader is cautioned, however that MarShield and its affiliates cannot guarantee the accuracy or completeness of this information and it is the customer's responsibility to determine the suitability of the products in any given application.

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LEAD LINED STORAGE CONTAINERS • LEAD WOOL BLANKETS • NUCLEAR LEAD POURS • SILFLEX