



## Neutron Shielding Products



# The Borated Polyethylene Neutron Shielding Material

King Plasti-Shield® is a borated polyethylene neutron shielding material. It is the product of a proprietary process called K-Stran™, the most advanced manufacturing process for superior flatness and consistency of 1" thick. Custom sheets, blocks and slabs can be made as a special order in the compression mold or extrusion mold. King Plasti-Shield® has a smooth finish on both sides of the sheet. It is made with 5% boron by weight and our trademark purple color. King Plasti-Shield® is an effective shielding material to meet all applicable applications for healthcare cancer treatment centers, diagnostic and hospital facilities. Applications include linear accelerators, nuclear or radiation shielding, industrial use, security such as seaports and airport security, nuclear submarines, nuclear power plants, border protection and other applications requiring attenuation of thermal neutrons. The polymer sheet never needs painting or refinishing, works like wood and it is easy to fabricate using common woodworking tools and techniques.

## **KING** **PLASTI-SHIELD®**

### Applications

- Airport Security and Sea Port Security
- Doors for Linear Accelerators
- International Border Security
- Medical Vaults
- Nuclear Reactors
- Nuclear Powered Vessels
- Research Applications

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## Specifications for 5%

### Standard Sheet Size

**in:** 48" x 96"

**mm:** 1219 mm x 2438 mm

### Standard Gauge

**in:** 1"

**mm:** 25.4 mm

### Approximate Weight

**lbs:** 174 lbs

**kg:** 78.925 kg

### Tolerance information:

#### K-Stran™

Gauge 1" ± 5%

Length and width plus only at room temperature

Custom sheets, blocks and slabs available in standard or custom colors

Properties	Units	ASTM	Nominal Values
Density (5% Borated)	g/cc	D1505	0.98
Tensile Strength @ Yield	p.s.i.	D638	3,960
Durometer	Shore D	D2240	66
Vicat Softening Temp.	°C (°F)	D1525	89°C (192°F)

All values are determined on specimens prepared according to ASTM Standards.  
Thickness required to attenuate a neutron beam by a factor of 10.

Material	Density	Thickness
Water	1.0	8.8"
Concrete	2.4	9.6"
HD Concrete	3.5	9.6"
Iron	7.9	5.7"
Lead	11.3	7.8"
King Plasti-Shield® 5%	0.98	8.0"

The above table is for illustration only, designers of radiation shielding must always consult an engineer to determine the shielding requirements for the specific application.

For tolerance information, contact your King Plastic Corporation representative.  
Custom and proprietary colors available with appropriate minimum order.  
Nominal values should not be interpreted as specifications.

## Standard Color



5% Purple

Note: Color accuracy can vary considerably on computer monitors and printers.  
Please consult your distributor for a product sample before making critical color choices.

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