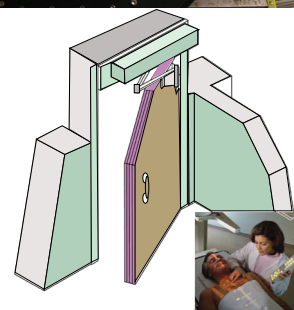
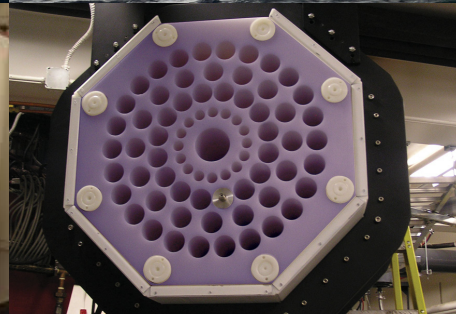
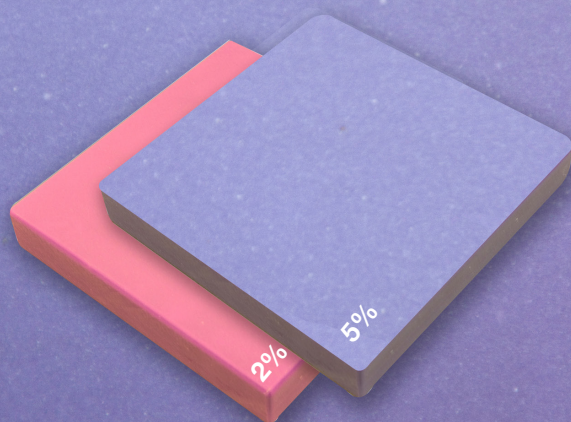


KING PLASTI-SHIELD®

Boron Filled Polyethylene Neutron Shielding



- Made in the USA of the finest polymers available. Choose 1%, 2% or 5% boron filled (by weight) or virgin formulas.
- High cross-section for consistent neutron attenuation.
- Advanced processes and precise tolerances ensure superior flatness and consistent density and even dispersion.
- 1"x4'x8' sheets allow for easy installation.
- Custom size and thickness available.
- Grade II and Grade III materials are closely inspected and controlled in accordance with MIL-P-23536A and shipyard specifications.
- Independent lab results available (charges apply).
- Supplied in mill shapes, such as sheets, blocks and slabs.
- Custom/proprietary colors available with appropriate minimum orders.
- Easily fabricated using standard woodworking tools.

King Plasti-Shield® has been used in neutron shielding applications for over 30 years. With 5% boron by weight and our trademark purple color, King Plasti-Shield® 5% Borated Polyethylene is manufactured to meet all applicable applications for industrial use, medical applications (with regards to cancer treatment) and is effective shielding for support in all areas of security, i.e., seaports, airports, border protection and other applications requiring attenuation of thermal neutrons.

King Plastic Corporation is also certified by prime vendors of the U.S. government as the source for Grade II and Grade III neutron shielding material on nuclear submarines and naval warships. Our process, materials, quality programs, sampling, testing, traceability, and packaging all meet or exceed military specifications such as MIL-P-23536A and EB2562E. We use MIL-STD-45662 for internal calibration system traceable back to NIST.

Now it's time to make King Plasti-Shield® your material of choice when it comes to neutron shielding protection.

Standard Sheets

Industrial Grade (purple, 5%* Boron by Weight)
Grade III (red, 2% * Boron by Weight)
Grade II (yellow, 1 %* Boron by Weight)
Virgin Polyethylene (natural color)

** Nominal values. Custom and proprietary color are available with appropriate minimum order.*

Product Comparison

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®	.92	8.0"

Standard Sheet Size

Standard Gauge (inches)	(mm)
1"	25.4mm
Approximate Weight (pounds)	(kilos)
160	72.57 kilos
(.35 lbs. per cubic inch)	
Sheet Size (inches)	(mm)
48" x 96"	1219mm x 2438mm

Tolerances

Both Width and Length is Plus Only at Room Temperature

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

Borated Polyethylene Facts

Most radioactive fields consist of different types of radiation. The most common include fast neutron, thermal neutron, primary gamma rays and secondary gamma rays. King Plasti-Shield® is a borated polyethylene designed to attenuate these types of radiations.

Fast Neutrons are most effectively shielded by hydrogen. King Plasti-Shield® has an inherently high concentration of hydrogen, over 13% of volume.

Thermal Neutrons are shielded by polyethylene with the presence of boron, such as King Plasti-Shield® Industrial Grade with 5% boron by weight.

Primary Gamma Rays are best shielded with lead or other high-density materials. It is common to combine a lead lining with King Plasti-Shield® in applications requiring attenuation of primary gamma rays.

Secondary Gamma Rays are created by the capture of thermal neutrons by hydrogen. These captured gamma rays can be minimized by adding boron, resulting in a significantly reduced energy dosage of only .42 MeV.

KING PLASTI-SHIELD®

Boron Filled Polyethylene Neutron Shielding

King Plastic Corporation has provided innovative sheets slabs and massive shape polymer products since 1968. King Plasti-Shield®

Industrial Grade (5%) is in stock or may be produced with a short lead time of two to three weeks.

King Plasti-Shield® Boron Filled Polyethylene

Neutron and Radiation Shielding

Popular Applications include:

- Personnel and Cargo detection devices
- Nuclear reactors
- US nuclear warships
- Law enforcement laboratories
- Medical vaults and doors for linear accelerators
- Research applications such as simulation of radiation damage
- X-rays facilities in doctors, dentists and veterinarians offices.

King Plasti-Shield® has been used as medical and industrial neutron shielding for more than 30 years.

It is light weight, cost-effective and an easily fabricated solution for a wide variety of neutron shielding needs.

Compared to paraffin-based products, King Plasti-Shield® sheets are much more durable and perform well in a wider range of temperatures. With 5% boron by weight and with our trademark purple color, King Plasti-Shield® Industrial Grade is effective in medical and other applications requiring attenuation of thermal neutrons.

Grade II (yellow, 1% boron) and Grade III (red, 2% boron) are used as neutron shielding in the construction and repair of US Navy warships. These products are manufactured to MIL-P-23536, REV. A. Certification and testing is available to meet MIL-Spec. requirements.

King Plastic Corporation also offers high-quality, non-borated virgin polyethylene (natural color), which shields against fast neutrons due to its high hydrogen content.

King Plastic Corporation Limit of Warranty is your money refunded or defective material replaced. All statements, information and data given herein are believed to be accurate and reliable but are presented without guaranty, warranty or responsibility of any kind, expressed or implied. Statements or suggestions concerning possible use of our products are made without representation or warranty that any such use is free of patent infringement, and are not recommendations to infringe any patent. The user should not assume that all safety measures are indicated or that other measures may not be required.



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