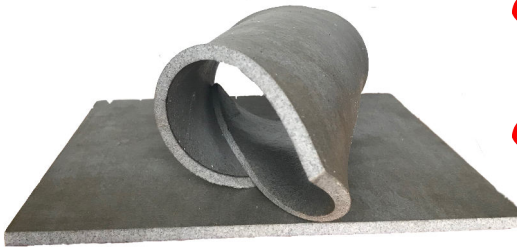




SWX-227ATH Neutron Shielding

9% Borated Polyurethane



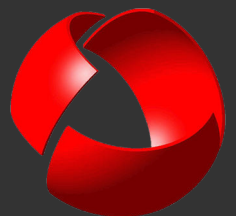
SWX-227ATH

- Highly flexible neutron shielding material ideal for installation on walls or in doors
- Contains 9% boron along with hydrogen in a tough flexible elastomer
- Easily Handled and Installed by Non-Specialized Personnel.

SWX-227ATH Borated Flexi-Panel is typically used for shielding neutrons such as those produced by high-energy accelerators used in physics research and fusion test facilities. Neutrons not shielded can produce high energy capture gammas by activating components of the concrete and other structural elements.

SWX-227ATH is a flexible light-weight sheet material with relatively high boron content of 9% (natural isotopic distribution). SWX-227ATH also includes a hydrogenous additive that helps slow the fast neutrons and can reduce the overall radiation field.

It is a relatively inexpensive neutron shielding material and is available in standard flexible sheets 5/16" thick x 48" x 48" (8 x 1219 x 1219 mm) or in custom sizes. The strong, rubber-like material is self-extinguishing when exposed to flame. Each sheet weighs approximately 32-lbs (14.4 kg) and is easily handled and installed by non-specialized personnel. This material can be cut to size using a razor knife and can be bent in a radius as small as 1/2" (12.7mm), depending on the thickness. SWX-227ATH is easily attached to concrete or other wall materials using standard mounting techniques.





SWX-227ATH Neutron Shielding

Specifications

Composition Data

Hydrogen atom density / cm ³ :	3.23 x 10 ²²
Hydrogen weight percent:	4.44 %
Boron atom density / cm ³ :	6.28 x 10 ²¹
Boron natural isotope distribution:	19.6% ¹⁰ B and 80.4% ¹¹ B
Boron weight percent:	9.26%
Total density:	1.22 g / cm ³ (76 lbs / ft ³)

Radiation Properties

Thermal Neutron 1/10 thickness:	0.2"
Gamma maximum exposure:	10 x 10 ⁸ rad
Neutron maximum exposure:	5.0 x 10 ¹⁷ n/ cm ²

Physical Properties

State:	Rubbery Solid
Odor:	Mild odor
Color:	Gray/black speckled
Machinability:	Poor, but easy to cut

Thermal Properties

Recommended Temperature Limit:	180 °F
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Chemical Properties

Chemical Name & Synonyms:	Borated Polyurethane
Trade Name & Synonyms:	SWX-227ATH
Chemical Family:	Polyurethane plus Boron compound
Solubility in Water:	Negligible

