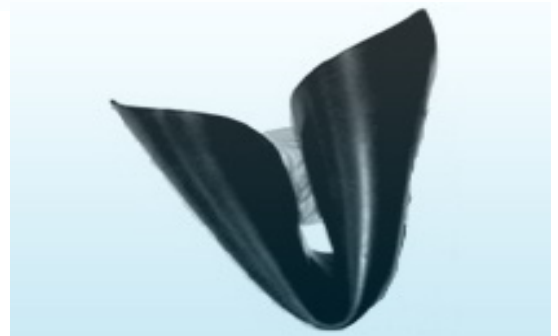




BR – 287 is a flexible, heat resistant, ozone resistant, lightweight synthetic polymer based containing 41% percentage of Boron. Boron has a very good macroscopic cross-section for thermal neutrons. Therefore the material has good attenuation factor for thermal neutrons. Hence, it provides an excellent shield against thermal neutrons. This product is also stable in vacuum

- Excellent neutron shielding material
- Easy to cut and can be bent into radius
- Light weight and stable in vacuum & Can be used over a wide temperature range
- Thickness Available: 3mm to 25mm
- Size Range : W 500mm x L 500mm, 1000mm & 2000mm
W 1000mm x L 1000mm & 2000mm
- Surface Finish : Smooth plain / Nylon Impression



BR 287 Flexible Borated shielding material can easily be handled and installed by non-specialized personnel. It is readily applied to concrete & metal surface or other wall materials using standard mounting technique. This flexible material can be cut and shaped using an ordinary knife and scissors. This material can be molded or extruded like Tubing, bushing, gasket, any cross section profiles and parts as per your Drawing and requirements

SPECIFICATIONS

Composition Data

Size available:	1000mm x 2000mm
Thickness available:	3.30 mm \pm 0.30 mm
Boron Contents by weight:	41 %
Boron atom density per cc :	3.21×10^{22}
Natural isotope distribution :	19.6 % B ¹⁰ & 80.4 % B ¹¹
Hydrogen atom density per cc :	5.60×10^{22}
Attenuation Factor	287 @ 1.24 Å 2430 @ 1.80 Å
Temperature Limit	140 °C \pm 5 °C
Density	1.40 \pm 0.05 gm/cc

Radiation Properties

Macroscopic thermal neutron cross section :	$\Sigma_B \dots 16.00 \text{ cm}^{-1} @ 1.24 \text{ \AA}$ $\Sigma_B \dots 24.10 \text{ cm}^{-1} @ 1.80 \text{ \AA}$
Gamma resistance : Approx	$\sim x 10^8 \text{ rads}$
Neutron resistance : Approx	$2 \times 10^{17} \text{ n / cm}^2$

Thermal Properties :

Recommended Temperature Limit : 140 °C \pm 5 °C

Mechanical Properties :

Machining :	Poor
Hardness :	70 \pm 5
Stable :	Vacuum
Bent Radius :	0.5 " (12.7mm)

Physical Properties

Appearance and Odor :

State :	Rubbery Solid
Color :	Grayish Black
Odor :	Mild rubbery odor

Chemical Properties :

Chemical Name & Synonyms :	Borated Rubber
Trade Name & Synonyms :	Catalog No. BR 287
Chemical Family :	Boron compound in elastomer
Formula :	Proprietary
Solubility in Water :	Negligible

Resistance to:

Ozone	Oxidation
Sunlight aging:	Heat

Application as a Thermal Neutron shield in

Neutron Instrumentation	
Nuclear Spectroscopy	Beam Lines
Nuclear Therapy	Nuclear Power Plant