

**POLYMER GRID BX3316
FOR SUPPORT OF UNDERGROUND MINE OPENINGS**

The grid shall be a regular structure formed by biaxially drawing a continuous sheet of select polypropylene material and shall have an open aperture geometry of uniformly spaced ribs having high rigidity, high tensile strength and modulus, and high junction strength and efficiency. The grid shall be resistant to ultraviolet degradation, to damage under normal installation procedures, and to all forms of biological or chemical degradation normally encountered in the environment in which it will be placed. In addition, the grid shall pass flammability tests as required by M.S.H.A. and described in the Code of Federal Regulations: 30 C.F.R. Ch. 1, Part 7, Subpart B.

The grid shall also conform in all respects to the property requirements listed below.

PROPERTY	TEST METHOD	UNITS	VALUE
Material			
· polypropylene	ASTM D 4101		Group 1/Class 1/Grade 2
· flammability	30 C.F.R., Ch.1, Part 7 Subpart B (Brattice Cloth) test method		Per acceptable performance as described in test
· carbon black	ASTM 4218	%	0.5 (nom)
Physical			
· aperture size ¹	I.D. Calipered ²		
- MD		cm	4.57 (nom)
- TD		cm	5.08 (nom)
· thickness	ASTM D 1777-64		
- ribs		mm	1.02 (nom)
- junctions		mm	4.83 (nom)
Mechanical			
· tensile strength	GRI GG1-87		
- MD		kN/m	21.89 (min)
- TD		kN/m	23.34 (min)
· flexural rigidity	ASTM D1388-64 ³		
- MD		mg-cm	600,000 (min)
- TD		mg-cm	800,000 (min)
· tensile modulus	GRI GG1-87 ⁴		
- MD		kN/m	291.8 (min)
- TD		kN/m	306.4 (min)
· junction strength	GRI GG2-87 ⁵		
- MD		kN/m	19.7 (min)
- TD		kN/m	21.0 (min)
· junction efficiency	GRI GG2-87 ⁵	%	90 (min)
· fatigue efficiency	GRI GG1-87 ⁶	%	95 (min)
Dimensions			
· unit weight		kgs/m-length	1.49
· roll length		m	27.4
· roll width		m	4.0
· roll weight		kg	43.2

Notes:

- MD (machine direction) is along roll length; TD (transverse direction) is across roll width.
- Inside dimension in each principal direction measured by calipers.
- ASTM D 1388-64 modified to account for wide specimen testing as described in Tensar Test Method TTM-5.0 "Stiffness of Geosynthetics".
- Secant modulus at 2% elongation measured by Geosynthetic Research Institute Test Method GG1-87 "Geogrid Tensile Strength". No offset allowances are made in calculating secant modulus.
- Geogrid junction strength and junction efficiency measured by Geosynthetic Research Institute Test Method GG2-87 "Geogrid Junction Strength".
- The percent strength retained following 1000 bends within the same rib(s).