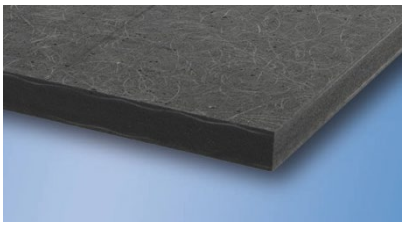
AIREX® PXc

GM--TDS-109

Fiber-Reinforced Structural Foam

DATA SHEET 08.2024 - Replaces 06.2024

DESCRIPTION



AIREX® PXc is a closed-cell, fiber reinforced polymer foam with very high mechanical properties ideally suited as core material for structurally loaded sandwich applications.

The sophisticated manufacturing process evenly distributes continuous glass fibers throughout the foam generating a very consistent foam with enhanced mechanical properties especially in compression and shear.

AIREX® PXc is dimensionally stable, has very low water absorption, and is resistant to chemicals and high temperatures. It is ideally suited as a core material for highly loaded sandwich structures or as a replacement for wood and plywood.

CHARACTERISTICS

- High shear and compression properties
- Replacement for wood and plywood
- Good fastener pull-out strength
- High heat resistance
- Compatible with a wide range of resins and adhesives
- Dimensionally stable
- High styrene resistance
- Very low water absorption
- Non biodegradable
- Excellent chemical resistance

APPLICATIONS

- **Marine:** Transoms, bulkheads, stringers, engine beds, floors, interiors, local reinforcements, tooling and molds
- **Road and Rail:** Floors, sidewalls, roofs, engine covers, interior panels
- **Industrial:** Covers, tanks, containers, tooling and molds, local reinforcements, architectural panels, sporting goods
- **Building & Construction:** concrete forms, substrates for fascia, SIPs panels, tub and shower enclosures

PROCESSING*

- Contact molding (hand/spray)
- Resin infusion / injection (VARTM / RTM)
- Adhesive bonding
- Pre-preg
- Processing molding

* for details, please refer to AIREX® Processing Guidelines

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MECHANICAL PROPERTIES						
Typical properties		**Unit (metric)**	**AIREX® PXc.245**	**AIREX® PXc.320**	**AIREX® PXc.385**	**AIREX® PXc.420**
Density	ASTM C-271 ISO-845	kg/m³	240	320	385	420
Compressive strength perpendicular to the plane	ASTM C-365 ISO-844	N/mm²	3.08	4.14	7.53	9.22
Compressive modulus perpendicular to the plane	ASTM C-365 ISO-844	N/mm²	72	142	198	227
Tensile Strength	ASTM C-297	N/mm²	2.83	3.93	5.11	5.83
Tensile Modulus	ASTM C-297	N/mm²	75	106	141	162
Shear strength	ASTM C-273 ISO 1922	N/mm²	2.21	2.98	3.59	3.90
Shear modulus	ASTM C-273 ISO 1922	N/mm²	47	90	125	142
Flexural strength	ASTM D-790	N/mm²	10.84	20.46	26.56	29.24
Flexural modulus	ASTM D-790	N/mm²	512	1170	1222	1247
Screw pull-out strength*	ASTM D1761	N	505	765	823	na
Water absorption	ASTM C-272	%	3.6	2.4	2.2	1.8
Standard sheet	Width	mm	1219	1219	1219	1219
	Length	mm	2438	2438	2438	2438
	Thickness	mm	12 to 50	12 to 50	12 to 45	12 to 45

Finishing Options, other dimensions and closer tolerances upon requestю

All properties evaluated on ¾“ (20 mm) rigid sheet; other thickness will have similar performance based on that specific sheet density. Flexural testing support span ratio 16:1.
*fastener type #14 sheet metal screw

The data provided gives approximate values for the nominal density. Due to density variations these values can be lower than indicated above. Minimum values to calculate sandwich constructions can be provided upon request.

The information contained herein is believed to be correct and to correspond to the latest state of scientific and technical knowledge. However, no warranty is made, either expressed or implied, regarding its accuracy or the results to be obtained from the use of such information. No statement is intended or should be construed as a recommendation to infringe any existing patent.

MECHANICAL PROPERTIES						
Typical properties		**Unit (imperial)**	**AIREX® PXc.245**	**AIREX® PXc.320**	**AIREX® PXc.385**	**AIREX® PXc.420**
Density	ASTM C-271 ISO-845	lb/ft³	15	20	24	26
Compressive strength perpendicular to the plane*	ASTM C-365 ISO-844	psi	447	600	1092	1338
Compressive modulus perpendicular to the plane*	ASTM C-365 ISO-844	psi	10,429	20,633	28,796	32,877
Tensile Strength	ASTM C-297	psi	411	570	724	846
Tensile Modulus	ASTM C-297	psi	10,849	15,434	20,461	23,558
Shear strength	ASTM C-273 ISO 1922	psi	320	432	521	566
Shear modulus	ASTM C-273 ISO 1922	psi	6,787	13,092	18,136	20,657
Flexural strength*	ASTM D-790	psi	1,572	2,968	3,853	4,241
Flexural modulus*	ASTM D-790	psi	74,297	169,755	177,190	180,908
Screw pull-out strength*	ASTM D1761	lbf	114	172	185	na
Water absorption	ASTM C-272	%	3.6	2.4	2.2	1.8
Standard sheet	Width	in	48	48	48	48
	Length	in	96	96	96	96
	Thickness	in	½ to 2	½ to 2	½ to 1 ¾	½ to 1 ¾

Finishing Options, other dimensions and closer tolerances upon request

All properties evaluated on ¾" (20 mm) rigid sheet; other thickness will have similar performance based on that specific sheet density. Flexural testing support span ratio 16:1.
*fastener type #14 sheet metal screw

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