



Physical Properties Data



Door Face Sheet Physical Properties

Property	Test Method	Unit	Class C General Purpose Result	Class A Fire Retardant Result	Approvals and Certifications
Flexural Strength	ASTM D-790	PSI	17,000	10,000	<ul style="list-style-type: none"> • Meets USDA/FSIS requirements • Canadian Food Inspection Agency (CFIA) accepted • ICC: Report # ER-2364 • ASTM D-3841-2001 • Fire Ratings: Face sheet products are available on multiple fire ratings, such as Class C (general purpose) and Class A (fire retardant).
Flexural Modulus	ASTM D-790	PSI	6.0×10^5	3.1×10^5	
Tensile Strength	ASTM D-638	PSI	8,000	7,000	
Tensile Modulus	ASTM D-638	PSI	9.43×10^5	3.1×10^5	
% Elongation	ASTM D-638	%	1.20	1.80	
Water Absorption 21°C @ 72 hrs.	ASTM D-570	%	0.17	0.72	
Izod Impact Strength	ASTM D-256	ft.-lbs. /in.	7.0	7.16	
Coefficient of Linear Thermal Expansion	ASTM D-696	in./in. /°F	2.22×10^{-5}	2.39×10^{-5}	
Barcol Hardness	ASTM D-2583	Avg.	30	35	
Specific Gravity	ASTM D-792	N/A	1.614	1.574	
Abrasion Resistance	TABER	% WT Loss	0.293	0.391	
Flash Ignition Temp.	ASTM 1929	°C	430	400	
Self Ignition Temp.	ASTM 1929	°C	450	430	
Flame Spread	ASTM E-84	N/A	≤ 200	≤ 25	
Smoke Generation	ASTM E-84	N/A	< 450	< 450	

Door Stile and Rail Tubes Physical Property

Property	Unit	Value	Property	Unit	Value
Tensile Strength	PSI	30,000	Tensile Strength	PSI	30,000
Tensile Modulus	PSI	2.9×10^6	Tensile Modulus	PSI	2.9×10^6
Trans. Tensile Strength	PSI	3400-8000	Trans. Tensile Strength	PSI	3400-8000
Trans. Tensile Modulus	PSI	1.2×10^6	Trans. Tensile Modulus	PSI	1.2×10^6
Compressive Strength	PSI	30,000	Compressive Strength	PSI	30,000
Compressive Modulus	PSI	2.9×10^6	Compressive Modulus	PSI	2.9×10^6
Flexural Strength	PSI	30,000	Flexural Strength	PSI	30,000
Flexural Modulus	PSI	1.2×10^6	Flexural Modulus	PSI	1.2×10^6
Density	lbs./in.	0.065	Density	lbs./in.	0.065
Specific Gravity		1.8	Specific Gravity		1.8
Percent Glass		40-60%	Percent Glass		40-60%
24 hr. Water Absorption	% Max	0.15	24 hr. Water Absorption	% Max	0.15
Coef of Thermal Exp.	in./in./°F	5×10^6	Coef of Thermal Exp.	in./in./°F	5×10^6

Frame Material Physical Properties

Property	Test Method	Direction	Unit	Polyglass F	Polyglass M
Mechanical Coupon					
Ultimate Tensile Strength	ASTM D-638	Longitudinal	PSI	30,000	30,000
	ASTM D-638	Transverse	PSI	6,500	8,500
Tensile Modulus	ASTM D-638	Longitudinal	PSI	2.5 x 10 ⁶	2.5 x 10 ⁶
	ASTM D-638	Transverse	PSI	0.8 x 10 ⁶	0.8 x 10 ⁶
Ultimate Compressive Strength	ASTM D-695	Longitudinal	PSI	30,000	30,000
	ASTM D-695	Transverse	PSI	15,000	15,000
Compressive Modulus	ASTM D-695	Longitudinal	PSI	2.3 x 10 ⁶	2.3 x 10 ⁶
	ASTM D-695	Transverse	PSI	0.8 x 10 ⁶	0.8 x 10 ⁶
Ultimate Flexural Strength	ASTM D-790	Longitudinal	PSI	30,000	30,000
	ASTM D-790	Transverse	PSI	10,000	10,000
Flexural Modulus	ASTM D-790	Longitudinal	PSI	1.6 x 10 ⁶	1.6 x 10 ⁶
	ASTM D-790	Transverse	PSI	0.8 x 10 ⁶	0.8 x 10 ⁶
Shear Strength Short Beam	ASTM D-2344	Longitudinal	PSI	4,500	4,500
	ASTM D-2344	Transverse	PSI	4,500	4,500
Impact Strength Izod	ASTM D-256	Longitudinal	ft.-lbs./in.	25	25
	ASTM D-256	Transverse	ft.-lbs./in.	4	4
Hardness - Barcol	ASTM D-2583	Perpendicular		50	50
Mechanical - Full Section Bending					
Modulus of Elasticity		Longitudinal	PSI	2.5 x 10 ⁶	2.5 x 10 ⁶
Electrical					
Electric Strength Short Time (in oil)	ASTM D-149	Perpendicular	Volts/mil	200	200
	ASTM D-149	Parallel	KV/in	35	35
Other					
Thermal Coefficient of Expansion	ASTM D-149	Longitudinal	in./in. /°C	5 x 10 ⁻⁵	5 x 10 ⁻⁵
Thermal Conductivity		Longitudinal	BTU/hr-ft-°F	4.0	4.0
Flame Class	UL 94			V-0	
Flame Spread (UL Tunnel Test)	ASTM E-84			25 or less	
Water Absorption 24 Hours	ASTM D-570	Longitudinal	%	0.6 Max	0.6 Max
Density	ASTM D-792	Longitudinal	lbs./in. ²	0.066	0.066

1,000,000 Cycle Grade A Swing Test

Fiberglass Doors		Fiberglass Frames	
Condition of Edge Weld/Bond	PASS	Condition of General Appearance	PASS
Condition of Lock Prep	PASS	Condition of Perimeter Clearance	PASS
Condition of Hinge Prep		Condition of Strike Prep	PASS
Top	PASS	Condition of Hinge Prep	
Center	PASS	Top	PASS
Bottom	PASS	Center	PASS
Condition of Top Closure	PASS	Bottom	PASS
Condition of Bottom Closure	PASS	Condition of Mutes	PASS
Condition of Door Core/Stiffeners	PASS	Condition of Wall Anchors	PASS
Condition of Panels – General	PASS	Condition of Floor Anchors	PASS
		Condition of Miters	PASS

Documentation can be provided upon requires.

Screw Holding Testing Data

Testing of pull-out strength of screws in 1 1/2 x 1/4 Square Tube. (8/17/2009)

Tubes were filled with foam and screws were attached when we received them from Edgewater FRP Door.

Screws were attached to the tube as shown above, in positions A, B, C and D.

Three pieces (1, 2 and 3) were tested.

Both ends of the tube were fastened to the load-table with C-clamps.

One screw was pulled out at a time using a hook that was attached to the Tinius-Olsen tester.

Maximum load was recorded for each screw.

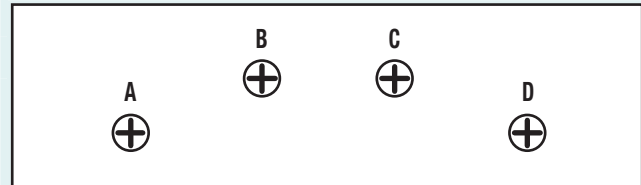
The order the screws were pulled out varied between the three pieces:

Piece 1: C first, A second, D third, B last

Piece 2: A first, B second, C third, D last

Piece 3: B first, D second, C third, A last

Test speed was 0.05 in/min.



	Maximum load [lb]			
	A	B	C	D
Piece 1	939.5	1039.7	1243.8	830.4
Piece 2	962.7	1065.9	888.4	714.6
Piece 3	959.2	1357.5	1179.2	1129.1