PULTRUDED STRUCTURAL PROFILES

LW = Lengthwise
CW = Crosswise
PF = Perpendicular to Laminate Face

PROPERTY MECHANICAL	ASTM TEST	UNITS	ISOPHTHALIC POLYESTER	VINYL ESTER
Tensile Stress, LW	D638	Mpa	200	200
Trensile Stress, CW	D638	MPa	47	47
Tensile Modulus, LW	D638	Gpa	17	18
Tensile Modulus, CW	D638	Gpa	5.5	5.5
Flexural Stress, LW	D790	Mpa	200	200
Flexural Stress,CW	D790	Mpa	67	67
Flexural Modulus, LW	D790	Gpa	11	11
Flexural Modulus, CW	D790	Gpa	5.5	5.5
Compressive Stress, LW	D695	Mpa	200	200
Compressive Stress,CW	D695	Mpa	100	105
Compressive Modulus, LW	D695	Gpa	17	18
Compressive Modulus,CW	D695	Gpa	6.5	6.5
Shear Modulus, LW	-	Gpa	3	3
Short Beam Shear, LW	D2344	Mpa	30	30
Parallel Compressive Shear Stress, LW	D3846	Mpa	20	20
Modulus of Elasticity, E	Full Section	Gpa	18	19

PROPERTY FLAMMABILITY (For Fire Retardant Polyester and Vinyl Ester Profiles)			TEST	VALUE
Underwriter Laboratory			UL94	VO
Flammability			ASTM D635	Self Exting.
Tunnel Test			ASTM E84	25 Max.
NBS Smoke Chamber			ASTM E662	650-700 (Typ.)

PROPERTY MECHANICAL	ASTM TEST	UNITS	ISOPHTHALIC POLYESTER	VINYL ESTER
Modulus of Elasticity EW and I Shape >100mm	Full Section	Gpa	17	17
Bearing Stress, LW	D953	Mpa	200	200
Poisson's Ratio, LW	D3039	cm/cm	0.33	0.33
Notched Izod Impact, LW	D256	ft-lbs/in	25	25
Notched Izod Impact,CW	D256	ft-lbs/in	4	4
PHYSICAL				
Coefficient of Thermal Expansion, LW	-	10^6cm/ cm/°C	8	8
24 hr Water Absorption	D570	%max. by wt	0.6	0.6
Specific Gravity	D792	gm/gm	1.7-1.9	1.7-1.9
Barcol Hardness	D2583	-	45	45
Electrical				
Dielectric Strength, LW	D149	KV/in	35	35
Dielectric Strength, PF	D149	Volt/mil	200	200
Dielectric Constant, PF	D150	@60Hz	5.6	5.2
Arc Resistance, LW	D495	seconds	120	120

Notes

1. For use in compression columns and as flexural beams, please consult Composite Profiles for Specific Allowable stress
2. The modulus of elasticity for full section bending is used to determine the allowable stress in beam and column design.
3. The shear modulus reflects the fact that the profiles are anisoptropic and it has been determined from tests on full length profiles.
4. Barcol hardness of the laminate can be a reflection of the surfacing tissues utilized. The value of 45 applies to laminates with surface tissues.