

Redco™ POLYCARBONATE

PHYSICAL PROPERTIES	ASTM or UL TEST	TYPICAL VALUE (3.0 MM THICKNESS)
PHYSICAL		
SPECIFIC GRAVITY	ASTM D 792	1.20
TENSILE STRENGTH, psi	ASTM D 638	9,000
ELONGATION AT BREAK, %	ASTM D 638	130
TENSILE MODULUS, psi	ASTM D 638	345,000
ROCKWELL HARDNESS	ASTM D 785	R118
IMPACT STRENGTH (NOTCHED) (ft-lb/inch)	ASTM D 256	17.0
FLEXURAL STRENGTH, psi	ASTM D 790	14,200
FLEXURAL MODULUS, psi	ASTM D 790	3.4x 10~
WEAR FACTOR AGAINST STEEL 40 psi 50fpm		2500x10~10
COEFFICIENT OF FRICTION 40psi 50fpm		0.38 Dynamic
COMPRESSIVE STRENGTH, psi	D695	12,500
COMPRESSIVE MODULUS, psi	D695	345,000
THERMAL		
MELTING POINT, °F		310
HEAT DEFLECTION AT 66 psi, °F	ASTM D 648	285
HEAT DEFLECTION AT 264 psi, °F	ASTM D 648	270
MAXIMUM TEMP. FOR SHORT TERM, °F		275
MAXIMUM TEMP. FOR LONG TERM, °F		240
THERMAL CONDUCTIVITY (Btu-inch/hr-ft~2- ° F)	ASTM C 177	1.35
SPECIFIC HEAT (Btu/lb- ° F)		0.30
COEFFICIENT OF LINEAR THERMAL EXPANSION	ASTM D 696	3.7x10~5
APPLICABLE TEMPERATURE RANGE FOR THERMAL EXPANSION, °F		0-200
FLAMMABILITY	UL 94	V-2
ELECTRICAL		
DIELECTRIC CONSTANT AT 60Hz (73° F, 50% RH)	ASTM D 150	3.2
DISSIPATION FACTOR AT 60Hz (73° F)	ASTM D 150	0.001
VOLUME RESISTIVITY	ASTM D 257	10~17 ohm-cm
DIELECTRIC STRENGTH (v/MIL)	ASTM D 149	380
OTHER		
WATER ABSORPTION - 24 HOURS, %	ASTM D 570	0.15
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WATER ABSORPTION - SATURATION, %	ASTM D 570 ASTM D 792	0.35
DENSITY (lb/inch~3)	MOTINI D 185	0.0434
WEATHERING RESISTANCE	I	Limited resistance (UV Sensitive)

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PROPERTY	ASTM OR UL TEST	GENERAL PURPOSE	HIGH FLEX MODULUS	20% GLASS		
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PHYSICAL						
SPECIFIC GRAVITY	D792	1.2	1.25	1.35		
SPECIFIC GRAVITY in3/lb (cm3/g)	D792	23 (636)	22.2 (614)	20.5 (567)		
WATER ABSORPTION, 24 h, 1/8-in thk (%)	D570	0.15	0.12	0.16		
MECHANICAL						
TENSILE STRENGTH psi (MPa)	D638	9,000-10,500 (62-72)	8,000-9,600 (55-66)	16,000 (110)		
ELONGATION (%)	D638	110-125	10-20	4-6		
TENSILE MODULAS psi (MPa)	D638	340,000 (2345)	450,000 (3100)	860,000 (5900)		
FLEXURAL SRENGTH psi (MPa)	D790	11,000-15,000 (76-103)	15,000 (103)	19,000 (131)		
FLEXURAL MODULUS psi (MPa)	D790	300,000-340,000 (2070-2345)	500,000 (3450)	800,000 (5517)		
IMPACT STRENGTH, IZOD ft-lb/in OF NOTCH (J/m of notch)	D256	12-16 (648-864)	2 (108)	2 (108)		
FATIGUE ENDURANCE LIMIT, 107 CYCLES psi (MPa)	D671	1,000 (6.9)	2,000 (13.8)	5,000 (34.5)		
HARDNESS, ROCKWELL M	D785	62-70	85	91		



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THERMAL						
THERMAL CONDUCTIVITY Btu-in/hr-ft2-ºF (w/m-K)	C177	1.35 (0.19)	1.41 (0.21)	1.47 (0.22)		
COEFFICIENT OF THERMAL EXPANSION (105 in/in-ºC)	D696	6.6-7.0	3.2	2.7		
DEFLECTION TEMPERATURE °F (°C)	D648					
AT 264 PSI		260-270 (127-132)	288 (142)	295 (146)		
AT 66 PSI		280 (138)	295 (146)	300 (149)		
FLAMMABILITY RATING		HB-V0	V-2, V-0	V-2, V-0		
ELECTRICAL						
DIELECTRIC STRENGTH SHORT TIME, (1/8-in thk) V/mil (KV/mm)	D149	380-400 (15-16)	450 (17.8)	490 (19.4)		
DIELECTRIC CONSTANT	D150					
AT 1 kHz		3.02	-	-		
DISSIPATION FACTOR	D150					
AT 1 kHz		0.0021	-	-		
VOLUME RESISTIVITY (ohm-cm) AT 73F, 50% RH	D257	>1016	>1016	>1016		
ARC RESISTANCE (s), 120 mils	D495	10-120	5-120	5-120		
OPTICAL						
REFRACTIVE INDEX	D542	1.586	-	-		
TRANSMITTANCE (%)	D1003	85-89	-	-		
FRICTIONAL						
COEFFICIENT OF FRICTION	-					
SELF		0.52	-	-		
AGAINST STEEL		0.39	-	-		

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