

Redco™ UHMW-PE NATURAL VIRGIN

PROPERTY	TYPICAL VALUES	ASTM or UL TEST	
PHYSICAL			
DENSITY, g/cm3	0.930 - 0.940	ASTM D 792	
HARDNESS, ROCKWELL R SCALE	64 - 68	ASTM D 785	
DUROMETER (D/15)	68 - 72	ASTM D 2240	
DEFLECTION TEMPERATURE °F (°C)		ASTM D 648	
AT 66 psi	174 (79)		
AT 264 psi	115 (46)		
MECHANICAL			
TENSILE PROPERTIES		ASTM D 638	
MAXIMUM STRENGTH, psi	4,800 – 6,200	2 in./min	
MPa	33 - 43		
YIELD STRENGTH, psi	2,900 - 3,500		
MPa	20 - 24		
MODULUS, psi	100,000 - 150,000		
MPa	689 - 1033		
ELONGATION AT BREAK, %	300 - 450		
FLEXURAL MODULUS, psi	100,000 - 150,000	ASTM D 790	
MPa	689 - 1033		
IZOD IMPACT STRENGTH AT 23°C, ft-lbs/in² (KJ/m²)			
NOTCHED	No break	ASTM D 256A	
DOUBLE NOTCHED	> 20 (42)	Internal	
MEAN COEFFICIENT OF LINEAR THERMAL EXPANSION PER °C	2 x 10- 4	ASTM D 696	
COEFFICIENT OF FRICTION AGAINST CR-PLATED STEEL AT 23°C		ASTM D 1894	
STATIC	.2025		
DYNAMIC	.1417		
ABRASION INDEX (RELATIVE TO STEEL AT 100)	10	Sand Slurry	
TEMPERATURE			
RECOMMENDED OPERATING TEMPERATURE RANGE		Internal	
MAXIMUM CONTINUOUS, °F (°C)	180 (82)		
MINIMUM CONTINUOUS, °F (°C)	-300 (-182)		
ELECTRICAL			
DIELECTRIC CONSTANT, 60 CYCLES TO 106 CYCLES	2.3-2.35	ASTM D 150	
SURFACE RESISTIVITY, ohms	>101 6	ASTM D 257	
VOLUME RESISTIVITY, ohms-cm	>101 6	ASTM D 257	

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Redco™ UHMW

Property	Method	Unit	Virgin	Repro	Cross Linked	Static Reduced
Density	ASTM D 792	lbs/in3 (g/cm3)	0.033 (0.93)	0.034 (0.94)	0.033 (0.93)	0.033-0.034 (0.93 - 0.94)
Tensile Break	ASTM D 638	PSI (MPa)	6000 (41)	4200 (30)	5200 (36)	4,800 - 5,600 (33-39)
Elongation at Break	ASTM D 638	%	400	300	350	300 - 400
Flexural Modulus	ASTM D 790B	PSI (MPa)	120,000 (830)	111000 (765)	120,000 (830)	100,000 - 150,000 (690-1035)
Abrasion	Internal	Steel = 100	16	14	7	10
IZOD Impact						
Notched	ASTM D 256A	ftlbs./in. (J/m)	No Break	No Break	No Break	No Break
Double- notched	Internal	ftlbs./in. (J/m)	26 (1400)	21 (1300)	23 (1240)	
Linear Coefficient of						
Thermal Expansion	ASTM D 696	°K-1	2 x 10-4	2 x 10-4	0.9 x 10-4	1.8 x 10-4
Coefficient of Friction						
Static	ASTM D 1894	Unitless	0.2	0.2	0.2	.2025
Dynamic	ASTM D 1894	Unitless	0.15	0.15	0.15	.1216