

REDCO™ UHMW

FRICIONAL PROPERTIES

Redco™ UHMW polymer has self lubricating and high slip properties, making it ideal for lining chutes and bunkers for wear strips, slide plates, bearings and bushings - all areas where sliding contact is encountered. While it is advisable to perform actual operating tests, which are somewhat influenced by environment, the following data are offered as a guide only:

MATERIAL	STATIC	KINETIC	TEST METHOD
Mild Steel on Mild Steel	.30-.40	.25-.35	
Mild Steel on UHMW-PE	.15-.20	.12-.20	ASTM
UHMW-PE on UHMW-PE	.20-.30	.20-.30	D 1894
UHMW-PE on Brass	.25-.35	.15-.20	
Industrial Belting on UHMW-PE	.30-.40	.20-.30	
Industrial Belting on Chrome Plated Steel	.65-.75	.75-.81	

COMPARISON OF DYNAMIC COEFFICIENT OF FRICTION ON POLISHED STEEL

PROPERTY	UHMW-PE	ULTRA AR	ULTRA ARS	NYLON 6	NYLON 6/6	NYLON /MoS2	PTFE	ACETAL COPOLYMER
DRY	.10-.22	.13	.06	.15-.40	.15-.40	.12-.20	.04-.25	.15-.35
WATER	.05-.10			.14-.19	.14-.19	.10-.12	.04-.08	.10-.20
OIL	.05-.08			.02-.11	.02-.11	.08-.10	.04-.05	.05-.10



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ENGINEERING HORSEPOWER FORMULA

ON A 70 FOOT LONG CONVEYOR- TRANSFERRING AN 18" DIAMETER LOG, USING C-132 CHAIN AT 150 FEET PER MINUTE.

$$\frac{\text{MATERIAL WEIGHT} + \text{CHAIN WEIGHT} \times \text{M} \times \text{SPEED}}{33,000} = \text{HORSEPOWER REQUIREMENTS}$$

FOR A.R. STEEL WEAR STRIP

$$\frac{10,500 + 3,000 \times .33 \times 150}{33,000} = 20 \text{ HORSEPOWER} = 15\text{KW}$$

FOR UHMW WEAR STRIP

$$\frac{10,500 + 3,000 \times .20 \times 150}{33,000} = 12 \text{ HORSEPOWER} = 9\text{KW}$$

SAND SLURRY ABRASION

The following table gives an indication of the abrasion resistance of Redco UHMW polymer. A value of 100 was designated for the amount of volumetric abrasion loss to the GUR specimen. The values shown for other materials are those of volumetric loss compared to Redco UHMW. The higher the figure, the more abrasion loss.

MATERIAL	SPECIFIC GRAVITY (g/cm ²)	RELATIVE VOLUMETRIC ABRASION
Redco (UHMW-PE)	0.94	100
Carbon Steel	7.45	160
Polytetrafluoroethylene (PTFE)	2.26	530
PTFE (25% Glass Fibre)	2.55	570
Low Density Polyethylene	0.92	600
Polypropylene (PP)	0.90	660
Acetal Copolymer (POM)	1.42	700
Polyvinyl Chloride (PVC)	1.33	920
Polymethylmethacrylate (PMMA)	1.31	1800
Phenolic Resin (PF)	1.40	2500
Beechwood	0.83	2700
Epoxy Resin (EP)	1.53	3400

* Conditions of Sand Slurry Test: 2 parts water, 3 parts sand (0.2 to 1.0 mm, 0.008" to 0.04"). Test Specimen: 1" x 3" x 1/4". Rotational speed of test specimen: 1200 rpm. Test Period: 24 hours. Temperature of apparatus increases to 120°F.