

Rope Selection Guide

There are two types of fibers used in the construction of ropes and twines, natural and synthetic. The most common natural fibers used are Manila, Sisal, Jute, and Cotton, while synthetic fibers such as Polypropylene, Polyethylene, Nylon, and Polyester have become the most popular in today's market.



MANILA rope was once the preferred choice in ropes before the synthetic fibers were developed. Manila ropes still maintain some advantages to synthetic fibers. It is not affected by heat, and has an excellent resistance to the sun's UV (Ultraviolet) rays.



SISAL fibers come from the Agave and Sisalana plants grown in some tropical countries. Sisal has many of the characteristics of manila, but offers only 80% of its strength. It is more economical than manila, and makes a good choice as a general purpose rope. It is commonly used as a tying twine.



JUTE is mainly used as a tying twine. It knots very well. Due to its short fibers, it does not have much strength.



COTTON is natural fiber, typically white in color. It is a soft fiber, which makes it nice to handle. It also knots very well.



POLYPROPYLENE & POLYETHYLENE make a flexible and lightweight rope. They are rot proof, resist oil, water, gasoline, and most chemicals. They are the only rope fibers that float. Available twisted or braided, they are a perfect economical choice as a general purpose rope.



POLYESTER is very strong and provides excellent abrasion resistance. Polyester stretches less than nylon, so it does not have the elasticity of shock absorbing qualities that nylon does. It has good resistance to UV rays, and resists rot, oil, gasoline, and most chemicals. It is very popular as a marine or industrial rope where stretch is not desired.



NYLON is known for its elasticity and tremendous shock absorbing qualities. It has good abrasion resistance, is rot proof, resists oil, gasoline, and most chemicals. It has good resistance to UV rays. Nylon will last 4-5 times longer than natural fibers.

Rope Selection Guide

FIBER TYPE	NYLON	POLYESTER	POLYPROPYLENE	POLYETHYLENE	MANILA	COTTON
STRENGTH	1	2	3	4	5	6
WET STRENGTH VS. DRY STRENGTH	85%	100%	100%	100%	115%	115%
SHOCK LOAD ABILITY	1	3	2	4	5	6
FLOATS OR SINKS IN WATER	SINKS	SINKS	FLOATS	FLOATS	SINKS	SINKS
ELONGATION AT BREAK	20-34%	15%-20%	15%-20%	10%-15%	10%-15%	5%-10%
WATER ABSORPTION	6%	ZERO	ZERO	ZERO	100%	100%
MELTING POINT	480° F	500° F	330° F	275° F	DOES NOT MELT	DOES NOT MELT
					CHARS AT 350° F	CHARS AT 350° F
ABRASION RESISTANCE	2	1	4	5	3	3
DEGRADATION: RESISTANCE TO SUNLIGHT	GOOD	EXCELLENT	POOR	FAIR	GOOD	GOOD
DEGRADATION: RESISTANCE TO ROT	EXCELLENT	EXCELLENT	EXCELLENT	EXCELLENT	POOR	POOR
DEGRADATION: RESISTANCE TO ACIDS	POOR	GOOD	GOOD	GOOD	POOR	POOR
DEGRADATION: RESISTANCE TO ALKALIS	GOOD	POOR	GOOD	GOOD	POOR	POOR
DEGRADATION: RESISTANCE TO OIL AND GAS	GOOD	GOOD	GOOD	GOOD	POOR	POOR
ELECTRICAL CONDUCTIVITY RESISTANCE	POOR	GOOD	GOOD	GOOD	POOR	POOR
FLEXING ENDURANCE	1	2	3	6	4	5
SPECIFIC GRAVITY	1.14	1.38	.90	.95	1.38	1.54
STORAGE REQUIREMENTS	WET OR DRY	WET OR DRY	WET OR DRY	WET OR DRY	DRY ONLY	DRY ONLY