Comparative characteristics of various

	Nylon	Polyester
Strength:		
Tenacity of dry fibre (in grams / denier):	9,0	8,5
Wet strength compared to dry strength:	85-90%	100%
Rope shock load absorption:	Excellent	Good
Weight:		
Specific gravity of fibres or filaments (grams / cubic centimeter):	1.14	1.38
Able to float:	No	No
Elongation:		
Typical percentage of rope elongation at 20% of break strength:	20-25%	16-18%
Average percentage of rope elongation at 75% of break strength:	42%	29%
Creep (elongation under sustained load):	Moderate	Low
Effects of moisture:		
Water absorption of individual fibres:	8-12%	1%
Resistance to rot, mildew and deterioration due to marine organisms:	Excellent	Excellent
Chemical resistance:		
Effects of acids:	Decomposed by strong mineral acids; resistant to weak acids	Resistant to most mineral acids; disintegrated by 95% sulphuric acid
Effects of alkalies:	Little or none	No effect cold; slowly disintegrated by strong alkalies at the boil
Effects of organic solvents:	Resistant, soluble in some phenolic compounds and in 90% formic acid	Generally unaffected. Soluble in some phenolic compounds
Degradation:		
Resistance to ultraviolet in sunlight:	Good	Excellent
Resistance to ageing for properly stored rope:	Excellent	Excellent
Rope abrasion resistance:		
Surface:	Very good	Best
Internal:	Excellent	Best
Effect of temperature on dry rope:		
High temperature working limit:	149°C	149°C
Low temperature working limit:	-21.1°C	-21.1°C
Melts at:	249°C	250°C
Ability of rope to render, or ease out, smoothly over metal while under load:	Poor	Good

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fibres used in ropes and twines

Polypropylene	Polyethylene	Manila	Sisal	Cotton
6,5 100% Very good	5-6 100% Very good	5-6 Up to 120% Poor	4-5 Up to 120% Poor	2-3 Up to 120% Very poor
0.91 Yes	0.95 Yes	1.5 No	1.5 No	1.54 No
18-22% 37% High	20-30% High High	10-12% 19% Very low	10-12% 19% Very low	0% 0% Zero
None Excellent	None Excellent	Up to 100% of weight Poor	Up to 100% of weight Very poor	Up to 100% of weight Very poor
Very resistant	Very resistant	Will disintegrate in hot diluted and cold concentrated acids	Will disintegrate in hot diluted and cold concentrated acids	Will disintegrate in hot diluted and cold concentrated acids
Very resistant	Very resistant	Poor resistance - will lose strength where exposed	Poor resistance - will lose strength where exposed	May swell but will not be damaged
Soluble in chlorinated hydrocarbons at 40°C	Soluble in chlorinated hydrocarbons	Fair resistance for fibre, but hydro-carbons will remove	Good resistance	Good resistance
Good when UV stabilised (Black is best) Excellent	Fair. Good when UV stabilised Excellent	Good Good	Good Good	Good Good
Good Good	Fair Good	Good Good	Fair Good	Good Good
93.2°C -26.7°C 164°C	80°C -50°C 130°C	149°C -37.8°C N/A	149°C -37.8°C N/A	149°C -37.8°C N/A
Very poor	Very poor	Excellent	Good	Good