CHEMICAL-PHYSICS CHARATERISTICS OF SYNTHETIC FIBERS

FIBRE	DYNEEMA	NYLON-POLYAM	POLYESTER	POLYPROPYLENE	POLYETHYLENE
RESISTANCE					
TENACITY dry fiber in gr/den.	35.00	9.00	8.50	6.50	6.00
LOAD WORK sugg. expressed in % of the tensile strenght		9.00 – 12.00	8.50	6.50	
Wet fiber RESISTANCE in relation to that dry		85 - 90 %	100 %	100 %	100 %
Tear RESISTANCE	Excellent	Excellent	Good	Very good	Excellent
Knot RESISTANCE compared to the normal resistance		62%	47%	58%	64%
WEIGHT					
SPECIFIC GRAVITY	0.97	1.14	1.38	0.91	0.95
WATER ABSORPTION	Very low	Moderately low	Moderately low	Low	Low
Water ABSORPTION of immersed rope		65%	45%	19%	23%
Floating CAPACITY	Float	Half-sink	Sink	Float	Float
REPORT strength/weight		3.00	2.25	2.50	2.50
ELONGATION					
Rope ELONGATION to workload suggested	Very low	23% very high	15% mod. low	18% moderate	20% high
Steady load ELONGATION	Poor	Moderate	Low	High	High
ELONGATION to 75% of the tensile strength	1.9%	42%	29%	37%	40%
DEGRADATION					
RESISTANCE to light	Very good	Good	Excellent	Fair	Excellent
RESISTANCE aging	Excellent	Excellent	Excellent	Excellent	Excellent
RESISTANCE in water to sea Organs	Excellent	Excellent	Excellent	Excellent	Excellent
RESISTANCE to temperature of dry rope	100° C–150° C	148° C – 45° C	148° C – 45° C	93° C – 25° C	65° C – 20° C
RESISTANCE after two years exposure to weather		70 %	90 %	30 – 90 %	90 %
MELTING POINT	144°/ 152°C	250° C	260° C	165° C	140° C
SOFTENING POINT		180°/235° C	230° C	135° C	100°/120° C
RESISTANCE					
Chemical acid products RESISTANCE	Excellent	Disintegrates	Disintegrates if hot	Good resistance	Good resistance
Alkali chemical products RESISTANCE	Excellent	Disintegrates	Good resistance	High resistance	Good resistance
Chemical organic solvents products RESISTANCE	Excellent	Soluble in phenols and formal	Soluble in phenolic	Soluble in chlorides	Soluble in chlorides
RESISTANCE to abrasion	Very good	Very good	Excellent	Satisfactory - good	Excellent
CAPACITY of ropes slip on the metal		Poor	Good	Very poor	

AT A GLANCE:

NYLON (POLYAMIDE): fire resistant, but not recommended for prolonged use in dry heat. Resistant to major alkali, but not for use in an acidic environment. It is not subject to significant deformation and has elastic properties very interesting. Suitable for applications from the simplest to the most severe.

POLYESTER: resistant to heat and most acids. Except for use in environments with a high alkaline, does not undergo changes when wet. Is not subject to significant deformation and has elastic properties interesting. Typically used in medium duty industrial applications.

POLYPROPYLENE: is resistant to acids that alkali. Not being treated does not have great resistance to heat. Not affected when wet. Reduced elastic properties. Suitable for simple applications.