



WATER - IT'S EVERYWHERE, BUT HOW MUCH OF IT DO WE WANT TO CARRY IN OUR ROPES?

After carrying literally tons of rope over the years, I have noticed a difference in the weight of similar lengths of rope, not just between thicknesses, but between materials as well. Some ropes feel like they hold a lot more water than others. I have also noticed that some ropes take a lot longer to dry, even in summer.

I have been told on numerous occasions that Polyester absorbs less water than Polyamide. I have no idea why, so I thought I would put it to the test. The ropes are a bit random, but hopefully some information will be gained from this simple test.

Test Details:

Weather Conditions - Humidity approx 80%. Temperature range from around 8 - 15 degrees Celcius. Hanging under shelter, in the shade.

Testing Method - Cut 1 metre lengths of rope. Weigh dry rope. Saturate rope - fully immersed for 1 hour. Re-weigh saturated rope. Re-weigh at intervals. Kitchen scales were used to weigh the rope. Each measure was checked twice.

Ropes hung vertically - see photos. (I know you are not going to carry your rope like this, but this is how I chose to do it for the experiment!)

I used these ropes because they are what I had available.

ROPE WEIGHT COMPARISON - POLYESTER VS POLYAMIDE (OLD + NEW)

ROPE TYPE	ROPE	DRY	WET	DRIP DRY 30 MINS	DRIP DRY 15 HRS	DRIP DRY 24 HRS
POLYAMIDE (NYLON)	Kordas Dana 9mm Canyon Rope (used 50 + times, two years old)	60gms	82gms +36.66%	80gms +33.33%	74gms +23.33%	63gms +5%
	Kordas Dana 10mm Canyon Rope (new)	72gms	86gms +19.44%	85gms +18.05%	81gms +12.05%	76gms +5.55%
	Beal 11mm Climbing Rope (20 years old) retired	71gms	92gms +29.57%	85gms +19.71%	80gms +12.67%	72gms +1.4%
POLYESTER	Stirling HTP 9mm (used 50 + times, two years old)	67gms	90gms +34.32%	89gms +32.83%	82gms +22.38%	71gms +5.97%
	Donaghys - Abseil Braid 10mm (10 years old)	96gms	132gms +37.50%	125gms +30.20%	119gms +23.95%	105gms +9.37%

Percentage weight gain from original weight - shown in red for each rope.

Points of Interest :

- In all cases the nylon rope drained faster than the polyester rope. (It would have been good to have some new HTP rope)
- Interestingly, the Beal dynamic rope drained the fastest - it is polyamide.
- The Kordas Dana 9 started off 11.66% lighter than the Stirling HTP (I was surprised).
- The 10mm dry treated new Kordas is actually lighter than the 9mm HTP when wet.
- Both Kordas ropes are dry treated (the 9mm is 2 years old, so there is some loss of 'dry treatment' over time).
- The Donaghy's rope is nearer 10.5mm, although advertised as 10mm. This polyester rope added the highest proportional weight.
- My thoughts are that there is a correlation between the density of a rope, the quantity of water it holds, and how fast it drains.
- A more thorough test could be very interesting. There are lots of variants - if you have a selection of new and old ropes + some spare time



Rope getting a thorough wetting before initial weighing.



Hanging up to drip dry before weighing at regular intervals.



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