

## ROPE CARE

Improper care and use of your rope could result in a serious injury. It is very important to follow these safety practices when working with rope.

1. Always properly pad your rope at points of abrasion. Rope pads made of softer materials are recommended as they will abrade before your rope. Canvas pads are excellent.
2. Tie off your rope so that sharp surfaces and sharp bends are avoided. When possible, use a second anchor point for added safety.
3. Never use a rope in any manner which subjects the rope to extreme loads.
4. Protect your rope from chemicals and excessive heat. Protect your rope from all chemicals including acids, alkalies, oxidizing agents, bleaching compounds, salt, acetone, benzene, chloroform, freon, gasoline, kerosene. Watch out for battery acid as this is the most common chemical that comes into contact with safety ropes.
5. Heat under 350o F will not effect the strength of your rope but nylon begins to be affected by temperature over 400o F. The layered construction of the kernmantle rope offers better protection against heat as compared to twisted ropes; the sheath yarns protect the load-bearing core strands for a certain period of time whereas the twisted ropes are affected immediately by excessive heat.
6. Keep your ropes clean as dirt will shorten the life of your rope through abrasion. Ropes should be washed in cold water. **DO NOT USE BLEACH.** The rope should be air dried away from direct sunlight. **DO NOT DRY YOUR ROPE IN HOME OR COMMERCIAL DRYERS** as the heat is excessive and will tend to make your rope stiff.
7. Check your rope after each use. Look in particular for damage to the sheath caused by cuts or from rubbing against a rough surface. Since the core strands contribute approximately 75% of the rope's tensile strength, very little strength is lost until the sheath is completely worn through and the core strands can be seen. When this occurs, it is necessary to cut the rope at that point but the remainder of the rope should be serviceable unless other damage is present. It is impossible to make an exact statement as to when a rope should be retired since there are so many variables. It is the responsibility of the user to know when a rope should be down-graded or retired from service.

Life is much more valuable than a piece of rope, so replace rope if there is any doubt as to it's condition.



## 1/2" STATIC KERNMANTLE ROPE

Made of 100% DuPont 707 nylon monofilament

**SHEATH:** Comprises approximately 25% of the strength of the rope. It will not slide on the core as will braid on braid and double braided rope.

**TEMPERATURE RESISTANCE:** Will maintain strength to 300oF. Critical temperature is 350o F. Melting point 480oF.

**ABRASION RESISTANCE:** Three times more abrasion resistant than lay type ropes, single and double braided construction. The kernmantle sheath protects the inner core from damage, contamination and wear. The sheath can almost be destroyed and the rope will only lose 25% of it's strength.

**CHEMICAL RESISTANCE:** Rope will not mildew; can be put away wet and stored if necessary. More resistant to most acid-alkaline-petroleum products than natural fiber ropes.

**SERVICE LIFE:** Indefinite - As long as the sheath remains intact, shielding the core from abrasion and contamination. Also as long as there is no shock load put on the rope, or stretched beyond it's working load.

**MAXIMUM AVERAGE STRETCH:** 1.5% at 200 pounds, 21% at failure. Will stretch slightly more when wet.

**MINIMUM TENSILE:**

Rope Diameter	Tensile Strength
7/16"	6,500 pounds
1/2"	7,600 pounds
9/16"	10,500 pounds
5/8"	9,000 pounds

Static kernmantle rope will stretch 20% when it is wet and will come back to 100% when it dries.

## ROPE - DO'S AND DON'TS

- DO: Roll the rope off the reel, don't take it off over the end unless you want lots of kinks to work out. An old broom handle inserted through the reel core works well for this.
- DO: Pad your rope at all points of contact that might abrade your rope.
- DO: Wash your rope often with clean, cold water. Dirt will cause wear on and in your rope and rappelling equipment. Allow to air dry before storing.
- DO: Inspect your rope for damage each time you rig it and again as you coil or bag it up. If the sheath becomes cut or worn to the inner core, or if you feel lumps in the core, cut the rope at that point and inspect for damage elsewhere.
- DON'T: Mistreat your rope. Walking or standing on ropes can damage them.
- DON'T: Allow chemicals to come in contact with your rope. Remember that many common items contain strong chemicals. Some of these chemicals can weaken or severely damage the nylon. Keep away from batteries (acid), and products that contain benzene, phenol, (pine oil cleaners), carbon tetrachloride, formaldehyde and gasoline. If you suspect chemical damage to your rope, cut it! If you wish to use a marker on your rope, use one with an ether or alcohol base as they do not appear to damage ropes.
- DON'T: Overload your rope. Do not use a rope to tow cars or lift heavy objects; overloading can cause hidden damage without actually breaking the rope.