I. Classification of Rescue Rope

1. Life Safety Rope – Rope solely dedicated for the purpose of supporting personnel during actual emergency operations as well as during rescue or firefighting training exercises.

2. Utility Rope – Rope designated for non-life safety activities.

3. Throw lines – Floatable rope that is normally designated for water-rescue use and has a minimum breaking strength of 3,000 lbs.

4. Escape Rope – Rope less than 3/8" in diameter that has a minimum breaking strength of 3,000 lbs. and is intended for a one person load in a one-time emergency self-rescue use.

II. Rescue Rope Construction

1. Only rope of block and creel construction, using continuous filament virgin fiber for load-bearing elements is suitable for life-safety applications.

2. Life safety rope should be of kernmantle construction, a German word broken down as follows: KERN = core and MAMTLE = outer sheath.
   a. The core provides approximately 75% of the rope strength and the sheath provides approximately 25% of the rope strength while providing protection to the core.
3. Most common type of material used in rope construction is nylon, some manufacturers use polyester for sheath construction and nylon for the core.

4. Diameters recommended for rescue operations by NFPA are 7/16” (one-person load) and 1/2” (two-person loads).

5. Life safety rope can be purchased in lengths up to 600 ft. Any lengths over that will normally have to be special order.

6. Dynamic rope: a.k.a. High Stretch rope is used when long falls are possible (example rock climbing).
   a. Designed to stretch up to 60% of its length without breaking.
   b. Reduces shock of impact on climbers and anchor systems.
   c. Not suitable for raising or lowering heavy loads.

7. Static Rope: Per NFPA 1983, rope that stretches between 0% to 5% of its length when subjected to a load of approximately 1 KN. This is the rope of choice for most rescue situations.
   a. Best suited for the following types of applications: raising and lowering heavy loads, mechanical advantage systems, general rescue operations, rappelling and any operations where no falls or very short falls may be expected.

8. Low-Stretch Rope: Per NFPA 1983, rope that stretches between 5% to 10% of its length when subjected to a load of 1 KN.