1. **Helmets:**
   a) Should meet OSHA, ANSI or NFPA guidelines.
   b) Light-weight construction.
   c) Design should allow for good peripheral vision.
   d) Have a chinstrap for security.

2. **Eye Protection:**
   a) Should meet OSHA guidelines.
   b) Designed to protect from airborne particles and flying objects.
   c) Ability to be secured during use.

3. **Outerwear:**
   a) Should protect all body parts.
   b) Should be constructed of flame resistant material except where fire is a potential, turnout gear is not the best choice for tactical rescue operations.
   c) Should be close fitting but still allow freedom of movement with no loose flaps to become entangled in the rope system.
   d) Be adequate for protection from prevailing weather conditions.
   e) Comparable to Wild Land firefighting gear.

4. **Footwear:**
   a) Lightweight leather construction.
   b) Waterproof.
   c) Provide ankle support.

5. **Gloves:**
   a) Medium weight construction.
   b) Durable.
   c) Leather palms.
   d) Flexible.

6. **Commercial Rescue Harnesses**
   a) Class I – defined by NFPA 1983 as being designed to fit around the rescuers waist, it is used only as an emergency escape belt rated for one-person load.
   b) Class II – defined by NFPA 1983 as being designed to fit around the waist and thighs or under the buttocks and may be utilized for a maximum of a two-person load.
   c) Class III – defined by NFPA 1983 as being designed to fit around the waist and thighs or under the buttocks and over both shoulders, rated for as maximum of a two-person load and is designed to prevent inverting.
### Improvised Rescue Harnesses:

- **Rescue Knot** — using life safety rope, the rescue knot performs like a Class III harness giving support to the upper body and lower torso.
- **Swiss Seat** — may be constructed with life safety (preferably 1/2 inch diam.) or 1 3/4 inch webbing to act as a Class II harness.
- **Swiss Seat w/chest harness** — may be constructed with life safety rope (preferably 1/2 inch diam.) or 1 3/4 inch webbing and with the seat harness and chest harness connected will serve as a Class III harness.

### Software:

- **Accessory cord** - rope smaller in diameter than life safety rope and usually kernmantle construction. Diameters between 1/4 (6mm) and 5/16 (8mm) used for litter lashing or constructing prussik cords.
- **Webbing**.

### Hardware:

- **Carabiners** — NFPA 1983 requires that carabiners used for fire and rescue operations should have locking gates and a minimum breaking strength of 5,000 lbs.
- **“D” type** used for general rescue operations.
- **Tri-links** designed for multi-directional load applications.
- **Rescue rings** — for general rescue operations and multi-directional loads, must meet NFPA 1983 for criteria for load strength.
- **Swivels** — prevent twisting of ropes used in various rigging systems, must be rated for life safety applications.
- **Anchor plates** — belay plates used as a friction system to control speed of descents from a fixed position above or below the rescuer.
- **Ascending devices** — used to assist rescuers to ascend a fixed vertical line or cable (ex. Cam-type – Gibbs, Rock Exotica; Handle type – Jumars).
- **Descending devices** — designed to assist rescuers with rappelling operations, allows rescuer to maintain self-control of rate of descent (ex. Figure of eight plates and brake bar racks). Figure –of – eight devices may be used with up to 5/8” rope in a single configuration and double ½’ ropes in a double configuration. Brake bar racks may be used in the same configurations.
- **Pulleys** — used for creating a change of direction pull for ropes and for rigging various mechanical advantage systems (ex. Single sheave design, double sheave design, triple sheave design).

**NOTE:** All hardware used for fire and rescue applications must meet NFPA 1983 criteria for maximum loading requirements and safe working load guidelines.

**NOTE:** The formula for safe working load for software and hardware is 10:1, Example: Carabiner breaking strength = 8,000 lbs, the SWL will be 800 lbs.