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Rope Rescue Equipment Safety Standards

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Purpose

The purpose of this document is to provide a clear set of expectations for equipment used in ITRA rope rescue-based courses and assessments.

Scope

This document intends to provide a minimum set of equipment standards that are used within ITRA rope rescue discipline progressions. There are many techniques, theories, and applications of equipment that currently exist in the rope rescue industry. The ITRA rope rescue working group has chosen these standards to meet the industry's best practices and insurance guidelines. The rope working group strives to maintain consistency and transparency in expectations for courses and assessment purposes.

The guidance listed in this document is intended to set a baseline standard of expectations for courses and assessments. If local insurance, SOPs, or local laws have greater requirements, those shall supersede this document.

ITRA Rope Rescue Equipment Standards

All equipment

- Must be used according to the manufacturer's instructions and recommendations during assessments.
- All equipment must be suitable and functional for its intended environment.
- Must be compatible with any system it is used in.
- Must conform to standards relevant to the intended use.
- All equipment used during a course or assessment shall be available for inspection prior to use.
- The instructor assumes complete responsibility for equipment and techniques used outside of the manufacturer's guidance (off-label) during courses.
- Equipment and techniques used outside manufacturer guidance (off-label) during assessments is not allowed.
- If equipment claims a standard, relevant documents showing full compliance with that standard must be available.
- Where applicable, certified equipment must be used when available.
- Guidance put forth in this document will not supersede **regulatory authority** and insurance requirements of training facilities, instructors, and evaluators.

Accessory cord

- Any accessory cord/rope used for anchor(s) and anchor systems, must have an **estimated breaking strength** of 15 kN or greater at the **master point** for **vertical** environments and 10 kN for **inclined slope** environments with a **rescue load** or **standard load**.
- Any accessory cord/rope used for rigging, prusiks, and lanyards must have an MBS of at least 7kN.

Anchor systems

- Must have a minimum **estimated breaking strength** or MBS of 15kN at a **master point** where devices for raising or lowering a **rescue load** are attached for operations in **vertical environments**.
- Must have a minimum **estimated breaking strength** or MBS of 10kN at a **master point** where devices for raising or lowering a **standard load** are attached for operations in **vertical environments**.
- Must have a minimum **estimated breaking strength** or MBS of 10kN at any given master point where devices or components are attached for raising or lowering a **rescue load** or **standard load** for operations in **inclined-sloped environments**.
- **Protection measures** must be taken as needed to reduce the possibility of rope failure from a hazard.

Artificial High Directionals

- Manufactured AHDs must have a minimum WLL of 1kn for a High Anchor Configuration and 2kn in a High Directional Configuration.
- Self-made AHDs may be used as long as it is coordinated with your **assessor**.
- Self-made AHDs must be tested to a minimum of 4kN prior to supporting a human load.

Ascenders

- Ascenders shall require two or more deliberate actions by the user to be removed from the rope.
- Ascenders should be easily adjustable in both directions along the main rope.
- Must be compatible with manufacturer rope diameter recommendations.

Connectors

- Carabiners used within a rope rescue system that immediately or independently hold a life or simulated life on it must have a locking feature (such as a screw-gate or auto-locking gate)
- Two non-locking carabiners used opposite and opposed are considered equivalent to one locking carabiner.
- Locking and non-locking carabiners should have a minimum breaking strength on their major axis of at least 18 kN (4047 lbs).

Descenders

- Descenders shall allow for controlled descent.
- Descenders should be auto-stopping or used in conjunction with another component to enable the user to stop automatically.
- Must be used with manufacturer-recommended rope diameters.

Harnesses

- Appropriate for the environment and conditions. Such as cave, mountain, industrial, and tactical.

Helmets

- Must have a chinstrap or other retention system.

Lanyards

- Can be premade by a manufacturer or self-made out of cord/rope.
- Cordage must meet the expectations listed for accessory cord

- Webbing and Slings must meet the expectations listed for those components in this document.
- Must have an **estimated breaking strength** or MBS of at least 10kn.

Pickets

- Recommended from a manufacturer made specifically for being an anchor point.
- An ITRA assessor reserves the right to allow **homemade equipment** during an assessment or course.

Pulleys

- Use within the rope compatibility list by the manufacturer.

Prusiks

- Cordage must meet the expectations listed for accessory cord

Rappel and Work Positioning Lines

- Any ropes used for rappel and work positioning lines must have an MBS of at least 12 kN.
- Must have a minimum **estimated breaking strength** or MBS of 15kN at a **master point** or **weakest point** of the system, when a **rescue load** is attached for operations in **vertical environments**.
- Must have a minimum **estimated breaking strength** or MBS of 10kN at a **master point** or **weakest point** of the system, when a **standard load** is attached for operations in **vertical environments**.
- Must have a minimum **estimated breaking strength** or MBS of 10k at any given master point or **weakest point** of the systems, when a **rescue load** or **standard load** is attached for operations in **inclined-sloped environments**.
- **Protection measures** must be taken as needed to reduce the possibility of rope failure from a hazard.

Rescue Litters

- Appropriate for the environment, patient injuries, and conditions.

Rope And Textile

- Rope and textiles shall be made from synthetic fibers.
- Life Safety Rope(s) should be of a **kern-mantel** construction.
- Life Safety Ropes used for a **rope rescue system** must be static or semi-static with an MBS of at least 22kN without a knot.

Mechanical Rope Grabs

- Suitable and tested to a load of up to 4 kN.
- Must be compatible with the intended rope size per manufacturer specifications.

Rope Protection

- Recommended from a manufacturer made specifically for the purpose of protecting a rope during rope rescue operations.
- An ITRA **assessor** reserves the right to allow “homemade” rope protection during an assessment or course.

Slings

- Must have an MBS of 20kN or greater.

Travel Restraint Lines (Fall arrest/edge lines)

- Any ropes or cordage used for travel restraint lines must have an MBS of at least 12kN.

Webbing

- 1-inch tubular webbing must have a minimum MBS of 17 kN

Recognized Standards And Regulatory Bodies

- ABNT
- ANSI - American National Standards Institute
- AS/NZS
- ASTM
- CSA
- CE
- EAC
- EN
- NFPA - National Fire Protection Association
- UIAA
- UKCA

Equipment Whitelist

The following equipment may be used in ITRA courses and assessments without the need for additional approval. Whitelisted equipment must be used in accordance with the manufacturer's guidance.

Equipment can be submitted for whitelisting by sending details of the equipment including the manufacturer's documentation to the rope working group at ropewg@itra.international

- Rock Exotica Totem
- Bluewater VT Prusik
- GM CLIMBING 8mm VT Prusik Hitch Cord
- Petzl Huit