



**A Capital  
Safety  
Brand**

## CONCRETE ANCHOR STRAP

**MODEL:** (SEE TABLE 1)

*This manual is intended to meet the Manufacturer's Instructions as required by the following standards and should be used as part of an employee training program as required by OSHA:*



ANSI Z359.1-2007

**WARNING:** This product is part of a personal fall arrest or restraint system. These instructions must be provided to the user of this equipment. The user must read and understand these instructions before using this equipment. Users must follow the manufacturer's instructions for each component of the system. Manufacturer's instructions must be followed for proper use and maintenance of this equipment. Alterations or misuse of this product, or failure to follow instructions, may result in serious injury or death.

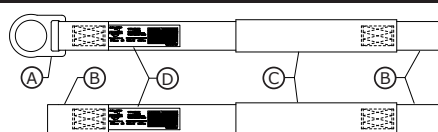
**IMPORTANT:** If you have questions on the use, care, or suitability of this equipment for your application, contact Capital Safety.

**WARNING:** Improper use of this equipment will increase the risk of serious injury. To obtain the optimum level of safety which Capital Safety fall prevention systems can provide, you must read or receive, understand and adhere carefully to all instructions provided by Capital Safety.

### APPLICATIONS

**PURPOSE:** The Protecta® Concrete Anchor Strap (see Figure 1) is designed as a temporary anchorage connector for a personal fall arrest or restraint system. The D-ring and Web Loop connecting single loop anchorage connectors are designed for single use. Do not hang, lift, or support tools or equipment from the Anchor Strap. When the anchorage connector is used as a component of a Personal Fall Arrest System (PFAS), it typically includes a Full Body Harness and a connecting subsystem (Energy Absorbing Lanyard). Maximum permissible free fall is 6 ft. (1.8 m). When the anchorage connector is used as a component of a restraint system, it must be rigged to prevent the user from reaching a fall hazard. Restraint systems typically include a Full Body Harness and a Lanyard or Restraint Line. No vertical free fall is permitted.

**Figure 1 - Concrete Anchor Strap**



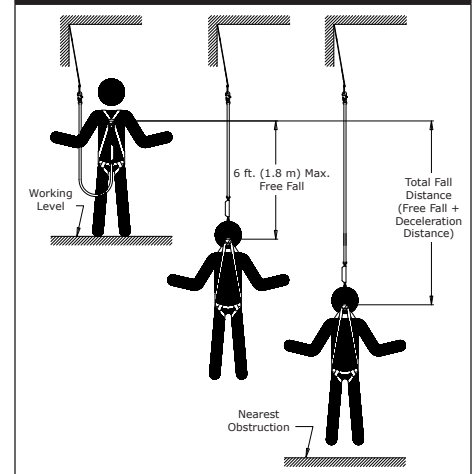
A D-Ring B - Web Loop C Wear Sleeve D Labels

**REQUIREMENTS:** Consider the following requirements before using this product:

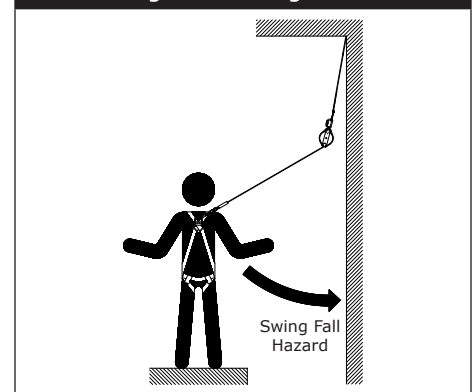
- **Capacity:** The Concrete Anchor Strap is designed for use by persons with a combined weight (clothing, tools, etc.) of no more than 420 lbs. (191 kg). No more than one personal protective system may be connected at one time.
- **Free Fall:** Restraint systems must be rigged so that no vertical free fall is possible. Personal fall arrest systems used with this equipment must be rigged to limit the free fall to 6 ft. (1.8 m) per ANSI Z359.1. See the personal fall arrest system manufacturer's instructions for more information.
- **Fall Clearance:** There must be sufficient clearance below the user to arrest a fall before the user strikes the ground or other obstruction (Figure 2). The clearance required is dependent on elevation of the anchorage connector, connecting subsystem length, deceleration distance, movement of the harness attachment element, worker height, and free fall distance. See the personal fall arrest system manufacturer's instructions for more information.
- **Swing Falls:** Swing falls occur when the anchorage point is not directly above the point where a fall occurs (see Figure 3). The force of striking an object in a swing fall may cause serious injury or death. Minimize swing falls by working as close to the anchorage point as possible. Do not permit a swing fall if injury could occur. Swing falls will significantly increase the clearance required when a Self Retracting Lifeline or other variable length connecting subsystem is used.
- **Hazards:** Use of this equipment in areas with environmental hazards may require additional precautions to prevent injury to the user or damage to the equipment. Hazards may include, but are not limited to; heat, chemicals, corrosive environments, high voltage power lines, gases, moving machinery, and sharp edges. Contact DBI-SALA if you have questions about using this equipment where environmental hazards exist.
- **Training:** This equipment must be installed and used by persons trained in its correct application and use. It is the responsibility of user to assure they are familiar with these instructions and are trained in the correct care and use of this equipment. The user must always be aware of the operating characteristics, application limits, and consequences fo improper use of this equipment.

**IMPORTANT:** Training must be conducted without exposing the trainee to a fall hazard. Training should be repeated periodically.

**Figure 2 - Fall Clearance**



**Figure 3 - Swing Falls**



**APPLICABLE STANDARDS:** Refer to national standards, including ANSI Z359.1, local, state, and federal requirements for more information on personal fall arrest systems and associated components.

### SYSTEM REQUIREMENTS

**COMPATIBILITY OF COMPONENTS:** Protecta equipment is designed for use with Capital Safety approved components and subsystems only. Substitutions or replacements made with non-approved components or subsystems may jeopardize compatibility of equipment and may effect the safety and reliability of the complete system.

**COMPATIBILITY OF CONNECTORS:** Connectors are considered to be compatible with connecting elements when they have been designed to work together in such a way that their sizes and shapes do not cause their gate mechanisms to inadvertently open regardless of how they become oriented. If the connecting element that a snap hook or carabiner attaches to is undersized or irregular in shape, a situation could occur where the connecting element applies a force to the gate of the snap hook or carabiner. This force may cause the gate (of either a self-locking or a non-locking snap hook) to open, allowing the snap hook or carabiner to disengage from the connecting point.

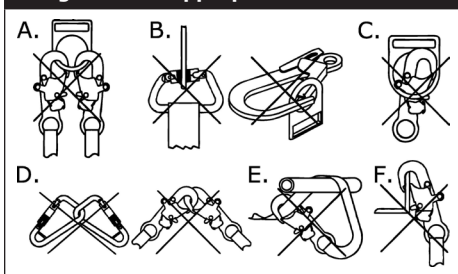
Contact Capital Safety if you have any questions about compatibility. Connectors (hooks, carabiners, and D-rings) must be capable of supporting at least 5,000 lbs. (22.2 kN). Connectors must be compatible with the anchorage or other system components. Do not use equipment that is not compatible. Non-compatible connectors may unintentionally disengage. Connectors must be compatible in size, shape, and strength. Self-locking snap hooks and carabiners are required by ANSI Z359.1 and OSHA.

**MAKING CONNECTIONS:** Use only self-locking snap hooks and carabiners with this equipment. Use only connectors that are suitable to each application. Ensure all connections are compatible in size, shape, and strength. Do not use equipment that is not compatible. Ensure all connectors are fully closed and locked. Capital Safety connectors (snap hooks and carabiners) are designed to be used only as specified in each product's user instructions (see Figure 4). Capital Safety snap hooks and carabiners should not be connected:

- A. To a D-ring to which another connector is attached.
- B. In a manner that would result in a load on the gate.
- C. In a false engagement, where features that protrude from the snap hook or carabiner catch on the anchor, and without visual confirmation seems to be fully engaged to the anchor point.
- D. To each other.
- E. Directly to webbing or rope lanyard or tie-back (unless the manufacturer's instructions for both the lanyard and connector specifically allow such a connection).
- F. To any object which is shaped or dimensioned such that the snap hook or carabiner will not close and lock, or that roll-out could occur.

**NOTE:** Large throat opening snap hooks should not be connected to standard size D-rings or similar objects which will result in a load on the gate if the hook or D-ring twists or rotates. Large throat snap hooks are designed for use on fixed structural elements such as rebar or cross members that are not shaped in a way that can capture the gate of the hook.

**Figure 4 - Inappropriate Connections**



**PERSONAL FALL ARREST SYSTEM:** Personal fall arrest systems used with this equipment must meet applicable state, federal, OSHA, and ANSI requirements. A full body harness must be worn when this equipment is used as a component of a personal fall arrest system. As required by OSHA, the personal fall arrest system must be capable of arresting the user's fall with a maximum arresting force of 1,800 lbs. (8 kN), and limit the free fall to 6 ft. (1.8 m) or less. If the maximum free fall distance must be exceeded, the employer must document, based on test data, that the maximum arresting force will not be exceeded, and the personal fall arrest system will function properly. When a free fall greater than 6 ft. (1.8 m), and up to a maximum of 12 ft. (3.7 m) is possible, Capital Safety recommends using a personal fall arrest system incorporating a Capital Safety Force2 Energy Absorbing Lanyard. Capital Safety has performed testing using the Force2 Energy Absorbing Lanyard in free falls up to 12 ft. (3.7 m) to ensure the maximum arresting force does not exceed 1,800 lbs. (8.0 kN), and the system functions properly. Results of these tests are listed in the manual provided with Force2 Energy Absorbing Lanyards.

**ANCHORAGE STRENGTH:** The anchorage strength required is dependent on the application. This equipment must be installed on structures capable of meeting the following anchorage strength requirements:

- **FALL ARREST:** The structure to which the anchorage connector is attached must sustain static loads applied in the directions permitted by the fall arrest system of at least: 3,600 lbs. (16.0 kN) with certification of a qualified person, or 5,000 lbs. (22.2 kN) without certification. See ANSI Z359.1 for certification definition. When more than one personal fall arrest system is attached to an anchorage, the strengths stated above must be multiplied by the number of personal fall arrest systems attached to the anchorage
- From OSHA 1926.500 and 1910.66:** Anchorages used for attachment of a personal fall arrest system shall be independent of any anchorage being used to support or suspend platforms, and must support at least 5,000 lbs. (22.2 kN) per user attached; or be designed, installed, and used as part of a complete personal fall arrest system which maintains a safety factor of at least two, and is supervised by a qualified person.

- **RESTRAINT:** The structure to which the anchorage connector is attached must sustain static loads applied in the directions permitted by the restraint system of at least 3,000 lbs. (13.3 kN) When more than one restraint system is attached to an anchorage, the strengths stated above must be multiplied by the number of restraint systems attached to the anchorage.

## INSTALLATION AND USE

**WARNING:** Do not alter or intentionally misuse this equipment; your safety depends on it. Consult with Capital Safety if using this equipment with components or subsystems other than those described in this manual. Some subsystem and component combinations may interfere with the operation of this equipment.

**WARNING:** Consult with your doctor if you doubt your fitness to safely absorb the shock from a fall arrest. Age and fitness can seriously affect your ability to withstand falls. Pregnant women and minors must not use this equipment.

**PLANNING:** Plan your system before installation. Consider all factors that will affect your safety during use of this equipment. The following gives important points to consider when planning your system:

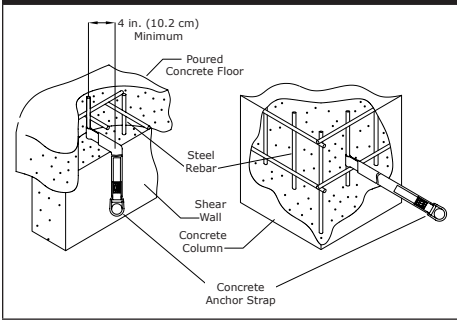
- A. Select an anchorage that meets the requirements specified in *System Requirements - Anchorage Strength*.
- B. Avoid working where system components may be in contact with, or abrade against, unprotected sharp edges. Inspection frequency should be increased when an anchorage connector is installed around sharp edges.
- C. Components which have been subjected to the forces of arresting a fall must be removed from service and destroyed
- D. The employer must have a rescue plan when using this equipment. The employer must have the ability to perform a rescue quickly and safely.

**INSTALLATION:** Figure 5 illustrates installation of the Concrete Anchor Strap. Select a location for the anchorage that will provide the best safety to the user. Once a section of concrete column, or a shear wall has been poured and allowed to cure, place the Web Loop end of the Anchor Strap over an exposed section of Steel Rebar. The anchoring rebar must be at least 4 in. (10 cm) from the outside face of the poured concrete. Once the Anchor Strap is in place, forming of the floor or column may continue. The concrete anchor will be secured by making the next pour, and allowing the concrete to cure. Once forms are removed and the concrete has cured, anchors will remain on the face of a column, or on the seam between shear wall and bottom side of the floor.

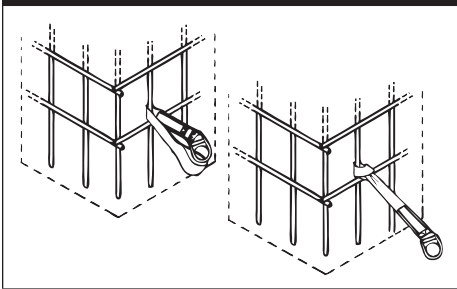
If the rebar cage has already been completed the Concrete Anchor Strap may be choked around the internal rebar by folding the Anchor Strap around the rebar and then pulling the D-Ring end through the Web Loop (see Figure 6). All other stipulations of this manual must still be followed, specifically regarding anchorage strength, position, and concrete curing before use.

**WARNING:** Do not use Concrete Anchor Strap until it is embedded in cured concrete. The concrete is an essential part of the anchorage strength. Using the Anchor Strap without concrete support may cause the anchorage connector to fail and could result in serious injury or death.

**Figure 5 - Anchor Strap Installation**



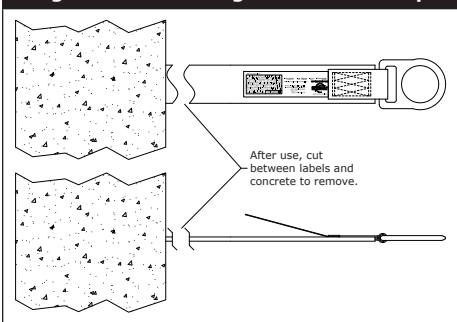
**Figure 6 - Installing on Completed Cage**



**REMOVAL:** Once the fall hazard has been eliminated, the Concrete Anchor Strap must be removed. Use a knife or scissors to cut the Anchor Strap at the concrete seam (see Figure 7).

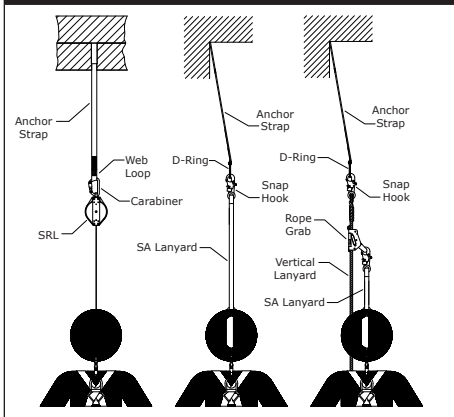
**WARNING:** The Concrete Anchor Strap is not reusable. It must be removed and disposed of once the fall hazard has been eliminated. Attempts to reuse his product after removal may cause the anchorage connector to fail and could result in serious injury or death.

**Figure 7 - Removing the Anchor Strap**



**CONNECTING TO THE CONCRETE ANCHOR STRAP:** Figure 8 illustrates typical Fall Arrest or Restraint system connections to the Anchor Strap. Attach to the D-Ring with a Self-Locking Snap Hook or Carabiner only. Ensure connections are fully closed and locked. When using an Energy Absorbing Lanyard, connect the Energy Absorber pack end to the Harness. Ensure Self Retracting Lifelines are positioned so that retraction is not hindered. Always protect the lifeline or lanyard from abrading against sharp or abrasive surfaces in your work area. Ensure all connections are compatible in size, shape, and strength. Never connect more than one Personal Protective System to a single Anchor Strap.

**Figure 8 - Anchorage Connections**



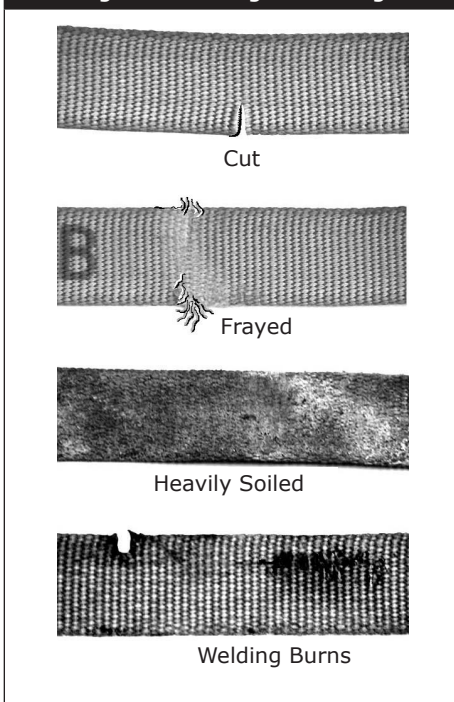
**INSPECTION:**

**BEFORE EACH USE:** Inspect the following components of the Concrete Anchor Strap to ensure safe, efficient operation:

- **D-Ring:** Inspect the D-Ring for damage. It must not be broken, distorted, or have any sharp edges, burrs, cracks, worn areas, or corrosion.
- **Webbing:** Inspect the Webbing for concentrated wear, frayed strands, broken yarn, burns, cuts, and abrasions. Inspect for excessive soiling, paint build-up, and rust staining. Inspect for chemical or heat damage indicated by brown, discolored, or brittle areas. Inspect for ultraviolet damage indicated by discoloration and the presence of splinters and slivers on the lifeline surface (see Figure 9).

**IMPORTANT:** Record the results of each inspection in the "Inspection & Maintenance Log". If inspection reveals any damage, the Anchor Strap must be removed and disposed of immediately.

**Figure 9 - Damaged Webbing**



**MODELS & SPECIFICATIONS**

**Table 1 - Models**

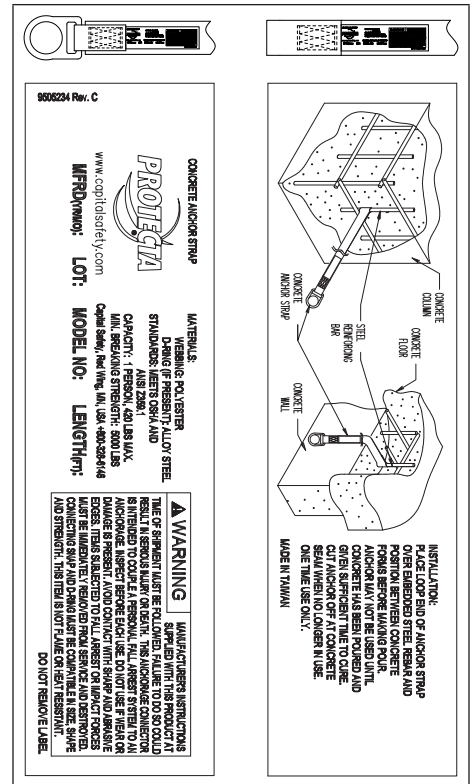
2190057 & 2190058		
2190063		
<b>Model</b>	<b>End Connectors</b>	<b>X</b>
2190057	D-Ring, Web Loop	42 in (1.0 m)
2190058	D-Ring, Web Loop	48 in (1.2 m)
2190063	2 Web Loops	42 in (1.0 m)

**Table 2 - Specifications**

<b>Hardware:</b>	Alloy Steel D-Ring
<b>Webbing:</b>	1 3/4 in. (4.4 cm) Polyester
<b>Wear Sleeve:</b>	.025 in. (.635 mm) Polyethylene
<b>Minimum Breaking Strength:</b>	5,000 lbs. (2.2 kN) when loaded within the recommended working range
<b>Capacity:</b>	1 Person x 420 lbs. (191 kg)
<b>Compliance:</b>	OSHA, ANSI Z359.1

**LABELING:**

All labeling must be securely attached to the Concrete Anchor Strap and must be fully legible.



**MEDICAL WARNING**

For user safety, workers with physical disabilities or muscular problems should receive medical advice prior to using fall arrest equipment. **UNDER NO CIRCUMSTANCES** should pregnant women or minors use Capital Safety fall arrest systems.

A worker's ability to accommodate arrest forces inflicted on the body in the event of a fall are seriously affected by age and fitness of the user. Only those in good health should work at heights. Please contact your physician should there be reason to doubt your ability to absorb the shock load on your body in the event of a fall.

