

ANSI Z359-Compliant Products from MSA

Z359.1



Z359.3

Z359.2

MSA
The Safety Company



The ANSI Z359-2007 Fall Protection Code replaces ANSI Z359.1-1992(R1999), *Minimum Safety Requirements for Personal Fall Arrest Systems, Subsystems, and Components*.

The scope of the new Fall Protection Code has expanded beyond fall arrest to other work applications. The new Z359 will add four new sections comprising the family of standards which make up the complete document. Sections of the new standard include:

Z359.0 | Definitions and Nomenclature Used for Fall Protection and Fall Arrest

Z359.1 | Safety Requirements for Personal Fall Arrest Systems, Subsystems and Components

Z359.2 | Minimum Requirements for a Comprehensive Managed Fall Protection Program

Z359.3 | Safety Requirements for Positioning and Travel Restraint Systems

Z359.4 | Safety Requirements for Assisted Rescue and Self-Rescue Systems, Subsystems and Components

Z359.0 | Definitions and Nomenclature Used for Fall Protection and Fall Arrest

This part functions as a dictionary of specialized terms compiled from the other four sections and defines each of approximately 150 terms used throughout the new standard.

Z359.1 | Safety Requirements for Personal Fall Arrest Systems, Subsystems and Components

This part contains product design criteria and test procedures for fall arrest components, subsystems and systems, just as in the previous version of the standard. However, it has been revised with several important new requirements. Listed here is a summary of Z359.1 standard key changes:

1. Gate strength requirements have increased for snaphooks and carabiners

The new standard will increase the gate strength requirement to 3,600 pounds in all directions of potential loading to the gate.

2. A front attachment element for fall arrest is now included in the standard

The revised standard allows attachment of the fall arrest system to a front-mounted D-ring, located approximately in the sternum area. Front D-ring connection is limited however, to systems restricting free fall distance to two feet or less and limit front D-ring maximum fall arrest loads to 900 pounds force, or less.

3. Additional testing and warnings for twin-leg shock-absorbing lanyards

The new standard will include a 5,000-pound static test of the joint between the two lanyard legs. Also added is a product label warning that only the center snaphook should be attached to the harness back D-ring. More warnings will be included within the user instructions, such as a warning not to attach the lanyard's unused leg to any harness point except for those attachment points specifically approved by the harness manufacturer for that purpose.

Z359.2 | Minimum Requirements for a Comprehensive Fall Protection Program

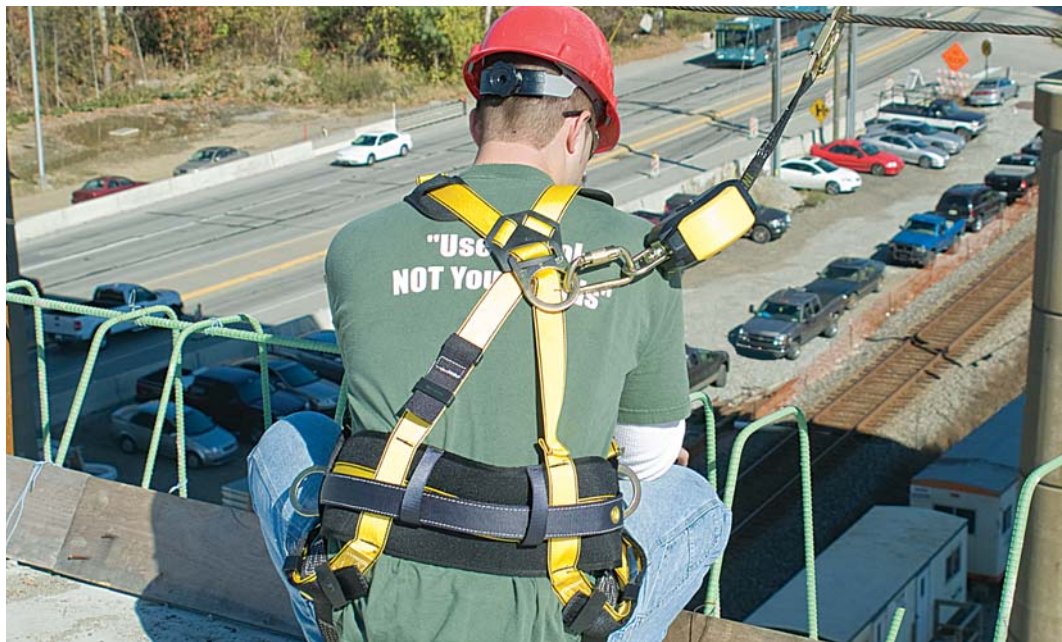
This entirely new section is directed at employers and safety professionals rather than product manufacturers. The new program standard sets detailed requirements for a comprehensive fall protection program and forms the basis for the standard's other four sections.

The standard's purpose is to:

- identify, evaluate, and eliminate (or control) fall hazards through planning
- ensure proper training of personnel
- ensure proper installation and use of fall protection and rescue equipment
- implement safe fall protection and rescue procedures

The standard sets clear, unambiguous duties and responsibilities for each program participant, including employers, Qualified and Competent Persons, rescuers, and trainers. Training is also defined for each role in the organization, as are the requirements for the trainers themselves.

The Program Standard sets general and specific requirements for fall protection procedures. The procedural scheme is based around the Fall Hazard Survey Report. The report is written by trained safety professionals, at the Qualified Person or Competent Person level, identifies each fall hazard at the work location. The report goes on to recommend one or more methods for eliminating or controlling each identified fall hazard through a fall protection hierarchy.



The program standard establishes strength criteria for various fall protection anchors. Anchors are divided into two categories, Certified and Non-Certified. Certified Anchors are those which have been selected under the supervision of a Qualified Person. Non-Certified Anchors are those judged by a Competent Person as capable of supporting the predetermined anchor forces prescribed by the standard. Requirements by application are outlined below:

Fall Arrest

Non-Certified Anchor | 5,000-lbf static strength

Certified Anchor | designed, selected and installed by a Qualified Person, static strength two times maximum arresting force

Work Positioning

Non-Certified Anchor | 3,000-lbf static strength

Certified Anchor | static strength two times foreseeable force

Restraint and Travel Restriction

Non-Certified Anchor | 1,000-lbf static strength

Certified Anchor | static strength two times foreseeable force

Rescue Systems

Non-Certified Anchor | 3,000-lbf static strength

Certified Anchor | static strength five times the applied load



Other requirements in the new standard include:

- Basic principles for rope access, including use of two rope lines and the need to operate as a multi-worker team.
- Provisions for prompt rescue after a worker has fallen and remains suspended, unable to evacuate him- or herself to a safe working level.
 - ✓ Planning for prompt rescue is defined as reaching the rescue subject within six minutes after an accidental fall.
 - ✓ If your plan calls for assistance by professional rescue services such as the fire department or local search and rescue teams, then advance planning must be undertaken.
 - ✓ If your plan includes an in-house rescue team, then team members must be trained and equipped for the task. Training must include regularly-scheduled simulations and documented plans and instructions for their use.
- Requirements for incident investigation in the event of accidental death, injury or property damage.
- Regular evaluation of the effectiveness of the Managed Fall Protection Program.

Z359.3 | Safety Requirements for Work Positioning and Travel Restraint Systems

Z359.3 establishes minimum design and test requirements for equipment used in work positioning and travel restraint. Work positioning systems are designed to prevent a fall from occurring. When a fall hazard is present, positioning systems must be used in conjunction with a separate and independent personal fall arrest system. Restraint systems do not support a portion of the worker's weight and are used only on walking/working surfaces with a slope between zero and 18.4 degrees.

Z359.4 | Safety Requirements for Assisted Rescue and Self-Rescue Systems, Subsystem and Components

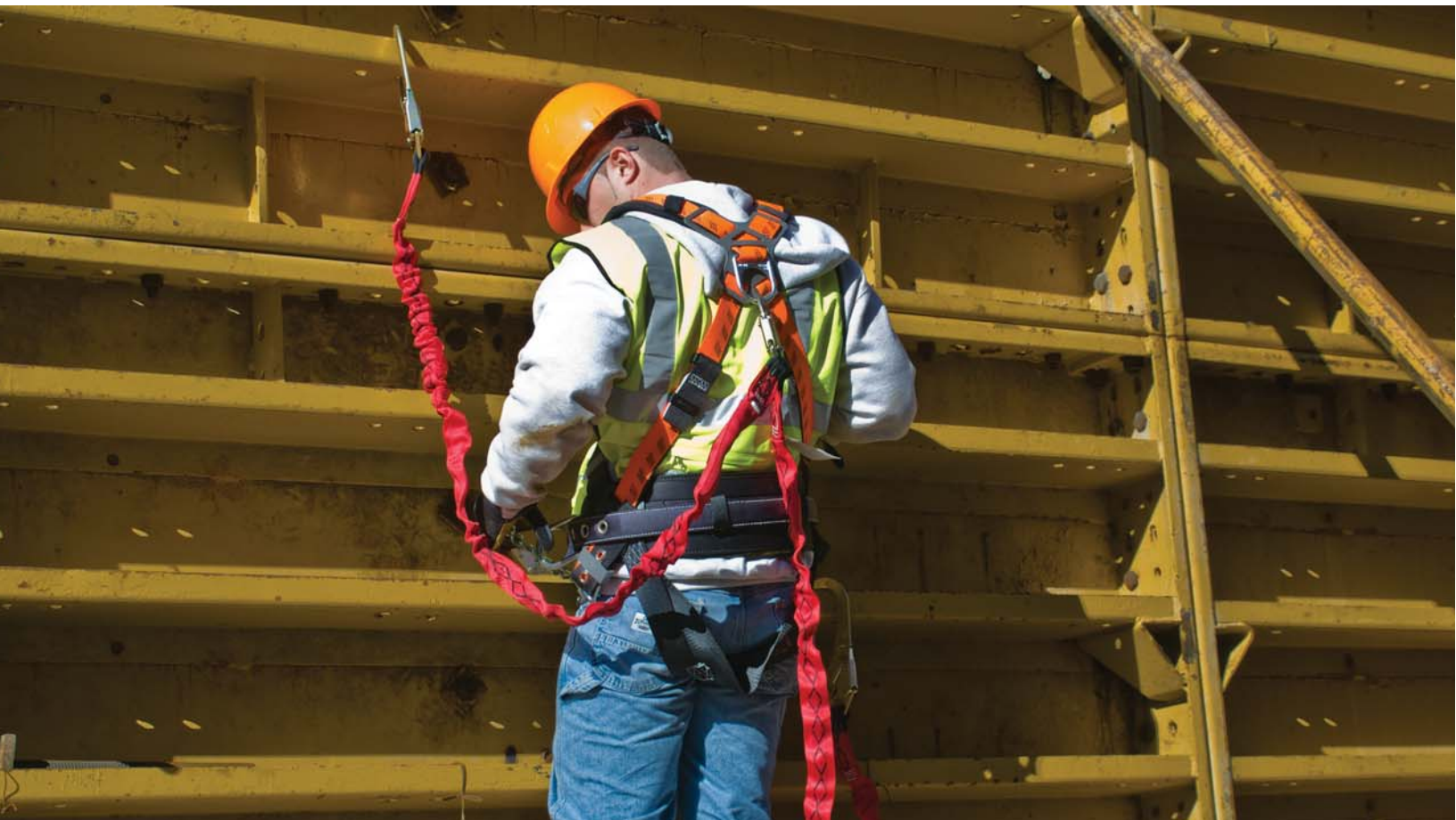
This ANSI Z359-2007 standard establishes requirements for design, performance, marking, qualification, instruction, training, use, maintenance, and removal from service of products used in rescue and evacuation. The standard is directed at rescue systems used in pre-planned rescue applications for one to two persons wherever a fall hazard exists.

Harnesses, rescue lanyards, and anchorage connectors must meet the applicable requirements in ANSI Z359.1. Evacuation harnesses are for rescue only and not for fall arrest. They must securely hold the body

pounds tensile load and 3100 pounds static load. They must have a secondary brake to prevent uncontrolled descent and have a minimum mechanical advantage of 3:1.

Descent devices can be single-or multiple-use devices and can be automatically or manually controlled. Manually-controlled devices must stop if descent control is released, and must also have a panic-grab function (stop descent if excessive force is applied to the control).

Personnel hoists may be operated manually or by an external power source. Units operated by



Full body harnesses must meet the requirements of ANSI Z359.1 for fall arrest. In addition, work positioning and travel restraint attachment elements (D-rings) must withstand a dynamic strength test consisting of a ANSI Z359.1 3.3-foot free fall with a 220-pound test weight.

Lanyards under this section must be designed and tested to withstand a static load of 5,000 pounds force without breaking.

whether the person is conscious or unconscious. Body support must be accomplished by a combination of webbing straps supporting the body around the shoulders and thighs.

Self-retracting lanyards with integral rescue capability must engage in the rescue mode at any time, have a minimum 3:1 mechanical advantage, hold a load in rescue mode, and have a means to stabilize the device during use.

Synthetic rope tackle blocks must use rope with a minimum breaking strength of 4500

an external power source must have a manual back-up operation mechanism. Hoists must also be able to stop and hold a load and include a back-up brake mechanism.

For additional information on the standard's requirements, refer to MSA's white paper, *A Review of Changes to the ANSI Z359.1 Fall Arrest Standard*, posted at the following: <http://www.msanorthamerica.com/webcasts.html>

To purchase copies of the new standards, contact the American Society of Safety Engineers, online at <http://www.ASSE.org>.

New ANSI Z359-Compliant Snaphooks and Carabiners

Snaphooks

3600-Pound Gate Strength
in all directions of potential loading



36C snaphook
3/4" gate opening



36CS snaphook
3/4" gate opening
swivel load indicator



36CL snaphook
2.5" gate opening

User-friendly design

Easy, single-hand operation

Carabiners

MSA's ANSI Z-compliant carabiners feature a 3,600-pound gate strength in various sizes. See the chart below for ordering options.



Part No. 10089205
9/16" gate opening



Part No. 10089207
1" gate opening



Part No. 10089209
2.1" gate opening

PN	Gate opening	Material
10089205	9/16"	Steel
10089207	1"	Steel
10089209	2.1"	Steel

Restraint Lanyards

Restraint lanyards are primarily used for travel restriction (to restrain a worker from reaching a fall hazard) and work positioning (stabilizing a worker at an elevated location) applications.



Part No. 10089346



Part No. 10089347

PN	Type					Connection		Length	
	Tie-Back	Single-leg	Twin-leg	Adjustable	Fixed	Harness	Anchorage	5'	6'
10056762	×	×		×		36C	FP5K	×	
10056763	×		×		×	36C	FP5K	×	
10089345		×		×		36C	36C		×
10089346		×		×		LOOP	36C		×
10089347		×			×	LOOP	36C		×

ANSI Z359-Compliant Lanyards

The FP5K™ Tie-Back Lanyard uses a carabiner with a 5000-pound gate strength to allow users to tie back to the leg of the lanyard, minimizing the amount of equipment a user must carry. The integral shock absorber keeps fall arrest forces below 900 pounds to meet ANSI Z359.1 requirements and uses Monster Edge™ webbing with a 12,000-pound minimum breaking strength for increased durability. Monster Edge webbing includes internal wear indicators to alert a user when it is time to remove the product from service.



Part No. 10047084



Part No. 10047085



Part No. 10047086



Part No. 10047087

PN	Material		Shock absorber	Type				Connection	
	Web	Cable		Single-leg	Twin-leg	Adjustable	Fixed	Harness	Anchorage
10047084	×		×	×		×		36C	FP5K
10047085	×		×		×	×		36C	FP5K
10047086		×	×	×			×	36C	FP5K
10047087		×	×		×		×	36C	FP5K
10066304	×		×	×		×		36C	FP5K



The Diamond™ Lanyard product line features a pouchless, integral shock-absorbing design to keep fall arrest forces below 900 pounds to meet ANSI Z359.1 requirements. This pouchless design decreases the weight of the product and streamlines the design, improving user comfort. The outer sheath of the Diamond Lanyard is UV-resistant and includes a Teflon coating to prolong service life.

Diamond Lanyards						
PN	Type				Connection	
	Single-leg	Twin-leg	Expanyard	D-ring extension	Harness	Anchorage
10088065	×				36C	36C
10088066	×				36C	36CL
10088067	×		×		36C	36C
10088068	×		×		36C	36CL
10088069		×			36C	36C
10088070		×			36C	36CL
10088071		×	×		36C	36C
10088072		×	×		36C	36CL
10088077		×		×	36C	36CL



Part No. 10088065



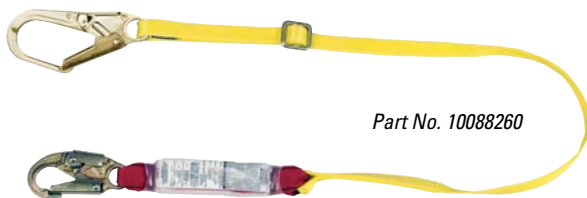
Part No. 10088067

Sure-Stop™ Shock-Absorbing Lanyards uses tear-tape design to keep fall arrest forces below 900 pounds to meet ANSI Z359.1 requirements. Lanyards are offered in adjustable and fixed lengths and are available in your choice of rope, cable, or web.

Web Shock-Absorbing Lanyards								
PN	Type						Connection	
	Single-leg	Twin-leg	Tie-back	Adjustable	Fixed	Expanyard	Harness	Anchorage
10088259	×			×			36C	36C
10088260	×			×			36C	36CL
10088261	×			×		×	36C	36C
10088262	×			×		×	36C	36CL
10088265		×		×			36C	36C
10088266		×		×			36C	36CL
10088268		×			×		36C	36CL
10088267		×			×		36C	36C
10088269		×			×		Sewn loop	36CL
10088263		×				×	36C	36C
10088264		×				×	36C	36CL
10088213	×		×		×		36C	36C
10088214		×	×		×		36C	36C
10088215		×	×		×		Sewn loop	36C
10088216	×				×		Sewn loop	36C
10088217		×			×		Sewn loop	36C



Part No. 10088214

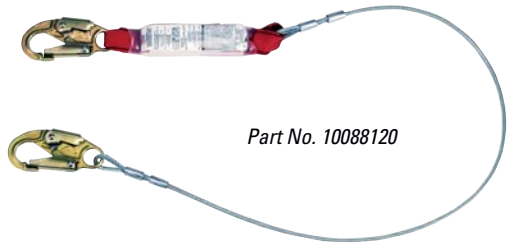


Part No. 10088260



Part No. 10088259

Cable Shock-Absorbing Lanyards				
PN	Type		Connection	
	Single-leg	Twin-leg	Harness	Anchorage
10088120	×		36C	36C
10088211		×	36C	36C
10088212		×	36C	36CL



ArcSafe® Lanyards are SEI-certified to the requirements of ASTM F887-05 standard for arc flash protection. ArcSafe Shock-Absorbing Lanyards use a tear-tape design to keep fall arrest forces below 900 pounds to meet ANSI Z359.1 requirements.

ArcSafe Shock-Absorbing Lanyards				
PN	Type		Connection	
	Single-leg	Twin-leg	Harness	Anchorage
10060139	×		36C	36C
10060140		×	36C	36C
10088256		×	36C	36CL



Shock-absorbing sub-assemblies use a tear-tape design to keep fall arrest forces below 900 pounds to meet the ANSI Z359.1 requirements.

Shock-Absorbing Sub-assembly	
PN	Description
10088218	Sub-Assembly with Sure-Stop Shock Absorber, 36C snaphook, D-ring



1/2" Rope Shock-Absorbing Lanyards						
PN	Type				Connection	
	Single-leg	Twin-leg	Fixed	Adjustable	Harness	Anchorage
10088219	×		×		36C	36C
10088220		×	×		36C	36C
10088221	×			×	36C	36C
10088222		×		×	36C	36C



Thermatek® Lanyards are designed for high-heat applications. This specialized design features a Tuffweld protective cover over the shock absorber and a Kevlar back-up strap inside the shock-absorbing pouch.

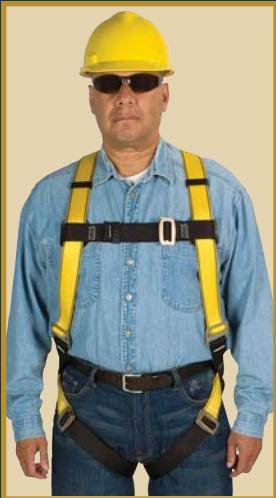
Thermatek Shock-Absorbing Lanyards					
PN	Type			Connection	
	Single-leg	Twin-leg	12' Freefall	Harness	Anchorage
10088246	×			36C	36C
10088247	×		×	36C	36C
10088250		×		36C	36C



Ropes and Rope Grabs	
PN	Description
415940	FP Pro Rope Grab with 3' Sure-Stop Lanyard, 36C snaphook
415941	Rope Grab with 12' fixed nylon lanyard, 36C snaphook
415865	25' 5/8" polyester rope, w/36C snaphook on one end
415873	200' 5/8" polyester rope, w/36C snaphook on one end



MSA harness product lines shown below are compliant to ANSI Z359.1-2007. For part numbers or ordering information, please reference MSA's Fall Protection Catalog (bulletin #2300-93-MC), visit us on-line at www.msanet.com, or contact MSA's Customer Service Center at 1-800-672-2222.



**Workman®
Harness**



**Workman
Construction Harness**



**Technacurv®
Vest-Type Harness**



**Technacurv
Pullover Harness**



**Technacurv
Construction Harness**



**Technacurv
Tower Harness**



**FP Pro®
Vest Style Harness**



**FP Pro Cross-Chest
Style Harness**



**FP Pro
Construction Harness**



**Thermatek®
Harness**



**ArcSafe® Cross-Chest
Style Harness**



**ArcSafe
Vest-Style Harness**



**SSH304 Series
Harness**



**SSH306 Series
Harness**



**SSH314 Series
Harness**



**SSH315 Series
Harness**



**SSH609 Series
Harness**



**SSH709 Series
Harness**



**SSH807 Series
Harness**



**SSH809 Series
Harness**



**SSH909 Series
Harness**



**SSH915 Series
Harness**



**SSH916 Series
Harness**



**SSH917 Series
Harness**



**SSH919 Series
Harness**



**Classic Vest-Type
Harness**



**Classic Pullover
Harness**

ANSI Z359.1-2007-Compliant Products

Workman Personal Fall Limiter (PFL)

With its solid design and fast-acting brake mechanism, you can be confident that the Workman PFL will be there when you need it most. The Workman PFL features a field-replaceable lifeline option, a 400-pound working capacity, an integral load indicator, and does not require annual factory re-certification.



Part No. 10093354

Workman Personal Fall Limiter (PFL)				
PN	Length	Connection		Standards
		PFL	Line	ANSI Z359.1-2007
10093352	12'	Back D connector	LC	
10093353	12'	1" steel carabiner	36C	×

Aptura® LT30 SRL

Aptura LT30 SRLs are light-weight and economical. They are designed to keep fall arrest forces below 900 pounds and the SRLs feature a 400- pound working capacity and a field-replaceable lifeline. Annual factory recertification is not required.



Part No. 10088386

Aptura LT30 SRLs			
PN	Length	Connection	
		SRL	Line
10088386	30'	None	36C
10088387	30'	10089207	36C

Dyna-Lock SRL

The MSA Dyna-Lock® SRLs are fast-acting fall arresters that limit freefall distance, deceleration distance, and fall arrest forces while allowing freedom of movement for the user. An internal shock absorption mechanism limits fall arrest forces to 900 pounds or less. Annual factory recertification is not required.



Part No. 506204

Part No. 506615

Dyna-Lock SRLs				
PN	Length	Line material	Type	
			Line connection	Backpacker
506615	20'	Nylon web	36CS	
10088390	20'	Nylon web	36CS	×
10017931	20'	Stainless steel cable	36CS	
506202	30'	Galvanized cable	36CS	
506203	30'	Stainless steel cable	36CS	
506204	50'	Galvanized cable	36CS	
506205	50'	Stainless steel cable	36CS	
506206	70'	Galvanized cable	36CS	
506207	70'	Stainless steel cable	36CS	
506208	95'	Galvanized cable	36CS	
506209	95'	Stainless steel cable	36CS	

FP Stryder™ Anchorage Connector

is available in two models to fit beam flange widths up to 24". The FP Stryder features a push-button adjustment design that allows easy, single-handed installation. Contact MSA Customer Service or visit us on-line for ordering information.



Part No. 10051455

Lynx® Tripod Confined Space Entry Kits

make it easy to order the confined space system which best suits your needs. The Lynx Hoist is rated for raising and lowering of materials and personnel. The Lynx Rescuer provides a means of non-entry rescue of a confined space system. Contact MSA Customer Service or visit us on-line for ordering information.



Part No. 10023968

PN	Description
505318	Lanyard Connector Adapter, nylon, 1 D-ring, 18" (back D-ring extension)
505233	1/4" wire rope, vinyl-coated, fixed length, 5', 36C snaphook one end, 3" O-ring on other end

Learn from the experts - MSA offers the following ANSI Z359-Compliant Fall Protection training courses:

MSA training courses are compliant to the new ANSI Z359 family of fall protection standards and meet **"ANSI Z490.1 2001 Criteria for Accepted practices in Safety, Health, and Environmental Training."**

Qualified Person Training

This course will train the Qualified Person in the use of all fall protection equipment and systems encountered in work and includes the following;

- Fall protection regulations
- Equipment use, selection, and inspection
- Preparing fall hazard surveys
- Developing engineering system standards
- Determining system clearance requirements
- Designing and selecting anchorages
- Designing new and evaluating existing horizontal systems
- Developing written fall protection procedures and rescue procedures
- Determining potential impact forces

Authorized Person Training

This course will train the Authorized Person to inspect, anchor, assemble, and use fall protection in work applications. Authorized Person training will include the following:

- Fall hazard recognition
- Fall hazard control methods
- Fall protection regulations
- How to use written fall protection procedures
- Equipment use, selection and inspection
- Fall protection rescue procedures

**Let us train you
at your facility!**

REGISTRATION INFORMATION

We invite you to attend our next training session, which will prove to be a comprehensive and valuable experience. For registration information, please contact the MSA Customer Service Center by phone (1.800.672.222) or by fax (1.800.967.0398), or log onto our web site at www.MSAnet.com.

Program Administrator Training

This course will train the Fall Protection Program Administrator to have a working knowledge of current fall protection regulations, standards, and fall protection equipment and systems. Fall Protection Program Administrator training will include the following:

- Fall protection regulations
- Developing and maintaining a managed fall protection program
- Fall hazard surveys
- Selection and appointment of safety committee personnel
- Fall protection system selection
- Development of approved equipment purchase lists
- Selection and appointment of qualified and competent people
- Development of engineering system standards

Competent Rescue Training

This course will train the Competent Fall Protection Rescuer how to select, inspect, anchor, assemble, and use fall protection and rescue equipment in work applications. Competent Fall Protection Rescuer training will include the following:

- Fall hazard control methods
- Fall protection and rescue regulations
- Assessment of fall hazards to determine appropriate rescue methods
- Training on suspension trauma
- Equipment use, selection, and inspection
- Rescue system assessment
- Development of written fall protection rescue procedures

Authorized Rescuer Training

This course will train the Authorized Fall Protection Rescuer how to select, inspect, anchor, and use fall protection and rescue equipment in work applications. Authorized Fall Protection Rescuer training will include the following:

- Fall hazard recognition
- Fall hazard control methods
- Fall protection and rescue regulations
- Training on suspension trauma
- How to use written fall protection and rescue procedures
- Inspection of rescue and fall protection equipment components and systems before use

Other courses available include:

- Competent Person for Safety-At-Heights
- Fundamentals of Safety-At-Heights
- Competent Person for equipment inspection
- Tower climbing safety
- Confined space entry

**Hands-on
comprehensive
courses**



**Training centers:
Butler, PA
Englewood, CO**