



3M™ DBI-SALA® Energy-Absorbing Lanyards

User Instructions

Form Number: 9598665, Revision: C

This product is certified to or conforms with the following standards and regulations. Certification and conformance may be restricted to individual product models or applications. For more information, see *Certifications*.

- Standard: AS/NZS 1891.1:2007

⚠WARNING:

For identification of product codes, refer to the product specification tables. See the Product Overview for more product information.

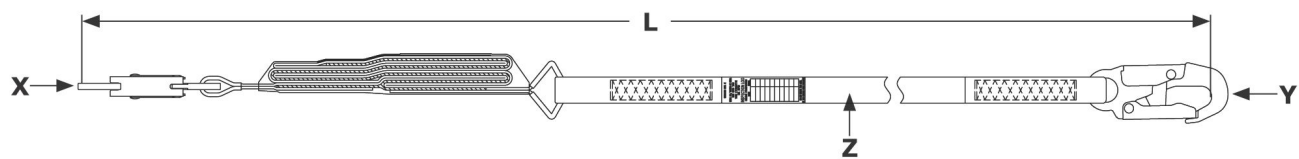
Figure 1 - Product Overview

Lanyard Style (Figure 2)	Model	Special Typings	Length (L)	Lanyard Leg Material	Connectors	
					X	Y
A	Z10100909		3.3 ft. (1.0 m)	PW1	C1	C1
A	Z10120909		3.9 ft. (1.2 m)	PW1	C1	C1
A	Z10127517E		3.9 ft. (1.2 m)	PW1	C10	C2
A	Z10150909E		4.9 ft. (1.5 m)	PW1	C1	C1
A	Z10153129E		4.9 ft. (1.5 m)	PW1	C4	C6
A	Z10161709		5.2 ft. (1.6 m)	PW1	C2	C1
A	Z10170909E		5.5 ft. (1.7 m)	PW1	C1	C1
A	Z10172525		5.5 ft. (1.7 m)	PW1	C3	C3
A	Z10200909		6.56 ft. (2.0 m)	PW1	C1	C1
A	Z10200909E		6.56 ft. (2.0 m)	PW1	C1	C1
A	Z10200909R		6.56 ft. (2.0 m)	NR1	C1	C1
A	Z10200909WR		6.56 ft. (2.0 m)	GS1	C1	C1
A	Z10202519		6.56 ft. (2.0 m)	PW1	C3	C8
A	Z10202519E		6.56 ft. (2.0 m)	PW1	C3	C8
A	Z10202519R		6.56 ft. (2.0 m)	NR1	C3	C8
A	Z10202580E		6.56 ft. (2.0 m)	PW1	C3	C9
A	Z10204545WR		6.56 ft. (2.0 m)	GS1	C11	C11
A	Z10207575E		6.56 ft. (2.0 m)	PW1	C10	C10

Figure 1 - Product Overview						
Lanyard Style (Figure 2)	Model	Special Typings	Length (L)	Lanyard Leg Material	Connectors	
					X	Y
A	Z10207575WR		6.56 ft. (2.0 m)	GS1	C10	C10
A	Z11200909	Adjustable	6.56 ft. (2.0 m)	PW1	C1	C1
A	Z11200919	Adjustable	6.56 ft. (2.0 m)	PW1	C1	C8
A	Z11202580	Adjustable	6.56 ft. (2.0 m)	PW1	C3	C9
B	Z11203131R	Adjustable	6.56 ft. (2.0 m)	NR1	C4	C4
A	Z11204545	Adjustable	6.56 ft. (2.0 m)	PW1	C11	C11
B	Z11204545CR	Adjustable	6.56 ft. (2.0 m)	NR1	C11	C11
B	Z11204545R	Adjustable	6.56 ft. (2.0 m)	NR1	C11	C11
B	Z11206119CR	Adjustable	6.56 ft. (2.0 m)	NR1	C5	C8
B	Z11206119R	Adjustable	6.56 ft. (2.0 m)	NR1	C5	C8
B	Z11206129R	Adjustable	6.56 ft. (2.0 m)	NR1	C5	C6
B	Z11206131R	Adjustable	6.56 ft. (2.0 m)	NR1	C5	C4
B	Z11206159R	Adjustable	6.56 ft. (2.0 m)	NR1	C5	C7
A	Z11206161	Adjustable	6.56 ft. (2.0 m)	PW1	C5	C5
C	Z12120919E		3.9 ft. (1.2 m)	PW1	C1	C8
C	Z12120980E		3.9 ft. (1.2 m)	PW1	C1	C9
C	Z12123129E		3.9 ft. (1.2 m)	PW1	C4	C6
C	Z12124519E		3.9 ft. (1.2 m)	PW1	C11	C8
C	Z12124545WR		3.9 ft. (1.2 m)	GS1	C11	C11
C	Z12153129E		4.9 ft. (1.5 m)	PW1	C4	C6
C	Z12170919E		5.5 ft. (1.7 m)	PW1	C1	C8
C	Z12170945E		5.5 ft. (1.7 m)	PW1	C1	C11
C	Z12182519E		5.9 ft. (1.8 m)	PW1	C3	C8
C	Z12200909		6.56 ft. (2.0 m)	PW1	C1	C1
C	Z12200909R		6.56 ft. (2.0 m)	NR1	C1	C1
C	Z12200919E		6.56 ft. (2.0 m)	PW1	C1	C8
C	Z12200919WR		6.56 ft. (2.0 m)	GS1	C1	C8

Figure 1 - Product Overview						
Lanyard Style (Figure 2)	Model	Special Typings	Length (L)	Lanyard Leg Material	Connectors	
					X	Y
E	Z12200929EW	Rescue	6.56 ft. (2.0 m)	PW1	C1	C6
C	Z12202519E		6.56 ft. (2.0 m)	PW1	C3	C8
C	Z12202519R		6.56 ft. (2.0 m)	NR1	C3	C8
C	Z12202580E		6.56 ft. (2.0 m)	PW1	C3	C9
E	Z12202580EWO	Rescue	6.56 ft. (2.0 m)	PW1	C3	C9
C	Z12202580R		6.56 ft. (2.0 m)	NR1	C3	C9
C	Z12204545WR		6.56 ft. (2.0 m)	GS1	C11	C11
C	Z12206119E		6.56 ft. (2.0 m)	PW1	C5	C8
C	Z12206129E		6.56 ft. (2.0 m)	PW1	C5	C6
C	Z12207575WR		6.56 ft. (2.0 m)	GS1	C10	C10
C	Z13200909	Adjustable	6.56 ft. (2.0 m)	PW1	C1	C1
C	Z13200919	Adjustable	6.56 ft. (2.0 m)	PW1	C1	C8
C	Z13200980	Adjustable	6.56 ft. (2.0 m)	PW1	C1	C9
D	Z13204545R	Adjustable	6.56 ft. (2.0 m)	NR1	C11	C11
D	Z13206119CR	Adjustable	6.56 ft. (2.0 m)	NR1	C5	C8
D	Z13206119R	Adjustable	6.56 ft. (2.0 m)	NR1	C5	C8
C	Z13206129	Adjustable	6.56 ft. (2.0 m)	PW1	C5	C6
D	Z13206129R	Adjustable	6.56 ft. (2.0 m)	NR1	C5	C6
D	Z13206131R	Adjustable	6.56 ft. (2.0 m)	NR1	C5	C4
D	Z13206159R	Adjustable	6.56 ft. (2.0 m)	NR1	C5	C7
C	Z13206161	Adjustable	6.56 ft. (2.0 m)	PW1	C5	C5

Figure 1 - Product Overview

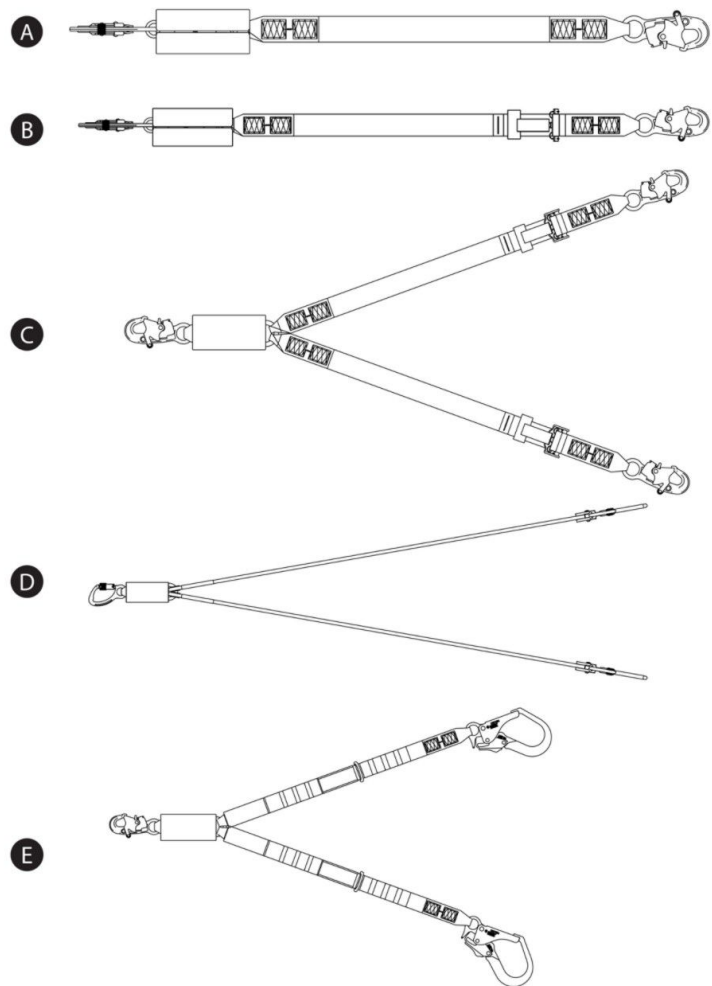


Refer to the product label for capacity information and performance data specific to your lanyard model.

Figure 2 - Lanyard Styles

Figure 1 Reference	Capacity	Energy Absorber	Maximum Free Fall	Average Arrest Force	Edge-Rated?
A	352 lb. (160 kg)	Tear Web	6.56 ft. (2.0 m)	1,350 lbf (6 kN)	No
B	352 lb. (160 kg)	Tear Web	6.56 ft. (2.0 m)	1,350 lbf (6 kN)	No
C	352 lb. (160 kg)	Tear Web	6.56 ft. (2.0 m)	1,350 lbf (6 kN)	No
D	352 lb. (160 kg)	Tear Web	6.56 ft. (2.0 m)	1,350 lbf (6 kN)	No
E	352 lb. (160 kg)	Tear Web	6.56 ft. (2.0 m)	1,350 lbf (6 kN)	No

Figure 2 - Lanyard Styles



Safety Information

Please read, understand, and follow all safety information contained in these instructions, prior to the use of this product. FAILURE TO DO SO COULD RESULT IN SERIOUS INJURY OR DEATH.

These instructions must be provided to the user of the equipment. Retain these instructions for future reference.

Safety Information

Form: 5908270, Revision: C

Intended Use

This product is used as part of a complete Fall Protection system.

Use in any other application including, but not limited to, non-approved material handling, recreational or sports related activities, or other activities not described in these instructions, is not approved by 3M and could result in serious injury or death.

This product is only to be used by trained users in workplace applications.

Warning

This product is used as part of a complete Fall Protection system.

All users must be fully trained in the safe installation and operation of their complete Fall Protection system. Misuse of this product could result in serious injury or death. For proper selection, operation, installation, maintenance, and service, refer to all instruction manuals and manufacturer recommendations. For more information, see your supervisor or contact 3M Technical Services.

- **To reduce the risks associated with using a Energy-Absorbing Lanyards which, if not avoided, could result in serious injury or death:**
 - Inspect the product before each use and after any fall event, in accordance with the procedures specified in these instructions.
 - If inspection reveals an unsafe or defective condition, remove the product from service immediately and clearly tag it "DO NOT USE". Destroy or repair the product as required by these instructions.
 - Any product that has been subject to fall arrest or impact force must be immediately removed from service. Destroy or repair the product as required by these instructions.
 - Ensure that Fall Protection systems assembled from components made by different manufacturers are compatible and meet all applicable Fall Protection regulations, standards, or requirements. Always consult a Competent Person before using these systems.
 - Ensure the product is configured and installed properly for safe operation as described in these instructions.
 - Ensure the lifeline is kept free from all hazards including, but not limited to: entanglement with users, other workers, moving machinery, other surrounding objects, or impact from overhead objects that could fall onto the lifeline or users.
 - Use appropriate edge protection when the lifeline may contact sharp edges or abrasive surfaces.
 - Do not twist, tie, or knot the product.
 - Avoid trip hazards with legs of the lifeline. If equipped, attach any unused legs of the lifeline to the lanyard parking attachment elements.
 - Do not exceed the number of allowable users specified in these instructions.
 - Use caution when installing, using, or moving the product as moving parts may create pinch points.
- **To reduce the risks associated with working at height which, if not avoided, could result in serious injury or death:**
 - Your health and physical condition must allow you to safely work at height and to withstand all forces associated with a fall arrest event. Consult your doctor if you have questions regarding your ability to use this equipment.
 - Never exceed allowable capacity of your Fall Protection equipment.
 - Never exceed the maximum free fall distance specified for your Fall Protection equipment.
 - Do not use any Fall Protection equipment that fails inspection, or if you have concerns about the use or suitability of the equipment. Contact 3M customer services with any questions.
 - Some subsystem and component combinations may interfere with the operation of this equipment. Only use compatible connections. Contact 3M customer services before using this equipment in combination with components or subsystems other than those described in these instructions.
 - Use extra precautions when working around moving machinery, electrical hazards, extreme temperatures, chemical hazards, explosive or toxic gases, sharp edges, abrasive surfaces, or below overhead materials that could fall onto you or your Fall Protection equipment.
 - Ensure use of your product is rated for the hazards present in your work environment.
 - Ensure there is sufficient fall clearance when working at height.
 - Never modify or alter your Fall Protection equipment. Only 3M, or persons authorized in writing by 3M, may make repairs to 3M equipment.
 - Before using Fall Protection equipment, ensure a written rescue plan is in place to provide prompt rescue if a fall incident occurs.
 - If a fall incident occurs, immediately seek medical attention for the fallen worker.
 - Only use a full body harness for Fall Arrest applications. Do not use a body belt.
 - Minimize swing falls by working as directly below the anchorage point as possible.
 - A secondary Fall Protection system must be used when training with this product. Trainees must not be exposed to an unintended fall hazard.
 - Always wear appropriate Personal Protective Equipment when installing, using, or inspecting the product.
 - Never work below a suspended load or worker.
 - Always maintain 100% tie-off.

Product Overview

Always ensure you are using the latest revision of your 3M instruction manual. Visit www.3m.com/userinstructions or contact 3M customer services for updated instruction manuals.

Before using this equipment, record the product information from the ID label in the 'Inspection and Maintenance Log' at the back of this manual.

Figure 1 lists the product models covered by this instruction. Energy-absorbing lanyards are lanyard models that include an energy-absorbing component to help manage fall arrest forces. This lanyard type may be used for Fall Arrest, Restraint, and Work Positioning applications.

Lanyard models are defined by their general construction and available features. Within Figure 1, lanyards are grouped first by their "Lanyard Style" then by their model number in numerical order. Figure 2 identifies the available lanyard styles covered by this instruction.

Figure 3 identifies key components of the available lanyard models. A typical lanyard includes connectors at both ends of the lanyard leg. Anchoring Connectors (A) secure the lanyard to its anchorage connection point. The Harness Connector (B) secures the lanyard to the user's full body harness. Energy-absorbing lanyards include an Energy Absorber (C), which dissipates kinetic energy and limits deceleration distance during fall arrest.

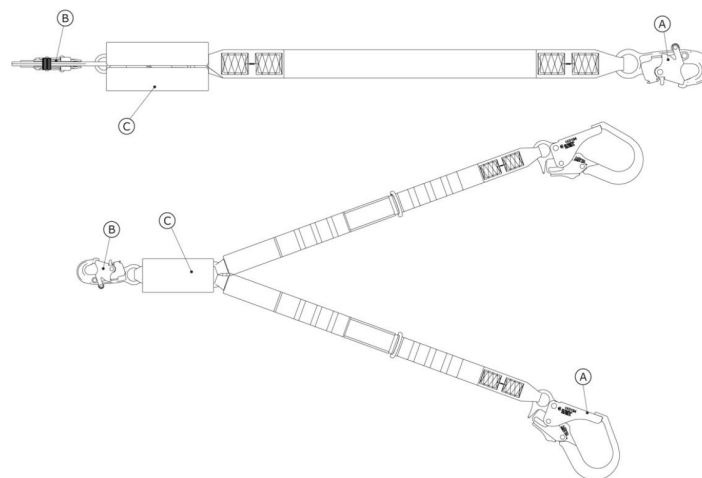
Lanyards are available in single- and twin-lanyard models. Twin-lanyard models include two lanyard legs and two Anchoring Connectors (A) between them. This design enables users to maintain 100-percent tie-off when transferring between anchorage points.

Each product model has its own particular size and its own combination of components as listed in Figure 1. See Table 1 for more information on Component Specifications.

Certain product models in this instruction include additional features or functionality. See Figure 1 for identification of these models.

- **Adjustable:** "Adjustable" product models include features that enable the length of the product to be adjusted.
- **Rescue:** Some product models include additional features for use in rescue applications.

Figure 3 - Components



System Specifications

Service Temperature:	-40°F to 130°F (-40°C to 54.4°C)
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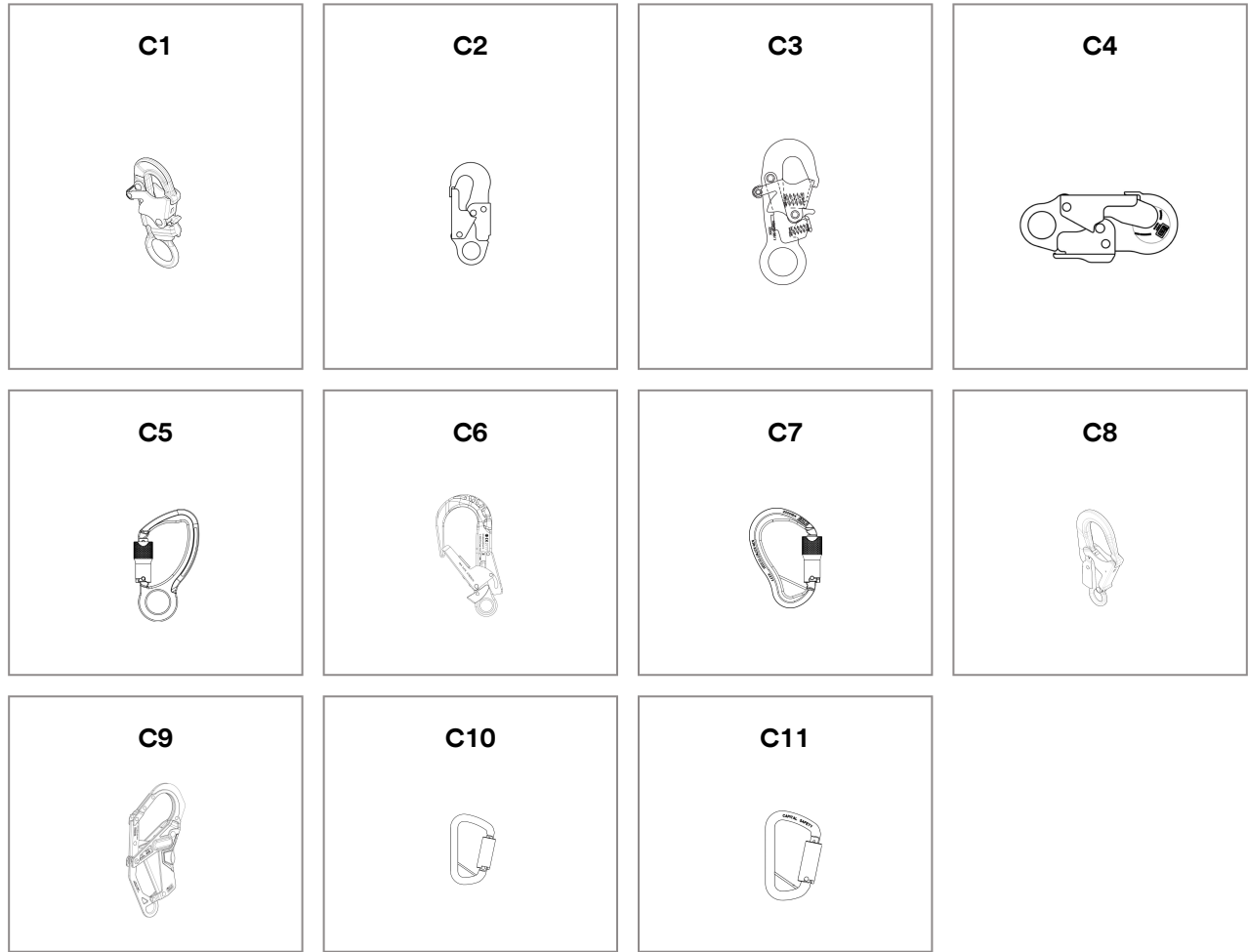
Component Specifications

Figure 2 Reference	Component	Materials
A	Anchoring Connector	(see Connector Specifications)
B	Harness Connector	(see Connector Specifications)
C	Energy Absorber	Tear Web: polyester webbing

Connector Specifications

Figure 1 Reference	Model Number	Description	Material	Gate Opening	Gate Strength	Tensile Strength
C1	9502116	Snap hook	Steel	3/4 in. (19 mm)	3600 lbf (16 kN)	5,000 lbf (22.2 kN)
C2	2000168	Snap hook	Aluminum	0.79 in. (20 mm)	3600 lbf (16 kN)	5,000 lbf (22.2 kN)
C3	9505254	Snap hook	Aluminum	3/4 in. (19 mm)	3600 lbf (16 kN)	5,000 lbf (22.2 kN)
C4	2000183	Snap hook	Aluminum	0.79 in. (20 mm)	3600 lbf (16 kN)	5,000 lbf (22.2 kN)
C5	8700552	Carabiner	Aluminum	0.71 in. (18 mm)	3600 lbf (16 kN)	5,000 lbf (22.2 kN)
C6	8700464	Rebar Hook	Aluminum	2.36 in. (60 mm)	1350 lbf (6 kN)	5,000 lbf (22.2 kN)
C7	2000184	Carabiner	Aluminum	0.71 in. (18 mm)	3600 lbf (16 kN)	5,000 lbf (22.2 kN)
C8	9502058	Rebar Hook	Aluminum	2.24 in. (57 mm)	3600 lbf (16 kN)	5,000 lbf (22.2 kN)
C9	2000214	Rebar Hook	Aluminum	2.48 in. (63 mm)	3600 lbf (16 kN)	5,000 lbf (22.2 kN)
C10	R-113	Carabiner	Steel	0.79 in. (20 mm)	3600 lbf (16 kN)	9,200 lbf (41 kN)
C11	R-119	Carabiner	Stainless steel	0.79 in. (20 mm)	3600 lbf (16 kN)	9,200 lbf (41 kN)

Connector Images



Lanyard Leg Material

Figure 1 Reference	Description	Minimum Tensile Strength
PW1	polyester webbing	6,000 lbf (27 kN)
NR1	0.51 in. (13 mm) polyester and nylon rope	6,000 lbf (27 kN)
GS1	0.24 in. (6 mm) PVC-coated galvanized steel wire rope	227,709 PSI (1570 Mpa)

1.0 Product Application

1.1 Purpose: Energy-absorbing lanyards are designed for use as a connecting subsystem in a Fall Protection system. Once anchored, energy-absorbing lanyards limit the movement range of the user, either to prevent the user from reaching a fall hazard or to arrest the user in the event of a fall. For more information on system applications, see the "Product Overview" and any sections about installation or use.

1.2 Supervision: Use of this equipment must be supervised by a Competent Person.

1.3 Resale and Distribution: If this product is resold outside the original country of destination, the re-seller must provide these instructions in the language of the country in which the product will be used.

1.4 Training: This equipment must be installed and used by persons trained in its correct application. These instructions are to be used as part of an employee training program as required by national, regional, or local standards. It is the responsibility of the users and installers of this equipment to ensure they are familiar with these instructions, trained in the correct care and use of this equipment, and are aware of the operating characteristics, application limitations, and consequences of improper use of this equipment.

1.5 Rescue Plan: When using this equipment and connecting subsystems, the employer must have a written rescue plan and the means to implement and communicate that plan to users, authorized persons, and rescuers. A trained, on-site rescue team is recommended. Team members should be provided with the equipment and techniques necessary to perform a successful rescue. Training should be provided on a periodic basis to ensure rescuer proficiency. Rescuers should be provided with these instructions. There should be visual contact or means of communication with the person being rescued at all times during the rescue process.

2.0 System Requirements

2.1 Anchorage: The anchorage structure securing this product must be able to withstand any required loads as permitted by its Fall Protection system. See Section 4 for more information.

2.2 Capacity: The user capacity of a complete Fall Protection system is limited by its lowest rated maximum capacity component. For example, if your connecting subsystem has a capacity that is less than your harness, you must comply with the capacity requirements of your connecting subsystem. See the manufacturer instructions for each component of your system for capacity requirements.

2.3 Environmental 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: high heat, strong winds, chemicals, corrosive environments, high voltage power lines, explosive or toxic gases, moving machinery, sharp edges, or overhead materials that may fall and contact the user or equipment. Contact 3M customer services for further clarification.

2.4 Lanyard Hazards: Ensure the lanyard is kept free from all hazards including, but not limited to: entanglement with users, other workers, moving machinery, other surrounding objects, or impact from overhead objects that could fall onto the lanyard or users.

2.5 Component Compatibility: 3M equipment is designed for use with 3M equipment. Use with non-3M equipment must be approved by a Competent Person. Substitutions made with non-approved equipment may jeopardize equipment compatibility and may affect the safety and reliability of your Fall Protection system. Read and follow all instructions and warnings for all equipment prior to use.

2.6 Connector Compatibility: Connectors are compatible with connecting elements when the size and shape of either component does not cause the connector to inadvertently open, regardless of orientation. Connectors must comply with applicable standards. Connectors must be fully closed and locked during use.

3M Connectors (snap hooks and carabiners) are designed to be used only as specified in each instruction manual. Ensure connectors are compatible with the system components to which they are connected. Do not use equipment that is noncompatible. Use of non-compatible components may cause the connector to unintentionally disengage. See figure for reference. If the connecting element to which a connector attaches is undersized or irregular in shape, a situation could occur where the connecting element applies a force to the gate of the connector (A). This force could then cause the gate to open (B), disengaging the connector from the connecting element (C).

2.7 Making Connections: All connections must be compatible in size, shape, and strength. See figure for examples of inappropriate connections. Do not attach snap hooks and carabiners:

1. To a D-Ring to which another connector is attached.
2. In a manner that would result in a load on the gate. Large-throat snap hooks should not be connected to D-Rings or other connecting elements, unless the snap hook has a gate strength of 3,600 lbf (16 kN) or greater.

3. In a false engagement, where size or shape of the connector or connecting element is not compatible and, without visual confirmation, would seem to be fully engaged.
4. To each other.
5. Directly to harness webbing, lanyard leg material, or tie-back material unless such a connection is explicitly allowed for by the manufacturer instructions.
6. To any object whose size or shape does not allow the connector to fully close and lock, or that could cause connector roll-out.
7. In a manner that does not allow the connector to align properly while under load.

Figure 4 - Connector Compatibility

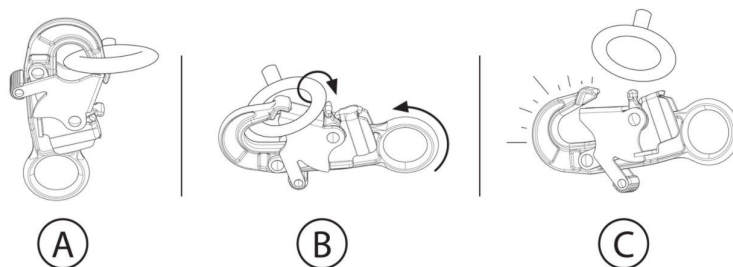
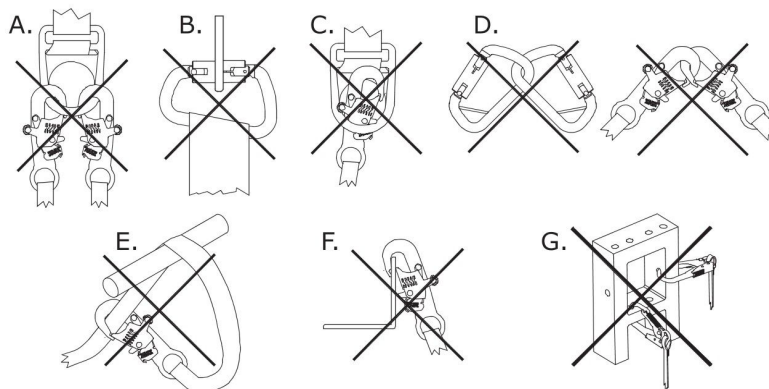


Figure 5 - Making Connections



3.0 Installation

3.1 Overview: Installing this product requires effective planning and knowledge of fall clearance requirements. In the event of a fall, there must be enough fall clearance present to safely arrest the user.

3.2 Planning: Plan your Fall Protection system before starting your work. Account for all factors that may affect your safety before, during, and after a fall. Consider all requirements and limitations specified in these instructions.

- A. **Sharp Edges:** Avoid working where system components may be in contact with, or scrape against, unprotected sharp edges and abrasive surfaces. All sharp edges and abrasive surfaces should be covered with protective material.

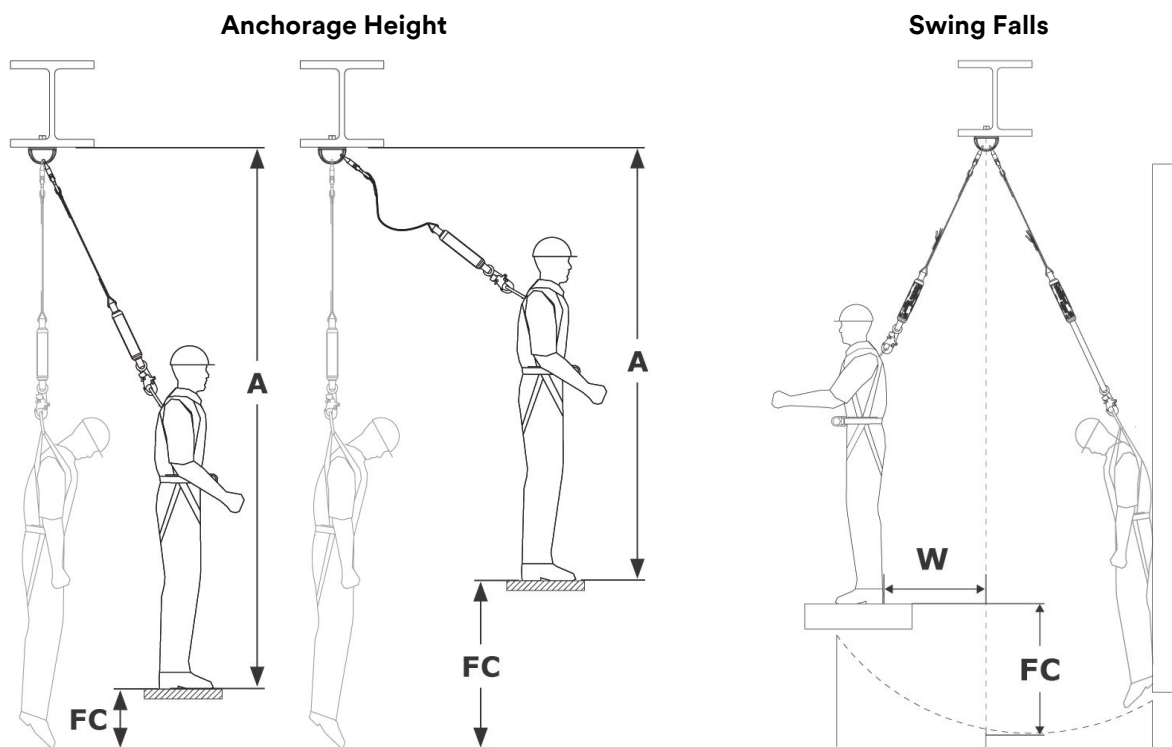
3.3 Fall Clearance: It is critical that the user is aware of fall clearance and its requirements before using this product.

- A. **Definition:** Fall clearance is the measure of distance between a user and the next obstruction below them. Before use of this product, the user should determine how much fall clearance is required to prevent them from striking an obstruction should they fall.

There may be additional factors affecting fall clearance within your Fall Arrest system, such as D-ring extension length and anchorage deflection. For coverage of these factors, and others not outlined in these instructions, refer to the manufacturer instructions for each component of your Fall Arrest system. Additional factors, when provided, should be added to the fall clearance values in this instruction.

- B. **Minimizing Requirements:** The user should always position their Fall Arrest system to minimize fall potential and potential fall distance. To keep fall clearance requirements to a minimum, it is recommended that the user work as directly below their anchorage point as possible.
- **Anchorage Height:** The Required Fall Clearance (FC) for a user increases as Anchorage Height (A) decreases. The user experiences a greater amount of free fall when connected to an anchorage point below them, since the user will have to travel that much farther should they fall.
 - **Swing Falls:** The Required Fall Clearance (FC) for a user increases as User Work Radius (W) increases. Swing falls occur when the anchorage point is not directly above the user when a fall occurs. The force of striking an object during a swing fall could cause serious injury or death. Do not permit a swing fall if injury could occur.

Figure 7A - Minimizing Fall Clearance Requirements



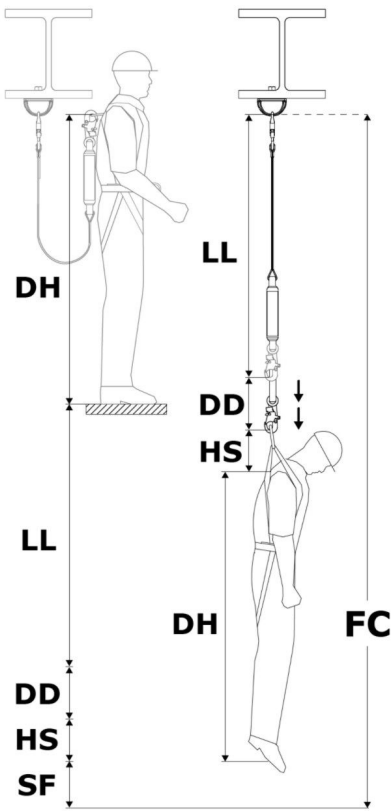
Fall Clearance Charts (AS/NZS 1891.4)

Under AS/NZS 1891.4, the user’s required fall clearance (FC) is the sum of Deceleration Distance (DD), Lanyard Length (LL), a 3.28 ft. (1.0 m) Safety Factor, and an additional 5.91 ft. (1.8 m) to cover the user’s height, D-ring slide, and harness stretch.

- Deceleration Distance (DD)
- Lanyard Length (LL)
- Safety Factor (SF) = 3.28 ft. (1.0 m)
- Harness Stretch (HS) + D-ring Height (DH) = 5.91 ft. (1.8 m)

The provided fall clearance charts give required fall clearance for the lanyard at specific weights and lanyard lengths.

Anchorage height must be measured from a standing position.



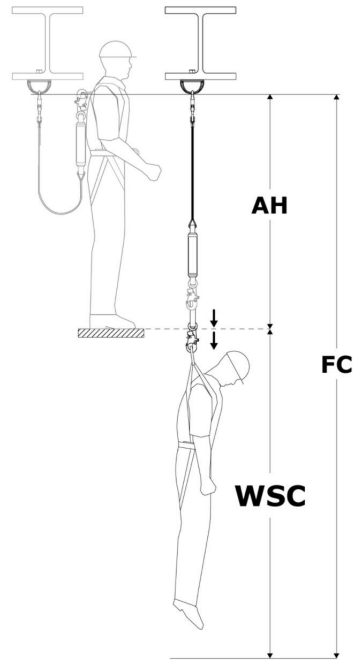
Fall Clearance Chart

Lanyard Styles (Figure 2)	A, B, C, D, E
Anchorage Height	See chart below.

User Weight	Lanyard Length	Required Fall Clearance (FC)	
		Anchorage Height: D-ring or above	Anchorage Height: Foot level to D-ring
121 lb. (55.0 kg)	6.56 ft. (2.0 m)	16.75 ft. (5.1 m)	22.75 ft. (6.9 m)
220 lb. (99.8 kg)	6.56 ft. (2.0 m)	18.0 ft. (5.5 m)	24.0 ft. (7.3 m)
352 lb. (159.7 kg)	6.56 ft. (2.0 m)	19.85 ft. (6.0 m)	25.85 ft. (7.8 m)

Need clearance below your working surface?

To find the amount of clearance needed below your working surface, subtract your Anchorage Height (AH) from the Required Fall Clearance (FC) to obtain the Working Surface Clearance (WSC) for your lanyard.



Measuring Free Fall

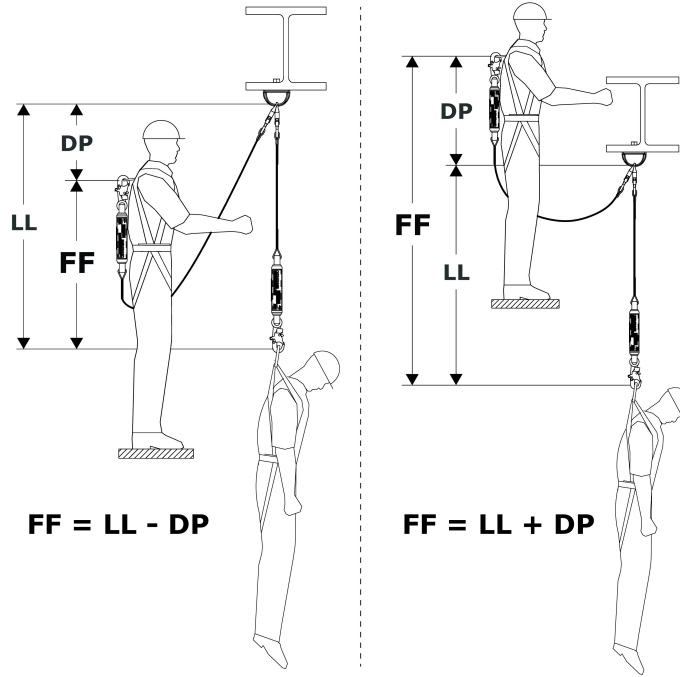
You must never exceed the Maximum Free Fall for your lanyard. See Figure 2 for the Maximum Free Fall for your lanyard. To ensure you are not exceeding this limit, you must determine the amount of Free Fall (FF) in your system.

Free Fall (FF) must be measured from a standing position. Crouching or lying prone reduces effective user height.

1. **Find Free Fall (FF).** Free Fall (FF) varies with where your anchorage point is located. Select the option that applies to your situation.

Anchorage Point Location	How to Find Free Fall	Legend
Above D-ring	Subtract DP from LL	DP = Distance to Anchorage Point LL = Lanyard Length
Below D-ring	Add DP to LL	

Measuring Free Fall



Energy Absorber Tables

Use the below tables to find the Deceleration Distance (DD) for your lanyard.

1. Find your user weight (including tools, clothing, etc.).
2. Find your corresponding Deceleration Distance (DD).

If your weight is between listed values, round up to the next highest value.

User Weight	Deceleration Distance (DD)
121 lb. (55.0 kg)	1 ft. (0.3 m)
220 lb. (99.8 kg)	2.25 ft. (0.69 m)
352 lb. (159.7 kg)	4.1 ft. (1.25 m)

3.4 Connecting to Anchorage: Figure 8 illustrates typical lanyard anchorage connections. The Anchorage (A) should be directly overhead to minimize free fall and swing fall hazards (see Section 3.3.B). Select an anchorage capable of sustaining the static loads defined in Table 1. Depending on system and product configuration, the user may secure the Anchoring Connector (B) of the lanyard directly to the anchorage structure or to an anchorage connector or anchorage connection point between.

3.5 Connecting to a Harness: Connection of the lanyard to a harness will vary per the harness and which attachment element is used. See Figure 9 for reference. To secure, connect the Harness Connector (A) of the lanyard to the Attachment Element (B) of the full body harness. For more information as to which attachment elements may be used, see the manufacturer instructions of your harness.

The “Product Overview” specifies for which Fall Protection applications your lanyard model may be used. Ensure use of your harness complies with these requirements. A full body harness is required for Fall Arrest applications.

When making any connection to a point on a harness which cannot be seen by the wearer of the harness, either the connection should be made before putting the harness on, or the connection should be made or checked for security by a second person.

Figure 8 - Connecting to Anchorage

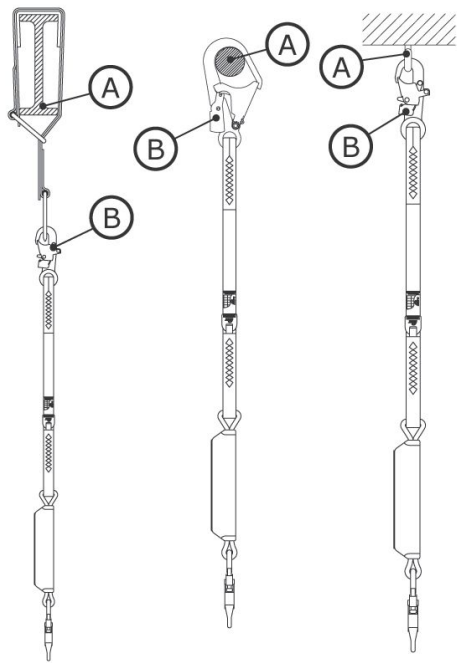
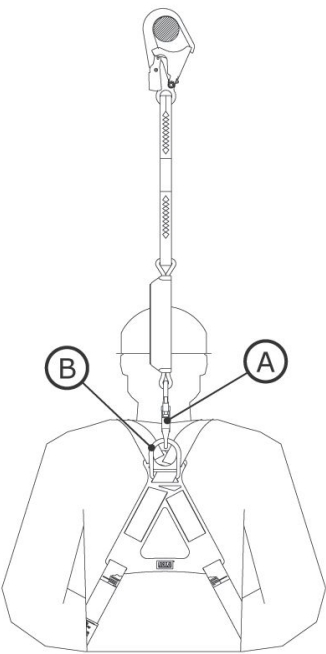


Figure 9 - Connecting to a Harness



3.6 Anchorage Height Restrictions: When installing an energy-absorbing lanyard, it is important to consider the length of your lanyard and its Maximum Free Fall requirement. These values determine anchorage height restrictions for your lanyard. The “Anchorage Height Restrictions” table shows requirements for common lanyard specifications.

Your lanyard must be anchored at a height that will not result in free fall greater than the Maximum Free Fall value stated in these instructions or on the product label.

Anchorage Height Restrictions		
Lanyard Length	Maximum Free Fall	Required Anchorage Height
6 ft. (1.83 m)	6 ft. (1.83 m)	D-ring Height or above
4 ft. (1.22 m)	6 ft. (1.83 m)	2 ft. (0.61 m) below D-ring height or above
6 ft. (1.83 m)	12 ft. (3.66 m)	Working surface or above

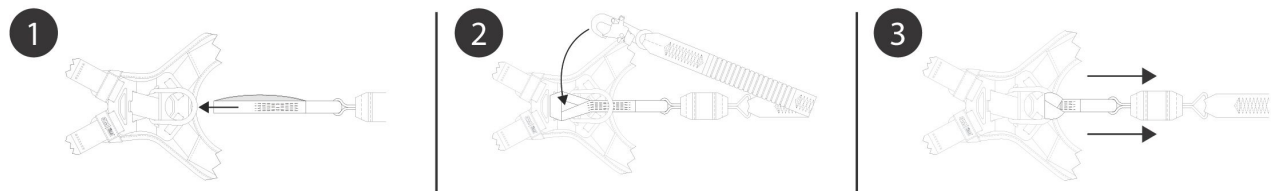
Anchorage Height Restrictions		
Lanyard Length	Maximum Free Fall	Required Anchorage Height
D-ring height varies per user, but is typically 5 ft. (1.52 m) for a user that is 6 ft. (1.83 m) tall.		

3.6 Installing the Lanyard: Installation of the positioning lanyard depends on its application. The positioning lanyard must be installed as described below for it to be used in these applications.

3.7 Securing Lanyards with Choker Loops: Some lanyard models include choker loops for connecting to harnesses. Choker loops are web loops that are designed to choke the lanyard onto a harness before securing to an anchorage point. See figure for reference. To secure a lanyard with a choker loop:

1. Insert the lanyard choker loop through the dorsal attachment element on the harness. This may be a D-ring or another web loop that is part of the harness.
2. Insert the anchoring end of the lanyard through the choker loop so that the lanyard encloses the harness attachment element.
3. Pull the lanyard through until its choker loop tightly cinches the harness attachment element.

Figure 10 - Securing Lanyards with Choker Loops



3.8 Installing Lifeline Subsystems: Lanyards with lifeline subsystems (e.g. rope grabs and cable grabs) as their anchoring connector will require special procedures for securing the lanyard to anchorage. Anchorage for lifeline subsystems should exclusively be vertical or horizontal lifelines. For more information on how to secure your lifeline subsystem, refer to the manufacturer instructions for your lifeline subsystem and lifeline.

⚠CAUTION:

When making any connection to a point on a harness which cannot be seen by the wearer of the harness, either the connection should be made before putting the harness on, or the connection should be made or checked for security by a second person.

4.0 Use

4.1 Before Each Use: Verify that your work area and Fall Protection system meet all criteria defined in these instructions. Verify that a formal Rescue Plan is in place. Inspect the product per the 'User' inspection points defined in the "Inspection and Maintenance Log". If inspection reveals an unsafe or defective condition, or if there is any doubt about its condition for safe use, remove the product from service immediately. Clearly tag the product "DO NOT USE". See Section 5 for more information.

4.2 Anchorage: In addition to product capacity, any fall protection system must take into account the strengths of any supporting structures or components.

1. **Anchorage Structure:** The anchorage structure securing this product must be able to withstand the required loads, as permitted by this product's fall protection system.
2. **Anchorage Connection Points:** Anchorage connection points used with the product must be able to withstand any loads applied by the product.

4.3 After a Fall: If this equipment is subjected to fall arrest or impact force, remove it from service immediately. Clearly tag it "DO NOT USE". See Section 5 for more information.

4.4 Operation: Before using a lanyard, the user will need to secure the lanyard to an anchorage connection point and an attachment element on their full body harness. For energy-absorbing lanyards, the end of the lanyard with the energy absorber should always be connected to the user's harness.

4.5 Using Adjustable Lanyards: Adjustable lanyards include adjusters for shortening or lengthening the lanyard. To adjust the length of your adjustable lanyard:

Adjustable lanyards should always be kept as short as possible to reduce trip hazards and chance of entanglement.

A. Buckle Adjusters

1. Slide the Loop Keeper (A) away from the Buckle Adjuster (B).
2. Slide the Buckle Adjuster (B) up or down the webbing to shorten or lengthen the lanyard leg.
3. Slide the Loop Keeper (A) back into place to secure the lanyard leg and Buckle Adjuster.

B. Lifeline Subsystem Adjusters

1. Lift the Lanyard Adjuster (A) from the Lanyard (B) to alleviate pressure.
2. To shorten, use the Loop End (C) to push more of the Lanyard (B) through the Lanyard Adjuster. To lengthen, pull on the Loop End to take more of the Lanyard out from the Lanyard Adjuster.
3. Once adjusted, allow the Lanyard Adjuster to settle back onto the Lanyard and return the Loop End to its storage location.

Figure 11 - Buckle Adjusters

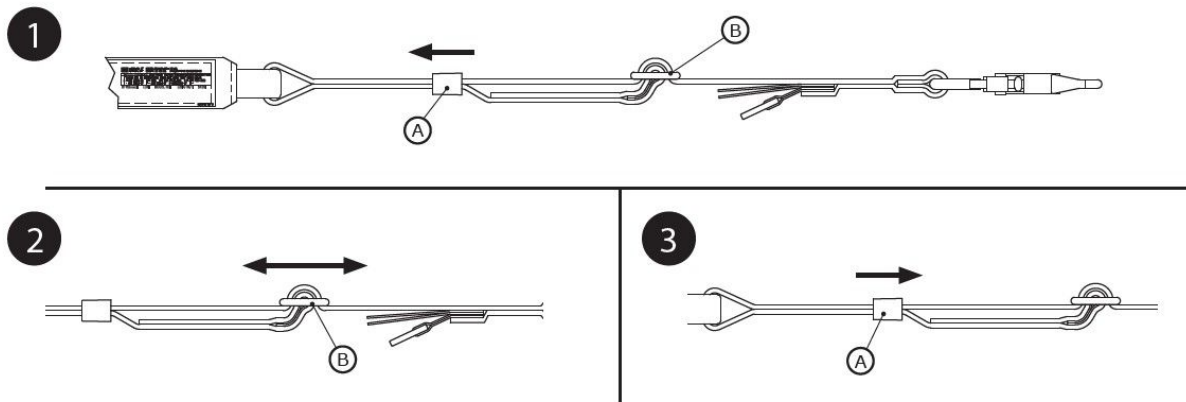
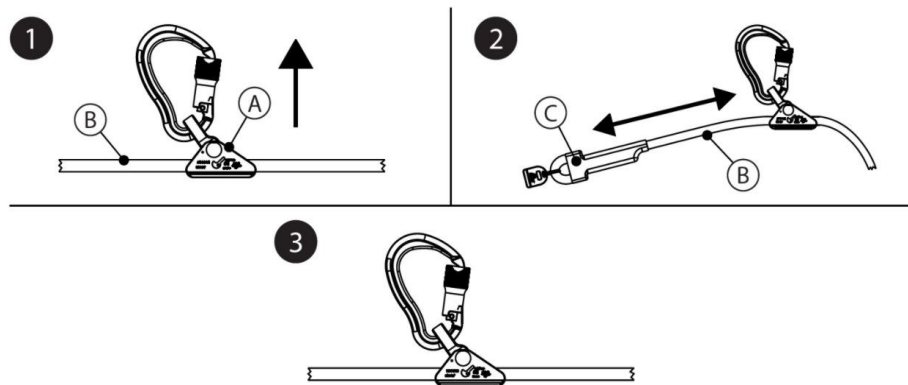


Figure 12- Lifeline Subsystem Adjusters



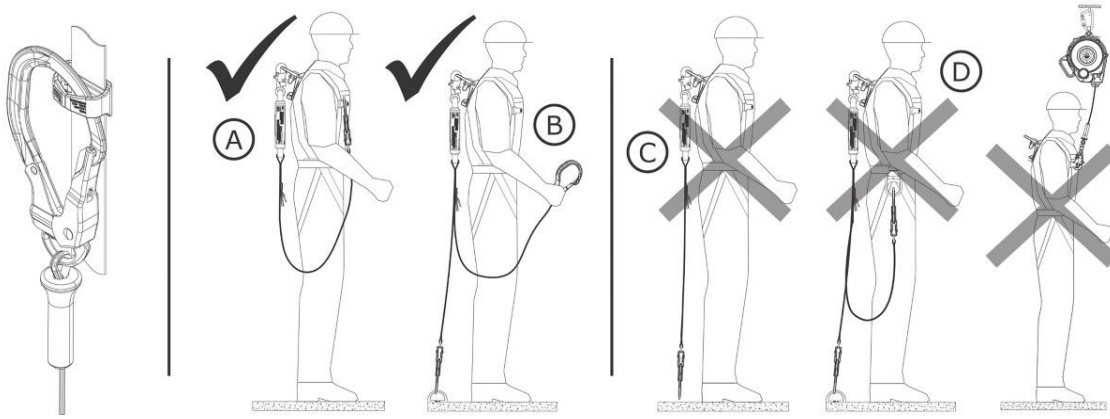
4.6 Lanyard Parking Attachment: When not in use, the free end of a lanyard or harness-mounted Self-Retracting Device (SRD) must be secured to a designated lanyard parking attachment on the user's harness (A) or be held securely within the user's hand (B).

The free end of a connecting subsystem must always be properly secured. Never allow free ends to hang freely (C) and never secure free ends to an unused attachment element on the user's harness (D). Both of these situations could create a trip hazard or cause the user to become entangled.

⚠WARNING:

Never use lanyard parking attachments as attachment elements for Fall Protection applications.

Figure 13- Lanyard Parking Attachment

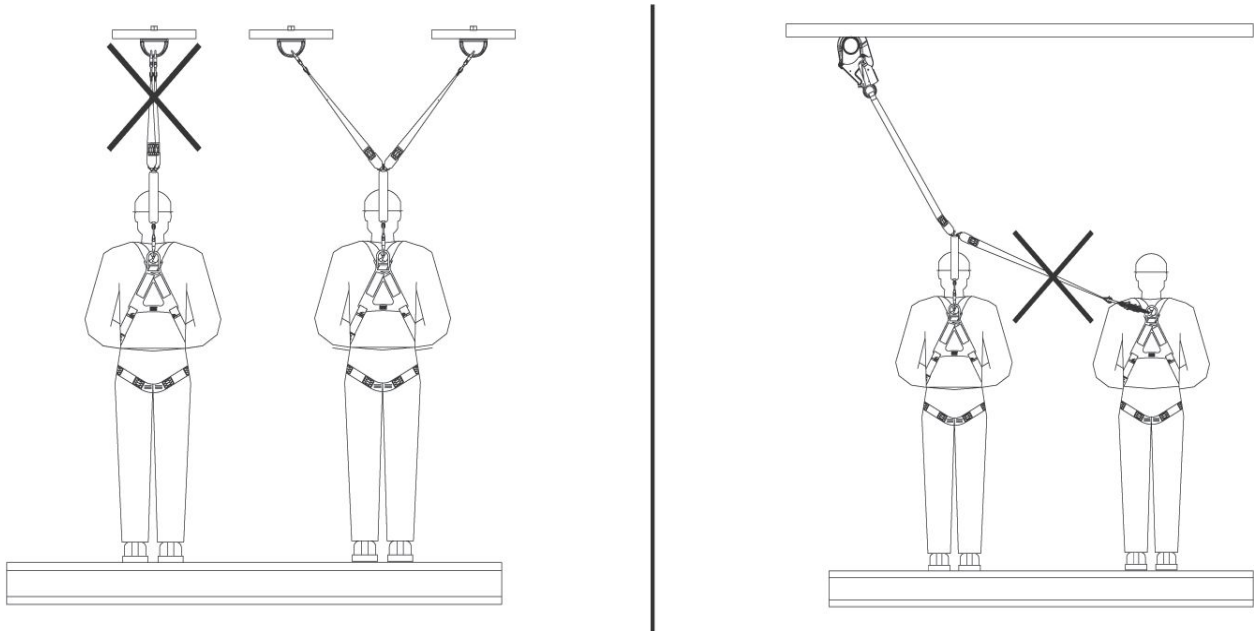


4.7 Using Twin-Lanyard Models: Twin-lanyard models may be used for Fall Arrest or Restraint applications. Additionally, twin-lanyards may be used for climbing applications, such as ascending or descending a rebar structure. Twin-lanyards enable the user to maintain 100-percent tie-off when moving between anchorage points. As long as one lanyard leg is secured to an anchorage point, the user may disconnect the other lanyard leg and move it to a different anchorage point. By disconnecting and reconnecting each lanyard leg in turn, the user may travel along a surface and still maintain tie-off during movement.

The user must always consider the following before using a twin-lanyard:

- When in the vicinity of a fall hazard, the user must always have at least one lanyard leg connected to an anchorage point. Never connect both lanyard legs to the same anchorage point.
- Each individual anchorage point must be strong enough to meet the anchorage requirements listed in Table 1.
- The individual lanyard legs must only be used to secure to anchorage points. Never secure two workers via the same system.
- Each lanyard leg must always be kept free from obstructions and entanglement. Do not pass either lanyard leg under arms or between legs during use.

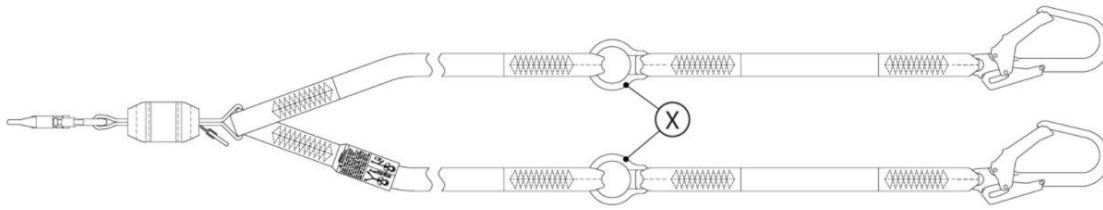
Figure 14- Using Twin-Lanyard Models



4.8 Rescue Rings: Rescue rings are a specialized component included with some lanyard models that help facilitate the rescue of a suspended user or fall victim. To use the rescue rings, the user should secure a secondary rescue device to the rescue ring (X), then use the rescue device as directed.

See the manufacturer instructions for your rescue device for more information.

Figure 15- Rescue Rings



5.0 Inspection

After equipment has been removed from service, it may not be returned to service until a Competent Person confirms in writing that it is acceptable to do so.

5.1 Inspection Frequency: The product shall be inspected before each use by the user and, additionally, by a Competent Person other than the user at the intervals specified below. A higher frequency of equipment use and harsher conditions may require increasing the frequency of Competent Person inspections. The frequency of these inspections should be determined by the Competent Person per the specific conditions of the worksite.

AS/NZS standards require the user to inspect product before and after each use.

Applicable Standard or Region	Required Frequency of Competent Person Inspections
AS/NZS	Once every six months

5.2 Inspection Procedures: Inspect this product per the procedures listed in the “Inspection and Maintenance Log”. Documentation of each inspection should be maintained by the owner of this equipment. An inspection and maintenance log should be placed near the product or be otherwise easily accessible to users. It is recommended that the product is marked with the date of next or last inspection.

5.3 Defects: If the product cannot be returned to service because of an existing defect or unsafe condition, or because the product has been exposed to fall arrest or impact force, then the product must be destroyed.

5.4 Product Life: The functional life of the product is determined by work conditions and maintenance. As long as the product passes inspection criteria, it may remain in service.

This product may remain in service up to its maximum product life, which should be measured from the date of manufacture. After the maximum product life has been reached, remove the product from service.

Maximum Product Life	10 years
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6.0 Maintenance, Storage, and Repair

Equipment that is in need of maintenance or scheduled for maintenance should be tagged “DO NOT USE”. These equipment tags should not be removed until maintenance is performed.

6.1 Cleaning: 3M product must be cleaned in accordance with 3M instructions. To clean the product, wash in a mild, bleach-free detergent and rinse with clean water. The product should afterwards be hung to air-dry. Water used for cleaning and temperatures used to air-dry must never exceed 130°F (54.4°C). For more information, please refer to the technical bulletin on our website: <https://www.3M.com/FallProtection/WebCleaning>

For any questions about cleaning procedures, please contact 3M Technical Services.

6.2 Disposal: Dispose of the lanyard if it cannot be returned to service. Before disposing of the lanyard, cut the lanyard in half or otherwise disable the lanyard to prevent accidental reuse.

6.3 Repair: This product is not repairable. Do not attempt to repair this product.

6.4 Storage and Transport: Store and transport the product in a cool, dry, clean environment out of direct sunlight. Avoid areas where chemical vapors may exist. Thoroughly inspect components after extended storage.

It is recommended that the user limit exposure of the product to UV light. Prolonged exposure to UV light could cause webbing material to degrade at a faster rate.

⚠WARNING:

Sudden transitions between warm and extremely cold environments could affect the performance of your equipment. Mechanical devices (such as self-retracting devices, winches, retrieval devices, climbing sleeves, etc.) should be adapted for use in extreme cold or heat by storing them in temperatures similar to the work environment. Always perform a pre-use inspection of your equipment in its work environment before using it.

7.0 Labels and Markings

7.1 Summary: The "Product Labels" figure illustrates labels and markings present on the product. See below for a summary of information provided with each label and marking.

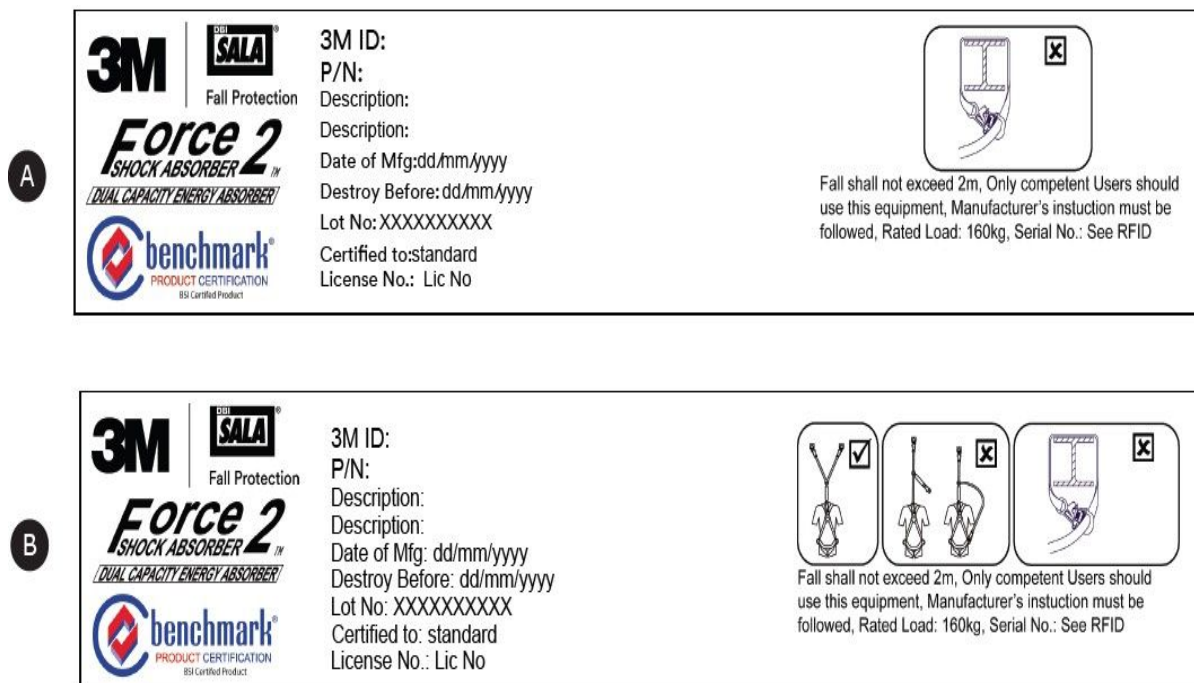
NOTICE:

Label images are intended to be representative. Please refer to your product labels for specific information.

Missing or damaged labels must be replaced. All labels must be fully legible.

A	Product Information Label — All Single-Leg Models
B	Product Information Label — All Twin-Leg Models

Figure 16 - Product Labels



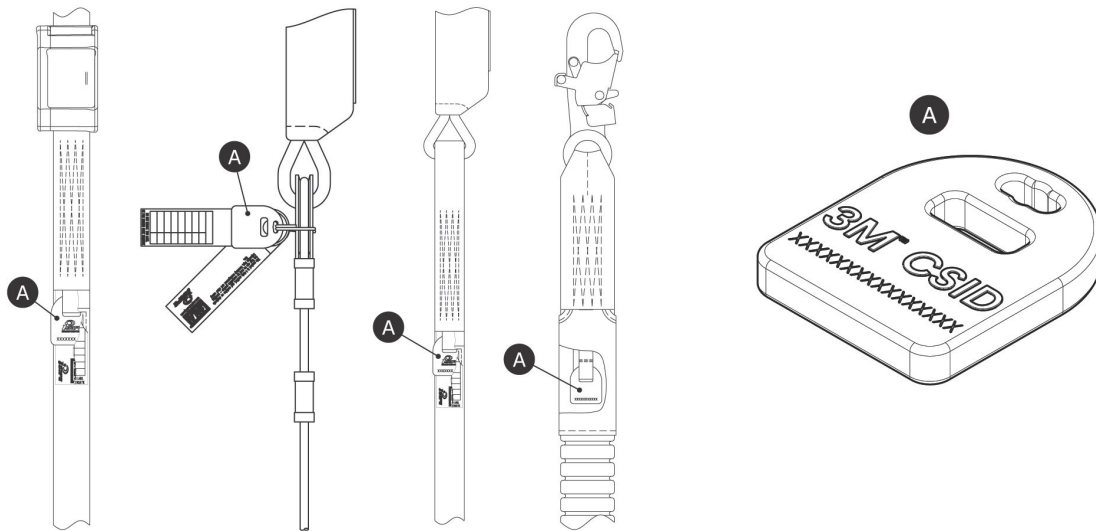
RFID Tag

Location: 3M product covered in these user instructions is equipped with a Radio Frequency Identification (RFID) Tag. RFID Tags may be used in coordination with an RFID Tag Scanner for recording product inspection results. See "RFID Tag Location" for where your RFID Tag is located.

Disposal: Prior to disposing of this product, remove the RFID Tag and dispose/recycle in accordance with local regulations.

For more information, please visit our website: <http://www.3M.com/FallProtection/RFID>

Figure 17 - RFID Tag Location



Glossary

Definitions: The following terms and definitions are used in these instructions:

For a comprehensive list of terms and definitions, please visit our website: www.3m.com/FallProtection/ifu-glossary

- **Authorized Person:** A person assigned by the employer to perform duties at a location where the person will be exposed to a fall hazard.
- **Competent Person:** One who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.
- **Fall Arrest System:** A collection of Fall Protection equipment configured to protect the user in the event of a fall.
- **Rescue System:** A collection of Fall Protection equipment configured to remove a person from hazards to a safe location. No free fall is permitted.
- **Rescuer:** A person using the Rescue system to perform an assisted rescue.
- **Restraint System:** A collection of Fall Protection equipment configured to prevent the user from reaching a fall hazard. No free fall is permitted.
- **User:** A person who performs activities while protected by a Fall Protection system.
- **Work Positioning System:** A collection of Fall Protection equipment configured to support a user at a work position.

Inspection and Maintenance Log

A copy of this table should be used for each inspection. Record information below.			
Manufacturer: 3M Fall Protection			
Model Number (Serial Number):			
Date Purchased:		Date of First Use:	
This product must be inspected by the user and, additionally, by a Competent Person other than the user at the specified intervals. See Section 5 for more information.			
Component	Inspection Procedure		Inspection Result (Pass or Fail)
Web Lanyards (Figure 18)	Inspect the webbing for Cuts (A), Frays (B), broken fibers, tears, abrasion, Heavy Soiling (C), mold, Burns (D), and discoloration. Inspect the stitching for pulled or cut stitches, since broken stitches may indicate that the product has been impact-loaded and must be removed from service.		
Cable Lanyards (Figure 19)	Inspect wire rope for cuts, Kinks (A), Broken Wires (B), Bird-Caging (C), welding splatter, corrosion, chemical contact areas, or Severely-Abraded Areas (D). Replace the wire rope assembly if there are six or more broken wires in one revolution, or three or more broken wires in one strand in one revolution. Replace the assembly if there are any broken wires within 25 mm (1 in.) of the ferrules.		
Rope Lanyards (Figure 20)	Inspect rope for Abrasion (A), Cut Strands (B), Pulled Strands (C), Melting (D), Compression (E), Inconsistent Diameter (F), and Discoloration (G).		
Connectors (Figure 21)	Inspect all connectors for signs of damage and corrosion. Verify that all connectors are working properly. Where present: Gates (A) should open, close, lock, and unlock properly; Swivel Eyes (B) should rotate without interference; and locking buttons and pins should function correctly.		
Energy Absorber (Figure 22)	Verify that the integral energy absorber has not been activated. Verify that the Lifeline Cover (A) has not pulled out from the Energy Absorber Cover (B) on either end. None of the Energy Absorber Webbing (C) should be exposed. The Energy Absorber Cover should also be secure and free of Tears (D) or other damage.		
Labels	All labels are present and fully legible.		
Fall Protection Equipment	Additional Fall Protection equipment that is used with the product is installed and inspected per the manufacturer instructions. Verify that the strength rating for each of your products is compatible and sufficient for the intended application.		
Summary of Product Inspection			
If the product fails an inspection procedure, then the product fails overall inspection. If the product fails inspection, remove it from service immediately. Clearly tag the product "DO NOT USE". See Section 5 for more information.			
Inspection Type: (circle one)	☐ User	☐ Competent Person	Overall Inspection Result:
Inspected By:		Date of Inspection:	
Signature:		Next Inspection Due:	
Additional Notes:			

Lanyard Inspection

Figure 18 - Web Lanyards **Figure 19 - Wire Rope Lanyards**

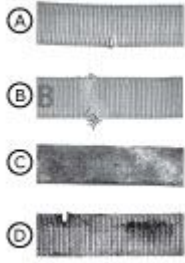


Figure 20- Rope Lanyards

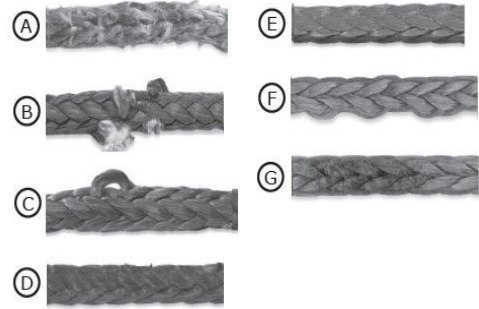


Figure 21 - Connector Inspection

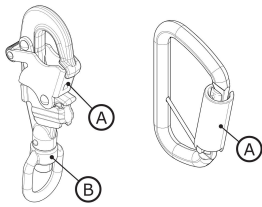


Figure 22 - Energy Absorber Inspection



Certifications

Your product conforms to the national or regional standards identified on the front cover of these instructions. Certification and conformance may be restricted to individual product models or applications.

For more information on certification or conformance requirements, refer to the applicable standards and regulations listed for your product.

Users under AS/NZS standards should consult AS/NZS 1891.4 for selection, use, maintenance, and training requirements.

BSI Certified Product

AS/NZS 1891.1:2007

License: BMP 537160

BSI - Head Office
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Australia



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To the extent permitted by law, 3M’s liability and the liability of the person who sold you this product, is limited at 3M’s option, to the repair or replacement of the goods or the refund of the purchase price of the goods. 3M will not be liable for any equipment damage resulting from wear, abuse, damage in transit, failure to maintain the product or other damage beyond the control of 3M.

Except to the extent that such liability is not able to be excluded by law, all other liability of 3M whether arising from negligence or otherwise is expressly excluded. For the avoidance of doubt, except where required by the Australian Consumer Law or any other law that cannot be excluded, 3M will not be liable for any indirect, special, incidental or consequential loss (including, but not limited to, loss of profits, and the costs of inspection, testing, storage or transportation).

3M reserves the right to require that the equipment be returned to its plant for inspection before determining the appropriate course of action.

Global Product Warranty, Limited Remedy, and Limitation of Liability

Warranty: The following is made in lieu of all warranties or conditions, express or implied, including the implied warranties or conditions of merchantability or fitness for a particular purpose.

Unless otherwise provided by local laws, 3M fall protection products are warranted against factory defects in workmanship and materials for a period of one year from the date of installation or first use by the original owner.

Limited Remedy: Upon written notice to 3M, 3M will repair or replace any product determined by 3M to have a factory defect in workmanship or materials. 3M reserves the right to require product be returned to its facility for evaluation of warranty claims. This warranty does not cover product damage due to wear, abuse, misuse, damage in transit, failure to maintain the product or other damage beyond 3M's control. 3M will be the sole judge of product condition and warranty options.

This warranty applies only to the original purchaser and is the only warranty applicable to 3M's fall protection products. Please contact 3M's customer service department in your region for assistance.

Limitation of Liability: To the extent permitted by local laws, 3M is not liable for any indirect, incidental, special or consequential damages, including but not limited to loss of profits, in any way related to the products regardless of the legal theory asserted.



3M.com/FallProtection

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Declaration of Conformity (European Union and United Kingdom):

3M.com/FallProtection/DOC