Doing It Right

A Guide to the Proper Use of Sure-Lok Wheelchair Securement and Occupant



Restraint Systems.









Introduction

Sure-Lok products are designed to make transportation safer for passengers with special needs. All our products are subjected to rigorous testing to ensure they meet or exceed all compliance regulations. As transportation professionals, you are responsible for the safety and welfare of your passengers. That's why it's extremely important to learn the correct way to secure passengers and their wheelchairs and comply with the regulations that apply to you. Sure-Lok has the parts, service and training materials you will need to help you perform your job correctly and efficiently.

This training program was developed to provide instruction on the proper use, application and care of Sure-Lok systems. The materials are provided in a combination of formats including lecture, video, interactive curriculum and hands-on training to maximize the amount of information retained by the participants.

If you need additional help or more information on our products and services, please call your Sure-Lok representative.

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Leader Preparation

Your organization has entrusted you to conduct this training program. It is your responsibility to ensure that the people in attendance come away from this session with a firm grasp of the materials and a clear understanding of the information presented. The following information will help you accomplish these goals.

Materials Required

- VCR or CD ROM Player and TV monitor
- Photocopies of the Program
 Worksheet
- Photocopies of Pre-Trip Checklist
- Wheelchair
- Vehicle with Sure-Lok Wheelchair Securement and Occupant Restraint Systems installed
- Pencils and paper for the participants

Hands-On Training

Program Overview

The following is a basic outline of the training program:

- Opening welcome and introduction
- Play the training video, pause between each section to review, discuss and answer questions on the Program Worksheet

Pre-Training Preparation

Prior to the training session, familiarize yourself with all the materials in the Sure-Lok *Doing It Right* Training Program.

- Read all the information in this leader's guide thoroughly, including the Program Worksheet.
- Preview the training video.
- Conduct a practice session with a colleague. Let him or her critique your presentation.
- Go to a vehicle equipped with Sure-Lok Wheelchair Securement and Occupant Restraint Systems and practice the procedures outlined in the video.

Post-Training Requirements

Upon completion of *Sure-Lok Doing It Right* — A *Guide to Proper Wheelchair Securement and Occupant Restraint Systems*, fill out the enclosed Certificates of Completion for each person who has successfully completed the program. If you need more certificates, please call Sure-Lok at 1-800-866-0004.

Welcome & Introduction

Welcome those in attendance to the Sure-Lok *Doing It Right* Training Program. Express your appreciation for their commitment to safety. Explain that the primary purpose of this training program is to provide instruction on the proper use, application and care of Sure-Lok Wheelchair Securement and Occupant Restraint Systems. Briefly outline the following seven sections of the training program which correspond to the information contained in the program worksheet. Encourage everyone to listen carefully and take notes as there is a large amount of information being presented in a short period of time.

Section One: Pre-Trip Assessment

Section Two: Sensitivity Training

Section Three: Components & Assembly

Section Four: Securing the Wheelchair

Section Five: Securing the Occupant

Section Six: System Care & Maintenance

Section Seven: Hands-On Training

Before starting the video, explain that under each section of the Program Worksheet there are questions relating to the material presented in the video. At the end of each section, the video will be paused and time will be allowed to complete and discuss the questions. Encourage group discussion and make sure to mention the correct answers to ensure everyone has the correct response. Answers to the questions can be found at the end of the Leader's Guide.

Play The First Section, Pre-Trip Assessment.

Section 1: Pre-Trip Assessment

Whether you're driving a school bus or a public transit bus, before the start of each trip it's important that you conduct a visual inspection of the vehicle interior as well as the wheelchair securement components. This quick inspection only takes a minute.







- 1. Make sure each securement station has four securement straps, a lap belt and a shoulder belt.
- Check to see that all the straps are in good working condition. Any defects such as cut, frayed, contaminated or damaged webbing; improperly functioning buckles or hardware; or worn or broken parts require the replacement of the entire strap or belt assembly.
- 3. Floor anchorages such as tracks or plates should be free of dirt and debris as they can interfere with proper system operation.



4. Ensure there's a clean, dry container in the vehicle for proper storage of belts when not in use.





- 5. Every vehicle should be equipped with a web cutter for use in an emergency evacuation.
- 6. Finally, make sure that an instruction sheet is available for quick reference. If you need extra instruction sheets, just ask. They are available from your Sure-Lok distributor.
- Pause The Video And Discuss Pre-Trip Assessment Questions.

section 2: Sensitivity Training

It's very important to be sensitive and courteous to your passengers with special needs. Make them feel at ease, safe and comfortable. There are five things to remember when securing a passenger in a wheelchair.



- 1. First, smile. Use a friendly tone and try to engage the passenger in a conversation.
- 2. If possible, crouch or sit down so you are at their eye level when speaking with them.
- 3. Explain what you are doing when securing the occupant and their wheelchair.



4. If the person has upper body mobility, ask if he or she would like to assist with the placement of their lap and shoulder belts.



5. And always use extra sensitivity while securing the shoulder and lap belt by ensuring that the back of your hand faces the occupant when reaching around them.

Pause The Video And Discuss Sensitivity Training Questions.

Section 3: Components & Assembly

The components in a Sure-Lok system can be divided into three basic categories: Track Fittings; Strap Attachment Hardware; Retraktors and Strap Buckles.

Track Fittings

There are three basic types of track fittings.



To fasten the L Track Fitting, line up the track fitting with the track, push down and slide it to lock it in place. Tug on the belt to make sure the fitting has engaged properly. To release, lift the plunger and slide in either direction, then lift the fitting out of the track.



Series A Track Fittings

To fasten the A Track Fitting, line up the track fitting with the track, lift the keeper, slide the fitting into the desired slot, and release the keeper. Tug on the belt to make sure the fitting is locked in place. For proper installation and belt alignment, it is very important that the keeper always faces away from the chair. To release, depress the keeper and slide the fitting out of the track.



Solo Cleat and Anchor Fitting

To attach the Solo Cleat Fitting to the Floor Anchor, line up the dot on the Cleat with the dot on the Anchor, slide the fitting on and rotate the strap assembly toward the wheelchair to lock onto the Anchor. To release, line up the dots on both the Anchor and Cleat and slide off.







Strap Attachment Hardware

There are four types of strap attachment hardware:



S-Hook

To use an S-Hook, attach the S-Hook to a structural frame member of the wheelchair, as close to the corner of the seat cushion as possible.



Buckle and Buckle Connector

To use a Buckle and Buckle Connector, thread the Buckle Connector around a structural frame member, as close to the corner of the seat cushion as possible, and insert it into the Buckle. To release, push the button on the Buckle.



Snap Hook and D-Ring

To use a Snap Hook and D-Ring system, loop the Snap Hook end of the strap around a structural frame member, as close to the corner of the seat cushion as possible. Attach the Snap Hook to the D-Ring.



Wire Hook and Ring

The Wire Hook attaches much the same as the Snap Hook and D-Ring. Loop the ring around a structural frame member, as close to the corner of the seat cushion as possible. Attach the ring to the Wire Hook.

Retraktors and Strap Buckles

In addition to the Retraktor, there are three types of strap buckles:



Retraktor

To operate the Retraktor, press the red release button to release the belt from its housing. Pull on the belt and attach to the wheelchair. To tighten, press the red button to remove the slack. Rotate the tensioning crank if additional tension is needed. To release the Retraktor, press the red release button to loosen the belt.



Overcenter Buckle

To operate the Overcenter Buckle, depress the locking mechanism to release the buckle handle. While pulling on the loose end of the strap, fold the buckle lever over to tension. To release, pull the loose end of the strap downward to unlock the handle and loosen the strap.

Ratchet Buckle

To operate the Ratchet Buckle, pull the loose end of the strap through the take-up reel until there's a small amount of slack. Then, rotate the ratchet handle up and down to tension the belt. There should be at least two turns of the webbing on the take-up reel. To prevent jamming, no more than four turns should be placed on the take-up reel. To release, depress the locking mechanism and rotate the handle to the fully open position, and pull on the tightened webbing.



Cam Buckle

To operate the Cam Buckle, press the lever and pull the loose end of the webbing until tight. To release, push on the lever and pull on the tightened webbing.

Pause The Video And Discuss Components & Assembly Questions.

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section 4: Securing the Wheelchair

Correctly securing a wheelchair is extremely important for the safety and comfort of the passenger as well as for your own peace of mind. Injury or death may result from improper securement.

With the occupant facing the front of the vehicle, center the wheelchair between the floor tracks or plates. Apply the wheel locks, or if motorized, turn off the power. Once you have the wheelchair centered and locked between the floor tracks or plates, you are ready to attach the rear straps. Remember: for the best securement the straps should form about a 45° angle between the floor tracks and where the straps attach to the wheelchair.



Install the track fitting end into a slot in the floor track or plate. Use a slot just to the inside of the rear wheel. Pull on the strap to ensure the fitting is firmly engaged and locked into the slot. If you're using an S-Hook system, press the red release button and pull the web out of the Retraktor. Let go of the release button and attach the S-Hook to a structural frame member of the wheelchair, as close to the corner junction of the seat cushion and seatback as possible. Then push the button on the Retraktor to remove the slack. Repeat this process for the other rear strap.

Installing the front straps is similar. Install the track fitting end of the front strap into the floor track or plate. Use a slot that's at least 3" outside the wheel. This prevents the strap from interfering with the footrest and gives better stability. Then pull on the strap to ensure that it's engaged firmly. Next, attach the S-Hook to a structural member of the wheelchair. Then push the button on the Retraktor to remove the slack and crank it down for extra tension. Repeat this process for the other front strap.



Once you have all four straps attached, release the brakes on the wheelchair and check for movement. Once secured, the wheelchair shouldn't move more than 2" front to back or side to side. Reapply the brakes.

There are instances when extra restraint may be needed. In this event, two additional rear straps shall be used. There are also times when a structural member is not easily accessible. The Quick Strap may help in these instances. This strap attaches to the wheelchair and provides highly visible anchoring points for the strap assemblies.



CAUTION - Doing it right also involves knowing what not to do.



• Don't attach the straps to wheels or any detachable portion of the wheelchair.



 Don't allow the straps to conform or bend around any object such as wheels or footrests. The securement straps must have a clear, straight load path from the floor tracks or plates to where they attach to the wheelchair frame. Keep the straps away from any sharp edges or corners.



 Never use the Cam Buckle Straps on all four points of attachment to the wheelchair frame. It is recommended that they only be used as front tie-downs. The Cam Buckle Strap is primarily a slack-removing device and can only tension to the extent of the operator's strength and angle of pull. At least two of the securement strap assemblies need to have full tensioning capability, for example, Ratchet or Overcenter Buckles.



 Never use different styles of buckle straps for attachment to the same end (front or rear) of the wheelchair. Use two of the same, identical style of buckle straps for the attachment to the front, and two of the identical style of buckle straps for the rear.



- Do not cross-connect the securement strap assemblies. This may place added stress or unequal load forces on the wheelchair frame and may lead to potential collapse or tipping of the wheelchair.
- If proper attachment and securement of a particular style of wheelchair cannot be accomplished, consult with your supervisor or contact your Sure-Lok representative.

Pause The Video And Discuss Securing the Wheelchair Questions.

section 5: Securing the Occupant

Once the wheelchair is secured, you're ready to secure the occupant. Let the passenger know what you will be doing at every step.

Lap Belts

Start by attaching the lap belt. Place the ends of the lap belt around the passenger. Thread them down through the opening between the side panel or the seat back and the seat cushion. Remember to position the lap belt around the occupant's pelvic zone near the hip, with the buckle of the lap belt placed opposite to the side where the shoulder belt is attached to the wall.



Integrated Lap Belts

For Integrated Lap Belts, take the Snap Hook end of the belt and attach it directly to the D-Ring on the rear securement strap assembly. Adjust the lap belt through the adjusters by pulling on the free end to make the fit firm yet comfortable.

The Integrated Lap Belt attaches to the rear wheelchair tie-downs, making it a part of the wheelchair securement system. Because of this, the Integrated Lap Belt can *only* be used with the heavy-duty FF600 Retraktor Series Systems or the FE500 Series Systems.





Parallel or Floor Anchored Lap Belts

Parallel or Floor Anchored Lap Belts attach directly to the floor track by inserting the track fitting end into the rear track or plate. Use a slot next to the rear securement strap on each side. This means that the passenger and the wheelchair are secured independently of each other. Parallel Lap Belts can be used with any of the Sure-Lok Wheelchair Securement Systems.



Shoulder Belts

The last belt to attach before you're on your way is the shoulder belt. Bring the triangular fitting of the shoulder belt over the passenger's shoulder, past the collar bone, and diagonally across the upper chest. Attach it to the stud of the lap belt latch plate. Pull on the loose end through the adjuster to achieve firm yet comfortable tension. Pull on the belt to ensure that everything is properly attached. There are several types of shoulder belts that may be used.



Non-Retractable Shoulder Belts

Non-Retractable Shoulder Belts easily attach to a section of track mounted on the vehicle sidewall, which provides increased positioning flexibility for multiple station vehicles. Insert the track fitting into a slot that gives the correct placement of the shoulder belt on the occupant.

A Non-Retractable Shoulder Belt is recommended for passengers with limited upper body control.





Retractable Shoulder Belts

Retractable Shoulder Belts may be directly mounted on the vehicle floor or sidewall. These offer automatic adjustment similar to auto seat belts.

Many systems offer a height adjustment feature which provides up to 12" of vertical adjustment to provide the proper placement of the shoulder belt.

All Sure-Lok Occupant Restraint Systems have a single quick release button. Just push the button on the buckle to release the occupant's lap and shoulder belts at the same time.





The Integrated Combination Lap and Shoulder Belt

The Integrated Combination Lap and Shoulder Belt is a very popular occupant restraint system. It can be used with Sure-Lok FF600 Retraktor Series Systems and FE500 Series Systems.

Grasp the buckle connector and pull the webbing out of the retractor. Slide it up the webbing a full arm's length while holding onto the Snap Hook with the web stiffener. Take the Snap Hook and thread it down and through the gap between the wheelchair back and seat. Connect it to the D-Ring on the rear wheelchair tie-down assembly closest to the vehicle sidewall.

Take the Snap Hook on the shorter buckle strap and thread it down and through the gap between the wheelchair back and seat. Connect it to the D-Ring on the rear wheelchair tie-down assembly.

Then, snap the buckle connector into the push button buckle and adjust the webbing using the adjuster to fit low and at the occupant's pelvic zone, near the hip and opposite the side from where the shoulder belt extends. Pull on the belt to ensure that everything is properly attached.

To disconnect, press the button on the buckle.



CAUTION - Here are some things to remember when securing the occupant:



 The lap belt must be worn low and snug across the occupant's pelvic zone, with the junction of lap and shoulder belts located near the wearer's hip.



 Never position the lap belt over the abdominal area, over the wheelchair armrests, or with the belt assembly twisted.



 Never extend the shoulder belt across the occupant's neck or face.



• Sure-Lok recommends that every securement station be equipped with a complete Sure-Lok Occupant Restraint System consisting of lap and shoulder belts for use by the occupant.



 Do not use postural support belts (belts that simply go around the occupant and mobility aid or are attached directly to the wheelchair) in lieu of an approved, FMVSS certified lap belt designed and tested to be used in conjunction with the securement system.

Pause The Video And Discuss Securing the Occupant Questions.

Section 6: System Care & Maintenance

Keeping your Sure-Lok restraint system clean and in good working condition is extremely important for both the safety of the occupant as well as the proper functioning of the system. The easiest and most effective way to achieve this is by incorporating cleaning and preventive maintenance procedures into the existing maintenance schedule for the vehicle. Here's what to do:





- Inspect straps and belts before each use. Any defects such as frayed, cut, contaminated or damaged webbing; improperly functioning buckle or hardware; or broken or worn parts require the replacement of the *entire* strap or belt assembly. Sure-Lok recommends that these belts be destroyed *before* they are discarded to avoid being used again.
- Environmental conditions such as dirt, mud, oil, sand, solvents, grease, saltwater or excessive sunlight will reduce the service life and proper functioning of the system. Prevent contamination of webbing from chemicals, especially battery acid. Store belts off the floor in a clean, dry container when not in use.
- Strap and belt webbing may be cleaned with mild soap and water. Rinse fully and dry completely.



 Any mechanical components, such as Cam or Ratchet Buckles must be periodically lubricated with a silicone-based lubricant at all moving metal-to-metal joints.



 Inspect all floor and sidewall anchorages such as tracks and plates including bolts. Check for excessive wear, corrosion and loose fasteners. Clean out any dirt and debris to ensure full and correct engagement of track fittings.

Any system components involved in a collision that requires the vehicle to be towed from the accident site must be replaced. This includes all anchorages.

Pause The Video And Discuss System Care & Maintenance Questions.

section 7: Hands-On Training

Now it's time to work with your staff in the hands-on portion of this training session. Take the participants to a vehicle equipped with a Sure-Lok Wheelchair Securement and Occupant Restraint System. Then, take turns practicing the proper procedures of operation as demonstrated during the classroom session. Have your group pair up, with one person acting as the passenger, and the other operating and applying the system. Remember, practice makes perfect. So take this time to familiarize yourself and your staff with all the Sure-Lok systems. And practice, practice, practice.

If you have any questions, please consult your supervisor or call your Sure-Lok representative. Because the safety of your passengers is one thing you don't want to compromise.

Conclusion

After completing the training program, take time to answer any final questions or to clarify any of the material that has been presented. Fill out the Certificate of Completion for each person who has actively participated in the *Doing It Right* Training Program. And finally, thank everyone for attending and for their commitment to safety.

For additional certificates, please call Sure-Lok at 1-800-866-0004.

Glossary of Terms

30mph/20g Impact Test

A simulated, dynamic crash condition that measures and evaluates the wheelchair securement and occupant restraint system's effectiveness and response to impact. As specified in SAE J2249.

Anchoring Point

The final point of attachment for the wheelchair securement or occupant restraint system to the vehicle structure.

FE500 Series

The group of wheelchair securement systems that has successfully passed the 30mph/20g Impact Test Criteria and meets ADA, FMVSS 222 and 302 requirements.

FF600 Series Retraktors

The retractable group of wheelchair securement systems that has successfully passed the 30mph/20g Impact Test Criteria and meets ADA, FMVSS 222 and 302 requirements.

FF800 Series

The original group of wheelchair securement systems that has a minimum breaking strength of 2,500 pounds per strap assembly and meets ADA, FMVSS 222 and 302 requirements.

Forward-Facing

The installation orientation of a securement system that allows the wheelchair and occupant, when secured, to face the front of the vehicle.

Four-Point Securement

Four strap assemblies that attach to the wheelchair frame at four separate points, two at the front, two at the rear, and anchor to the vehicle floor at four separate points.

Integrated

Refers to an occupant restraint lap belt that connects directly to the rear strap assemblies of the securement system, and is dependent upon the strength of the securement system for its restraint capability.

Minimum Breaking Strength

The minimum static load (applied in a straight tensile pull) that a component, strap, or belt assembly will withstand before failing.

Mobility Aid

A wheelchair, or any mobile seating device, either battery powered or manual, that is used to support and convey a person with special needs.

Parallel

Refers to an occupant restraint lap belt that anchors directly to the floor track or plates, and provides an occupant restraint system that secures the passenger separately, and independently, from the wheelchair securement.

Positive Locking

A design feature of wheelchair securement and occupant restraint systems where the attachment and anchoring hardware have a spring loaded mechanism that prohibits them from becoming inadvertently released or disengaged, once properly installed.

Seat Track

A feature of the Series L System where the Aluminum Track and seat stud fittings are used to mount and reposition the vehicle seats.

Series A

A wheelchair securement and occupant restraint system that utilizes Heavy-Duty Series A, 11 gauge, slotted Steel Track or Floor Plates for anchoring points.

Series L

A wheelchair securement and occupant restraint system that utilizes Series L Aluminum Track or Floor Plates for anchoring points.

Solo System

A wheelchair securement system that utilizes a low profile, stainless steel anchor mounted in the floor of the vehicle that is used with a stainless steel cleat, attached to the retractable wheelchair tie-down assembly.

Wheelchair Securement and Occupant Restraint System

A total system that provides securement for the wheelchair, as well as restraint protection for the occupant.

Program Worksheet

Section 1: Pre-Trip Assessment

- 1. What equipment should be in each securement station?
- 2. What inspection criteria require replacement of the entire strap or belt assembly? _____
- 3. Every vehicle should be equipped with a ______ for use in an emergency evacuation.

Section 2: Sensitivity Training

- 1. (TRUE or FALSE) You should stand when speaking to your passenger with special needs.
- 2. What question should you ask your passenger who has upper body mobility?
- 3. When should extra sensitivity be used?_____

Section 3: Components & Assembly

- 1. (TRUE or FALSE) For proper installation and belt alignment of A Track Fittings, it is very important that the keeper always faces away from the chair.
- To attach the Solo Cleat Fitting to the Floor Anchor, line up the ______ on the Cleat with the ______ on the Anchor. Slide the fitting on and rotate the strap assembly toward the wheelchair to lock onto the Anchor.
- 3. Loop all strap attachment hardware around a ______ member of the wheelchair.

Section 4: Securing the Wheelchair

- 1. The securement straps need to have approximately a ______ angle from the floor tracks or plates to where they attach to the wheelchair frame.
- Install the fitting end of the front securement strap into a slot of the floor track or plate that is at least _____ inches outside the front wheel of the wheelchair.

Section 4: Securing the Wheelchair (continued)

- Install the fitting end of the rear securement strap into a slot in the floor track or plate that is just to the _______.
 of the wheelchair's _______.
- 4. There are also times when a structural member is not easily accessible. The _____ may help in these instances.

Section 5: Securing the Occupant

- 1. When securing an Integrated Lap Belt, take the Snap Hook end of the belt and attach it directly to the _____ on the rear securement strap assembly.
- (TRUE or FALSE) Bring the triangular fitting of the shoulder belt over the passenger's shoulder, past the collarbone and diagonally across the upper chest of the occupant.
- 3. The height adjuster provides up to _____ inches of vertical adjustment.
- 4. All Sure-Lok Occupant Restraint Systems have a single _____ button, which releases the occupant's lap and shoulder belts at the same time.

Section 6: System Care & Maintenance

- 1. It is recommended that the following procedures be incorporated into an existing ______ that is currently in place for the vehicle.
- Any mechanical components, such as Cam or Ratchet Buckles must be periodically lubricated with a _____ based lubricant at all moving metal-to-metal joints.
- 3. (TRUE or FALSE) Sure-Lok recommends leaving straps on the floor when not in use. This allows for quick use the next time they are needed.
- 4. Strap and belt webbing may be cleaned with _____ and

Answers to Program Worksheet

Section 1: Pre-Trip Assessment

- 1. four securement straps, lap and shoulder belts
- 2. Any defects such as damaged webbing, improperly functioning hardware, or broken or worn parts.
- 3. web cutter

Section 2: Sensitivity Training

- 1. False
- 2. Would you like to assist with the placement of your lap and shoulder belts?
- 3. When securing the lap and shoulder belts of the occupant.

Section 3: Components & Assembly

- 1. True
- 2. dot, dot
- 3. structural frame

Section 4: Securing the Wheelchair

- 1.45°
- 2. 3
- 3. inside, rear wheel
- 4. Quick Strap

Section 5: Securing the Occupant

- 1. D-Ring
- 2. True
- 3. 12
- 4. Quick Release

Section 6: System Care & Maintenance

- 1. preventive maintenance schedule
- 2. silicone
- 3. False
- 4. mild soap, water

Sure-Lok Resources

Sure-Lok offers a variety of resources and literature that are accessible to you through your distributor or by ordering directly from the company. It's a reflection of our commitment to you as well as to the safe transportation of passengers in wheelchairs.



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