

1 Department of Public Safety

2

3 Adopted Permanent Rules Relating to Wheelchair Safety Devices

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5 Rules as Adopted

6 7450.0100 DEFINITIONS.

7 Subpart 1. **Scope.** The terms used in parts 7450.0100 to  
8 7450.0800 have the meanings given them in this part.

9 [For text of subp 2, see M.R.]

10 Subp. 3. **Commissioner.** "Commissioner" means the  
11 commissioner of public safety or an authorized agent.

12 Subp. 3a. **FMVSS.** "FMVSS" means federal motor vehicle  
13 safety standard No. 209 or No. 210, found in Code of Federal  
14 Regulations, title 49, section 571.209 or 571.210, respectively,  
15 as amended through December 31, 1991.

16 Subp. 3b. **Gross vehicle weight rating.** "Gross vehicle  
17 weight rating" means the value specified by the vehicle  
18 manufacturer as the maximum loaded weight of the vehicle.

19 [For text of subps 4 and 5, see M.R.]

20 Subp. 6. **Operator.** "Operator" has the meaning given in  
21 Minnesota Statutes, section 299A.11, paragraph (b).

22 Subp. 6a. **Transit vehicle.** "Transit vehicle" means a bus  
23 with a gross vehicle weight rating greater than 15,000 pounds.  
24 Transit vehicle does not include a school bus as defined in  
25 Minnesota Statutes, section 169.01, subdivision 6.

26 Subp. 7. **Wheelchair.** "Wheelchair" means a mobility aid  
27 belonging to any class of three- or four-wheeled devices and  
28 that are usable indoors and designed for and used by individuals  
29 with mobility impairments, whether operated manually or powered.

30 Subp. 8. **Wheelchair securement device; securement device.**  
31 "Wheelchair securement device" or "securement device" has the  
32 meaning given in Minnesota Statutes, section 299A.11, paragraph  
33 (a).

34 7450.0200 PURPOSE, AUTHORITY, AND SCOPE.

35 Subpart 1. **Purpose.** The purpose of parts 7450.0100 to

1 7450.0800 is to establish minimum standards for approval of  
2 wheelchair securement devices in vehicles and approval of seat  
3 belt assemblies and anchorages used to protect persons in  
4 wheelchairs while transported in vehicles.

5 Subp. 2. **Authority.** Parts 7450.0100 to 7450.0800 are  
6 adopted pursuant to the authority granted by Minnesota Statutes,  
7 sections 299A.01, subdivision 6; 299A.12, subdivision 4; and  
8 299A.18.

9 Subp. 3. **Scope.** Parts 7450.0100 to 7450.0800 apply to the  
10 transportation by motor vehicle of a disabled person while  
11 occupying a wheelchair. This transportation is offered or  
12 provided by an operator to the public, to its employees, or in  
13 connection with any other service offered by the operator  
14 including schooling or nursing homes and convalescent or child  
15 care services.

16 Subp. 4. **Exception.** Parts 7450.0100 to 7450.0800 do not  
17 apply to a school bus manufactured before January 1, 1988, and  
18 subject to regular school bus inspection under Minnesota  
19 Statutes, section 169.451, nor do they apply to incidental  
20 transportation of an occupied wheelchair under circumstances  
21 other than as provided in subpart 3.

22 7450.0250 TYPE OF SECUREMENT REQUIRED.

23 Subpart 1. **Transit vehicle.** An occupied wheelchair  
24 transported in a transit vehicle must be secured with an  
25 approved securement device that is either:

26 A. a frame-attached device that meets the  
27 requirements of parts 7450.0300 and 7450.0400; or

28 B. a user-friendly device that meets the requirements  
29 of parts 7450.0430 and 7450.0460.

30 Subp. 2. **Vehicle other than transit vehicle.** An occupied  
31 wheelchair transported in a vehicle other than a transit vehicle  
32 must be secured with an approved frame-attached securement  
33 device that meets the requirements of parts 7450.0300 and  
34 7450.0400.

35 7450.0300 FRAME-ATTACHED WHEELCHAIR SECUREMENT.

1 Subpart 1. Sufficient strength. A frame-attached  
2 securement device must be of sufficient strength to prevent  
3 forward, backward, lateral, or vertical movement of the  
4 wheelchair when the device is engaged and the vehicle is in  
5 motion, accelerating, or braking.

6 Subp. 2. Attached to frame. A frame-attached wheelchair  
7 securement device must attach to the frame of the wheelchair  
8 without damaging the frame. "Damage" includes effects harmful  
9 to the strength, integrity, or serviceableness of the  
10 wheelchair, but does not include minor dents, scratches, or  
11 other cosmetic blemishes not materially affecting  
12 serviceableness.

13 Subp. 3. Limitation. A frame-attached wheelchair  
14 securement device must not be attached to a wheel of a  
15 wheelchair.

16 7450.0400 MINIMUM STANDARDS FOR FRAME-ATTACHED DEVICES.

17 Each frame-attached wheelchair securement device must meet  
18 the requirements of items A to G.

19 A. It must attach to the wheelchair frame on at least  
20 three points. The three points of contact must be spaced to  
21 provide effective securement. Alternatively, a securement  
22 device meeting all other requirements of this chapter may attach  
23 to two widely spaced points on the wheelchair frame if the wheel  
24 tires or the wheelchair frame abuts an unyielding surface in a  
25 manner that meets the approval requirements of part 7450.0500.

26 B. It must consist of at least two webbing-type belts  
27 described in subitem (1) or at least two all-metal devices  
28 described in subitem (2) or one or more of each type of device.

29 (1) Webbing-type devices must be assemblies that  
30 meet or exceed Type 2 pelvic restraint seat belt requirements as  
31 specified in S4.2(b) of FMVSS No. 209, or be certified by the  
32 manufacturer that the device meets or exceeds assembly strength  
33 of 5,000 pounds in loop fashion or 2,500 pounds on each  
34 anchorage leg.

35 (a) Certification may be the specification

1 listed in catalogs or publications by the manufacturer.

2 (b) New construction of these securement  
3 devices and repairs to webbing must conform with standards  
4 established by the manufacturer of the webbing.

5 (2) All-metal securement devices must be designed  
6 and constructed to provide wheelchair securement strength that  
7 is at least equal to the strength of a webbing-type device  
8 comprised of three separate attachments and anchorages.

9 C. It must be free of sharp edges, corners, and  
10 jagged projections to minimize injury to persons in the event of  
11 unintentional contact.

12 D. It must be capable of retraction, and be readily  
13 removable or otherwise suitably storable when not in use.

14 E. It must be anchored to the vehicle at not less  
15 than two separate points with bolts, nuts, and lock washers or  
16 self-locking nuts.

17 (1) Bolts used must be not less than 3/8-inch in  
18 diameter and of National Fine Thread SAE grade 5 designation or  
19 equivalent.

20 (2) Where anchorage bolts do not pierce the  
21 vehicle frame, subframe, bodypost, or equivalent metal  
22 structure, a metal reinforcement plate or washer 1/16-inch thick  
23 and not less than four square inches or 2-1/4 inches in diameter  
24 respectively, is required.

25 (3) Interior paneling may not be used to  
26 constitute anchorage for a point of securement.

27 (4) A metal track, rail, or similar device  
28 permitting attachment of the securement device at optional  
29 points on it may be used to anchor the securement device, only  
30 if:

31 (a) the track, rail, or other device is  
32 secured to the vehicle in compliance with anchorage requirements  
33 of this part; and

34 (b) the attachment of the securement device  
35 to the anchor point is by means of a positive attachment metal  
36 fitting.

1 F. The method or device that provides attachment of  
2 the securement device to the wheelchair frame and the method or  
3 device locking the securement device in the load-holding mode  
4 must each be of a strength and design that will ensure  
5 performance of their intended function until the securement  
6 device is intentionally released.

7 G. Buckles, anchorage fittings, and other components  
8 essential to the functioning of the securement device must be  
9 integrated into the securement device in accordance with  
10 recognized practices and in a manner that preserves the overall  
11 strength of the securement device.

12 7450.0430 USER-FRIENDLY WHEELCHAIR SECUREMENT.

13 Subpart 1. **Nominal movement.** A user-friendly securement  
14 device must limit movement of an occupied wheelchair when the  
15 vehicle is in normal operation. An occupied wheelchair loaded  
16 with a restrained weight of 250 pounds may not move more than  
17 two inches in any direction at any point of contact with the  
18 floor when the vehicle is being operated under the following  
19 conditions:

20 A. full-throttle acceleration on dry pavement from a  
21 standstill to a speed of 25 miles per hour with the vehicle at  
22 its curb weight plus one occupied wheelchair;

23 B. maximum braking from a speed of 22 miles per hour  
24 to a standstill on dry pavement with the vehicle at its curb  
25 weight plus one occupied wheelchair; and

26 C. driving both clockwise and counterclockwise with  
27 the outer, front wheel around one of the following:

28 (1) a 50-foot diameter circle at a minimum steady  
29 speed of 12 miles per hour;

30 (2) a 75-foot diameter circle at a minimum steady  
31 speed of 14 miles per hour; or

32 (3) a 100-foot diameter circle at a minimum  
33 steady speed of 16 miles per hour.

34 Subp. 2. **Attachment.** A user-friendly securement device  
35 must attach to the wheelchair without damaging it during normal

1 vehicle operations. "Damage" includes effects harmful to the  
2 strength, integrity, or serviceableness of the wheelchair but  
3 does not include minor dents, scratches, or other cosmetic  
4 blemishes not materially affecting serviceableness. A bent  
5 wheel or broken spoke for example is "damage."

6 Subp. 3. Release. A user-friendly securement device must  
7 be designed so as to prevent an unintended mechanical release.

8 Subp. 4. User-friendly. A user-friendly securement device  
9 must be designed so that it can be readily engaged and released  
10 by the user, or remotely by the vehicle driver, subject to the  
11 following conditions:

12 A. The manual operating control for the user must be  
13 located within the upper 33 inches of a 48-inch cube occupied by  
14 the secured wheelchair.

15 B. The force required by the user to engage and  
16 release may not exceed five pounds force and may not require  
17 tight grasping, pinching, or twisting of the wrist.

18 C. When a device is manually engaged, the reach,  
19 force, and dexterity required to manually release the device may  
20 not exceed that required to manually engage it.

21 D. The device may be automatically engaged by the  
22 wheelchair or remotely by the vehicle driver, but a manual  
23 release must be available that meets the specifications of items  
24 A and B. A device that may be remotely engaged or released by  
25 the driver must have an indicator light to inform the driver  
26 that the device has engaged or released the wheelchair.

27 E. A user-friendly device does not need to be able to  
28 secure all types of wheelchairs. A user-friendly device must  
29 secure all types of wheelchairs for which it is approved by the  
30 commissioner.

31 7450.0460 MINIMUM STANDARDS FOR USER-FRIENDLY DEVICES.

32 Subpart 1. Force to be restrained. A user-friendly  
33 securement device must be able to restrain force as follows:

34 A. A user-friendly securement device and its  
35 attachments used on a vehicle with a gross vehicle weight rating

1 of 30,000 pounds or more must withstand a force in a forward  
2 longitudinal direction of up to 2,000 pounds per securement leg  
3 or clamping mechanism and a minimum of 4,000 pounds total for  
4 each wheelchair.

5 B. A user-friendly securement device and its  
6 attachments used on a vehicle with a gross vehicle weight rating  
7 of over 15,000 pounds but less than 30,000 pounds must withstand  
8 a force in a forward longitudinal direction of up to 2,500  
9 pounds per securement leg or clamping mechanism and a minimum of  
10 5,000 pounds total for each wheelchair.

11 Subp. 2. Attachment to vehicle. A user-friendly  
12 securement device must be attached to a part of the vehicle that  
13 can, when attached, withstand the forces specified in subpart  
14 1. The device must be installed according to the manufacturer's  
15 installation instructions approved under part 7450.0500.

16 Subp. 3. Damage to device. After the test modes in  
17 subpart 1 have been removed, a user-friendly securement device  
18 must be operable to the extent that it will release a  
19 wheelchair, as specified in part 7450.0430, subpart 4.

20 7450.0500 APPROVAL PROCEDURE.

21 Subpart 1. Application. Application for approval of a  
22 wheelchair securement device must be made in writing to the  
23 commissioner and must be accompanied by the manufacturer's  
24 actual or proposed written installation and use instructions and  
25 photographs or drawings clearly depicting the construction of  
26 the device and its physical characteristics, including all  
27 mounting hardware. The application must also include the  
28 labeling used for identifying the manufacturer and the model  
29 designation. An application for approval of a user-friendly  
30 securement device must also include a test report or engineering  
31 document certifying that the device and its attachment to the  
32 vehicle can withstand the forces specified in part 7450.0460, or  
33 the manufacturer's specifications to the same effect listed in  
34 catalogs or publications by the manufacturer.

35 Subp. 2. Demonstration of frame-attached securement

1 **device.** When requested by the commissioner, an applicant for  
2 approval of a frame-attached securement device shall provide a  
3 vehicle with the securement device installed in it, and  
4 demonstrate the device by attaching it to a wheelchair provided  
5 by the applicant. The commissioner may load the wheelchair to  
6 140 pounds and require that the vehicle be accelerated, driven  
7 around corners, and subjected to hard braking at speeds of 30  
8 miles per hour or less. Movement of the wheelchair more than  
9 one inch in any direction, including vertically, during the test  
10 is grounds for refusing approval. Measurement of movement must  
11 be at the points where wheelchair wheels contact the floor.  
12 Damage to the wheelchair or other property or injury to a person  
13 during the test is the responsibility of the applicant.

14 **Subp. 2a. Demonstration of user-friendly securement**  
15 **device.** When requested by the commissioner, an applicant for  
16 approval of a user-friendly securement device shall provide a  
17 vehicle with a wheelchair and with the securement device  
18 installed in the vehicle and demonstrate compliance of the  
19 device to the requirements of parts 7450.0430 and 7450.0460.  
20 Damage to the wheelchair or other property or injury to a person  
21 during the test is the responsibility of the applicant.

22 **Subp. 3. Approval.** On determining that the securement  
23 device meets the requirements of this chapter, the commissioner  
24 shall issue a certificate of approval authorizing use of the  
25 device. If the a user-friendly device does not secure all types  
26 of wheelchairs, the certificate must state the types of  
27 wheelchairs for which the device is approved.

28 **Subp. 4. Denial and revocation.** The commissioner shall  
29 deny or revoke an approval upon a showing that the securement  
30 device does not meet a requirement of parts 7450.0100 to  
31 7450.0800. The commissioner shall notify the applicant in  
32 writing of a denial or revocation of approval.

33 **Subp. 5. Label.** Each wheelchair securement device must be  
34 permanently labeled with the name, initials, or trademark of the  
35 manufacturer and the model designation of the device. The label  
36 must be readily visible and legible from the outside of the



1 device when it is properly mounted to the vehicle and in use.

2 7450.0600 OCCUPANT RESTRAINT.

3 Subpart 1. **Seat belt assembly.** Each vehicle equipped with  
4 a wheelchair securement device must be equipped with a Type 2  
5 seat belt assembly with a detachable upper torso portion at each  
6 wheelchair position in the vehicle or, in the alternative, must  
7 be equipped with a Type 1 pelvic restraint assembly and a length  
8 of Type 1 or Type 2 seat belt webbing, with buckle, adequate to  
9 encircle the chest of the wheelchair occupant and the backrest  
10 of the wheelchair.

11 Subp. 2. **Standard.** Type 1 and Type 2 seat belt assemblies  
12 must meet the requirements of S1 to S4.4 of FMVSS No. 209.

13 Subp. 3. **Installation and anchorage.** Type 1 and Type 2  
14 seat belt assemblies and the detachable upper torso restraint,  
15 if a detachable upper torso restraint is installed instead of  
16 using a length of seat belt webbing to encircle the chest of the  
17 occupant and the backrest of the wheelchair, must be installed  
18 and anchored in accordance with S1 to S4.3.2 of FMVSS No. 210.

19 7450.0700 USE OF SECUREMENT DEVICE.

20 The driver of a vehicle equipped with a wheelchair  
21 securement device has the following duties:

22 A. The driver or a person designated by the driver  
23 shall ensure that an occupied wheelchair is properly secured  
24 before moving the driver sets the vehicle in motion.

25 B. When requested by the wheelchair user or, when the  
26 wheelchair user is unable to communicate, when seat belt usage  
27 is required of all passengers in the vehicle, or when the  
28 vehicle is a school bus, the driver or a person designated by  
29 the driver shall ensure that the seat belt assembly, and upper  
30 torso restraint if so equipped, is fastened around the  
31 wheelchair user, before moving the driver sets the vehicle in  
32 motion. The seat belt assembly or the upper torso restraint  
33 must not be fastened, however, if the wheelchair user or other  
34 responsible person advises the driver that to do so would  
35 aggravate a physical condition of the wheelchair user. If the

1 physical condition would be aggravated by the use of but one of  
2 the devices, the device that would have no adverse effect on the  
3 physical condition must be fastened in the required manner.

4 C. The driver or a person designated by the driver  
5 shall ensure that securement devices and seat belt assemblies  
6 are retracted, removed, or otherwise stored when not in use to  
7 prevent tripping of persons and damage to devices.

8 7450.0800 INSPECTION, REMOVAL, AND CORRECTION.

9 Subpart 1. **Inspection.** Annual inspections of securement  
10 devices must be performed in accordance with Minnesota Statutes,  
11 section 299A.14.

12 Subp. 2. **Removal, correction.** The commissioner shall  
13 order the removal or correction of a securement device upon  
14 determining that the device, without regard to date of  
15 installation:

16 A. is not capable of sustaining loads imposed on it  
17 in restraining an occupied wheelchair;

18 B. permits excessive movement of an occupied  
19 wheelchair; or

20 C. does not meet the requirements of parts 7450.0100  
21 to 7450.0800.

22 REPEALER. Minnesota Rules, part 7450.0900, is repealed.