Transport of Wheelchair Seated Passengers

‘Travel Safe’ Guidance

This leaflet provides a quick guide to the very basic requirements for the transport of wheelchair seated passengers traveling in road vehicles.

IMPORTANT

The Travel Safe leaflet should be used in conjunction with the PMG Best Practice Guidelines for the Transportation of People Seated in Wheelchairs.

Sharing knowledge • Promoting good practice

PMG

Posture & Mobility Group

Preparation for Road Transport

As with all things, **preparation** is paramount.

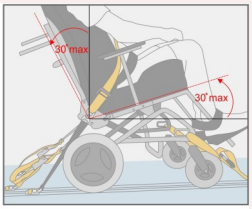
If possible, a wheelchair user should transfer from their wheelchair to a vehicle seat and store their wheelchair as an item of luggage. Passengers should then use the vehicle seat belts provided.

When transfer is not possible, and the wheelchair user must remain in their wheelchair, the following important points must be considered.

- Have you read the manufacturer user instructions for transport? Is the wheelchair suitable for use as a seat in a road vehicle? If it is then there will be a statement of compliance to ISO 7176-19:2008.

- The wheelchair and occupant should face forwards in the direction of travel.

- Are the tie-down attachment points clearly marked on the wheelchair? Can you see the karabiner symbol front and rear of the wheelchair?

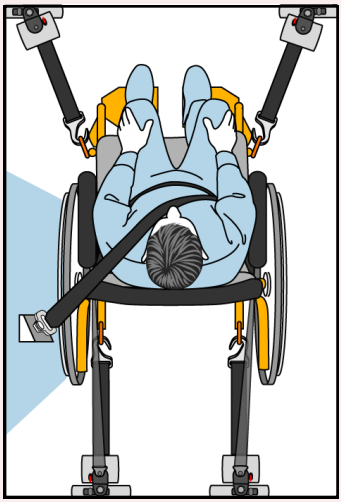


- Are there any specific instructions in the user instructions about wheelchair settings, such as tilt or recline angles when in transport?

- Remove luggage, such as a back pack, attached to the wheelchair. Back-packs are likely to affect wheelchair stability whilst boarding and alighting a vehicle.

Securing the Wheelchair

All transportable wheelchairs that comply with ISO 7176-19 can be secured forward facing using a 4-Point webbing type securement system that complies with ISO 10542-1 'Wheelchair Tie-down and Occupant Restraint System' (WTORS).



Front and rear tie-downs must be fitted to provide a stable seat for the wheelchair occupant.

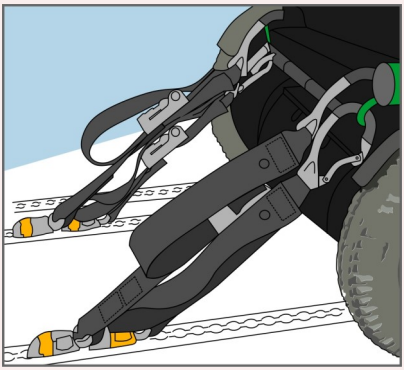
Front tie-downs should be placed wider apart to avoid contact with foot supports. This also helps to provide lateral stability of the wheelchair.

Rear tie-downs should run parallel, straight back behind the wheelchair to anchor points on the vehicle floor.

The wheelchair should be positioned against the side wall of the vehicle for the torso belt to anchor above and behind the shoulder.

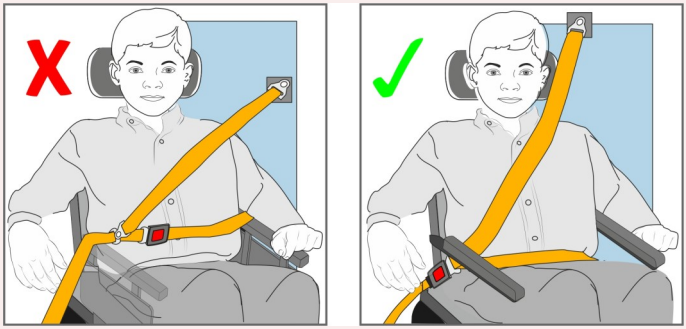
For heavy powered wheelchairs, it may be necessary to fit additional tie-downs at the rear to make sure that the wheelchair is properly secured. Check with the wheelchair user instructions for details of wheelchair securement.

Check the load bearing capacity of your tie-downs with your WTORS supplier.

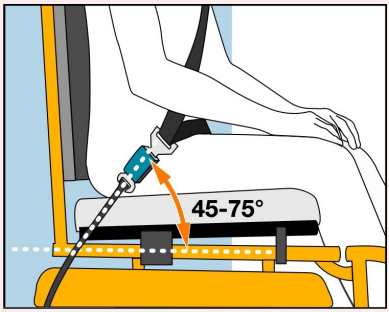


Protect the Occupant

Always use a 3-point lap and diagonal occupant restraint system.



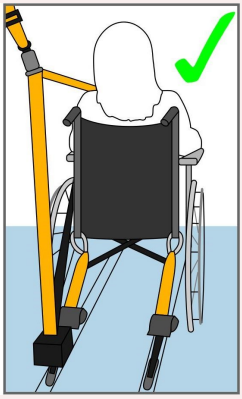
The lap belt must be routed under arm supports and side guards to achieve close contact with the pelvis of the wheelchair seated passenger.
The shoulder belt should lay across the sternum and over the mid-shoulder to effectively restrain the upper torso of the occupant.



The lap belt should run at a steep angle, when viewed from the side, to maintain position and prevent the webbing applying load to the abdomen during a crash event.

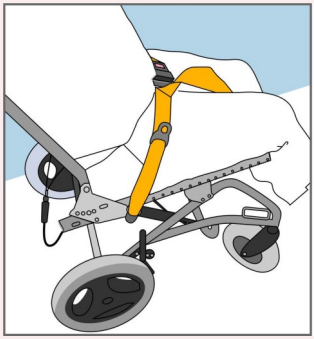
Abdominal intrusion is associated with ‘submarining’.

The anchorage for the diagonal section of the restraint webbing should be positioned above and behind the occupant’s shoulder, on the side wall of the vehicle.
Direct to floor anchored shoulder belts impart high downward loads to the shoulder and spine of the wheelchair seated passenger and allow excessive head movement, with possible contact with vehicle interior.
Direct to floor anchored shoulder belts do not comply with the WTORS Standard ISO 10542-1.



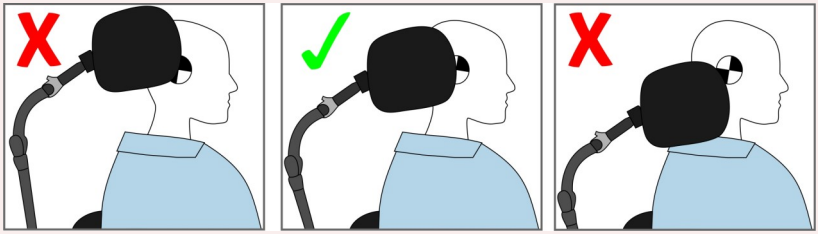
Protect the Occupant

Wheelchair integrated lap belts can provide better control of lap belt positioning, to prevent submarining.



Posture belts help maintain an occupant in an upright position, so that crash restraint systems remain in the right place.

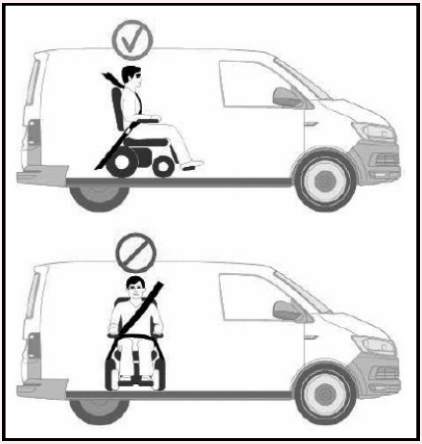
Wheelchair mounted head supports provide occupant comfort whilst in transport. Head supports should be positioned level with the occupant's head centre of gravity—approximately level with the passenger's ears.



Head supports offer limited occupant protection in rear impact scenarios.

Seating Orientation

Wheelchairs are tested and approved for use as a seat in transport forward facing.



For a rearward facing wheelchair, the passenger will require close fitting head and back support to prevent injury during a frontal impact.

Side facing seating orientation is not permitted.

Vehicles and Wheelchair Access

Understanding the different types of road vehicles help wheelchair users and their care providers plan ahead for transport options.

Private Wheelchair Accessible Vehicles

Referred to as 'WAVs'. Plenty of choice according to user or family needs.
Check doorway dimensions + interior space.
Check carrying capacity for heavy chairs.
Check fit of occupant restraint system.
Any driver allowed.

Taxi

Prefer forward facing wheelchair and occupant.
Rear facing requires head and back support.
Never sideways facing when occupied.

Minibus

More than 8 seated passengers.
Home to school, school or community transport operations/services.
Generally tracked floor layout for flexible operations.
Require trained/approved drivers.

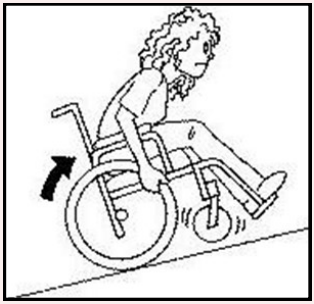
Low Floor Bus PSV

Allow standing passengers with handholds
Ramp access with kneeling system.
Rearward facing passenger station.
Wheelchair brakes on.
Handholds for occupant stability.
Local bell push.

Vehicle Entry and Egress

The majority of adverse incidents for wheelchair passengers happen whilst getting in or out of a vehicle.

Ramps



Ramp slope angle is critical—longer ramp reduces slope angle—which reduces risk.
Unassisted manual wheelchair 7° maximum.
Assisted manual wheelchair 14° maximum.
Width—800mm in public transport
300kg Load capacity. Side edge protection 25mm.

Passenger Lift Platforms

Operators must read the manufacturer user manual and undertake approved 'hands-on' training.
Check lifting capacity—300kg common.
Minimum 6 monthly mechanical inspection.

Driver responsible for passenger safety.
Vehicle should be level.
Check wheelchair orientation; forward or rearward on platform.
Driver riding on platform may exceed lift capacity.
May require two people to ensure safety.

Complex situations will require written and recorded risk assessment, to be conducted by transport managers in collaboration with passenger care providers.

Further Information

The full version of the Posture and Mobility Group Best Practice Guidelines for the Transportation of People Seated in Wheelchairs is available as a free download from:

www.pmguk.co.uk/resources/best-practice-guidelines-bpgs/best-practice-guidelines-bpgs

Acknowledgements

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