



A Guide to Transportation of People Seated in Wheelchairs

Assistive technology is a piece of equipment, device or system that provides people with practical solutions to everyday life activities. You can search our National Equipment Database www.askned.com.au to view a range of products online.

Whenever possible and practical, it is strongly recommended that wheelchair occupants transfer out of their wheelchair onto a vehicle seat and use the vehicle seatbelt system. This is generally the safest mode of transport.

Transportation requirements should be considered by a therapist during the assessment process and prescription of a wheelchair.

Risk Assessment

A risk assessment should be completed by a therapist to determine the most appropriate method of transportation. This should take into consideration how a client transfers, their postural support needs, type of vehicle, clinical needs vs. crash safety, use of equipment, carer requirements and compliance of wheelchair/seating/restraints. The therapist should clearly document the process and clinical reasoning during assessment and prescription.

Wheelchair Suitability for Transport

In Australia there are presently no specific legal requirements stating which types of wheelchairs can or cannot be used in a vehicle. However, for people who need to stay seated in their wheelchair for transport, it is strongly recommended that the wheelchair used complies with Australian Standard AS/NZS 3696.19 “Wheeled mobility devices for use as seats in motor vehicles”.

Wheelchairs that meet this standard have been “Crash Tested” to withstand crash forces (48km/h at 20 g) in an accident. If you are unsure whether a wheelchair is “crash tested”, check with the manufacturer or supplier.

A Guide to Transportation of People Seated in Wheelchairs

Seating Systems

When a seating system is integrated into the wheelchair frame (or is supplied as standard with the frame) then the frame/seating system combination should comply with AS/NZS 3696. 19:2009. If a separate seating system is used, the wheelchair frame should meet AS/NZS 3696.19:2009 while the seating system should meet AS/NZS ISO 16840.4:2014 for both to be considered “crash tested”.



Modified vehicle

Regardless of the type of seating system used, there are general requirements recommended to maximise safety:

- Back support should ideally be at shoulder height
- Head support mounted to the wheelchair or to the vehicle
- Postural Support Devices (e.g. lateral supports) should be integrated into the seating system whenever possible
- Wheelchair cushions should be of minimal weight and secured to the wheelchair
- Ancillary items (e.g. trays) should be removed from the wheelchair during transport

A Guide to Transportation of People Seated in Wheelchairs

Wheelchair tie-down and occupant restraint system (WTORS)

While the choice of wheelchair and seating system is crucial to the safe transportation of people in wheelchairs, so is the use of appropriate WTORS.

Wheelchair tie down systems secure the wheelchair firmly to the floor of the vehicle. The most common type of wheelchair tie-down is a four-point strap system, which attach to specified tie-down points on the wheelchair.

Alternatively, a docking system may be used. The occupied wheelchair should face forwards during transportation.

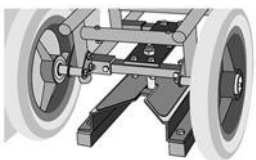
The wheelchair user must also be restrained independently of the wheelchair, using an occupant restraint system. These are lap/sash belts that attach to the vehicle and are separate to any postural harnesses used.

Wheelchair tie-down and occupant restraint system should comply with AS/NZS 10542 and should always be used as per manufacturer's instructions.

NOTE: Always check that restraints are appropriate for the weight of the wheelchair and user. Heavy duty restraints are required for wheelchairs over 120kg.

Wheelchair accessible taxis often only carry standard restraints, and it may be necessary for users to carry their own restraints.

Docking system



Four-point tie down system



Vehicles

There are a variety of cars, vans, minibuses and multi-purpose vehicles that can be modified to enable transport of people seated in wheelchairs. Modifications may include lowering the vehicle floor and/or raising the roof line, raising the door height and installation of WTORS anchorages.

Vehicles should only be completed by an approved vehicle modifier. Seek advice from them if planning to modify a vehicle or planning to purchase a vehicle for modification. All modified vehicles need to be approved by the Department of Transport of WA before use.

Entry in and out of the vehicle should be quick and require minimal effort. This can be via a fixed or removable ramp, or via a lift system.

There are also minimum clearance spaces required around the wheelchair, user and WTORS in the vehicle. This reduces the potential for injuries during a crash. Details of the requirements can be found in AS/NZS 3696.19:2009

Our experienced health professionals can provide strategies and advice on the right product for you. Please contact us using the details below for further information or to book an appointment. Appointments can be conducted by phone, email, face-to-face or video call.

Did you know Indigo also offer a range of other services?

Please ask us when you call, or visit www.indigosolutions.org.au

Frequently Asked Questions

This FAQ section aims to cover common enquiries. This section is a guide only and further information and clarification should be sought if you are unsure.

What is the difference between AS/NZS 3696.19:2009, ISO 7176-19 and ANSI/RESNA WC19?

ISO 7176-19 “Wheeled mobility devices for use as seats in motor vehicles” is an International Standard. Wheelchairs that meet this standard have passed tests to withstand collisions under certain conditions.

ANSI/RESNA WC19 is a voluntary industry standard for designing, testing and labelling a wheelchair for use as a seat in a motor vehicle. Compliance with this implies compliance with ISO 7176-19.

AS/NZS 3696.19:2009 “Wheeled mobility devices for use as seats in motor vehicles” is an Australian and New Zealand specific standard. It adopts ISO 7176-19:2008 with national modifications to specify design requirements, performance requirements and test methods.

Each of these indicates that a wheelchair has been “crash tested”, however it is recommended to use wheelchairs that meet AS/NZS 3696.19:2009 for transportation if possible.

If a wheelchair has a head rest attachment, does that mean it has been crash tested?

No. A head rest is essential to have on a wheelchair that is transporting a person, however having one fitted does not make a wheelchair transport approved. It is compliance with a relevant standard that makes it “crash tested”.

If a wheelchair or scooter has tie down points, does this mean it has been “crash tested”?

Not always. Just because a wheelchair or scooter has tie down points or labels doesn't mean that it has been crash tested. In the case of scooters some have tie down points, but none have been crash tested. It is not legal to sit in a scooter for transport in a vehicle. If your wheelchair has tie down points or labels and you are unsure as to whether it is crash tested it is best to check with the supplier/manufacturer.

Can “crash tested” seating systems be used on any wheelchair base/frame?

Seating systems that are “crash tested” (comply with AS/NZS ISO 16840.4:2014) should be mounted to “crash tested” wheelchair bases/frames (compliant with AS/NZS 3696.19:2009). Ideally, use combinations identified by suppliers as being crash tested together.

How do I know what wheelchair tie down system / equipment to use?

The suitability of tie down systems depends on the attachment points and the load capacity of both the wheelchair and the vehicle. Most wheelchairs, both power and manual, now feature transport lugs upon which a hook can be attached to the tie down point. Check that the vehicle you are using has a tie down system which is compatible with your attachment points and is strong enough for the weight of the wheelchair.

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If a wheelchair occupant uses a positioning harness; do they need to use an occupant restraint system as well?

Yes. A positioning harness is not the same as a seatbelt and should not be used as one. A positioning harness is used to support a client's posture. An occupant restraint system is like a lap-sash seatbelt and is designed to limit the potential injury during a vehicle accident. They have been tested to withstand forces anticipated in an accident.

Recent International Best Practice Guidelines indicate that postural harnesses, belts, and postural supports (e.g., lateral supports and pommels) should be removed during transport unless required for physical safety.

Can a wheelchair be tied down if it doesn't have specific tie down points / lugs?

No. It is not safe to attach tie down straps to any point other than approved transport lugs. If there is no specific tie down points indicated on the wheelchair, then that wheelchair should not be used for vehicle transportation.

Note: "crash tested" wheelchairs may not always come with transport lugs attached (this is often optional). Ensure that "crash tested" wheelchairs are supplied with transport lugs if the wheelchair will be used for vehicle transportation.

When do tie down restraints need replacing?

If the straps are showing general signs of wear and tear such as fraying or significant fading, then they should be replaced. If you are unsure as to whether it is time to replace the straps it is best to check with the supplier/manufacturer as they will usually have recommended "lifetimes". If the tie down system has been involved in a vehicle accident, then the system should be replaced before further use.

Where should the head rest be positioned for travel?

It is important that the headrest is positioned directly behind the head as indicated by the International best practice guidelines.

Where can I get more information on transportation of people seated in wheelchairs?

Contact Indigo, or view the relevant Australian Standards and resources listed below.



A Guide to Transportation of People Seated in Wheelchairs

Relevant Australian Standards:

Copies of the Australian Standards relevant to the transportation of people seated in wheelchairs can be purchased from:

<https://infostore.saiglobal.com/en-au/>

AS/NZS 3696.19:2009 (Wheeled mobility devices for use as seats in vehicles)

AS/NZS ISO 16840.4:2014 (Seating Systems for use in motor vehicles)

AS/NZS 10542.1:2009 (wheelchair tie down and occupant restraint systems - requirements and test methods for all systems)

AS/NZS 10542.2:2009 (wheelchair tie down and occupant restraint systems – four-point, strap type tie down systems)



Resources

International Best Practice Guidelines: Transportation of People Seated in Wheelchairs (2013). Available from <https://www.pmguk.co.uk/resources/best-practice-guidelines/transportation-under-review>

WC19 compliant wheelchairs and seating systems

www.nercwts.org/WC19.html

WA Department of Transport: “Modify a Vehicle for Special Needs”

[Modify a vehicle for special needs \(transport.wa.gov.au\)](http://transport.wa.gov.au/Modify-a-vehicle-for-special-needs)

WA Department of Transport: “Transporting People with a Disability”

<https://www.transport.wa.gov.au/On-demandTransport/transporting-people-with-disability.asp>

Vehicle Modification Agents in WA:

<http://ilcaustralia.org.au/products/18428>

Wheelchair tie down and occupant restraint systems:

http://ilcaustralia.org.au/search_category_paths/496