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## **JAPANESE VS AUSTRALIAN WHEELCHAIR ACCESSIBLE VEHICLES**

There is currently an issue in Australia with the influx of many Japanese vehicle imports.

Many of the vehicles do not comply with the Australian vehicle requirements.

To try to combat this, the standard for Wheelchair Tie-downs and Occupant Restraints ISO 10542-1:2012 was updated by the Australian Standard Board to include 3 additional vehicle requirements and became AS/NSZ ISO 10542-1:2015.

The differences between the Australian and Japanese standards for WTORS and wheelchair accessible vehicles are outlined in the table below.

	Japan	Australia	Notes
<b>Wtors EQUIPMENT</b>	<p>They are a signatory of ISO and are reviewing the ISO standards but have not adopted them.</p> <p><b><i>Currently no WTORS standards exist in Japan; each manufacturer uses their own standards and develops their own systems. An old research report is used as the basis for WTORS testing which requires the wtors meet a 400kgf requirement.</i></b></p>	<p>Must be tested to AS/NSZ ISO10542-1:2015</p> <ol style="list-style-type: none"> <li>1. Mandatory design requirements</li> <li>2. Mandatory 20g dynamic sled testing</li> <li>3. Mandatory environmental testing such as flammability, wear etc.</li> </ol>	<p>In Japan no requirements exist, only recommendations from an old research report which requires a Static load for the tiedowns of <b>400kgf which is ½ that for wtors if ISO were applied statically.</b></p> <p>The WTORS used in Japanese vehicles are therefore very different. They use a lot of mini retractors, Y belts attached to a single rear anchorage and wire webbing/cable systems. These systems meets the Japanese loads but do not comply with ISO 10542-1</p>
<b>Wheelchairs</b>	<p>JIS T9201 &amp; 9203 exists for manual and power wheelchairs. This covers the design of the wheelchair but does not include any crash testing requirement.</p>	<p>All manual and power wheelchairs designed to AS/NSZ ISO 7176 and tested to ISO7176-19 20g dynamic sled test</p>	<p>The Japanese standard looks only at the design from a usability/ rehabilitation point of view and considers durability but they do not consider the wheelchair when used as a seat in a motor vehicle. Most wheelchairs in Japan are manual wheelchairs and the testing institute has confirmed many would not pass a dynamic sled test. It is because the size and weight of wheelchairs used in Japan is so different, that the corresponding vehicles and WTORS are also smaller and lighter.</p>

	<b>Japan</b>	<b>Australia</b>	<b>Notes</b>
<b>Wheelchair accessible vehicles and taxis</b>	<p>No requirements. Few wheelchair accessible taxis around, no design standard for the vehicle layout this is all determined by each vehicle manufacturer.</p> <p>For public vehicles, the only requirements are for accessibility under the new Disability Act and requirements for Barrier free access to public building and transport which requires use of ramps and wtors equipment but no standard on strength of the anchorages</p>	<p>AS/NSZ ISO 10542-1:2015 aligns with Disability Standards for Accessible Public Transport 2002 &amp; Australian Design Rule (ADR) 5.</p> <p>The Australian version of ISO 10542-1 includes 3 additional requirements to try to improve the vehicle design and installation of the WTORS, these are:</p> <ol style="list-style-type: none"> <li>1. WTOR anchorage strength for tiedown and occupant belts to be reinforced and tested to ADR5 which is a static anchorage test. This test only covers the occupant belt anchorage and no requirements are set out for the tiedown anchorages.</li> <li>2. Clear space/head height must be a minimum of 1550mm.</li> <li>3. Upper anchorage points must fall within zones in ISO10542.</li> </ol>	<p>The Japanese vehicles tend to have their anchorages tested but to very low loads, which would be insufficient for a heavy power wheelchair used in a 20g crash event.</p> <p>In Australia the occupant belt anchorage is tested to ADR5 but not the WTORS anchorages as there are no standards that cover this as it lies outside of ADR5. Most vehicle manufactures therefore add reinforcement which is visually inspected.</p> <p>It is therefore possible for a Japanese vehicle to be shown to comply with 1 by an inspector but the addition of new requirements 2 &amp; 3 will start to exclude more Japanese vehicles.</p>