INTERNATIONAL STANDARD

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Technical systems and aids for disabled or handicapped persons — Wheelchair tiedown and occupant-restraint systems —

Part 3: Docking-type tiedown systems

Assistances et aides techniques pour les personnes invalides ou handicapées — Systèmes d'attache du fauteuil roulant et de retenue de l'occupant —

Partie 3: Systèmes de fixation par arrimage

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 10542-3 was prepared by Technical Committee ISO/TC 173, *Assistive products for persons with disability*, Subcommittee SC 1, *Wheelchairs*.

ISO 10542 consists of the following parts, under the general title *Technical systems and aids for disabled or handicapped persons — Wheelchair tiedown and occupant-restraint sytems*:

— *Part 1: Requirements and test methods for all systems*

— *Part 2: Four-point strap-type tiedown systems*

— *Part 3: Docking-type tiedown systems*

— *Part 4: Clamp-type tiedown systems*

— *Part 5: Systems for specific wheelchairs*

Introduction

Providing effective protection for the wheelchair-seated occupant of a motor vehicle usually requires that after-market equipment be installed to secure the wheelchair and restrain the person in the wheelchair. ISO 10542-1 specifies requirements and test methods for all wheelchair tiedown and occupant-restraint systems (WTORS). Its provisions apply as amended and supplemented by this part of ISO 10542 for wheelchair tiedown and occupant-restraint systems that use a manual or powered docking system to secure the wheelchair.

At the time of the drafting of this part of ISO 10542, docking tiedown devices were most often used to allow wheelchair users to independently secure their wheelchairs in private vehicles. Extending the use of docking tiedown devices to public vehicles places the added demand that docking devices engage with, and safely secure, a wide range of wheelchair types. Therefore, this part of ISO 10542 also contains a specification for a universal docking interface geometry (UDIG). When adopted by both the wheelchair and wheelchair securement industries, the UDIG specification will allow the user increased independence in wheelchair securement for a wide range of vehicles, while in all likelihood reducing the time required for loading and unloading wheelchair passengers.

Technical systems and aids for disabled or handicapped persons — Wheelchair tiedown and occupant-restraint systems —

Part 3: Docking-type tiedown systems

1 Scope

This part of ISO 10542 specifies design and performance requirements and recommendations, instructions and warnings for both installers and users, and product marking and labelling, for wheelchair tiedown and occupant-restraint systems (WTORS) that use a docking-type wheelchair tiedown. It specifies the universal docking interface geometry (UDIG) and a method of testing wheelchair movement. It is applicable to docking-type wheelchair tiedown devices intended for securing all types of manual and powered forward-facing wheelchairs, including scooters with three or more wheels, used by adult passengers and drivers of motor vehicles.

This part of ISO 10542 is applicable primarily to complete WTORS, but a portion of this part of ISO 10542 can also be applied to components and sub-assemblies sold separately and for replacement parts.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 10542-1:2001, *Technical systems and aids for disabled or handicapped persons — Wheelchair tiedown and occupant-restraint systems — Part 1: Requirements and test methods for all systems*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 10542-1 and the following apply.

3.1
docking-type tiedown
docking-type securement
method of wheelchair tiedown by which portions of the wheelchair structure, or add-on components fastened to the wheelchair, align, mate and engage with a docking tiedown device fastened to the vehicle, upon manoeuvring of the wheelchair into position in the vehicle

NOTE Securement of the wheelchair can occur automatically during wheelchair engagement, or could require manual intervention through operation of a mechanical lever or electrical switch. Release of the wheelchair will usually require operation of a mechanical lever or electrical switch.