Sled Impact Test

MC 2503
Motion Concepts

Frontal Impact of an Aviva Fx40 MPS Maxx Secured by a Surrogate Six-Point, Strap-Type Tiedown and Loaded with a Hybrid III Midsize Male ATD Restrained by a Three-Point Belt Comprised of a Commercial Wheelchair-Anchored Lap Belt and a Surrogate Shoulder Belt

Tested in accordance with Annex A of
ISO 7176-19:2022: *Wheeled Mobility Devices for Use in Motor Vehicles*

Test Date: April 2, 2025

Submitted to:
Motion Concepts
84 Citation Drive
Concord, Ontario
L4K 3C1 Canada

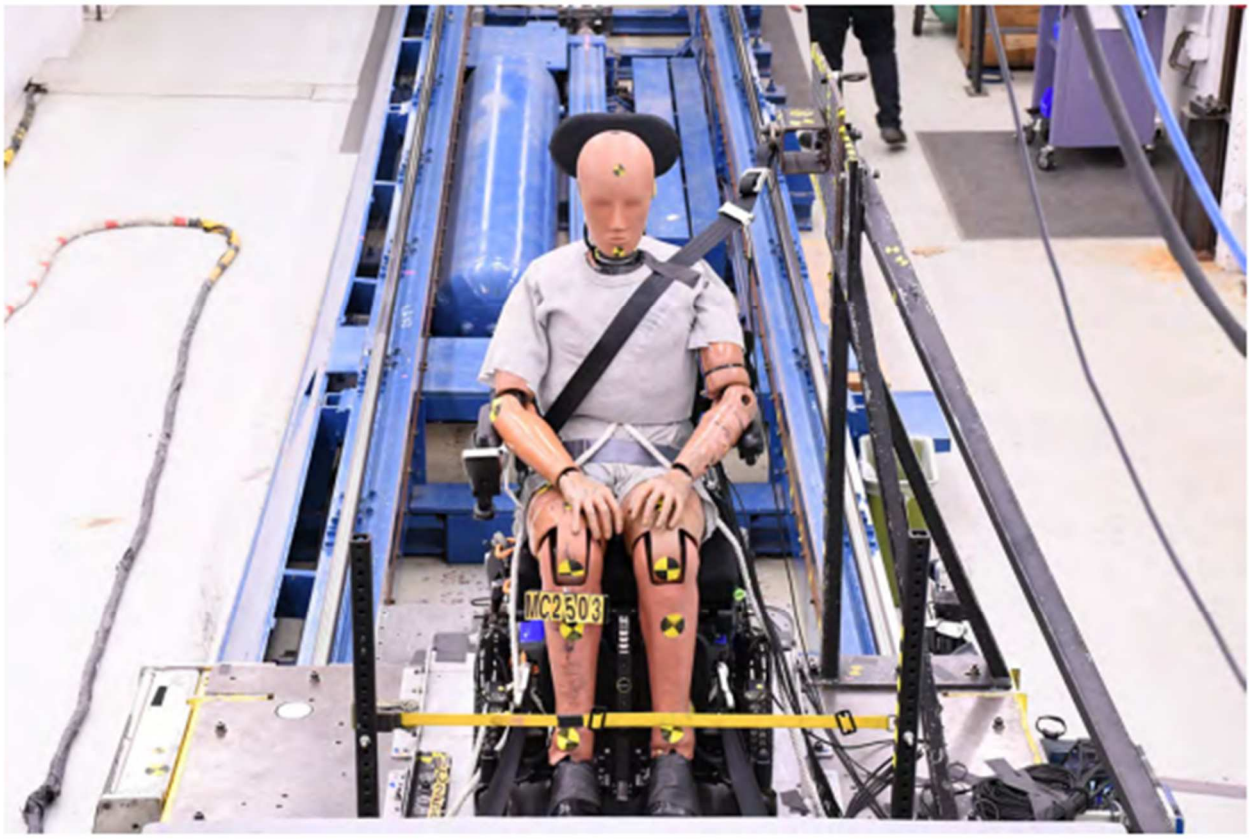
The University of Michigan
Transportation Research Institute
2901 Baxter Road
Ann Arbor, Michigan 48109
Accredited to ISO/IEC 17025:2017

ilac-MRA

PJLA
Testing
Accreditation #108987

Authorized Signatures

Nichole Orton	Miriam Manary
Senior	Lead
Research Engineer	Research Engineer



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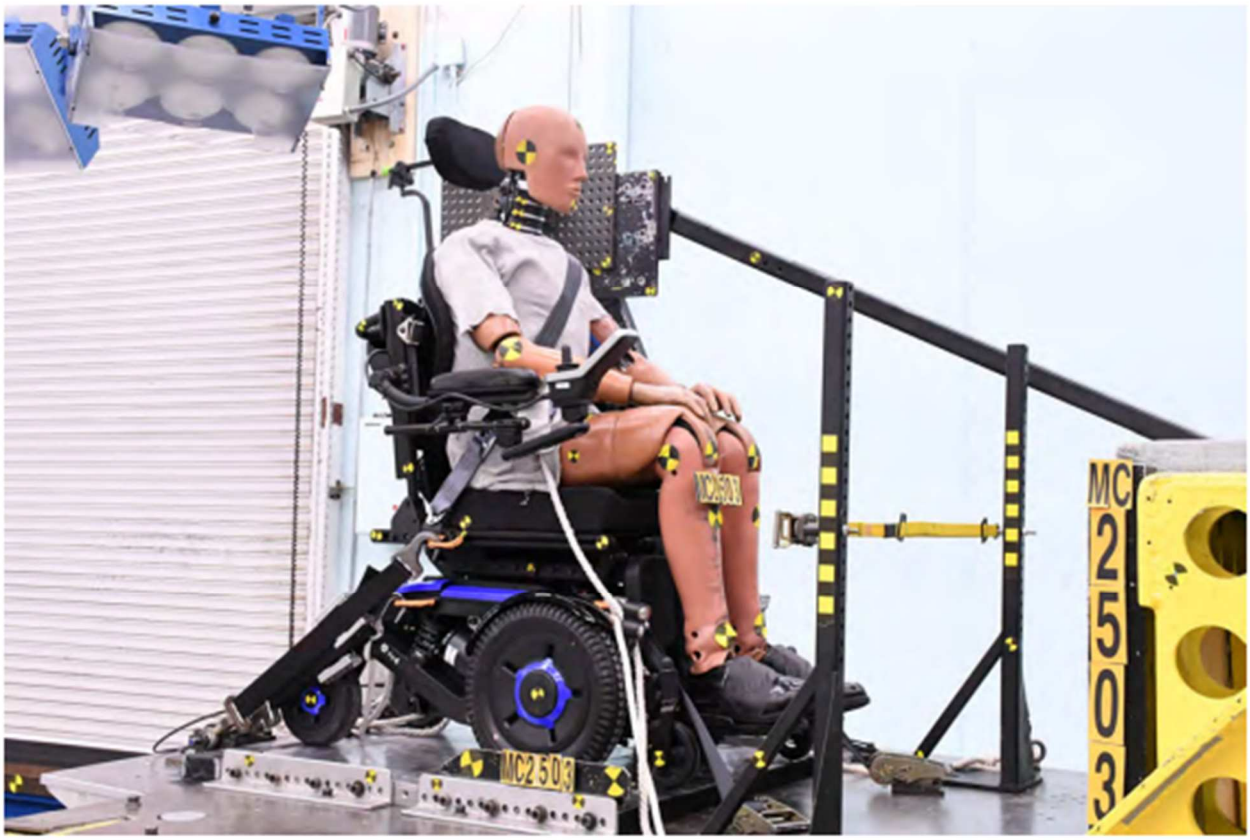

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SUMMARY OF PERFORMANCE TO ISO 7176-19:2022
SLED TEST MC 2503 (6-PT TIEDOWN)

Requirement		Observed Performance	
ISO 7176-19 2022 Clause	Description	Description	Pass/Fail
5.2.3a	Forward excursion of Point P<200 mm	150 mm	Pass
	Forward knee excursion <375 mm	240 mm	Pass
	Forward head excursion <650 mm	445 mm	Pass
	Rearward head excursion <450 mm	267 mm	Pass
5.2.3b	Ratio of ATD knee excursion to Point P excursion must exceed 1.1.	N/A – wheelchair anchored lap belt	NA
5.2.3c	Batteries must be within WC footprint	Batteries remained within footprint.	Pass
	Batteries cannot move into the WC user's space.	Batteries did not move into user space.	Pass
5.2.3 d	No components of the securement system shall completely detach or disengage from the wheelchair. (Stabilizer brackets and alignment aids OK to detach)	No components of the securement system completely detached or disengaged from the wheelchair.	Pass
5.2.4a	WC must be upright and on test platform and the ATD must be in WC seat with torso leaning not more than 45° in any direction	The WC was upright on test platform and the ATD was seated in the WC with torso leaning forward 5 degrees.	Pass
5.2.4b	WC securement points cannot completely fail	No securement points completely failed.	Pass
5.2.4c	Detached hardware cannot exceed 150 g	No hardware weighing over 150 g detached.	Pass
5.2.4d	WC must not have sharp edges with potential for occupant contact	No sharp edges were created in the occupant space.	Pass
5.2.4e	Locking mechanisms of tilt-in-space seat adjusters shall not completely fail	N/A	N/A
5.2.4f	Removal of ATD from WC shall not require use of tools	No tools were required.	Pass
5.2.4g	Release of WC from tiedown system shall not require use of tools	No tools were required.	Pass
5.2.4h	Post-test height of ATD H-point shall not be more than 20% lower than pretest height	Average H-point height did not decrease.	Pass
5.2.4i	WC cannot cause partial or complete failure of the webbing of the surrogate WTORS	There was no partial or complete failure of surrogate WTORS webbing.	Pass
5.2.4j	No components of the securement system shall completely disengage or detach.	No hooks disengaged.	Pass

Note: WC = wheelchair, N/A = not applicable