## ISO 31110:2020 (E)

Wheeled child conveyances — Pushchairs and prams — Requirements and test methods

## **Contents**

1

2

3

4

5

	Foreword			
	Scope			
	Normative references			
	Terms and definitions			
	General requirements and test conditions			
4.1	General			
4.2	Samples			
4.3	Principle of the most onerous condition			
4.4	Tolerances for test equipment			
4.5	Test conditions			
4.6	Determination of the protected volume			
4.6.1	•			
4.6.2	Protected volume of pram bodies having a length greater than 800 mm			
4.6.3				
4.7				
4.7	Determination of the junction line Determination of occupant space			
4.8 4.8.1	·			
4.8.2				
4.8.3				
	Test equipment			
5.1	Test masses			
5.1.1	General			
5.1.2	Programme Test mass A			
5.1.3	Test mass B			
5.1.4	Test mass C			
5.1.5	Test mass D			
5.1.6	Test mass D0			
5.1.7	Test mass F			
5.1.8	Test mass G			
5.1.9	Test bar			
5.2	Test probes			
5.2.1	Finger probes			
5.2.1	.1 Finger probe with hemispherical end			
5.2.1				
5.2.1	.3 Conical probe for mesh			
5.2.2	Conical probes			
5.3	Angle measuring device			
5.4	Test ball			
5.5	Hinged board			
5.6	Small parts cylinder			
5.7	Test surface			
5.8	Rectangular stops			
5.9	Irregular surface test equipment			
5.9.1				
5.9.2	Particulating arms			
5.10				
5.11	Clamp device			

6	Chem	ical hazards
	6.1	General
	6.2	Requirements
	6.2.1	General
	6.2.2	Sampling
	6.3	Migration of certain elements
		<del></del>
	6.4	Phthalates
	6.5	Azo colorants
	6.6	Formaldehyde
	6.7	Flame retardants
7	Therm	nal hazards
8	Mecha	anical hazards
	8.1	Protective functions
	8.1.1	Suitability of vehicle
	8.1.1.1	Requirements
	8.1.1.1.1	Vehicles intended for use from birth
	8.1.1.1.2	Vehicles intended for use from six months of age
	8.1.1.1.3	
	8.1.1.2	Test methods
	8.1.1.2.1	Measurement of angle and length of the backrest
	8.1.1.2.2	Ball retention test
	8.1.2	Minimum internal height of pram body
	8.1.2.1	Requirements
	8.1.2.2	Test method
	8.1.3	Restraint system and fasteners
	8.1.3.1	Requirements
	8.1.3.1.1	Restraint system for seat units
	8.1.3.1.2	Restraint system type A
	8.1.3.1.3	Restraint system type B1 1 Based on ASTM F833[30].
	8.1.3.1.4	Restraint system for a pram body
	8.1.3.2	Test methods
	8.1.3.2.1	Effectiveness of restraint system of seat unit
	8.1.3.2.2	Attachment of the restraint system to the seat unit
	8.1.3.2.3	Strength of fastener
	8.1.3.2.4	Effectiveness of the adjustment system
	8.1.3.2.5	Strength of the harness anchorage points
	8.1.3.2.6	Measurement of anchorage points location
	8.1.3.2.7	Determination of the test mass position 22 Based on ASTM F833[30].
	8.1.3.2.8	Determination of gaps in waist restraint3 3 Based on ASTM F833[30].
	8.1.3.2.9	Determination of the positioning of the mass3)
	8.1.3.2.10	Determination of the positioning of the mass with crotch strap system3
	8.2	Entrapment hazards
	8.2.1	Holes and openings
	8.2.1.1	Requirements
	8.2.1.2	Test methods
	8.3	Hazards from moving parts
	8.3.1	Requirements
	8.3.2	Shearing hazards
	8.3.2.1	Requirements
	8.3.2.2	Test method
	8.3.3	Crushing hazards (see F.3.4)
	8.3.3.1	Requirements
	8.3.3.2	Test method
	8.3.4	Wheels
	8.3.5	Locking mechanism(s)
	8.3.5.1	Folding system for storage or transportation
	8.3.5.1.1	Requirements
		General requirements
		Incomplete deployment
		Unintentional release of locking mechanism(s)
	8.3.5.1.2	Test methods

8.3.5.1.2.1	
	Unintentional release of the locking mechanism by one single action
	Automatically returning operating device
8.3.5.1.2.4	Effectiveness of locking mechanism(s) on vehicles where the chassis can fold with the
	pram body or seat unit or car seat installed
8.3.5.2	Pushchairs with rotating seat units
8.3.5.3	Handle movement
8.3.5.3.1	Requirements for reversible handles
8.3.5.3.2	Requirements for telescopic handles
8.3.5.4	Requirements for the attachment of pram body, seat unit and car seats to the chassis
8.4	Entanglement hazards
8.4.1 8.4.2	Requirements4 4 Based on ASTM F833[30]. Test method
8.5	Choking and ingestion hazards
8.5.1	Requirements
8.5.2	Test methods
8.5.2.1	Torque test5 5 Based on ASTM F833[30].
8.5.2.2	Tensile test
8.5.2.3	Bumper bar protective covering removal test method
8.6	Suffocation hazards
8.6.1	Internal lining of the pram body and seat unit
8.6.2	Requirements — Packaging
8.7	Hazards from edges and protrusions
8.8	Parking and braking devices
8.8.1	Requirements
8.8.2	Test methods
8.8.2.1	General test conditions
8.8.2.2	Vehicle facing up the slope
8.8.2.3	Vehicle facing down the slope
8.8.2.4	Vehicle perpendicular to the slope
8.8.2.5	Test for available wheel movement
8.8.2.6	Abrasion conditioning
8.9	Stability
8.9.1	Stability of vehicle
8.9.1.1	Requirements
8.9.1.2	Test procedure
8.9.1.2.1	Positioning of the vehicle
8.9.1.2.2	Stability of prams (for one child)
	Prams (for one child) having an internal length of 800 mm or less
	Prams (for one child) having an internal length greater than 800 mm
8.9.1.2.3	Stability of pushchairs (for one child)
8.9.1.2.4 8.9.1.2.5	Stability of vehicles fitted with a car seat  Stability of vehicles for more than one child
8.9.1.2.6	Stability of vehicles fitted with an integrated platform
8.10	Structural integrity
8.10.1	Carrying handles and handle anchorage points of pram bodies and seat units with a
0.10.1	carrying function
8.10.1.1	Requirements
8.10.1.2	Test method
8.10.2	Longitudinal stability of a pram body with carrying handles
8.10.2.1	Requirements
8.10.2.2	Test method
8.10.3	Strength and durability of attachment devices for pram bodies, seat units, car seats or
	carry cots
8.10.3.1	Requirements
8.10.3.2	Test method
8.10.4	Irregular surface test
8.10.4.1	Requirements
8.10.4.2	Test method
8.10.5	Dynamic strength
8.10.5.1	Requirements
8.10.5.2	Test method
8.10.6	Wheel strength
x 10 6 1	Requirements

	8.10	.6.2	Test method
	8.10	.6.2.1	Test method wheels detachment from an axle testing
			General6 6 Based on ASTM F833[30].
			Test method for non-swivel wheels6)
			Test method for swivel wheels 77 Based on ASTM F833[30].
	8.10	.6.2.1.4	Test method for swivel assembly attachment from the frame7)
	8.10		Handle strength
	8.10		Requirements
	8.10		Test methods
			General test conditions
			Durability test
			Dynamic resistance of reversible and/or adjustable handles
	8.10	.7.2.4	Dynamic resistance of telescopic handles
9		Durab	ility and adhesion of marking
	9.1		Requirement
	9.2		Test method
10		Produ	ct information
	10.1		General
	10.2		Marking of product
	10.3		Purchase information
	10.4		Instructions for use
Annex	Α	(inforn	native) Examples of a folding system
Annex	В	(inforn	native) Articulating arms
Annex	C	(inforn	native) Chemicals
	C.1		General
	C.2	_	Hazards of the chemicals
	C.2.	-	Elements
	C.2.		Phthalates Azo dyes
	C.2.		
	C.2.		Formaldehyde
	C.2.	5	Flame retardants
	C.3		Raw materials
	C.4 C.5		Placed in the mouth
	U.5		Declaration of conformity document
Annex	D	•	native) Guidelines for the application of 8.3.5.1.1.3 "Unintentional release of locking anism(s)"
	D.1		General
	D.2		Products fitted with one single operating device (products that can be folded using only one hand)
	D.3		Products fitted with two operating devices
	D.4		Products having three or more operating devices
	D.5		Products covered by different requirements
Annex	Ε	(inforn	native) Examples of moving parts of the canopies inside 100 mm from the pivot point
	E.1		Case A
	E.2		Case B
	E.3		Case C
Annex		(inforn	native) Further information on hazards
	F.1		General The second (co. 2) and The second control of the second co
	F.2		Thermal hazards (see Clause 7)
	F.3		Mechanical hazards (see Clause 8)
	F.3.1		General Protective function (co. 8.4)
	F.3.2		Protective function (see 8.1)
	F.3.3 F.3.4		Entrapment hazards (see 8.2)
	F.3.5		Hazards from moving parts (see 8.3) Entanglement hazards (see 8.4)
	F.3.6		Choking and ingestion hazards (see 8.5)
		•	THE WHITE HIS TONE TO THE TONE OF THE TONE

F.3.7	Suffocation hazards (see 8.6)
F.3.8	Hazardous edges and protrusions (see 8.7)
F.3.9	Parking and braking devices (see 8.8)
F.3.10	Stability (see 8.9)
F.3.11	Structural integrity (see 8.10)
F.3.12	Purchase information (see 10.3)
F.4	Elements not addressed in this document
F.4.1	Use of a tether strap
F.4.2	Use of colour for the actuator of the parking device

Page count: 93