




Connectivity & Products
New standards, new regulations: focus on certain baby products
 Juvenile Products Safety Forum | Melody Zhang, Catherine Follin-Arbelet | October 27, 2022




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Speakers




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- News
- Reclined cradles : revision of EN12790
- Carry cots : revision of EN1466
- Tricycles : a technical specification – prTS17826
- Child Restraint Systems : UN R129

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Reclined cradles – revision EN12790




- 2002 ● 1st publication of EN12790
- 2009 ● 1st revision of EN12790
- 2017 ● Launch of a 2nd revision
Standard splitted in 2 parts
- 2022 ● Formal vote
- Exp.16.11.2022 ● DAV – definitive text available
- Exp.30.11.2023 ● DOW – date of withdrawal – National standards

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Reclined cradles : revision EN12790

Widen the scope of the standard


EN12790 – 1	EN12790-2
Part 1 Reclined cradles for children up to when they start to try to sit up	Part 2 Reclined cradles for children up to when they start to stand up
As previously, both parts of the standard apply to car seats complying with UN R44 or UN R129 that can be used as reclined cradles according to manufacturer's instructions	
Exclusion of the high chairs that have a function as a reclined cradle from slippage test	
Requirements to prevent hazards from sound level and electrical hazards have been introduced, from the EN16232 on Infant Swings	The reclined cradle is tested in accordance with EN12790-1 For extended use additional testing in accordance with the part 2



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Reclined cradles : revision EN12790

EN12790 – 1	Gap EN12790
Chemical hazards	
Migration of certain éléments updated to the current EN71-3 – with limits. Limits for 8 elements	
Requirements to limit the content in Formaldehyde	
<ul style="list-style-type: none"> • Textile : 30 mg/kg (ISO14184-1) • Resin-bonded wood components: 0,124 mg/m³ (class E1 EN622-1) 	
Colourants for textile components (EN71-10 and EN71-11)	
Aniline from textile components : 30 mg/kg (ISO 14362-2 and ISO 17234-1)	
Thermal hazards	
Maximum flame propagation speed 50 mm/s (EN71-2)	Surface flash





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Reclined cradles : revision EN12790

EN12790 - 1	Gap EN12790
Mechanical hazards	
Hazards due to sound level	
<ul style="list-style-type: none"> A-weighted emission sound pressure level L_{pA} max. 80 dB in a free field C-weighted peak emission sound pressure level L_{pCpeak} max. 115 dB 	
Entrapment hazards	7 mm – 12 mm
7 mm – shape assessment probe	
Entanglement hazards	Cords max. 220 mm
<ul style="list-style-type: none"> Cords max. 220 mm Loops max. 360 mm 	
	Requirement on springs deleted
	Height of the seat unit deleted

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Reclined cradles : revision EN12790

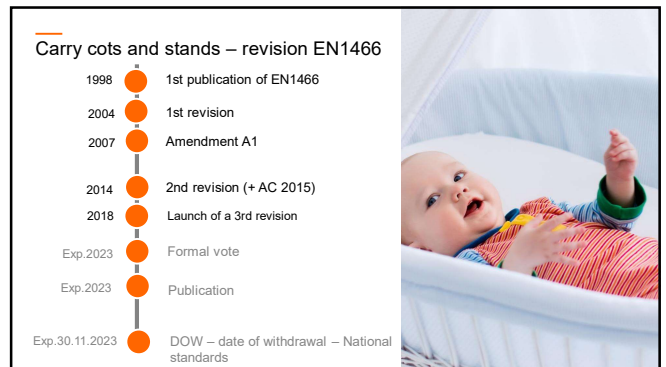
EN12790 - 1 NEW
Mechanical hazards
Requirements for plastic packaging added
Requirements on durability of powered mechanisms (electrically operated rocking or bouncing movement) added
Requirements on toy bar attachment added
Requirements on electrical hazards added
Improvement of product information (+ translation of warning sentences) and the use of pictograms
 

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Reclined cradles : revision EN12790

EN12790 - 2 NEW
Mechanical hazards
A different forward stability test (method adapted from ASTM)
Static strength : 27 kg
Dynamic strength : 20 kg
Test of the reclining system using a 12 kg mass
Slippage test using a 12 kg mass

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Carry cots and stands : revision EN1466

Limit the scope of the standard

prEN1466	Gap with EN1466: 2014
This document specifies safety requirements and test methods for products which provide a sleeping accommodation and are intended for the purpose of carrying a child in a lying position by means of handle(s) by using one hand and for stands which could be used in conjunction with these products intended for domestic use.	Adds domestic use
These products are intended for a child who cannot sit unaided, roll over or push up on its hands and knees, with a maximum weight of 9 kg. Hereafter, in this document these products are called "carry cots" and include all types of carry cot with rigid or non-rigid sides.	Adds consideration on the carrying function, using one hand only : products that need both hands to be carried are now excluded
	Future : the aim of the working group being to open a new work item, to cover all kinds of soft filled sleeping products, that would need both hands to be carried, or without handles

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Reclined cradles : revision EN1466

prEN1466	Gap with EN1466: 2014
Requirement on organic material	Added
Chemical hazards	
Migration of certain elements EN71-3 dated 2019	Not dated
Requirements to limit the content in Formaldehyde	
<ul style="list-style-type: none"> Textile : 30 mg/kg (ISO14184-1) Resin-bonded wood components: 0,124 mg/m³ (class E1 EN622-1) 	
Colorants for textile components (EN71-10 and EN71-11)	
Thermal hazards	
Maximum flame propagation speed 50 mm/s (EN71-2)	Surface flash

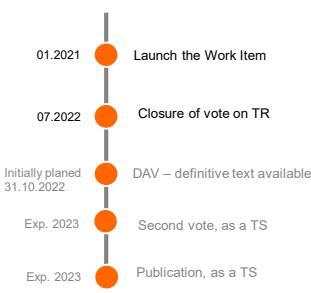
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Reclined cradles : revision EN1466


prEN1466	Clap with EN1466: 2014
Mechanical hazards	
Test method to assess the effectiveness of the retaining function of the ends of non-rigid carry cots using a test sphere	Added
Requirements to prevent suffocation hazard: - Softness of the base, measuring the angle when suspended - Mattress size	Added
Modification in test methods - Stability - Strength of carry cots - Folding mechanism for stand	Improvement
Product information improved and completed	
For non rigid carry cots WARNING : Never leave the child unattended	Added

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Tricycles – prTS17876



- 01.2021 Launch the Work Item
- 07.2022 Closure of vote on TR
- Initially planned 31.10.2022 DAV – definitive text available
- Exp. 2023 Second vote, as a TS
- Exp. 2023 Publication, as a TS



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Tricycles – prTS17876 – Scope



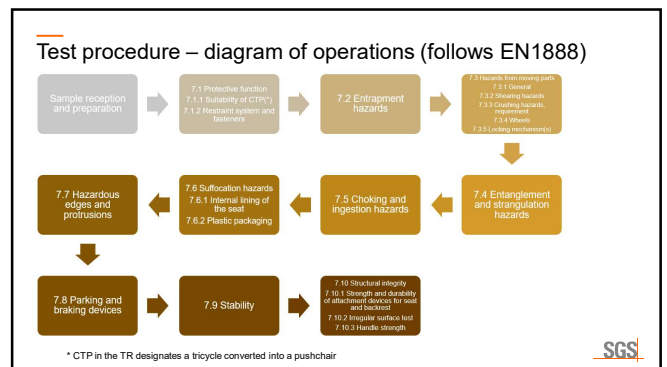
Convertible tricycle pushchair: passive transportation function

- The minimum height of the backrest is 250 mm, and
- Includes any of the below pushchair features:
 - A bumper bar
 - Possibility to semi-recline or recline the child's seat
 - Reversible child's seat
 - Footrest
 - A system for overriding front wheel steering for the child and parent

Application of both Toy Safety Directive (2009/48/EC) and TS




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Tricycles – prTS17876 – Specific requirements

- 7.3.4 Wheels : follow requirements of EN71-1
- 7.4 Entanglement hazards : application of EN71-1 requirements
- 7.5 Choking and ingestion hazards : application of EN71-1 requirements but bite test from EN1888 on bumper bar
- 7.8 Parking device is required, and should engage simultaneously on all rear wheels.
- 7.10.2 Irregular surface test: 7 200 cycles
- 7.10.3 Handle strength test: 3 000 cycles
- Dedicated product information




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Tricycles – prTS17876



MARKETING

- Marketed as a stroller/pushchair → EN1888
- Marketed as a tricycle only + features: combination of accessories and key features → Technical Specification
- A Technical Specification has not the status of a standard
- Cannot be published in the OJEU
- Reference document to assess safety
- Publication expected 2023




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Car seats

ISOFIX BELTED

Phase I
Phase II
Phase III



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Main change

- Different test dummy: P dummy To Q dummy

Q-Dummy Mass Distributions

	Q0	Q1	Q1.5	Q3	Q6	Q10
Mass in [kg]						
Head + neck (including acc. mount)	1.15 ± 0.06	2.41 ± 0.10	2.80 ± 0.10	3.17 ± 0.10	3.94 ± 0.10	4.21 ± 0.15
Torso (including acc. mount and chest deflection sensor not including APTS)	1.40 ± 0.08	4.21 ± 0.25	4.74 ± 0.25	6.00 ± 0.30	9.07 ± 0.40	14.28 ± 0.50 (including shaft)
Legs (together)	0.58 ± 0.03	1.82 ± 0.20	2.00 ± 0.20	3.54 ± 0.10	6.90 ± 0.10	12.48 ± 0.44
Arms (together)	0.28 ± 0.02	0.89 ± 0.20	1.20 ± 0.20	1.48 ± 0.10	2.49 ± 0.10	3.98 ± 0.20
Suit	0.08 ± 0.02	0.27 ± 0.05	0.30 ± 0.05	0.40 ± 0.10	0.55 ± 0.10	0.63 ± 0.10
Total	3.47 ± 0.21	9.6 ± 0.80	11.10 ± 0.80	14.59 ± 0.70	22.95 ± 0.80	35.58 ± 1.39

The installation of Abdominal Pressure Twin Sensors (APTS) in frontal and rear impact may add up 0.2kg to the Q1.5 and 0.5kg to the Q3, Q6 and Q10 dummies.

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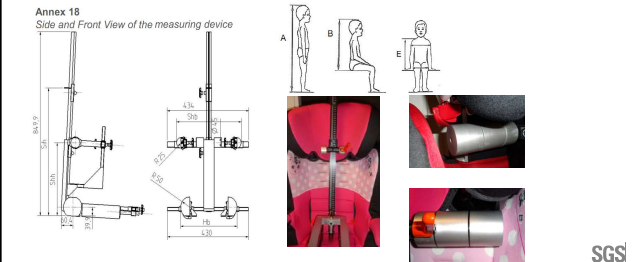
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Main change

- Internal Annex 18 Side and Front View of the measuring device

Annex 18 Geometrical dimensions of i-Size Child Restraint Systems

Figure 1

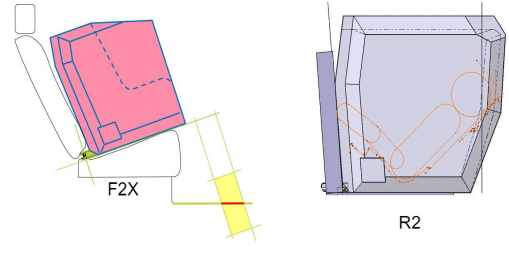


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Main change

- External Dimensions



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Main change

- Q dummy for Impact test

7.1.3.6 Size indication

The dynamic tests shall be conducted with the largest dummy and the smallest dummy as defined in the following table according to the size range indicated by the manufacturer for the enhanced child restraint system.

Size range indication (in cm)	Q0	Q1	Q1.5	Q3	Q6	Q10 ¹⁾
65 < x <= 75						
75 < x <= 85						
85 < x <= 105						
105 < x <= 125						

1) No dummy shall be used along the Q10 dummy. It is required for child booster seats with a size range equal to or over 105cm and 105kg.

2) Q10 shall not be approved only for the use of Q10 seat with its own unique configuration.

Criterion	Performance	Head and thorax	Head impact
Head performance criterion	HPIC (15)		
Head acceleration	A head Cam 3.0m ²⁾		
Upper neck tension	Fx		
Upper neck flexion moment	Mx		
Chest acceleration	3 ms.g		
Abdominal penetration	n.s.		

Q-Dummy family well equipped ...

- Q0 10kg
- Q1 15kg
- Q3 30kg
- Q6 60kg
- Q10 100kg

... to contribute to child safety

Where the enhanced child restraint system requires substantial modification for different sizes (e.g., convertible enhanced child restraint system) or if the size range cover more than three size ranges a relevant intermediate dummy(ies) shall be tested in addition to the dummy(ies) defined above.

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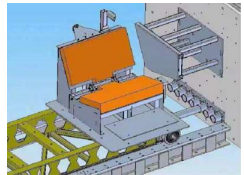
Main change

- Include lateral impact in R129
- Criteria for lateral impact test:

Criterion	Performance	Q0	Q1	Q1.5	Q3	Q6	Q10
Head performance criterion	HPIC (15)	600	600	600	800	800	800
Head acceleration	A head Cam 3.0m ²⁾	E	75	75	75	80	80
Upper neck tension	Fx	N	For monitoring purpose only ¹⁾				
Upper neck flexion moment	Mx	N	For monitoring purpose only ¹⁾				

1) To be reviewed within 3 years following entry into force of this Regulation.

2) Cam 3cm means cumulative 3ms value.



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Main change

- support leg(6.3.5)
- Support-leg and Support-leg Foot Geometrical Requirements;
- Support-leg Foot Adjustability Requirements;
- Support-leg Foot Dimensions;
- Support-leg Foot Jig;

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Main change

- Encourage rear facing installation

6.1.2.7. For children under the age of 15 months only lateral-facing or rearward-facing enhanced child restraint system shall be used.

That means:

- A rearward-facing enhanced child restraint system designed for children up to 15 months of age shall accommodate a child with a stature of up to 83cm as a minimum;
- A forward facing enhanced child restraint system shall not be designed to accommodate a stature below 76cm;
- A convertible seat in its rearward-facing configuration shall be able to accommodate a child with a stature up to 83cm. This shall not preclude a child stature greater than 83cm.

The use of rearward-facing enhanced child restraint system may be applied to any age of child.

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Main change

- Arrangements of the approval mark

E4 1-Size universal ISOFIX
40cm – 70cm / ≤ 24kg
a/a/2/1
a/a/2/1
a/a/2/1
002439
UN-Regulation No. XXX/XX

E2 Universal belted
40cm – 70cm / ≤ 24kg
a/a/2/1
a/a/2/1
a/a/2/1
022439
UN Regulation No. 129B3

E : Means "following UNECE regulation"
2 : Means country authority who delivered homologation
(1: Netherlands - 2: Thailand - 3: distributed) ...

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