Staatliche
Materialprüfungsanstalt
Universität Stuttgart

MPA STUTTGART

Deutscher Akkreditierungs Rat DAR

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KBA-P00018-95

Test Report

New Approval test for Child Restraint System (CRS) for handicaped children in vehicles in dependence to ECE- Regulation 44, Amendment 03, Supplement 4.

Type:	**KIDS lover**
Trade mark:	KIDS lover
Features:	Forward- facing child restraint, not integrated.
Scrotch strap:	y
Manufacturer:	Hernik GmbH Partenhauserweg 14 81369 München
Manufacturer representative:	n.a.
Application Date:	23- 01- 2003
Mass group:	II und III
Categorie:	universal
Installation:	Co- driver and rear seat in the vehicle
Homologation label:	Adhesive label at the side of the seat shell
Belt type:	Adult belt (3 point belt with or without retractor) according requirements of ECE-Regulation 16.
Report date:	15- 04- 2003
Report number:	950848001 Bei
Pages:	2
Appendix:	3
Information folder:	From manufacturer in report
issued:	2 x Hernik GmbH

The test results relate only to the items tested.

Publication of this report in full or partly is only allowed with written authorization by MPA University of Stuttgart.

Submitted documents and sample to Typ KIDS lover

Documents: Drawings of the seat and drawings of the components, certificate of the buckle, seat cover, webbing, part list, list of tested accessories

Samples: 1 CRS each size

Labels: without

Assessment according ECE- Regulation 44, Amendment 03, Supplement 4:

clause	Content	Appendix	Document
3	Application, samples, Part of the documentation		x
4	Labels		-
5	Approval label		-
6	General requirements *1 - 3 (english translation)	1, 2 *	
7	*Special Requirement*		
7.1	*Test complete seat*		
7.1.1	Corrosion Resistance	n.a	
7.1.2	Energie absorption	n.a	
7.1.3	Roll over	n.a	
7.1.4	Dynamic Test *4 (english translation)	3 **	
7.2	*Test of the components*		
7.2.1	Buckle	n.a	
7.2.2	Adjusting device	n.a	
7.2.3	Retractor	n.a	
7.2.4	Webbing	n.a	
7.2.5	Lock off Device	n.a	
8	*Description of the test to clause 7*		
14	Instructions		x

***Judgement*:** *The Child Restraint System for handicaped children complies with the requirements of the ECE regulation 44, Amendment 03, supplement 4, as tested. There are no technical reservations about the applied alternations to grant the approval.*

Dipl.- Ing. Beißwänger
Der Test engineer

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Dipl.- Phys. Mayer
Head of the unit High Speed Loading

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Test of restrain system (CRS) for children Type KIDS lover according the general requirements, ECE- R44, section 6.

section	Content	pass
6.1	*Positioning and securing on the vehicle*	
6.1.1	The use of child restraints in the ”universal”, ”semi- universal” and ”restricted” categories is permitted in the front and rear seat positions if the restraints are fitted in conformity with the manufacturer’s instructions.	yes
6.1.2	The use of child restraints in the ”specific vehicle” category	n.a.
6.1.3	*Securing of the child restraint to the vehicle structure or to the seat structure.*	
6.1.3.1	For the ”universal” and ”restricted” categories, by means of an adult safety- belt (with or without a retractor) meeting the requirements of Regulation No. 16 (or equivalent) fitted to anchorages meeting the requirements of Regulation No. 14 (or equivalent)	yes
6.1.3.2	For the ”semi- universal” category: by means of the lower anchorages prescribed in Regulation No. 14 and additional anchorages meeting the recommendation of Annex 11 to this Regulation	n.a.
6.1.3.3	For the ”specific vehicle” category: by means of the anchorages designed by the manufacturer of the vehicle or the manufacturer of the child restraint	n.a.
6.1.3.4	In the case of child restraining straps or child restraint attachment strap utilizing belt anchorages to which are already fitted an adult belt or belts, the Technical Service shall check that: - The effective adult anchorage position is as approved under Regulation No. 14 or equivalent - Effective operation of both devices is not hindered by the other; - The buckles of the adult and additional system shall not be interchangeable.	n.a.
	In the case of child restraining devices utilizing bars, or extra devices attached to the anchorages approved under Regulation No. 14, which move the effective anchorage position outside the field of Regulation No. 14, the following points shall apply: - Such devices will only be approved as semi- universal or specific vehicle devices; - requirements of Annex 11 to this Regulation to the bar and the fastenings; - The bar will be included in the dynamic test, with the loading being applied to the mid- position and the bar and its greatest extension, if adjustable; - The effective position and operation of any adult anchorage by which the bar is fixed shall not be impaired.	n.a.
6.1.4	A booster cushion shall be restrained by either an adult belt, using the test as specified in paragraph 8.1.4., or by separate means.	n.a.
6.1.5	Toxicity Declaration	yes
6.1.6	Flamability Declaration	n.a.
6.1.7	In the case of rearward- facing child restraints supported by the vehicle dashboard, for the purpose of approval to this Regulation the dashboard is assumed to be sufficiently rigid.	n.a.

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section	Content	pass
6.1.8	Distance between main load- bearing contact point at the universal child restraint and Cr point is more than 150 mm.	ja
6.1.9	If the adult belt is required to secure a ”universal” category child restraint, its maximum length to be used on the dynamic test bench is defined in Annex 13 to this Regulation.	yes
6.1.10	Child restraints of groups 0 and 0+ shall not be used forward facing.	n.a.
6.2	*Configuration of the ”Special Needs Restraints” CRS*	
6.2.1	*The configuration of the restraint, handling and protective*	
6.2.1.1	The restraint gives the required protection in any intended position of the restraint system; for ”Special Needs Restraints” the primary means of restraint shall give the required protection in any intended position of the restraint system without the use of the additional restraining devices which may be present.	yes
6.2.1.2	The child is easily and quickly installed and removed, For ”Special Needs Restraints”	yes
	harness belt or a Y- shaped belt without a retractor	
	- Buckle use and webbing movement according 7.2.1.3	yes
	- additional devices shall be designed to release quickly so far as possible.	yes
6.2.1.3	If it is possible to change the inclination of the restraint, this change in inclination shall not require manual readjustment of the straps. A deliberate hand- action is required in order to change the inclination of the restraint	yes
6.2.1.4	The groups 0, 0+ and I restraint systems shall keep the child so positioned as to give the required protection even when the child is asleep	yes
6.2.1.5	For all forward- facing group I restraints incorporating an integral harness belt system to prevent submarining, either by impact or through restlessness, a crotch strap shall be required.	yes
6.2.2	For groups I, II and III, all restraint devices utilizing a ”lap strap” shall positively guide the ”lap strap”	yes
6.2.3	All straps of the restraint shall be so placed that they cannot cause discomfort to the wearer in normal use or assume a dangerous configuration.	yes
	The distance between the shoulder- straps in the vicinity of the neck should be at least the width of the neck of the appropriate manikin.	yes
6.2.4	The design shall be such that compression loads shall not be imposed on the crown of the child’s head in the event of a collision.	yes
6.2.4.1	Y- shaped belts may only be used in rearward facing and lateral facing child restraint systems (carrycots).	n.a.
6.2.5	*The child restraint shall be so designed and installed as*	
6.2.5.1	- minimized danger of injury to the child or to other occupants of the vehicle through sharp edges or protrusions (Regulation No. 21, for example)	yes
6.2.5.2	- Not to exhibit sharp edges or protrusions liable to cause damage to vehicle- seat covers or to occupant’s clothing	yes
6.2.5.3	- Not to subject weak parts of the child’s body (abdomen, crotch, etc.) to supplementary inertial forces it sets up;	yes

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section	Content	pass
6.2.5.4	- To ensure that its rigid parts do not, at points where they are in contact with straps, exhibit sharp edges capable of abrading the straps.	yes
6.2.6	Easy use and fitting of detachable parts	yes
	Lock off device is fitted	n.a.
	Any part made separable to enable components to be fixed and detached shall be so designed as to avoid any risk of incorrect assembly and use so far as possible. ”Special Needs Restraints” may have additional restraining devices; these shall be designed to avoid any risk of incorrect assembly and that their means of release and mode of operation is immediately obvious to a rescuer in an emergency	yes
6.2.7	Backrest is higher than 500 mm (Class I, II).	yes
6.2.8	Only automatically- locking retractors or emergency- locking retractors may be used.(paragraph 7.2.3)	n.a.
6.2.9	For devices intended for use in Group I it shall not be possible for the child to easily slacken that part of the system that restrains the pelvis after the child has been installed	n.a.
	If lock off device is used the requirements of paragraph 7.2.5. shall be fulfilled; any device that is designed to obtain this shall be permanently attached to the child restraint system.	n.a.
6.2.10	A child restraint may be designed for use in more than one mass group and/or by provided that it is able to satisfy the requirements laid down for each of the groups concerned. A child restraint in the ”universal” category shall meet the requirements of that category for all mass groups for which it has been approved.	yes
	A child restraint may be designed for use with more than one child	n.a.
6.2.11	In the case of a child restraint incorporating a retractor, the retractor shall have met the requirements of paragraph 7.2.3. below.	n.a.
6.2.12	In case of booster cushions, the ease with which the straps and tongue of an adult belt pass through the fixture points shall be examined. This goes particularly for booster cushions which are designed for the front seats of cars, which may have long semi- rigid stalks. The fixed buckle should not be allowed to pass through the fixture points of booster seats, or to permit a lie of belt completely different from that of the test- trolley.	n.a.
6.2.13	If the child restraint is designed for more than one child, each restraint system shall be fully independent with regard to load transfer and adjustments.	n.a.
6.2.14	The child restraints incorporating inflatable elements shall be so designed that the conditions of use (pressure, temperature, humidity) have no influence on their ability to comply with the requirements of this Regulation	n.a.

Judgement: The requirements were complied with.

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Test of assembled restraint system (CRS) for children Type KIDS lover following ECE- R44, paragraph 7.1/8.1

Dynamic Test according following paragraph 7.1.4/8.1.3: FRONTAL IMPACT

Test rig following ECE- R44, Annex 6, manikins following Annex 8

	unit	Sample Nr.				Limit
		1	2			
Test Nr.		03/028 [5]	03/029 [6]			
Mass of the manikin	kg	22	36			
Choice of anchorages [1]		ABCRe	ABCRe			
Webbing slack	cm	2,5	2,5			2,5
Sled entry velocity	km/h	48,6	49,0			50^{+0}_{-2}
Sled braking distance	mm	637	655			650 ± 50
maximal sled deceleration [2]	g	21,3	21.1			[3]
maximal resulting chest acceleration a_R	g	35.1	33.7			-
Time t_R for a_R > 55 g	ms	-	-			≤ 3
maximal vertical chest acceleration a_y	g	12.8	4.8			-
Time t_y for a_y > 30 g	ms	-	-			≤ 3
maximal head displacement respective to Cr- point [4]	mm					
- horizontal		385	362			≤ 550
- vertical	mm	709	788			≤ 800
Deformation of the modelling clay in the abdomen		none	none			none
Buckle opening force following § 7.2.1.8	N	64	68			≤ 80
Observations: No deformations or ruptures after the dynamic sled tests.						

1) Name of the anchorages following ECE- R44, Annex 6, Appendix 3
2) Corridor and filtering following ECE- R44, Annex 7
3) Limit for calibration test: 20 g bis 28 g
4) Position of the C_R- Point following ECE- R44 paragraph 7.1.4.4
5) KIDS lover size 1
6) KIDS lover size 2

Judgement: The requirements were complied with.

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Test of assembled restraint system (CRS) for children Type KIDS lover following ECE- R44, paragraph 7.1/8.1

Dynamic Test according following paragraph 7.1.4/8.1.3: FRONTAL IMPACT

Test rig following ECE- R44, Annex 6, manikins following Annex 8

	unit	Sample Nr.				Limit
		1	2			
Test Nr.		07/202 [5]	07/540 [5]			
Mass of the manikin	kg	75 [*]	36			
Choice of anchorages [1]		ABCRe	ABCRe			
Webbing slack	cm	2,5	2,5			2,5
Sled entry velocity	km/h	48.4	49,0			$50\ ^{+0}_{-2}$
Sled braking distance	mm	621	655			650 ± 50
maximal sled deceleration [2]	g	20.9	21.1			[3]
maximal resulting chest acceleration a_R	g	-	-			-
Time t_R for a_R > 55 g	ms	-	-			≤ 3
maximal vertical chest acceleration a_y	g		-			-
Time t_y for a_y > 30 g	ms	-	-			≤ 3
maximal head displacement respective to Cr- point [4]	mm					
- horizontal		-	<550			≤ 550
- vertical	mm	-	<800			≤ 800
Deformation of the modelling clay in the abdomen		n.a.	none			none
Buckle opening force following § 7.2.1.8	N	n.a	n.a.			≤ 80
Observations: No deformations or ruptures after the dynamic sled tests.						

[1] Name of the anchorages following ECE- R44, Annex 6, Appendix 3
[2] Corridor and filtering following ECE- R44, Annex 7
[3] Limit for calibration test: 20 g bis 28 g
[4] Position of the C_R- Point following ECE- R44 paragraph 7.1.4.4
[5] KIDS lover size 2XL
[*] The 75 kg TNO 10/8 dummy was used for overload test.

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Zubehörliste für Crash-Test-Überprüfung / list of accessories for crash test ECE/44-03

Artikelnummer *article number*	*Bezeichnung* *name*
300050-S	Kopfstütze „u-förmig“ / headrest soft
300025-S	Kopfstütze „Kick-Back / headrest „Kick-Back“
300350-S/300355-S	Beinführung li. u. re. / leg support left, right
300400-S/310400-S-310400-S-XL	Abduktionskeil / abduction block
300450-S/310450-S	Fußstütze / foot rest
300455-S/310450-S	Fußstützrolle / foot roll
300500-S/300505-S	Thoraxpelotten fest u. abklappbar / side supports size 1, fix and swing away
300510-S/300515-S	Oberkörperpel. fest u. abklappbar / side supports size 2, fix and swing away
300700-S	Schulterführungspelotten / shoulder supports
300200-S	swivel base
300100-S/310100-S/310100-S-XL	Sitzschrägverstellung / angular adjustment
300110-S	erweiterte Sitzschrägverstellung / extra angular adjustment
300575-S/310575-S	Isofix-Adapter / isofix adapter
300550-S/310550-S	Klemmbügel Gr. 1 und 2 / clamp bow size 1 and 2
300075-S	zusätzliche Gurtführung / additional belt guide
300600-S/310600-S/310600-S-XL	Stütz- und Sicherheitspolster / security tray
300640-S	Verbindungsgurt / belt to connect the chest straps