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TNO report

13.KR.KE.5666.1/RL

Inspection report relating to child restraint system(s)
Approval number: E4-44R-044310 Ext. 00

Date	11 November 2013
Author(s)	R. Lancashire
Sponsor	Apramo Child Care Manufacturing Co., Ltd. No. 19 Zhuangshi Avenue Ningbo 315201 CHINA
Approved by (Project Leader)	F.L.P.M. Brouwers
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RvA INSPECTION RvA I 065

The test laboratory is accredited for the tests mentioned below by the accreditation body of RDW, as the competent Approval Authority for the Netherlands. Accreditation number RDW-99050003

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1 Introduction

1.1 Purpose

The tests have been performed in order to judge whether the child restraint system meets the requirements of the following regulation or not:

- ECE Regulation 44, addendum 04 [1]

1.2 Submitted application information

All samples have been handed in together with:

- application form, relating to the ECE Regulation for the type approval of child restraint system;
- technical description including drawings and specifications;
- installation instructions, if applicable, and instructions and details of packaging.

1.3 Sampling procedure

The sample(s) have been handed in by the manufacturer.
The test house has had no influence on the selection of the sample(s).
All samples which have been handed in, were test worthy.

1.4 General information

Tests on the child restraint system have been performed according to the requirements of ECE Regulation 44-04 [1].
For details of the samples, see Chapter 2 System identification.
All samples have been handed in on 30 October 2013.
Temperature and corrosion tests, as well as adjusting device, webbing and non-dynamically tested buckle results, were taken from TNO Report 13.KR.KE.4992.1/RL

Table 1 Sample description

Approval mark	04444310
Manufacturer	Apramo Child Care Manufacturing Co., Ltd. No. 19 Zhuangshi Avenue Ningbo 315201 CHINA
Trade name or mark	Sparco
Attachment method	3-point adult belt
Kind of restraint	Forward facing
Category of vehicle	M, N
Type and general commercial description(s)	F1000K
Category of child restraint system	universal
Weight group	I/II/III (9 - 36 kg)
Retention system class	integral / non-integral
ISOFIX size category	not applicable

Information about the status of the 1958 Agreement and the annexed Regulations including the last situation report can be found in document TRANS/WP29/343. This document can be found on the internet using the following URL: www.unece.org/trans/main/welcwp29.htm.

Technical service that conducted the approval tests:

TNO Homologations B.V.
P.O. Box 753
5700 AT Helmond
The Netherlands

Address of production plant(s):
See information document No. 6E200

2 System identification

Manufacturer	Apramo Child Care Manufacturing Co., Ltd.
Type	F1000K

Drawing No. of assembly	Spec for Hom page 05
Drawing No. of harness	206003+206004+206001
Drawing No. of seat shell	Spec for Hom page 06
Drawing No. of buckle	63-4959-XX
Manufacturer of buckle	Holmbergs
Make of webbing (harness)	Striped ribbon weaver
Material of seat shell	HDPE-HHM5502BN
Material of seat padding	EPS
Mass of the seat shell and assembly	6.37 kg
Drawing No. of Label (approval)	Spec for Hom page 10

3 Test results

Table 2 Summary of the results

Test	Clause EEC	Clause ECE	Details on page	Result
Inspection	-	4, 5	7	pass
General specification	-	6	7	pass
Corrosion	-	7.1.1	8	pass
Energy absorption	-	7.1.2	9	pass
Overturning	-	7.1.3	9	pass
Dynamic	-	7.1.4	11	pass
Buckle	-	7.2.1	18	pass
Adjusting device	-	7.2.2	19	pass
Webbing	-	7.2.4	20	pass
Production Qualification	-	11	21	pass
Instructions	-	15	21	pass
				n.a. not applicable n.c. non-compliance n.t. not tested n.m. not measured

4 Description of the clauses

Clause EEC	ECE	Description	Result
	4	**MARKINGS**	
	4.1	The child restraint system shall be clearly and indelibly marked with the manufacturer's name, initial or trademark. Sample number 189628 was clearly and indelibly marked with the following text: Sparco. Nature and location of sticker: Stitched harness, head restraint; embossed seat sides.	pass
	4.2	Sample number 189628 was clearly and indelibly marked with the year of production.	pass
	4.3	For sample number 189628 the routing of the adult belt is clearly indicated by a drawing permanently attached to the restraint. The markings shall be visible with the restraint in the vehicle. The colour used for belt-routing for forward facing installations shall be red and for rearward facing installations shall be blue.	pass
	5.4	**APPROVAL MARKING** Sample number 189628 was assessed and complied with the requirements concerning the approval mark.	pass
	6.1	**POSITIONING AND SECURING ON THE VEHICLE** The instructions supplied for positioning and securing the restraint on the vehicle complied with the requirements.	pass
	6.2	**CONFIGURATION**	
	6.2.1.1	The restraint shall give the required protection in any intended position.	pass
	6.2.1.2	The child shall be easily and quickly installed and removed.	pass
	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.	pass
	6.2.1.4	The group 0, 0^+ and I restraint systems shall keep the child so positioned as to give the required protection even when the child is asleep.	pass
	6.2.1.5	A crotch strap shall be required on all forward facing device group I restraints incorporating an integral harness belt system.	pass
	6.2.2	For group I, II and III all restraint devices must support the pelvis in the event of a collision.	pass

6.2.3	All straps shall be so placed that they cannot cause discomfort to the wearer in normal use, or assume a dangerous configuration.	pass
6.2.4	The assembly shall not subject weak parts of the child's body to excessive stresses and compression loads shall not be imposed on the crown of the child's head in a collision.	pass
6.2.4.1	"Y-shaped belts may only be used in rearward facing and lateral facing child restraint systems (carrycots)".	pass
6.2.5	The restraint shall be designed and installed so as:	
6.2.5.1	to minimise the danger of injury to the child or other occupants of the vehicle through sharp edges or protrusions.	pass
6.2.5.2	not to exhibit sharp edges or protrusions liable to cause damage to vehicle seat covers or occupant's clothing.	pass
6.2.5.3	not to subject weak parts of the child's body to supplementary inertial forces it sets up.	pass
6.2.5.4	to ensure rigid parts do not exhibit sharp edges capable of abrading the straps.	pass
6.2.6	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. Devices which lock the adult seat belts, if any, must be permanently attached to the restraints system for which they are intended to be used.	pass
6.2.7	The internal height of a chair back for groups I and/or II shall be not less than 500 mm. Internal height of chair back on sample 189628 was 550 mm.	pass
6.2.9	For devices intended for use in group I it must not be possible for the child to easily slacken that part of the system that restraints the pelvis after the child has been installed; any device that is designed to obtain this must be permanently attached to the child restraint system.	pass
6.2.10	A restraint may be designed for use in more than one weight group, provided that it is able to satisfy the requirements laid down for each of the groups concerned.	pass
7.1.1	**RESISTANCE TO CORROSION**	
	After 50 hours corrosion the restraint shall be washed in clean, running water (max. 38 degrees C) and allowed to dry at room temperature for 24 hours. There shall be no sign or deterioration likely to impair the proper functioning of the child restraint and no significant corrosion shall be visible to the unaided eye of a qualified observer. Assessment relates to sample number 186521.	pass

7.1.2 ENERGY ABSORPTION

For all devices with backrests there shall be internal surfaces, defined in annex 18 and measured in accordance with annex 17. pass

Deceleration of headform shall not exceed 60 g

	max. g
First point	15.7 g
Second point	15.2 g
Third point	16.5 g

Assessment relates to sample number 186511.

7.1.3 OVERTURNING

When the test seat is upside down the vertical movement of the manikin's head (S) shall be less than or equal to 300 mm. pass

Table 3 Overturning results for sample number 189627

Child seat position: inclined forward

Attachment method: 3-point adult belt

Manikin	Rotation axis		S [mm]
P ¾ 9 kg	longitudinal	↻	≤ 300 mm
	longitudinal	↺	≤ 300 mm
	lateral	↻	≤ 300 mm
	lateral	↺	≤ 300 mm

Table 4 Overturning results for sample number 189627

Child seat position: inclined forward

Attachment method: 3-point adult belt

Manikin	Rotation axis		S [mm]
P 3 15 kg	longitudinal	↻	≤ 300 mm
	longitudinal	↺	≤ 300 mm
	lateral	↻	≤ 300 mm
	lateral	↺	≤ 300 mm

Table 5 Overturning results for sample number 189627

Child seat position: upright forward

Attachment method: 3-point adult belt

Manikin	Rotation axis		S [mm]
P 3 15 kg	longitudinal	↻	≤ 300 mm
	longitudinal	↺	≤ 300 mm
	lateral	↻	≤ 300 mm
	lateral	↺	≤ 300 mm

Table 6 Overturning results for sample number 189627

Child seat position: upright forward

Attachment method: 3-point adult belt

Manikin	Rotation axis		S [mm]
P 6 22 kg	longitudinal	↻	≤ 300 mm
	longitudinal	↺	≤ 300 mm
	lateral	↻	≤ 300 mm
	lateral	↺	≤ 300 mm

Table 7 Overturning results for sample number 189627

Child seat position: upright forward

Attachment method: 3-point adult belt

Manikin	Rotation axis		S [mm]
P 10 32 kg	longitudinal	↻	≤ 300 mm
	longitudinal	↺	≤ 300 mm
	lateral	↻	≤ 300 mm
	lateral	↺	≤ 300 mm

7.1.4 DYNAMIC

Sample number	**189532**		
Type	SPARCO 123		
Manikin	P3		
Position child-restraint system	Upright		
Impact	Frontal		
Orientation	Forward facing		
Anchorages used	A + B + C		
Shot number	KB4719 [1]		
Impact speed	49.6	km/h	
Stopping distance of the trolley	645	mm	

7.1.4.1 During the dynamic test no part of the child restraint keeping the child in position shall break and no buckles or displacement system shall release. pass

7.1.4.2 Chest acceleration pass

Resultant	58.0 g	1.5 ms
Vertical	9.4 g	0.0 ms
Head acceleration	67.3 g	0.0 ms

The resultant chest acceleration shall not exceed 55 g except during periods whose sum does not exceed 3 ms.
The vertical component of acceleration shall not exceed 30 g except during periods whose sum does not exceed 3 ms.

7.1.4.3 Abdominal Penetration pass
During the verification there were no visible signs of penetration of the modelling clay of the abdomen by any part of the restraining device.

7.1.4.4 Head displacement pass
The head of the manikin shall not pass beyond the planes defined.
Movement towards AB (forwards): 535 mm
Requirement ≤ 550 mm
Movement towards AD (upwards): 660 mm
Requirement ≤ 800 mm
The forward facing device (group I, II, III) complied planes AB and AD.

[1] Test in group 1 with harness.

	Sample number	**189533**		
	Type	SPARCO 123		
	Manikin	P3		
	Position child-restraint system	Inclined		
	Impact	Frontal		
	Orientation	Forward facing		
	Anchorages used	A + B + C		
	Shot number	KB4718 [1]		
	Impact speed	49.3	km/h	
	Stopping distance of the trolley	635	mm	
7.1.4.1	During the dynamic test no part of the child restraint keeping the child in position shall break and no buckles or displacement system shall release.			pass
7.1.4.2	Chest acceleration			pass
	Resultant	65.4 g	1.5 ms	
	Vertical	23.0 g	0.0 ms	
	Head acceleration	104.1 g	1.3 ms	
	The resultant chest acceleration shall not exceed 55 g except during periods whose sum does not exceed 3 ms.			
	The vertical component of acceleration shall not exceed 30 g except during periods whose sum does not exceed 3 ms.			
7.1.4.3	Abdominal Penetration			pass
	During the verification there were no visible signs of penetration of the modelling clay of the abdomen by any part of the restraining device.			
7.1.4.4	Head displacement			pass
	The head of the manikin shall not pass beyond the planes defined.			
	Movement towards AB (forwards): 540 mm			
	Requirement ≤ 550 mm			
	Movement towards AD (upwards): 660 mm			
	Requirement ≤ 800 mm			
	The forward facing device (group I, II, III) complied planes AB and AD.			

[1] Test in group 1 with harness.

	Sample number	**189534**		
	Type	SPARCO 123		
	Manikin	P3/4		
	Position child-restraint system	Upright		
	Impact	Frontal		
	Orientation	Forward facing		
	Anchorages used	A + B + C		
	Shot number	KB4714 [1]		
	Impact speed	49.2	km/h	
	Stopping distance of the trolley	632	mm	
7.1.4.1	During the dynamic test no part of the child restraint keeping the child in position shall break and no buckles or displacement system shall release.			pass
7.1.4.2	Chest acceleration			pass
	Resultant	53.8 g	0.0 ms	
	Vertical	17.6 g	0.0 ms	
	Head acceleration	55.6 g	0.0 ms	
	The resultant chest acceleration shall not exceed 55 g except during periods whose sum does not exceed 3 ms.			
	The vertical component of acceleration shall not exceed 30 g except during periods whose sum does not exceed 3 ms.			
7.1.4.3	Abdominal Penetration			pass
	During the verification there were no visible signs of penetration of the modelling clay of the abdomen by any part of the restraining device.			
7.1.4.4	Head displacement			pass
	The head of the manikin shall not pass beyond the planes defined.			
	Movement towards AB (forwards): 500 mm			
	Requirement ≤ 550 mm			
	Movement towards AD (upwards): 590 mm			
	Requirement ≤ 800 mm			
	The forward facing device (group I, II, III) complied planes AB and AD.			

[1] Test in group 1 with harness.

	Sample number	**189535**		
	Type	SPARCO 123		
	Manikin	P3/4		
	Position child-restraint system	Inclined		
	Impact	Frontal		
	Orientation	Forward facing		
	Anchorages used	A + B + C		
	Shot number	KB4715 [1]		
	Impact speed	49.5	km/h	
	Stopping distance of the trolley	645	mm	
7.1.4.1	During the dynamic test no part of the child restraint keeping the child in position shall break and no buckles or displacement system shall release.			pass
7.1.4.2	Chest acceleration			pass
	Resultant	60.3 g	0.0 ms	
	Vertical	17.0 g	0.0 ms	
	Head acceleration	55.9 g	0.0 ms	
	The resultant chest acceleration shall not exceed 55 g except during periods whose sum does not exceed 3 ms.			
	The vertical component of acceleration shall not exceed 30 g except during periods whose sum does not exceed 3 ms.			
7.1.4.3	Abdominal Penetration			pass
	During the verification there were no visible signs of penetration of the modelling clay of the abdomen by any part of the restraining device.			
7.1.4.4	Head displacement			pass
	The head of the manikin shall not pass beyond the planes defined.			
	Movement towards AB (forwards): 490 mm			
	Requirement ≤ 550 mm			
	Movement towards AD (upwards): 590 mm			
	Requirement ≤ 800 mm			
	The forward facing device (group I, II, III) complied planes AB and AD.			

[1] Test in group 1 with harness.

	Sample number	**189536**		
	Type	SPARCO 123		
	Manikin	P3		
	Position child-restraint system	Upright		
	Impact	Frontal		
	Orientation	Forward facing		
	Anchorages used	A + B + C		
	Shot number	KB4717		
	Impact speed	49.4	km/h	
	Stopping distance of the trolley	637	mm	
7.1.4.1	During the dynamic test no part of the child restraint keeping the child in position shall break and no buckles or displacement system shall release.			pass
7.1.4.2	Chest acceleration			pass
	Resultant	41.7 g	0.0 ms	
	Vertical	11.6 g	0.0 ms	
	Head acceleration	62.1 g	0.0 ms	
	The resultant chest acceleration shall not exceed 55 g except during periods whose sum does not exceed 3 ms.			
	The vertical component of acceleration shall not exceed 30 g except during periods whose sum does not exceed 3 ms.			
7.1.4.3	Abdominal Penetration			pass
	During the verification there were no visible signs of penetration of the modelling clay of the abdomen by any part of the restraining device.			
7.1.4.4	Head displacement			pass
	The head of the manikin shall not pass beyond the planes defined.			
	Movement towards AB (forwards): 400 mm			
	Requirement ≤ 550 mm			
	Movement towards AD (upwards): 650 mm			
	Requirement ≤ 800 mm			
	The rearward facing device (group 0, 0^+, I) supported by the dashboard complied planes AD and DC.			

	Sample number	**189537**		
	Type	SPARCO 123		
	Manikin	P6		
	Position child-restraint system	Upright		
	Impact	Frontal		
	Orientation	Forward facing		
	Anchorages used	A + B + C		
	Shot number	KB4713		
	Impact speed	49.6	km/h	
	Stopping distance of the trolley	640	mm	
7.1.4.1	During the dynamic test no part of the child restraint keeping the child in position shall break and no buckles or displacement system shall release.			pass
7.1.4.2	Chest acceleration			pass
	Resultant	39.2 g	0.0 ms	
	Vertical	13.2 g	0.0 ms	
	Head acceleration	69.2 g	0.0 ms	
	The resultant chest acceleration shall not exceed 55 g except during periods whose sum does not exceed 3 ms.			
	The vertical component of acceleration shall not exceed 30 g except during periods whose sum does not exceed 3 ms.			
7.1.4.3	Abdominal Penetration			pass
	During the verification there were no visible signs of penetration of the modelling clay of the abdomen by any part of the restraining device.			
7.1.4.4	Head displacement			pass
	The head of the manikin shall not pass beyond the planes defined.			
	Movement towards AB (forwards): 480 mm			
	Requirement ≤ 550 mm			
	Movement towards AD (upwards): 735 mm			
	Requirement ≤ 800 mm			
	The forward facing device (group I, II, III) complied planes AB and AD.			

	Sample number	**189538**		
	Type	SPARCO 123		
	Manikin	P10		
	Position child-restraint system	Upright		
	Impact	Frontal		
	Orientation	Forward facing		
	Anchorages used	A + B + C		
	Shot number	KB4712		
	Impact speed	49.5	km/h	
	Stopping distance of the trolley	647	mm	
7.1.4.1	During the dynamic test no part of the child restraint keeping the child in position shall break and no buckles or displacement system shall release.			pass
7.1.4.2	Chest acceleration			pass
	Resultant	35.8 g	0.0 ms	
	Vertical	21.7 g	0.0 ms	
	Head acceleration	48.0 g	0.0 ms	
	The resultant chest acceleration shall not exceed 55 g except during periods whose sum does not exceed 3 ms.			
	The vertical component of acceleration shall not exceed 30 g except during periods whose sum does not exceed 3 ms.			
7.1.4.3	Abdominal Penetration			pass
	During the verification there were no visible signs of penetration of the modelling clay of the abdomen by any part of the restraining device.			
7.1.4.4	Head displacement			pass
	The head of the manikin shall not pass beyond the planes defined.			
	Movement towards AB (forwards): 400 mm			
	Requirement ≤ 550 mm			
	Movement towards AD (upwards): 795 mm			
	Requirement ≤ 840 mm			
	The forward facing device (group I, II, III) complied planes AB and AD.			
7.1.5	**RESISTANCE TO TEMPERATURE**			
7.1.5.1	Buckle assemblies, retractors, adjusters and lock-off devices that are liable to be affected by temperature, shall be subject to the temperature test as specified.			pass
7.1.5.2	After the temperature test as specified, no signs of deterioration likely to impair the proper functioning of the child restraint, shall be visible to the unaided eye of a qualified observer.			pass

7.2.1	**BUCKLE**		
	It must not be possible to leave the buckle partially closed; it must not be possible to exchange the buckle parts inadvertently when the buckle is being locked; the procedure for opening the buckle must be evident; the buckle must only lock when all parts are engaged, it shall be easy to operate and gasp; it must be possible to release the child by a single operation on a single button, the area of which shall be coloured red (except for groups 0 and 0^+, where 2 buckles are allowed to release the child and the restraint device).		pass
	Buckle contact width Requirements: ≥ 25 mm for group I ≥ 38 mm for group II ≥ 38 mm for group III	>38 mm	pass
	Button	enclosed	
	Area Requirement ≥ 2.5 cm²	>2.5 cm²	
	Width Requirement ≥ 10 mm	>10 mm	
7.2.1.5	Groups II and III; the buckle shall be placed so the child can reach it		pass
7.2.1.6	Opening of the buckle shall enable the child to be removed independently of the chair ext. The crotch strap shall be released by the same buckle. Assessment relates to sample number 189628		pass

7.2.1.8 Buckle durability and release pass

Sample No.	Release force [N] [1]	5000 cycles	Test No.	Release force [N] [2]	Tempera-ture test
186513	52.7	yes	--	--	yes
186514	50.8	yes	--	--	yes
186515	49.2	yes	--	--	no
186516	50.7	yes	--	--	no
189532	--	yes	KB4719	67.1	no
189533	--	yes	KB4718	76.8	no
189534	--	yes	KB4714	62.6	no
189535	--	yes	KB4715	78.6	no

[1] No load (40-80 N)

[2] Release force after dynamic test, 200 N load (max. 80 N)

7.2.1.9 Sample number 186513 - 186516 with harness buckle has withstand the strength test according to 8.2.1.3.2. pass
Requirements: Group I, II and III shall withstand 10 kN.

7.2.2 ADJUSTING DEVICE

7.2.2 The range of adjustment shall permit correct adjustment of the restraint throughout the weight group(s) for which it is intended; pass
all adjusting devices shall be "quick adjusters" except those used only for initial installation.
Quick adjusters shall be easy to reach and easily adjustable.
Assessment relates to sample number 186511.

7.2.2.4 Force required to operate manual adjusting (max. 50 N) pass

Adjuster	Force to tighten [N]
186517	10
186518	8

The device must not break or become detached when tested as 8.2.2.1
Assessment relates to sample number 186517.

7.2.2.5 Microslip pass

The amount of strap slip shall not exceed 25 mm for one adjuster or 40 mm for all adjusting devices.
N.B.: If slip per adjuster exceeds 12.5 mm then abrasion conditioning is required (clause 7.2.4.3.4).

Adjuster	Slip [mm]
186517	0.0
186518	0.0

Total slip for restraint (worst case): 0.0 mm.

7.2.2.7 Durability test for an adjuster mounted directly on the child restraint pass

Assessment relates to sample number 186501.

7.2.4. WEBBING

Make: Striped ribbon weaving
Type : Two stripped 25mm and Four stripped 38mm

Table 8: Webbing test results, 25mm

Conditioning	Breaking resistance [kN]		Width [mm]	Thickness [mm]	Elongation [%]
	test 1	test 2	test 1 test 2	test 1 test 2	test 1 test 2
Room temperature	17.1	17.0	25.3	1.6	19.0
Ultra-violet light	17.8	17.3	25.3	1.6	20.0
Cold	17.6	17.8			
Warm	16.6	17.2			
Water	17.8	17.5			

Table 9: Webbing test results, 38mm

Conditioning	Breaking resistance [kN]		Width [mm]	Thickness [mm]	Elongation [%]
	test 1	test 2	test 1 test 2	test 1 test 2	test 1 test 2
Room temperature	17.6	17.5	38.3	1.0	10.0
Ultra-violet light	16.7	16.9	38.3	1.2	10.0
Cold	18.5	18.1			
Warm	18.3	18.0			
Water	18.7	18.8			

	The minimum width of the child restraint straps shall be 25 mm for groups 0, 0^+ and I. The minimum width of the child restraint straps shall be 38 mm for groups II and III. The breaking load shall be not less than 3.6 kN for groups 0, 0^+ and I. The breaking load shall be not less than 5 kN for group II. The breaking load shall be not less than 7.2 kN for group III.	pass
11	**PRODUCTION QUALIFICATION**	
11.2.1	Dynamic tests sample number 189539 has a horizontal head excursion of 520 mm sample number 189540 has a horizontal head excursion of 530 mm sample number 189541 has a horizontal head excursion of 540 mm sample number 189542 has a horizontal head excursion of 530 mm sample number 189543 has a horizontal head excursion of 530 mm The mean value X 530 The standard deviation S 7.07 The limit value L 550 mm	pass
11.2.2	Control of Markings	pass
15	**INSTRUCTIONS**	
15.1	Each restraint shall be accompanied by instructions in the language of the country where the device is to be sold. Language(s): English, Spanish, French, Italian, Portuguese, German, Russian, Danish, Dutch, Finnish, Greek, Norwegian, Polish, Swedish, Turkish, Arabic, Irish, Japanese	pass
15.2	Instructions on installation shall include the following:	

15.2.1	For "universal" child restraints the following label shall be clearly visible at the point of sale without removing the packing. **NOTICE:** 1. This is a "Universal" child restraint. It is approved according to Regulation No. 44, 04 series of amendments, for general use in vehicles and it will fit most, but not all, car seats. 2. A correct fit is likely if the vehicle manufacturer has declared in the vehicle handbook that the vehicle is capable of accepting a "Universal" child restraint for this age group. 3. This child restraint has been classified as "Universal" under more stringent conditions than those which applied to earlier designs which do not carry this notice. 4. If in doubt, consult either the child restraint manufacturer or the retailer.	pass
15.2.4	If the device requires an adult safety-belt, the following warning should also be clearly visible at the point of sale without removing the packing: "Only suitable if the approved vehicles are fitted with a 3-point/with retractor safety belts, approved according to UN/ECE Regulation No. 16 or other equivalent standards." In the case of carry-cot restraints a list of carry-cots for which the device is suited should be included.	pass
15.2.5	The child restraint manufacturer shall provide information on the packing box as to the address to which the customer can write to obtain further information on fitting the child restraint in specific cars.	pass
15.2.6	The method of installation illustrated by photographs and/or very clear drawings.	pass
15.2.7	The user shall be advised on the location of rigid parts of the restraint to avoid damage/trapping by seats/doors etc.	pass
15.3	Instructions for use shall include the following:	
15.3.1	the mass groups and the fixture for which the device is intended;	pass
15.3.2	the type of adult belt required (if applicable);	pass
15.3.3	the method of use illustrated by photographs and/or very clear drawings. In the case of seats that can be used both forward and rear-facing, clear warning must be given to keep the restraint rear-facing until the child's mass is greater than a stated limit or some dimensional criterion is exceeded;	pass
15.3.4	the operation of the buckle and adjusting devices shall be explained clearly;	pass

15.3.5	it shall be recommended that any straps holding the restraint to the vehicle should be tight, that any straps restraining the child should be adjusted to the child's body and that the straps should not be twisted;	pass
15.3.6	the importance of ensuring that any lap strap is worn to low down, so that the pelvis is firmly engaged, shall be stressed;	pass
15.3.7	it shall be recommended that the device should be changed after an accident;	pass
15.3.8	instructions for cleaning shall be given;	pass
15.3.9	a general warning shall be given regarding unauthorised alternations and the danger of not following the supplied instructions;	pass
15.3.11	it shall be recommended that children are not left in their child restraint system unattended;	pass
15.3.12	it shall be recommended that any luggage or other objects liable to cause injuries in the event of a collision shall be properly secured;	pass
15.3.13	it shall be recommended that: the child restraint must not be used without the cover. (a) the seat cover should not be replaced with any other than the one recommended by the manufacturer, because the cover constitutes an integral part of the restraint performance;	pass
15.3.14	there shall be a text or a diagram indicating how a user can identify an unsatisfactory position of the adult safety belt buckle relative to the main load bearing contact points on the restraint. The user shall be advised to contact the child restraint manufacturer if in doubt about this point;	pass
15.3.16	there shall be provisions made so that the instructions can be retained on the child restraint for its life period;	pass
15.3.17	there shall be explicit warning not to use any load bearing contact points other than those described in the instructions and marked in the child restraint;	pass

5 Conclusion

The child restraint system meets the requirements as stated in:

- ECE Regulation 44, addendum 04 [1]

6 References

1 ECE Regulation 44, 04 series of amendments
Uniform provisions concerning the approval of restraining devices for child occupants of power-driven vehicles ("Child restraint system")
Including Revision 2 Supplement 5
United Nations; 27 January 2013