

Zkušebna pasivní bezpečnosti
Test laboratory of passive safety

Zkušebna uznaná OSN pro zkoušení dětských zádržných systémů podle předpisu EHK OSN č. 44.
Test laboratory approved by UN to test the child restraint systems according to Regulation ECE No.44.

Strana/Page: 1/11

Protokol číslo: 17/180

Test report No:

Žadatel: AGS 92, s.r.o., Rosická 653, Praha 9
Applicant:

Předmět zkoušek: informativní dynamická zkouška dětského zádržného systému (EHK č. 44-04)

Subject of tests: Information dynamic test of the Child Restraint System (ECE R44-04)

Číslo homologace / Approval No: E4 04 444309

Typ/Type: BS07-TT (skupiny/groups I, II, III)

Vzorky předány na zkušebnu: 10.8.2017

Submitted for testing: August 10, 2017

Výsledek (*): Vyhovuje příslušným požadavkům předpisu EHK č. 44-04

Conclusion It meets the relevant requirements of the ECE Regulation No. 44-04

Místo a datum vydání: Praha, 11.9.2017

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Protokol obsahuje: 11 stran

This document contains: 11 pages

(*) Výsledky zkoušek uvedené v tomto protokolu se týkají jen zkoušeného vzorku.

Test results relate only to the sample submitted for testing.

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SHORT DESCRIPTION OF THE CHILD RESTRAINT SYSTEM:

Approval number: E4 - 04 444309
Category of the CRS: universal 9-18 kg, semi-universal 15-36 kg
Class of the Child Restraint System: integral I, non-integral II,III
Mass group of the CRS: I, II, III
Dummy mass group used for dynamic testing: P3 (15 kg)
Seat material: plastic
Energy absorbing means: foam plastic + fabric
Mass of the seat and its assembly: 11,9 kg

CONTENTS AND SUMMARY OF TEST RESULTS

Selected requirements of the R44 ECE and their compliance

Paragraph	Topic	Page	Date	Evaluation	Commentary
7.1.4.	Dynamic test	3 - 11	14.8.2017	positive	-



DYNAMIC TEST

(Chapter 7, § 1.4. of the Regulation ECE 44/04)

Commentary: On this page there are the concisely specified requirements of the Regulation. On the further 4 pages there are recorded data of the test. Before the dynamic tests (deceleration method) the calibrations of dummy P3 were carried out, and also the measuring of the „adult strap“ forces was calibrated.

Paragraph	Description of the requirement	Evaluation, note
7.2.1.7	The buckle is tested by heat (8.2.8.1.) and before the dynamic test it operates 5000 ± 5 opening and closing cycles.	no sample by heat, no sample was cycled
7.2.1.8	Before the dynamic test, the unpulled buckle should be opened by a force between 40 and 80 N. After the dynamic test, releasing the buckle pulled by a force 200 N must be possible by a force of 80 N or less (see next page)	hasn't been tested
7.1.4.1	During the dynamic test, no part of the child restraint keeping the child in position shall break and neither buckle nor retractor or displacement system shall release.	Positive
7.1.4.2	The resultant chest deceleration shall not exceed 55 g, the vertical component of acceleration from the abdomen towards the head shall not exceed 30 g, except during periods whose sum duration does not exceed 3 ms.	the requirement has been met, see the next page
7.1.4.3	After the dynamic test there should be no visible signs of penetration into the modeling clay of the abdomen caused by any part of the restraining device.	the requirement has been met
7.1.4.4	The head of the manikin shall not pass beyond the defined planes.	Positive

The measured data and diagrams from the dynamic test follow on the next 4 pages.

Note:

According to R44-04 ECE, § 8.4.1.2. it is necessary to express the uncertainty of measuring the head biggest distances from the C_r point. We used the method of the document EA 4/02 for it. On account of several tens of repeated measurements we determined the values of standard deviations: for the direction forwards 1.34 mm, and for the direction upwards 1.14 mm. With inclusion of other uncertainties (calibration of the scale, choosing the right snap from the videorecord, non-infinite proximity of neighbouring snaps) we have found out that the extended **uncertainty** (covering 95 % of the extent) is ± 5 mm for the direction forwards (x) and ± 3 mm for the direction upwards (z).



DYNAMIC TESTof the **CHILD RESTRAINT SYSTEM** (frontal impact by using sled deceleration)

Producer of the CRS : Ningbo Weldon Manufacturing Co., Ltd, China
 Producer's marking : BS07-TT
 Approval number : E4 04 444309
 Mass groups of the CRS : I
 Category of the restraint : universal
 Class of the restraint : integral
 Used anchorages : isofix

TESTING PARAMETERS	UNIT	REQUESTS	RESULTS	
Orientation of the CRS			forward facing	
Tested mass group of the CRS			I	
Mass of the used dummy	kg	An. 8, Ap.	15	
The dummy simulates a child aged	year	1, § 3.1.	3	
Tipping position of the seat			1	
Testing number of the sample			17/180-01R	
Speed of the sled before the impact	km/h	48 - 50	48,9	
Stopping distance of the sled	mm	600 - 700	632	
Duration of the sled stopping ¹	ms	80 - 120	109,0	
Stopping period with (- a ≥ 20 g*)	ms	15 - 63.7	17,8	
Maximal deceleration of the sled	g*	20 - 28	21,7	
Maximal chest deceleration in the mutually perpendicular directions:	→ x	g*	not defined	35,7
	y ↙	g*	not defined	5,9
	↑ z ^{b/}	g*	≤ 30 ^{a/}	13,6
Vector sum of max. decelerations	g*	≤ 55 ^{a/}	36,8	
Buckle releasing force after test ^{h/}	N	≤ 80	n.m.	
Any sights ^{e/} of abdominal penetration ?		not	Not	
Any failure of the locked restraint ?		not	Not	

^{a/} except during periods whose sum ≤ 3 ms

^{b/} z is coincident with the direction of the seat back (trunk towards head)

^{c/} see R 44/04, § 7.1.4.3.1. and annex 8, § 5.3.

^{h/} belt tension 200 ± 2 N (see R 44/04, § 7.2.1.)

g* is the gravitational acceleration (9.81 ms⁻²)

Manikin displacement →
 (demarcation lines see
 § 7.1.4.4. of the R 44 ECE)
 Requirement: space ≥ 0

Free space for the head [mm] / time [ms]		
in direction x	in direction z	to inclined line
43/130	102/239	irrelevant

Allowed uncertainty of
 measuring is ± 25 mm.
 Real uncertainty: 5 mm
 for x, 3 mm for z

THE RESULTS OF DYNAMIC TESTING CRS ARE POSITIVE

¹ The required time of deceleration record ≥ 300 ms (§ 9.1.) was not observed. Our experience substantiates that the force effects become insignificant after about 180 ms.



TESTING PARAMETERS	UNIT	REQUESTS	RESULTS	
Orientation of the CRS			forward facing	
Tested mass group of the CRS			I	
Mass of the used dummy	kg	An. 8, Ap.	15	
The dummy simulates a child aged	year	1, § 3.1.	3	
Tipping position of the seat			1	
Testing number of the sample			17/180-02	
Speed of the sled before the impact	km/h	48 - 50	48,9	
Stopping distance of the sled	mm	600 - 700	648	
Duration of the sled stopping ²	ms	80 - 120	107,2	
Stopping period with (- a ≥ 20 g*)	ms	15 - 63.7	13,2	
Maximal deceleration of the sled	g*	20 - 28	21,7	
Maximal chest deceleration in the mutually perpendicular directions:	→ x	g*	not defined	35,8
	y ↙	g*	not defined	12,2
	↑ z ^{b/}	g*	≤ 30 ^{a/}	15,4
Vector sum of max. decelerations	g*	≤ 55 ^{a/}	38,1	
Buckle releasing force after test ^{h/}	N	≤ 80	n.m.	
Any sights ^{e/} of abdominal penetration ?		not	Not	
Any failure of the locked restraint ?		not	Not	

^{a/} except during periods whose sum ≤ 3 ms

^{b/} z is coincident with the direction of the seat back (trunk towards head)

^{c/} see R 44/04, § 7.1.4.3.1. and annex 8, § 5.3.

^{h/} belt tension 200 ± 2 N (see R 44/04, § 7.2.1.)

g* is the gravitational acceleration (9.81 ms⁻²)

Manikin displacement →
(demarcation lines see
§ 7.1.4.4. of the R 44 ECE)
Requirement: space ≥ 0

Free space for the head [mm] / time [ms]		
in direction x	in direction z	to inclined line
35/114	77/214	irrelevant

Allowed uncertainty of
measuring is ± 25 mm.
Real uncertainty: 5 mm
for x, 3 mm for z

THE RESULTS OF DYNAMIC TESTING **CRS** ARE POSITIVE

² The required time of deceleration record ≥ 300 ms (§ 9.1.) was not observed. Our experience substantiates that the force effects become insignificant after about 180 ms.



DEKRA CZ a.s. - Passive Safety Testing Center
DYNAMIC TEST of the Child Restraint System acc. to ECE 44-04

Annex to the report No.: 17180
Sample No : 01R
Producer of the sample : WELLDON
Producers marking : BS07-TT
Approval number : E4-04444309
Purpose of the test : Information

1. Impact direction : Frontal
2. Restraint orientation : forward facing
3. Group of the restraint : I(9-18kg)dummy P3,15kg
4. Category of the restraint: universal
5. Class of the restraint : integral
6. Used anchorages : isofix

Item	Parameters of the test	Unit	Requests	Reality
10.	Sled speed before the impact	km/h	48.0-50.0	48.9
11.	Stopping distance of the sled	mm	600-700	632
12.	Duration of the sled stopping	ms	80.0-120.0	109.0
13.	Stopping period with $-a > 20.0g$	ms	15.0-63.7	17.8
14.	Max.deceleration of the sled	g	20.0-28.0	21.7
15.	Avg.deceleration of the sled	g	10.0-19.6	14.0
20.	Max.chest decel.in direction X	g		35.7
21.	Max.chest decel.in direction Y	g		5.9
22.	Max.chest decel.in direction Z	g	<30.0	13.6
23.	Vector sum of chest decel.	g	<55.0	36.8
30.	Buckle releasing force	N	<80.0	n.m.
40.	Signs of abdominal penetration:			Invisible
50.	Restraint failure or breakage :			None

Notes: g is the gravitational acceleration [9.81 m/(s.s)]
n.m.- no measurement
Items 22,23: except during periods whose sum <3ms
Item 30 : the pulling force of the strap is 200 N

Remarks: free space for the head:x=43mm/130ms,z=102mm/239ms

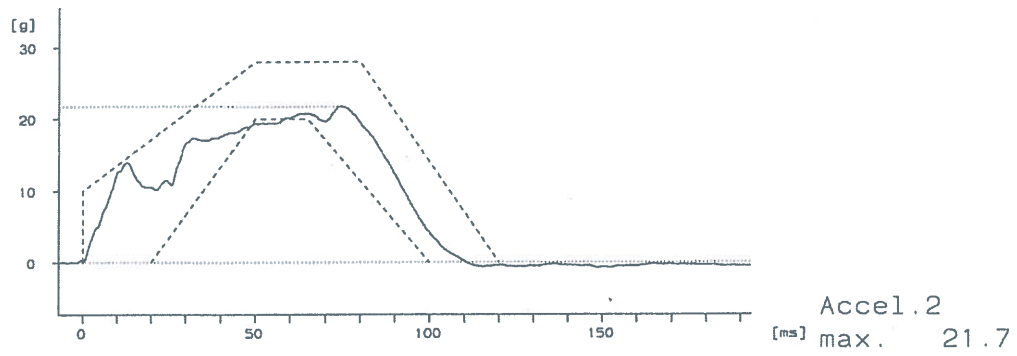
The test result is : POSITIVE

Date : August 14, 2017

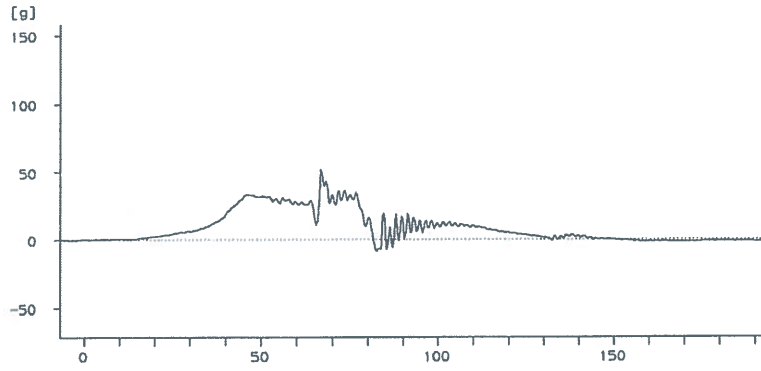
Test performer : Karel Chlupac



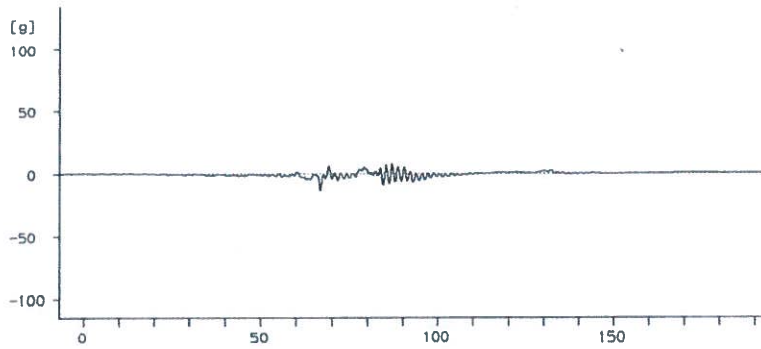
1718001R/1



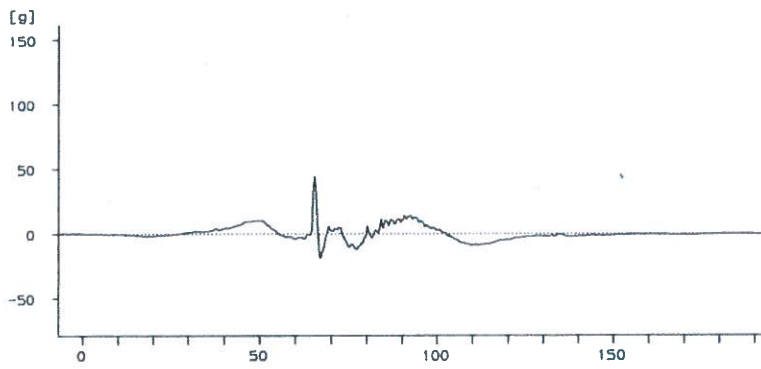
1718001R/2.



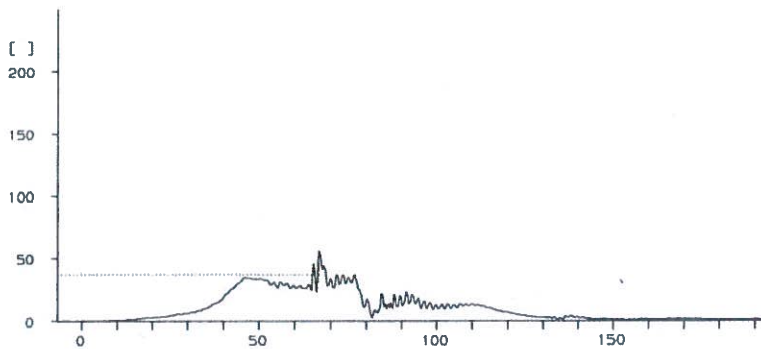
Accel.X
[ms] max. 35.7



Accel.Y
[ms] max. 5.9



Accel.Z
[ms] max. 13.6



Vect. Accel.
[ms] max. 26.8



DEKRA CZ a.s. - Passive Safety Testing Center
DYNAMIC TEST of the Child Restraint System acc. to ECE 44-04

Annex to the report No.: 17180
Sample No : 02
Producer of the sample : WELLDON
Producers marking : BS07-TT
Approval number : E4-04444309
Purpose of the test : Information

1. Impact direction : Frontal
2. Restraint orientation : forward facing
3. Group of the restraint : I (9-18kg) dummy P3, 15kg
4. Category of the restraint: universal
5. Class of the restraint : integral
6. Used anchorages : isofix

Item	Parameters of the test	Unit	Requests	Reality
10.	Sled speed before the impact	km/h	48.0-50.0	48.9
11.	Stopping distance of the sled	mm	600-700	648
12.	Duration of the sled stopping	ms	80.0-120.0	107.2
13.	Stopping period with $-a > 20.0g$	ms	15.0-63.7	13.2
14.	Max.deceleration of the sled	g	20.0-28.0	21.7
15.	Avg.deceleration of the sled	g	10.0-19.6	14.2
20.	Max.chest decel.in direction X	g		35.8
21.	Max.chest decel.in direction Y	g		12.2
22.	Max.chest decel.in direction Z	g	<30.0	15.4
23.	Vector sum of chest decel.	g	<55.0	38.1
30.	Buckle releasing force	N	<80.0	n.m.
40.	Signs of abdominal penetration:			Invisible
50.	Restraint failure or breakage :			None

Notes: g is the gravitational acceleration [9.81 m/(s.s)]
n.m.- no measurement
Items 22,23: except during periods whose sum <3ms
Item 30 : the pulling force of the strap is 200 N

Remarks: OK
free space for the head: x=35mm/114ms, z=77mm/214ms

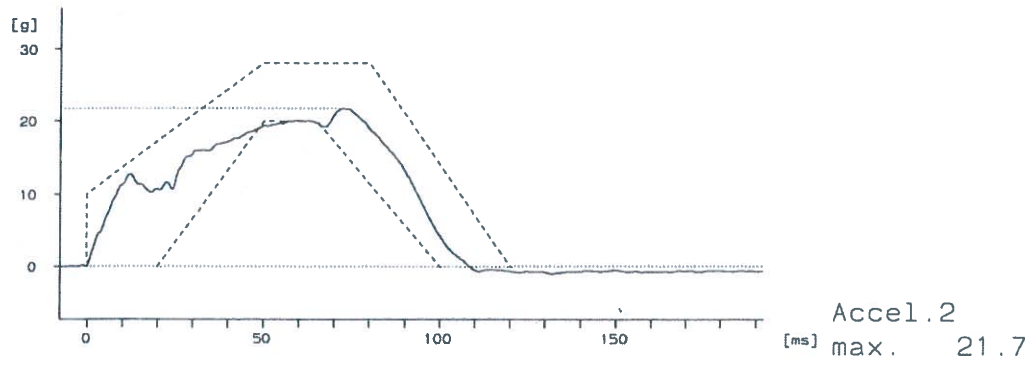
The test result is : POSITIVE

Date : August 14, 2017

Test performer : Karel Chlupac



1718002/1.



1718002/2

