DEKRA CZ a.s.

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.

Protokol číslo: 18/113

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 4625**

Typ/*Type*: **D, B1** (skupiny/*groups* 0, I)

Vzorky předány na zkušebnu: 16.5.2018
Submitted for testing: May16, 2018

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, 13.6.2018
Place and issuing date: Prague, June 13, 2018

Číslo výtisku /*Copy No.*: 1. **Počet výtisků** / *Number of copies:* 2

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(15)

Protokol obsahuje: 7 stran
This document contains: 7 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 4625
Category of the CRS: ..... universal
Class of the Child Restraint System: ..... integral
Mass group of the CRS: ..... 0, I
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: ..... 13,5 kg

CONTENTS AND SUMMARY OF TEST RESULTS

Selected requirements of the R44 ECE and their comliancy

Paragraph	Topic	Page	Date	Evaluation	Commentary
7.1.4.	Dynamic test	3 - 7	5.6.2018	positive	-

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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 thedirection 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).

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DYNAMIC TEST
of the CHILD RESTRAINT SYSTEM (frontal impact by using sled deceleration)

Producer's marking : **D, B1**
Approval number : **E4 04 4625**
Mass groups of the CRS : **I**
Category of the restraint : **universal**
Class of the restraint : **integral**
Used anchorages : **isofix (support leg)**

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. 1, § 3.1.	15
The dummy simulates a child aged		year		3
Tipping position of the seat				I
Testing number of the sample				**18/113-01**
Speed of the sled before the impact		km/h	**48 - 50**	49,2
Stopping distance of the sled		mm	**600 - 700**	615
Duration of the sled stopping [1]		ms	**80 - 120**	103,4
Stopping period with (- a ≥ 20 g*)		ms	**15 - 63.7**	29,6
Maximal deceleration of the sled		g*	**20 - 28**	22,0
Maximal chest deceleration in the mutually perpendicular directions:	→ x	g*	not defined	27,2
	y ↵	g*	not defined	10,3
	↑ z [b]	g*	**≤ 30** [a]	17,7
Vector sum of max. decelerations		g*	**≤ 55** [a]	29,6
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
77/102	154/253	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.

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DYNAMIC TEST of the Child Restraint System acc. to ECE 44-04

Annex to the report No.: 18113
Sample No : 01
Producer of the sample : WELLDON
Producers marking : D,B1
Approval number : E4-044625
Purpose of the test : information

1. Impact direction : Frontal
2. Restraint orientation : forward facing
3. Group of the restaint : 0-I(3.4-18kg),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	49.2
11.	Stopping distance of the sled	mm	600-700	615
12.	Duration of the sled stopping	ms	80.0-120.0	103.4
13.	Stopping period with -a>20.0g	ms	15.0-63.7	29.6
14.	Max.deceleration of the sled	g	20.0-28.0	22.0
15.	Avg.deceleration of the sled	g	10.0-19.6	15.0
20.	Max.chest decel.in direction X	g		27.2
21.	Max.chest decel.in direction Y	g		10.3
22.	Max.chest decel.in direction Z	g	<30.0	17.7
23.	Vector sum of chest decel.	g	<55.0	29.6
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=77mm/102ms,z=154mm/253ms

The test result is : POSITIVE

Date : June 5, 2018

Test performer : Karel Chlupáč

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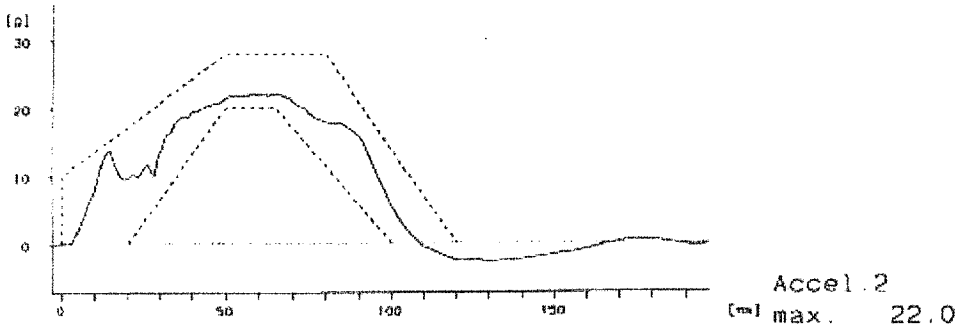
1811301/1



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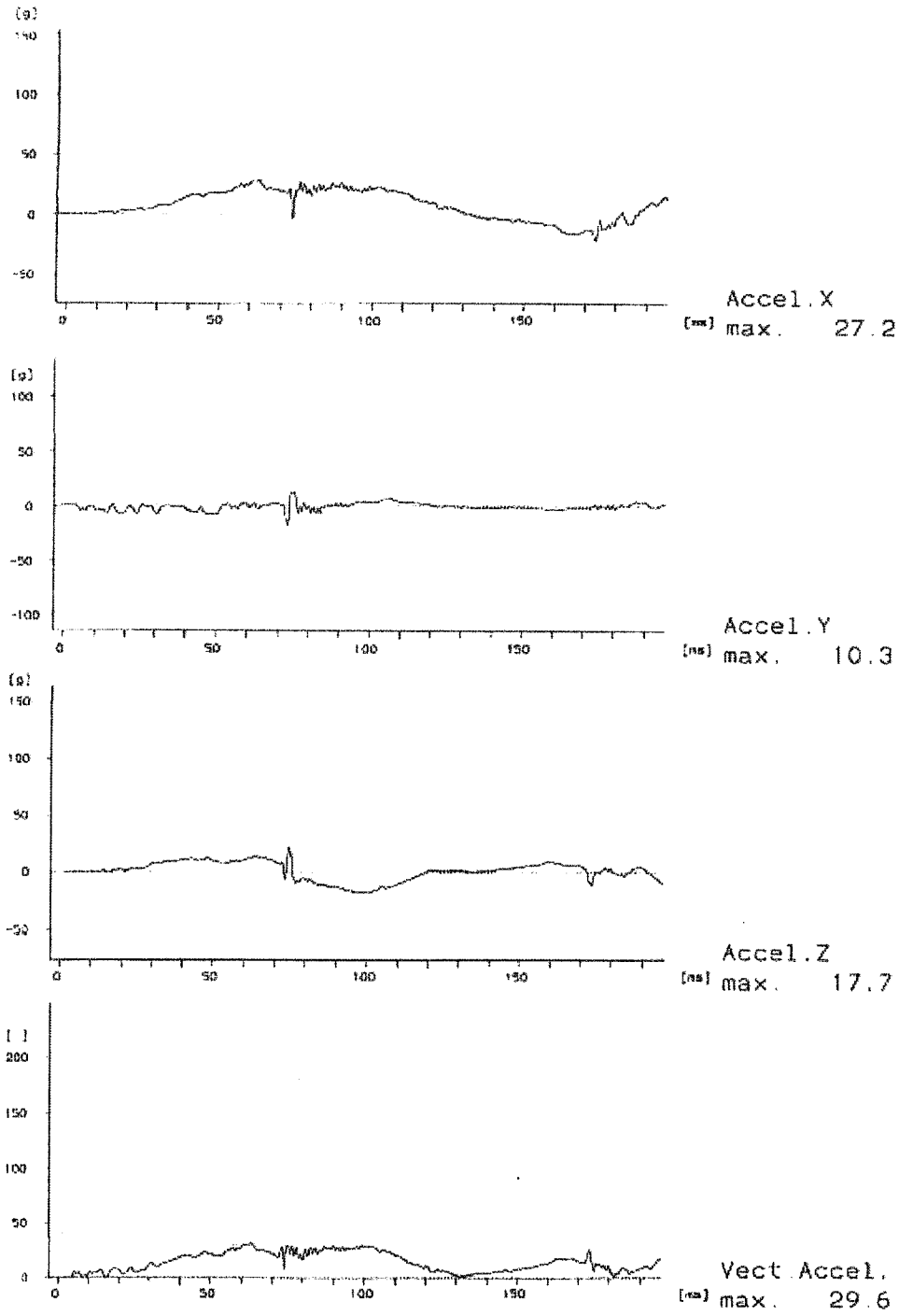

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