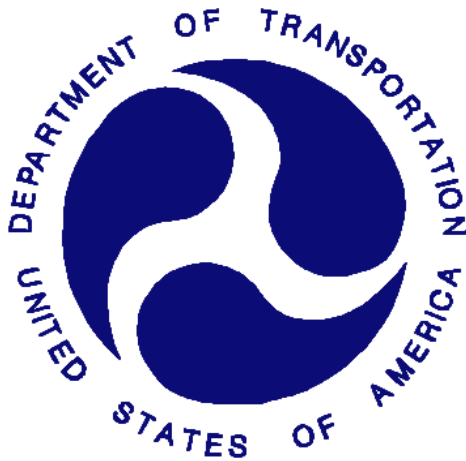


REPORT NUMBER: 213-CAL-18-040

**SAFETY COMPLIANCE TESTING FOR FMVSS 213
CHILD RESTRAINT SYSTEMS**

**Graco
Extend 2 Fit Convertible, Model 1963211-JJ**

**PREPARED BY:
CALSPAN CORPORATION
4455 GENSEE ST
BUFFALO, NY 14225**



Report Date: May 2018

FINAL REPORT

**PREPARED FOR:
U. S. DEPARTMENT OF TRANSPORTATION
National Highway Traffic Safety Administration
Enforcement
Office of Vehicle Safety Compliance
Mail Code: NVS-220, W43-481
1200 New Jersey Avenue, SE
Washington, DC 20590**

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Prepared by:  Date: **May 2, 2018**
Adam Hardbottle, SLED
Engineer

Approved by:  Date: **May 2, 2018**
William Horn, SLED Director

FINAL REPORT ACCEPTANCE BY OVSC:

Accepted By: _____

Acceptance Date: _____

213-CAL-18-040

Technical Report Documentation Page

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4. Title and Subtitle Final Report of FMVSS 213 Compliance Testing of Manufacturer: Graco Name: Extend 2 Fit Convertible Model: 1963211-JJ				5. Report Date Date: May 2, 2018	
				6. Performing Organization Code CAL	
7. Author(s) Adam Hardbattle, William Horn				8. Performing Organization Report No. 213-CAL-18-040	
9. Performing Organization Name and Address Calspan Corporation 4455 Genesee St. Buffalo, NY 14225				10. Work Unit No.	
				11. Contract or Grant No. DTNH22-17-R-0037	
12. Sponsoring Agency Name and Address U. S. DEPARTMENT OF TRANSPORTATION National Highway Traffic Safety Administration Enforcement Office of Vehicle Safety Compliance Mail Code: NVS-220, W43-481 1200 New Jersey Avenue, SE Washington, DC 20590				13. Type of Report and Period Covered Final Test Report April-May 2018	
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15. Supplementary Notes					
16. Abstract Compliance tests were conducted on the Graco, Extend to Fit, Model 1963211-JJ child restraint systems in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP-213-10. Test failures identified as follows: None					
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SECTION 1 PURPOSE AND TEST PROCEDURE

PURPOSE

The tests performed are part of the safety compliance program for the National Highway Traffic Safety Administration (NHTSA) by Calspan Corporation under Contract No. DTNH22-17-R-0037. The purpose of the testing is to determine whether production child restraint systems meet the minimum inspection and dynamic test requirements of TP-213-10, "Child Restraint Systems".

TEST PROCEDURE

The Calspan Corporation Test Procedure for FMVSS 213, submitted and approved by the Office of Vehicle Safety Compliance, National Highway Traffic Safety Administration contains the specific procedures used to conduct this test. This procedure shall not be interpreted to be in conflict with any portion of FMVSS 213 and amendments in effect as noted in the applicable contract.

SECTION 2 INTRODUCTION AND SUMMARY

This report presents all of the FMVSS 213 compliance inspection and test data obtained on the Graco, Extend 2 Fit, Model 1963211-JJ child restraint system. The restraint was dynamically tested in the following configurations:

- 12 month old, CRABI, rear facing, other configuration, lower anchor, tether free, recline 3
- H3 3YO, Forward Facing, other configuration, lower anchor, top tether, upright recline 4
- 12 month old, CRABI, Forward Facing, other configuration, lower anchor, tether free, upright recline 4
- H3 3YO, Forward Facing, other configuration, lower anchor, tether free, upright recline 4
- H3 6YO, Forward Facing, other configuration, lab belt, top tether, upright recline 6
- H3 W6YO, Forward Facing, other configuration, lab belt, top tether, upright recline 6

Inversion testing was performed in both the forward Y-axis rotation and in the lateral X-axis rotation for the following configurations:

- Newborn, rear facing, other configuration, lap belt, tether free and recline 2
- 12 month old, CRABI, forward facing, other configuration, lap belt, tether free and Upright
- 3 year old H3, forward facing, other configuration, lap belt, tether free and Upright

The inspection and testing of the Graco, Extend 2 Fit, Model 1963211-JJ child restraint met the requirement(s) of FMVSS No. 213 when tested in accordance with TP-213-10 in the configurations and conditions documented in this report.

No test failures were identified

Restraint system inspection, dynamic sled testing and inversion testing were performed by Calspan Corporation, Buffalo NY. Compliance test data sheets for all tests are found in the Data Sheets and Test Data Sections of this report.

**SECTION 3
DATA SHEET 1
CHILD RESTRAINT SYSTEM IDENTIFICATION**

Report No. 213-CAL-18-040

Manufacturer:	Graco
Place of Manufacture per S5.5.2(d):	China
Model No.	Extend 2 fit, Model 1963211-JJ
Group No.	040

1	Item Code	040-1963211-01-12CRNLFR
	Date of Manufacture	02/24/2018
	Sled Test No.	FM04-18-45A
2	Item Code	040-1963211-02-3H3FNLTU
	Date of Manufacture	02/24/2018
	Sled Test No.	FM04-18-45B
3	Item Code	040-1963211-03-12CFNLTU
	Date of Manufacture	02/24/2018
	Sled Test No.	FM04-18-46A
4	Item Code	040-1963211-04-3H3FNLFU
	Date of Manufacture	02/24/2018
	Sled Test No.	FM04-18-46B
5	Item Code	040-1963211-05-6H3FN2TU
	Date of Manufacture	02/24/2018
	Sled Test No.	FM04-18-47A
6	Item Code	040-1963211-06-6W3FN2TU
	Date of Manufacture	02/24/2018
	Sled Test No.	FM04-18-47B

**SECTION 4
DYNAMIC TEST RESULTS DATA SUMMARY**

Child Restraint System – Graco / Extend 2 Fit Convertible / 1963211-JJ										
Item Code	Sled Test No.	Dummy Selection and Test Mode (see legend below)	Lower Anchors Used Y/N	Tether Used Y/N	HIC (1000 max)	Chest g clip (60 g max)	Head Excursion (720 mm max, 813 mm max w/o tether)	Knee Excursion (915 mm max)	Seat Back Angle (70 deg max)	Pass/Fail
040-1963211-01-12CRNLFR	04-18-45A	12C RFR	Y	N	404	41	N/A	N/A	50	Pass
040-1963211-02-3H3FNLTU	04-18-45B	3H3 FFU	Y	Y	197	39	524	685	N/A	Pass
040-1963211-03-12CFNLTU	04-18-46A	12C FFU	Y	Y	198	43	491	527	N/A	Pass
040-1963211-04-3H3FNLFU	04-18-46B	3H3 FFU	Y	N	337	40	675	807	N/A	Pass
040-1963211-05-6H3FN2TU	04-18-47A	6H3 FFU	N	Y	362	38	549	735	N/A	Pass
040-1963211-06-6W3FN2TU	04-18-47B	6W3 FFU	N	Y	N/A	N/A	557	755	N/A	Pass

Test Mode:

RF - Rear Facing
 FF - Forward Facing
 U - Upright mode
 R - Reclined mode

ATD:

NIN – Newborn Infant
 12C -12 MO, CRABI
 3H3 – 3 YO, Hybrid III
 6H2 – 6YO Hybrid 2
 6H3 – 6YO Hybrid III
 6W3 – 6 YO, Weighted Hybrid III
 10H3 – 10YO Hybrid III

**SECTION 5
DATA SHEET 2
LABELING
(FMVSS 213, S5.3, S5.5)**

Report No.:	213-CAL-18-040	Model No.:	Extend 2 Fit, 1963211
Test Date:	25 April 2018		

Requirement	Pass / Fail
The labels on the subject child restraint system were inspected and compared to the requirements of FMVSS No. 213 S5.3.1(b) and S5.5, as applicable	Pass

The following failures were identified:
No failures

Remarks:

S5.5.2(k)(3): Location is directly below head contact area
S5.5.2(l): All forward facing diagrams show with Top Tether
Photographs of the labels are included in section 9.

Recorded by: 
Adam Hardbattle, SLED Engineer

Date: April 27, 2018

**DATA SHEET 3
PRINTED INSTRUCTIONS FOR PROPER USE
(FMVSS 213, S5.6)**

Report No.:	213-CAL-18-040	Model No.:	Extend 2 Fit, 1963211
Test Date:	25 April 2018		

Requirement	Pass / Fail
The printed instructions accompanying the subject child restraint system were inspected and compared to the requirements of FMVSS No. 213 S5.6, as applicable	Pass

The following failures were identified:
No failures

Remarks:
S5.6.1.1: Wording slightly different

Recorded by:



Adam Hardbatt, SLED
Engineer

Date:

April 27, 2018


**DATA SHEET 4
REGISTRATION FORM
(FMVSS 213, S5.8)**

Report No.:	213-CAL-18-040	Model No.:	Extend 2 Fit, 1963211
Test Date:	25 April 2018		

Requirement	Pass / Fail
The printed registration form accompanying the subject child restraint system and the electronic registration form were inspected and compared to the requirements of FMVSS No. 213 S5.6, as applicable	Pass

The following failures were identified:
No failures

Remarks:
Photographs of the registration are included in section 9.

Recorded by: 
Adam Hardbattle, SLED
Engineer

Date: April 27, 2018

**DATA SHEET 5
MAXIMUM CHILD WEIGHT FOR LOWER ANCHOR USE
(FMVSS 213, S5.5.2(I)(3))**

Report No.:	213-CAL-18-040	Model No:	Extend 2 Fit, 1963211
Test Date:	25 April 2018		

For child restraints manufactured on or after February 27, 2015:

Installation Mode	A Max Child weight is Required for this installation mode (Y or N)	Installation Diagram Shown (Y or N)	Max Child Weight Indicated on Installation Diagram (lb)
Rear Facing	Y	Y	45
Forward Facing	Y	Y	45

CRS Weight (lb)	Child Weight (CW) Calculation (lb)	Rounded CW Limit permitted under S5.5.2(I)(3)(A)	Calculated CW	Rounded CW
			15 < CW ≤ 20	20
			20 < CW ≤ 25	25
			25 < CW ≤ 30	30
			30 < CW ≤ 35	35
			35 < CW ≤ 40	40
			40 < CW ≤ 45	45
			45 < CW ≤ 50	50
			50 < CW ≤ 55	55
			55 < CW ≤ 60	60

17 lbs	Rear Facing 60-CRS Weight = 43 lbs	45 lbs
	Forward Facing 65-CRS Weight = 48 lbs	50 lbs

Section	Requirement	Pass / Fail
S5.5.2(I)(3)(A)	A maximum child weight is required on an installation diagram when the CRS+child weight is greater than 65 lb for CRS that are used with the internal harness and installed with lower anchors. The maximum weight on the label conforms to the limits established in S5.5.2(I)(3)(A)	Pass
S5.5.2(I)(3)(B)	For CRS that can be used both forward and rear-facing either: (1) separate diagrams are provided and labeled; or (2) only one diagram is applicable, provided, and labeled; or (3) two diagrams are applicable and the diagram shown contains the lesser of the permitted weights	Pass

The following failures were identified:
No failures

Remarks:
None

Recorded by: 
Adam Hardbatt, SLED
Engineer

Date: April 27, 2018


DATA SHEET 6
ATTACHMENT TO ANCHORAGE SYSTEM
(FMVSS 213, S5.9)

Report No.:	213-CAL-18-040	Model No:	Extend 2 Fit, 1963211
Test Date:	25 April 2018		

Section	Requirement	Pass / Fail
S5.9(a)	This add-on child restraint system (excluding car beds, harnesses and belt-positioning seats) has a permanently attached anchorage system having components that enable the restraint to be securely fastened to the lower anchorages.	Pass
	The anchorage system has components which can only be removed with a tool, such as a screwdriver.	Pass
	Note: If this is a rear facing child restraint system with a detachable base, then only the base is required to have the components.	N/A
S5.9(b)	This child restraint system has components for attaching the system to a tether anchorage, and those components include a tether hook that conforms to the configuration and geometry specified in Figure 22 of TP-213-10.	Pass
S5.9(c)	This child restraint system has adjustable components for attaching the system to a tether anchorage or to lower anchors to allow the restraint to be tightened to the vehicle.	Pass
S5.9(d)	If the anchorage system on this child restraint has components other than hooks, that enables the restraint to be securely fastened to the lower anchors, it provides either an indication when each attachment to the lower anchorage becomes fully latched or attached, or provides a visual indication that all attachments to the lower anchorages are fully latched or attached.	Pass
	Visual indications are visible under normal daylight lighting conditions.	N/A

The following failures were identified:
No failures

Remarks:
None

Recorded by: 
Adam Hardbattle, SLED
Engineer

Date: April 27, 2018

**DATA SHEET 7
INSTALLATION
(FMVSS 213, S5.3)**

Report No.:	213-CAL-18-040	Model No:	Extend 2 Fit, 1963211
Test Date:	25 April 2018		

Section	Requirement	Pass / Fail					
S5.3.1	Add-on child restraints meet either (a) or (b) as appropriate	Pass					
S5.3.1(a)	Except for components designed to attach a child restraint anchorage system, this add-on child restraint does not have any means designed for attaching the system to a vehicle seat cushion or vehicle seta back and any component (except belts) that is designed to be inserted between the vehicle seat cushion and vehicle seat back	Pass					
S5.3.1(b)	Harness manufactured for use on school bus seats must meet S5.3.1(a) unless labeled appropriately. Refer to the labeling data sheet for the specific requirements.	N/A					
S5.3.2	The child restraint system is capable of being installed as required by Table S5.3.2 of FMVSS No. 213. Shaded section indicate installation means required by standard.	Pass					
		<i>Lap Belt</i>	<i>Lap belt & Tether (if needed)</i>	<i>Lower Anchors</i>	<i>Lap & Shoulder belt</i>	<i>Seat back Mount</i>	
	<i>Harnesses per S5.3.1(b)(1)-(3) & Figure 12</i>						N/A
	<i>Other Harnesses</i>						N/A
	<i>Car Beds</i>						N/A
	<i>Rear-Facing Restraints</i>	X		X	X		Pass
	<i>Belt-Positioning Seats</i>						N/A
	<i>All other child restraints</i>	X	X	X	X		Pass
S5.3.3	If a car bed, this child restraint system is designed to be installed laterally.	N/A					

The following failures were identified:
No failures

Remarks:
None

Recorded by: 
Adam Hardbattle, SLED
Engineer

Date: April 27, 2018

DATA SHEET 8
MINIMUM HEAD SUPPORT SURFACE
(FMVSS 213, S5.2.1)

Report No.:	213-CAL-18-040	Model No:	Extend 2 Fit, 1963211
Test Date:	25 April 2018		

Section	Requirement	
S5.2.1.2	The child restraint system is exempt from S5.2.1.1 if it is a forward facing restraint and the target points on either side of the dummy's head (using the largest test dummy specified in S7, excluding the 6-year old) is below the top of the test seat	
S5.2.1.1(a)	Maximum Recommended Child Weight	Minimum Seat Back Height Required
	≤ 18 kg (39.7 lb)	50 cm (19.7 in.)
	> 18 kg (39,7 lb)	56 cm (22 in.)
S5.2.1.1(b)	Side Wing Depth	Minimum Back Support Width
	< 102 mm (4.0 in)	203 mm (8 in.)
	≥ 102 mm (4.0 in)	156 mm (6 in.)

The child restraint system is exempt from S5.2.1.1 **NO**

Back Support Height

Manufacturers Recommended Maximum Child Weight kg (lb)	Measured Height mm (in)	Pass / Fail
30kg (65lb)	560mm (22in)	Pass

Back Support Width

Measured Side Wing Depth mm (in)	Measured Width mm (in)	Pass / Fail
64mm (2.5in)	245mm (9.6in)	Pass

The following failures were identified:
No failures

Remarks:
None

Recorded by: 
Adam Hardbattle, SLED
Engineer

Date: April 27, 2018

DATA SHEET 9
TORSO IMPACT PROTECTION
(FMVSS 213, S5.2.2)

Report No.:	213-CAL-18-040	Model No:	Extend 2 Fit, 1963211
Test Date:	25 April 2018		

Section	Surface Requirement	Contour Requirement	Other Requirement
S5.2.2.1(a)	Back Support Surface	Flat or concave	Continuous surface area of ≥ 85 in ²
S5.2.2.1(b)	Side Support Surface	Flat or concave	Continuous surface area of ≥ 24 in ² for restraints having a recommended child weight of ≥ 20 lb
		Flat or concave	Continuous surface area of ≥ 48 in ² for restraints having a recommended child weight of < 20 lb
S5.2.2.1(c)	Horizontal Cross Sections of Surfaces Restraining Torso Forward Movement	Flat or concave	
	Vertical Longitudinal Cross Sections of Surfaces Restraining Torso Forward Movement	Flat or concave	Radius of Curvature ≥ 2 in
S5.2.2.2	Fixed or Moveable Surface Forward of Dummy		Must be used to restrain dummy and allow compliance with injury & excursion data

Support Surface Results

Surface	Contour	Measured Area	Pass / Fail
Back Support	Flat	≥ 85 in ²	Pass
Side Support	Flat	≥ 24 in ²	Pass

Surfaces Restraining Torso Forward Movement Results

	Contour	Measured Area	Pass / Fail
Horizontal Cross Section	N/A	N/A	N/A
Vertical Cross Section	N/A	N/A	N/A

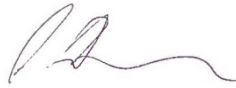
Fixed or Movable Surfaces Forward of Dummy Results

Yes/No	Pass / Fail
No	Pass

The following failures were identified:
No failures

Remarks:
None

Recorded by:



Adam Hardbatt, SLED
Engineer

Date:

April 27, 2018

**DATA SHEET 10
PROTRUSION LIMITATION
(FMVSS 213, S5.2.4)**

Report No.:	213-CAL-18-040	Model No.:	Extend 2 Fit, 1963211
Test Date:	25 April 2018		

S5.2.4 Any portion of a rigid structural component within or underlying a contactable surface is subject to the protrusion limitations described below.

Test	Compliance Requirement	Test Result	Pass/Fail
Height	≤ 9.53 mm (3/8 in.)	≤ 9.53 mm ($\leq 3/8$ in)	Pass
Edge Radius	≥ 6.35 mm (1/4 in.)	≥ 6.35 mm ($\geq 1/4$ in)	Pass

The following failures were identified:
No failures

Remarks:
None

Recorded by: 
Adam Hardbattle, SLED
Engineer

Date: April 27, 2018

DATA SHEET 11
DYNAMIC IMPACT TEST CONDITIONS – TEST 1
(FMVSS 213, S6.1)

Report No.:	213-CAL-18-040	Sled Test No.	FM04-18-45A
Test Date:	25 April 2018	Item Code	040-196321-01-12CRNLFR

Laboratory Ambient Conditions During Testing:

Temperature Degrees C (F)	21.5C (70.7F)
Relative Humidity %	47.1%

Pulse:

Test Configuration (I or II):	I
Velocity (km/h (mph)):	47.1 km/h (29.3 mph)

Dummy:

Dummy Description:	CRABI 12 Month Old (Part 572R)
Dummy Serial Number:	085


Restraint Installation:

Installed Direction:	Rearward Facing
Base Usage:	Other Configuration
Attachment Method:	Lower Anchors
Tether Usage:	NO, Tether Free
Seat Back Position:	Recline 3
Internal Shoulder Harness Position:	Slot 5, Counted from bottom up
Buckle Harness Position:	Rear

Remarks:

Pre and Post Test Photos are presented in Section 9.

Recorded by: _____


Adam Hardbattle, SLED
Engineer

Date: _____

April 27, 2018

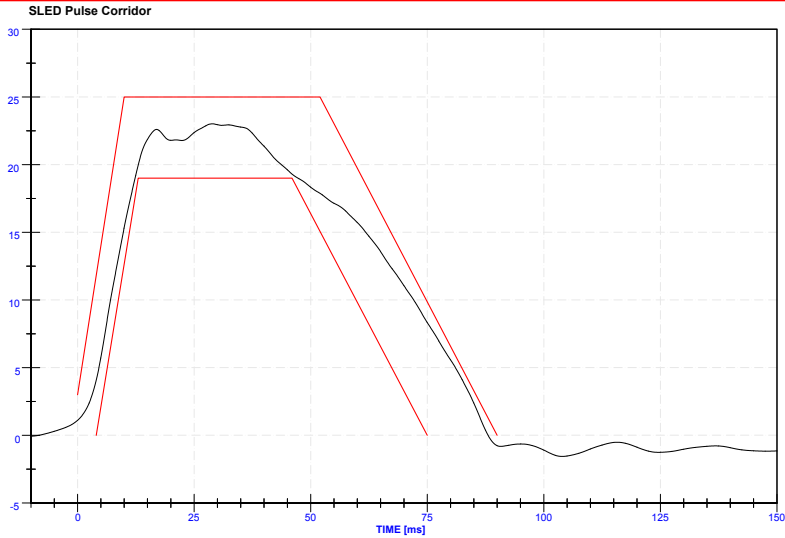
DYNAMIC IMPACT SLED PULSE – TEST 1 (FMVSS 213, S6.1)

Report No.:	213-CAL-18-040	Sled Test No.:	FM04-18-45A
Test Date:	25 April 2018	Item Code	040-196321-01-12CRNLFR



NHTSA FM04-18-045

Test Date: April 25, 2018

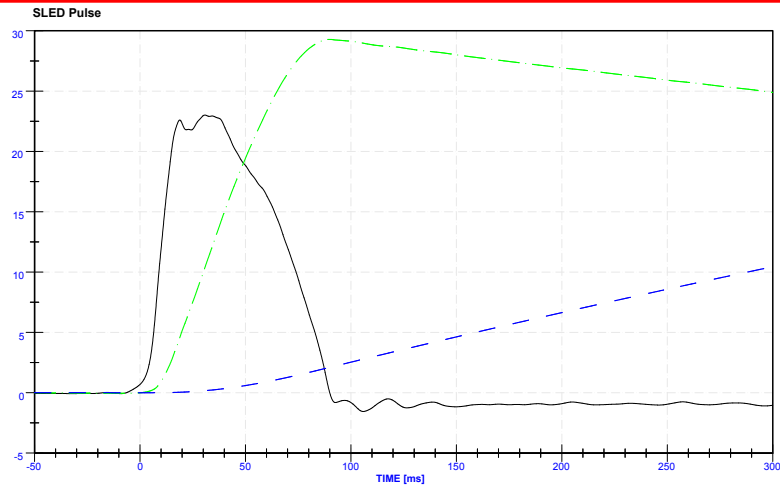


	Maximum	Time (ms)	Filter Class	Legend
SLED Acceleration (G's)	23.01	30.9	CFC 60	S0SLED000000ACXD



NHTSA FM04-18-045

Test Date: April 25, 2018



	Maximum	Time (ms)	Filter Class	Legend
SLED Acceleration (G's)	23.01	105.9	CFC 60	S0SLED000000ACXD
SLED Velocity (mph)	29.28	-6.1	CFC 180	S0SLED000000VAXC
SLED Displacement (ft)	10.43	0.4	CFC 180	S0SLED000000DVXC

DATA SHEET 12
BELT RESTRAINT – TEST 1
(FMVSS 213, S5.4.3)

Report No.:	213-CAL-18-040	Sled Test No.	FM04-18-45A
Test Date:	25 April 2018	Item Code	040-196321-01-12CRNLFR

Section	Requirement	Pass / Fail
S5.4.3.1	Snug Fit of Belts. Belts that are part of the restraint and designed to restrain the child are adjustable to snugly fit any child of height and weight identified by the manufacturer in accordance with the manufacturers installation instructions.	Pass


Section	Requirement	Yes / No	Pass / Fail
S5.4.3.2	Direct Restraint. Belts impose no loads on the child resulting from mass of the system or the test seat		Pass
	The restraint has one or more belts that contact the dummy for restraint	Yes	If all are "Yes" Restraint fails S5.4.3.2
	The restraint has a rigid structure behind the dummy	Yes	
	The restraint could move relative to the belt	No	

Section	Requirement	Pass / Fail
S5.4.3.3	Seating Systems. Except for harness and infant restraints for children up to 10kg (22lb), each restraint designed for a child in a seated position and having belts shall provide.	Pass
S5.4.3.3(a)	Upper torso restraint (either belts or a shield)	Pass
S5.4.3.3(b)	Lower torso restraint (either belts or a shield)	Pass
S5.4.3.3(c)	Crotch restraint (either a belt attached to the lap belt or a shield)	Pass

Section	Requirement	Pass / Fail
S5.4.3.4	Harnesses. Each harness shall:	N/A
S5.4.3.3(a)	Provide upper torso restraint)	N/A
S5.4.3.3(b)	Provide lower torso restraint (lap & crotch)	N/A
S5.4.3.3(c)	Prevent Standing	N/A

Remarks

Recorded by:


 Adam Hardbattle, SLED Engineer

Date:

April 27, 2018

DATA SHEET 13
BUCKLE RELEASE – TEST 1
(FMVSS 213, S5.4.3.5, S6.2)


Report No.:	213-CAL-18-040	Sled Test No.	FM04-18-45A
Test Date:	25 April 2018	Item Code	040-196321-01-12CRNLFR

Section	Requirement	Measurement	Pass / Fail
S5.4.3.5(a)	Pre-Impact Release Force Releases under 40-60 N	52 N	Pass
S5.4.3.5(a)	Post-Impact Release Force* Releases \leq 71 N	67 N	Pass
S5.4.3.5(a)	Minimum Surface Area of Buckle \geq 3.9 cm ² (0.6 in ²)	4 cm ²	Pass
S5.4.3.5(a)	Buckle Integrity Shall not release during testing	No Release	Pass

*Not applicable unless determined using the largest test dummy specified in S7 for use in testing the seat.

Remarks

None

Recorded by: 
Adam Hardbattle, SLED
Engineer

Date: April 27, 2018

DATA SHEET 14
SYSTEM INTEGRITY – TEST 1
(FMVSS 213, S5.1.1)

Report No.:	213-CAL-18-040	Sled Test No.	FM04-18-45A
Test Date:	25 April 2018	Item Code	040-196321-01-12CRNLFR

S5.1.1 When dynamically tested, the child restraint shall:

Section	Requirement	Pass / Fail
S5.1.1(a)	Structural Integrity – Exhibit no complete separation of any load bearing structural element	Pass
	Exhibit no partial separation with exposing surfaces with a radius of less than 9.53 mm (3/8 in.)	Pass
	Exhibit no partial separation with exposing surfaces with protrusions greater than 6.35 mm (1/4 in.)	Pass
S5.1.1(b)(1)	Adjustment Position – Remain in the same adjustment position during the test that it was immediately before the test	Pass
S5.1.1(b)(2)(ii)	Exposed Openings – Have no exposed opening larger than 6.35 mm (1/4 in.) before the test becomes smaller during the testing as a result of the movement of the seating service relative to the restraint system as a whole.	Pass
S5.1.1(c)	Seating Surface Angle – Forward facing restraints do not allow the angle between the system's back support surface and seating surface and seating surface to be less than 45 degrees at the completion of the test	N/A

Remarks

None

Recorded by: 
 Adam Hardbatt, SLED
 Engineer

Date: April 27, 2018

DATA SHEET 15
INJURY CRITERIA – TEST 1
(FMVSS 213, S5.1.2)

Report No.:	213-CAL-18-040	Sled Test No.	FM04-18-45A
Test Date:	25 April 2018	Item Code	040-196321-01-12CRNLFR

Section	Requirement
S5.1.2.1(a)	Head Injury Criterion The maximum calculated head injury criterion for a 36 millisecond time interval (HIC36) shall not exceed 1,000. HIC is not calculated when using the 6-year-old weighted and 10-year-old test dummies.
S5.1.2.1(b)	Chest Injury Criterion The chest acceleration shall not exceed 60g for intervals whose cumulative duration is more than 3 milliseconds


Head Injury Criterion Results

Calculated HIC36	Pass / Fail
404	Pass

Chest Injury Criterion Results

Max Acceleration lasting 3ms (g)	Pass / Fail
41	Pass

Remarks
None

Recorded by: 
 Adam Hardbattle, SLED
 Engineer

Date: April 27, 2018

**INJURY CRITERIA – HEAD ACCELERATION PLOTS – TEST 1
(FMVSS 213, S5.1.2)**

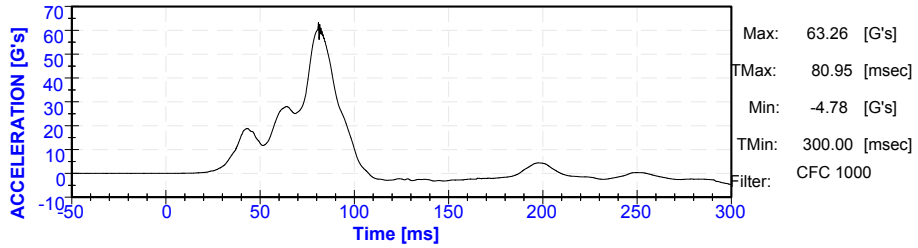
Report No.:	213-CAL-18-040	Sled Test No.	FM04-18-45A
Test Date:	25 April 2018	Item Code	040-196321-01-12CRNLFR
HIC 36ms	404	Resultant	67 g's



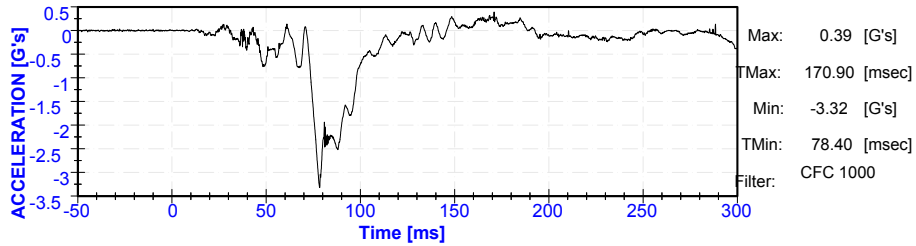
NHTSA FM04-18-045

Test Date: April 25, 2018

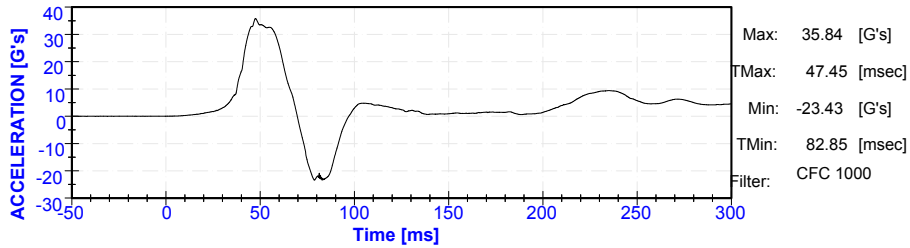
A Bench ATD Head X Acceleration



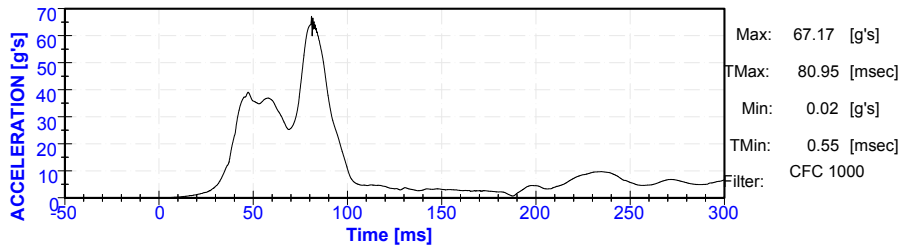
A Bench ATD Head Y Acceleration



A Bench ATD Head Z Acceleration



A Bench ATD Head Resultant Acceleration



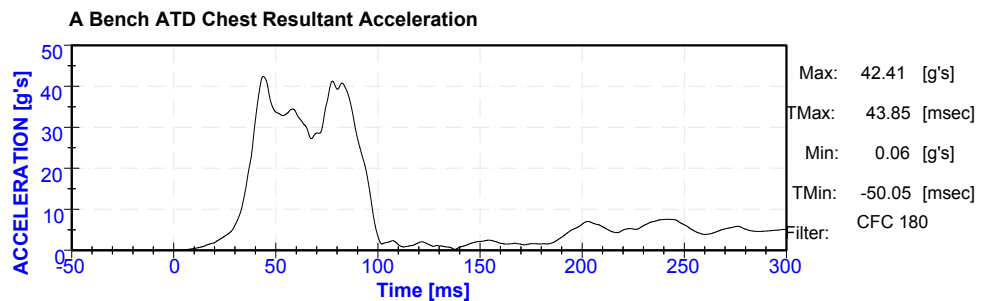
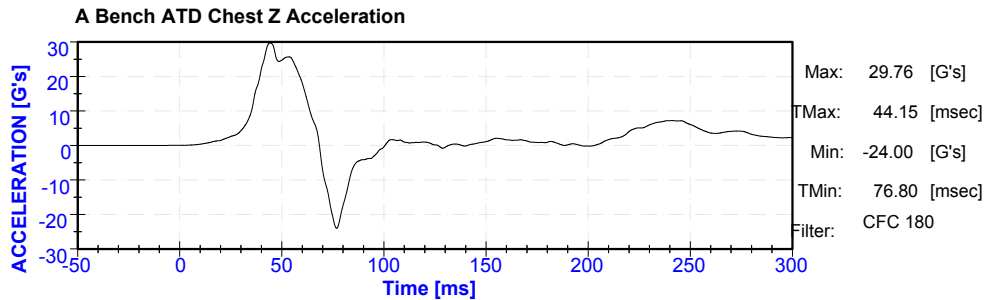
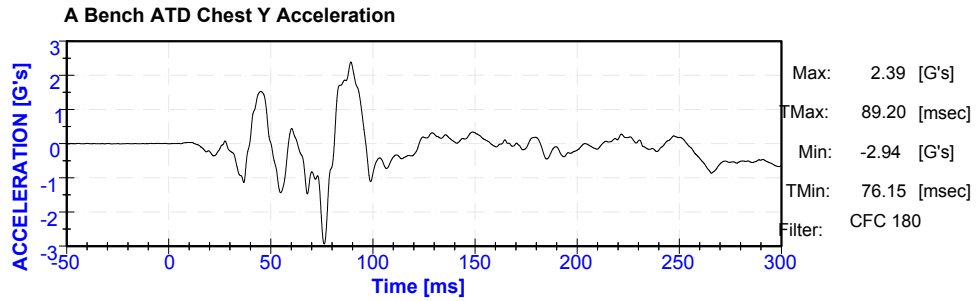
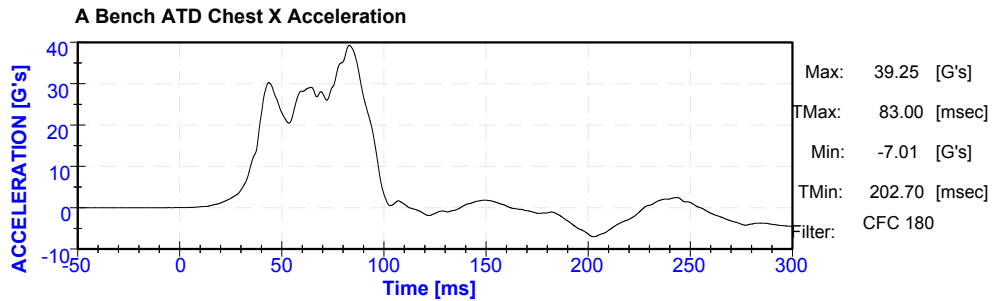
INJURY CRITERIA – CHEST ACCELERATION PLOTS – TEST 1 (FMVSS 213, S5.1.2)

Report No.:	213-CAL-18-040	Sled Test No.	FM04-18-45A
Test Date:	25 April 2018	Item Code	040-196321-01-12CRNLFR
3ms Clip	41 g's	Resultant	42 g's



NHTSA FM04-18-045

Test Date: April 25,



DATA SHEET 16
OCCUPANT EXCURSION – TEST 1
(FMVSS 213, S5.1.3, S5.1.4, S5.2.1.1(c))

Report No.:	213-CAL-18-040	Sled Test No.	FM04-18-45A
Test Date:	25 April 2018	Item Code	040-196321-01-12CRNLFR

FORWARD-FACING RESTRAINTS


Section	Requirement	Measurement	Pass / Fail
S5.1.3.1	Torso Retention – CRS shall retain the torso within system		Pass
S5.1.3.1(a)(1)	Head Excursion - ≤ 720 mm (28.4 in.) with tether ≤ 813 mm (32 in.) No tether	N/A	N/A
S5.1.3.1(a)(2)	Knee Excursion - < 91.5 cm (36 in.)	N/A	N/A
S5.2.1.1(c)	Head-Torso Angle - Rearward change ≤ 45 degrees	N/A	N/A

REAR-FACING RESTRAINTS

Section	Requirement	Measurement	Pass / Fail
S5.1.3.2	Torso Retention – CRS shall retain the torso within system		Pass
S5.1.3.2	Head Target Excursion – Not beyond restraint's top and forward edge		Pass
S5.1.4	Back Support Angle - Angle between the back support surface and vertical ≤ 70 degrees	50	Pass
S5.2.1.1(c)	Head-Torso Angle - Rearward change ≤ 45 degrees	<45	Pass

Remarks

Excursion camera locations (forward of Z point) are 28.4", Camera speed = 2000fps and focal length of lenses = 12.5mm

Recorded by: 
 Adam Hardbattle, SLED
 Engineer

Date: April 27, 2018

DATA SHEET 17
OCCUPANT EXCURSION – TEST 1
(FMVSS 213, S5.1.3.3)

CAR BED RESTRAINTS

Section	Requirement	Measurement	Pass / Fail
Head – Torso Retention (FMVSS 213, S5.1.3.3)	Retain within confines of system	N/A	N/A

Remarks

Recorded by:



Adam Hardbatt, SLED
Engineer

Date:

April 27, 2018

DATA SHEET 18
DYNAMIC IMPACT TEST CONDITIONS – TEST 2
(FMVSS 213, S6.1)

Report No.:	213-CAL-18-040	Sled Test No.	FM04-18-45B
Test Date:	25 April 2018	Item Code	040-196321-02-3H3FNLTU

Laboratory Ambient Conditions During Testing:

Temperature Degrees C (F)	21.5C (70.7F)
Relative Humidity %	47.1%

Pulse:

Test Configuration (I or II):	I
Velocity (km/h (mph)):	47.1 km/h (29.3 mph)

Dummy:

Dummy Description:	H3 3 Year Old (Part 572R)
Dummy Serial Number:	034

Restraint Installation:

Installed Direction:	Forward Facing
Base Usage:	Other Configuration
Attachment Method:	Lower Anchors
Tether Usage:	Top Tether
Seat Back Position:	Upright - 4
Internal Shoulder Harness Position:	Slot 7, Counted from bottom up
Buckle Harness Position:	Rear

Remarks:

Pre and Post Test Photos are presented in Section 9.

Recorded by: 
 Adam Hardbatt, SLED
 Engineer

Date: April 27, 2018

DYNAMIC IMPACT SLED PULSE – TEST 2 (FMVSS 213, S6.1)

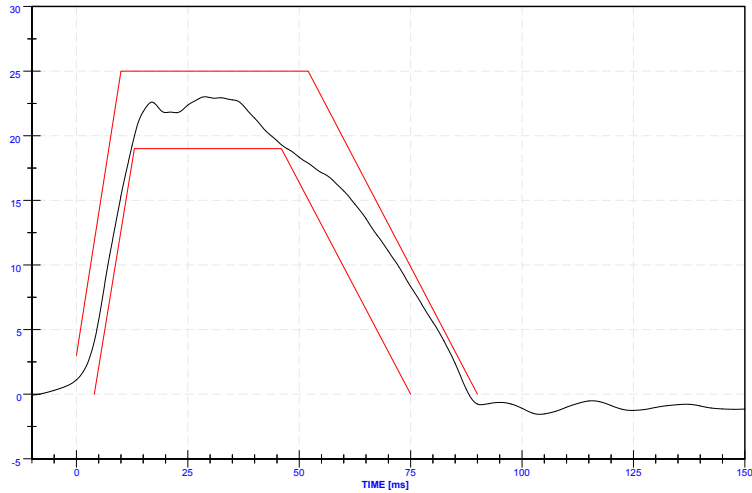
Report No.:	213-CAL-18-040	Sled Test No.:	FM04-18-45B
Test Date:	25 April 2018	Item Code	040-196321-02-3H3FNLTU



NHTSA FM04-18-045

Test Date: April 25, 2018

SLED Pulse Corridor



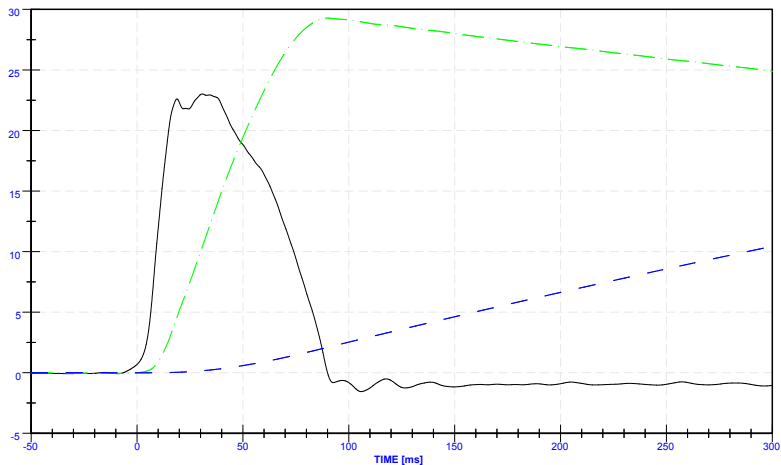
	Maximum	Time (ms)	Filter Class	Legend
SLED Acceleration (G's)	23.01	30.9	CFC 60	S0SLED0000R00ACXD



NHTSA FM04-18-045

Test Date: April 25, 2018

SLED Pulse



	Maximum	Time (ms)	Filter Class	Legend
SLED Acceleration (G's)	23.01	105.9	CFC 60	S0SLED000000ACXD
SLED Velocity (mph)	29.28	-6.1	CFC 180	S0SLED000000VAXC
SLED Displacement (ft)	10.43	0.4	CFC 180	S0SLED000000DVXC

DATA SHEET 19
BELT RESTRAINT – TEST 2
(FMVSS 213, S5.4.3)

Report No.:	213-CAL-18-040	Sled Test No.	FM04-18-45B
Test Date:	25 April 2018	Item Code	040-196321-02-3H3FNLTU

Section	Requirement	Pass / Fail
S5.4.3.1	Snug Fit of Belts. Belts that are part of the restraint and designed to restrain the child are adjustable to snugly fit any child of height and weight identified by the manufacturer in accordance with the manufacturers installation instructions.	Pass


Section	Requirement	Yes / No	Pass / Fail
S5.4.3.2	Direct Restraint. Belts impose no loads on the child resulting from mass of the system or the test seat		Pass
	The restraint has one or more belts that contact the dummy for restraint	Yes	If all are "Yes" Restraint fails S5.4.3.2
	The restraint has a rigid structure behind the dummy	Yes	
	The restraint could move relative to the belt	No	

Section	Requirement	Pass / Fail
S5.4.3.3	Seating Systems. Except for harness and infant restraints for children up to 10kg (22lb), each restraint designed for a child in a seated position and having belts shall provide.	Pass
S5.4.3.3(a)	Upper torso restraint (either belts or a shield)	Pass
S5.4.3.3(b)	Lower torso restraint (either belts or a shield)	Pass
S5.4.3.3(c)	Crotch restraint (either a belt attached to the lap belt or a shield)	Pass

Section	Requirement	Pass / Fail
S5.4.3.4	Harnesses. Each harness shall:	N/A
S5.4.3.3(a)	Provide upper torso restraint)	N/A
S5.4.3.3(b)	Provide lower torso restraint (lap & crotch)	N/A
S5.4.3.3(c)	Prevent Standing	N/A

Remarks

Recorded by:


 Adam Hardbattle, SLED Engineer

Date:

April 27, 2018

DATA SHEET 20
BUCKLE RELEASE – TEST 2
(FMVSS 213, S5.4.3.5, S6.2)

Report No.:	213-CAL-18-040	Sled Test No.	FM04-18-45B
Test Date:	25 April 2018	Item Code	040-196321-02-3H3FNLTU


Section	Requirement	Measurement	Pass / Fail
S5.4.3.5(a)	Pre-Impact Release Force Releases under 40-60 N	51 N	Pass
S5.4.3.5(a)	Post-Impact Release Force* Releases \leq 71 N	58 N	Pass
S5.4.3.5(a)	Minimum Surface Area of Buckle \geq 3.9 cm ² (0.6 in ²)	4 cm ²	Pass
S5.4.3.5(a)	Buckle Integrity Shall not release during testing	No Release	Pass

*Not applicable unless determined using the largest test dummy specified in S7 for use in testing the seat.

Remarks

None

Recorded by: _____


Adam Hardbattle, SLED
Engineer

Date: _____ April 27, 2018 _____

**DATA SHEET 21
SYSTEM INTEGRITY – TEST 2
(FMVSS 213, S5.1.1)**

Report No.:	213-CAL-18-040	Sled Test No.	FM04-18-45B
Test Date:	25 April 2018	Item Code	040-196321-02-3H3FNLTU

S5.1.1 When dynamically tested, the child restraint shall:

Section	Requirement	Pass / Fail
S5.1.1(a)	Structural Integrity – Exhibit no complete separation of any load bearing structural element	Pass
	Exhibit no partial separation with exposing surfaces with a radius of less than 9.53 mm (3/8 in.)	Pass
	Exhibit no partial separation with exposing surfaces with protrusions greater than 6.35 mm (1/4 in.)	Pass
S5.1.1(b)(1)	Adjustment Position – Remain in the same adjustment position during the test that it was immediately before the test	Pass
S5.1.1(b)(2)(ii)	Exposed Openings – Have no exposed opening larger than 6.35 mm (1/4 in.) before the test becomes smaller during the testing as a result of the movement of the seating service relative to the restraint system as a whole.	Pass
S5.1.1(c)	Seating Surface Angle – Forward facing restraints do not allow the angle between the system’s back support surface and seating surface and seating surface to be less than 45 degrees at the completion of the test	Pass

Remarks

None

Recorded by: 
Adam Hardbatt, SLED
Engineer

Date: April 27, 2018

**DATA SHEET 22
INJURY CRITERIA – TEST 2
(FMVSS 213, S5.1.2)**

Report No.:	213-CAL-18-040	Sled Test No.	FM04-18-45B
Test Date:	25 April 2018	Item Code	040-196321-02-3H3FNLTU

Section	Requirement
S5.1.2.1(a)	Head Injury Criterion The maximum calculated head injury criterion for a 36 millisecond time interval (HIC36) shall not exceed 1,000. HIC is not calculated when using the 6-year-old weighted and 10-year-old test dummies.
S5.1.2.1(b)	Chest Injury Criterion The chest acceleration shall not exceed 60g for intervals whose cumulative duration is more than 3 milliseconds

Head Injury Criterion Results

Calculated HIC36	Pass / Fail
197	Pass

Chest Injury Criterion Results

Max Acceleration lasting 3ms (g)	Pass / Fail
39	Pass

Remarks

None

Recorded by: 
 Adam Hardbattle, SLED
 Engineer

Date: April 27, 2018

**INJURY CRITERIA – HEAD ACCELERATION PLOTS – TEST 2
(FMVSS 213, S5.1.2)**

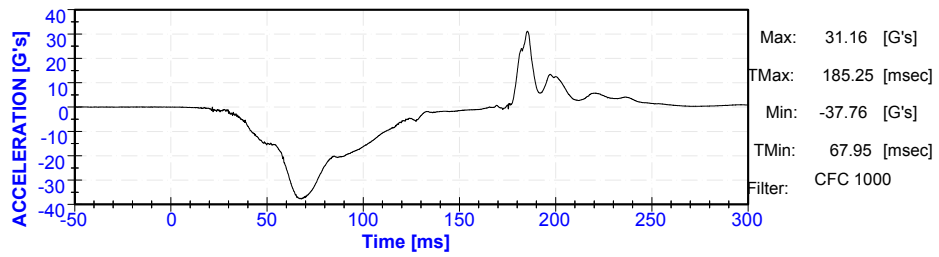
Report No.:	213-CAL-18-040	Sled Test No.	FM04-18-45B
Test Date:	25 April 2018	Item Code	040-196321-02-3H3FNLTU
HIC 36ms	197	Resultant	40 g's



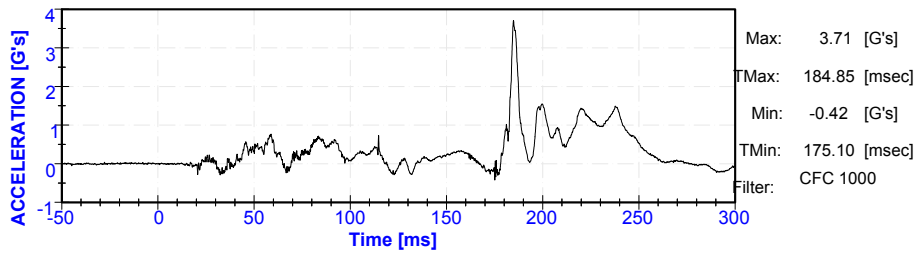
NHTSA FM04-18-045

Test Date: April 25, 2018

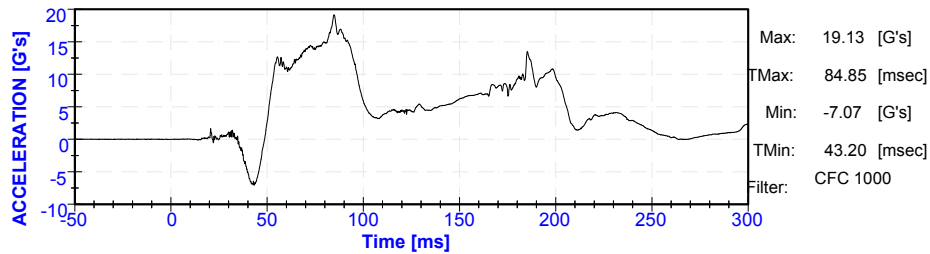
B Bench ATD Head X Acceleration



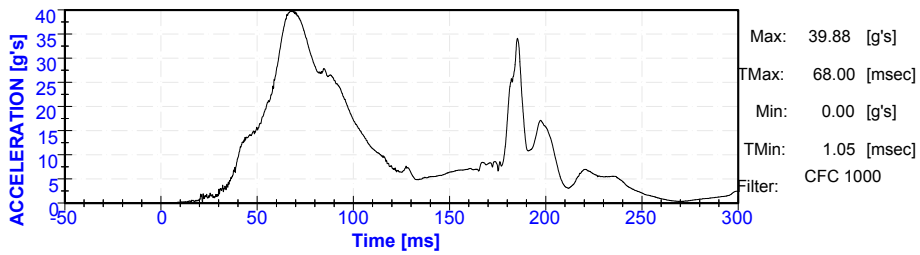
B Bench ATD Head Y Acceleration



B Bench ATD Head Z Acceleration



B Bench ATD Head Resultant Acceleration



INJURY CRITERIA – CHEST ACCELERATION PLOTS – TEST 2 (FMVSS 213, S5.1.2)

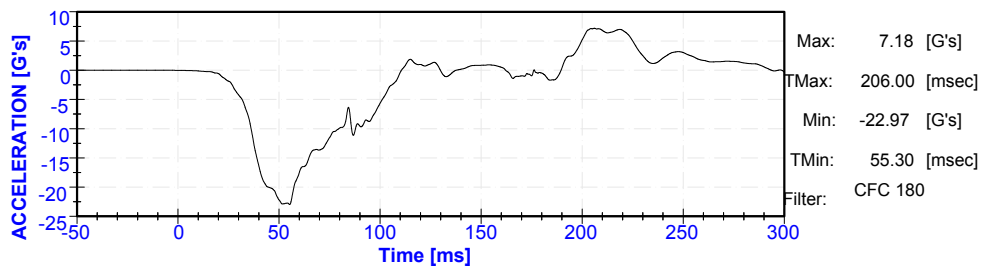
Report No.:	213-CAL-18-040	Sled Test No.	FM04-18-45B
Test Date:	25 April 2018	Item Code	040-196321-02-3H3FNLTU
3ms Clip	39 g's	Resultant	39 g's



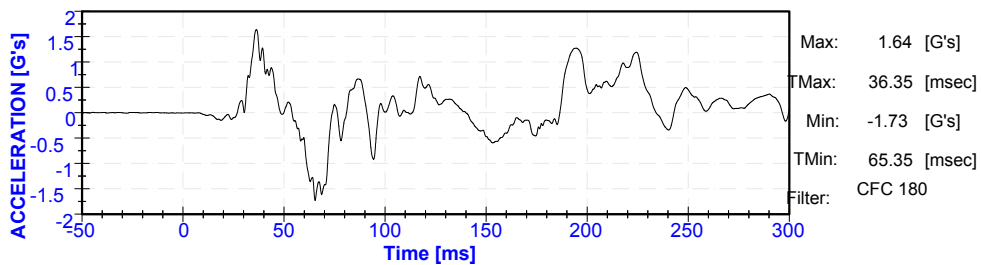
NHTSA FM04-18-045

Test Date: April 25,;

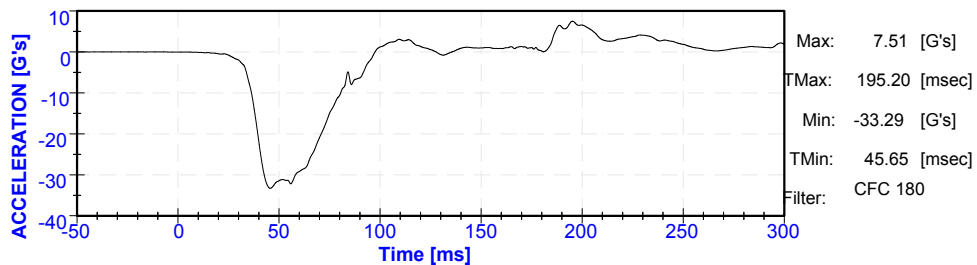
B Bench ATD Chest X Acceleration



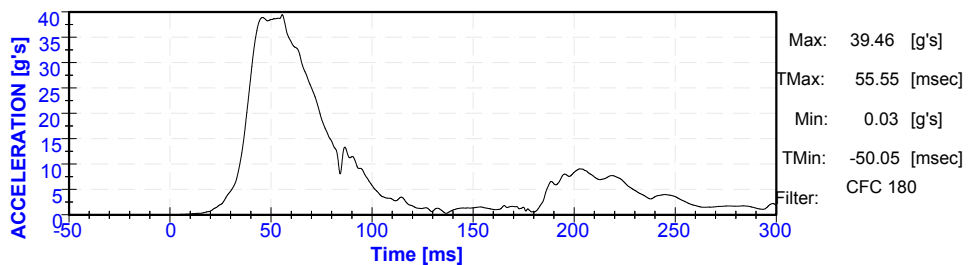
B Bench ATD Chest Y Acceleration



B Bench ATD Chest Z Acceleration



B Bench ATD Chest Resultant Acceleration



DATA SHEET 23
OCCUPANT EXCURSION – TEST 2
(FMVSS 213, S5.1.3, S5.1.4, S5.2.1.1(c))

Report No.:	213-CAL-18-040	Sled Test No.	FM04-18-45B
Test Date:	25 April 2018	Item Code	040-196321-02-3H3FNLTU

FORWARD-FACING RESTRAINTS


Section	Requirement	Measurement	Pass / Fail
S5.1.3.1	Torso Retention – CRS shall retain the torso within system		Pass
S5.1.3.1(a)(1)	Head Excursion - ≤ 720 mm (28.4 in.) with tether ≤ 813 mm (32 in.) No tether	524	Pass
S5.1.3.1(a)(2)	Knee Excursion - ≤ 91.5 cm (36 in.)	685	Pass
S5.2.1.1(c)	Head-Torso Angle - Rearward change ≤ 45 degrees	≤ 45°	Pass

REAR-FACING RESTRAINTS

Section	Requirement	Measurement	Pass / Fail
S5.1.3.2	Torso Retention – CRS shall retain the torso within system		N/A
S5.1.3.2	Head Target Excursion – Not beyond restraint's top and forward edge		N/A
S5.1.4	Back Support Angle - Angle between the back support surface and vertical ≤ 70 degrees	N/A	N/A
S5.2.1.1(c)	Head-Torso Angle - Rearward change ≤ 45 degrees	N/A	N/A

Remarks

Excursion camera locations (forward of Z point) are 28.4", Camera speed = 2000fps and focal length of lenses = 12.5mm

Recorded by: 
 Adam Hardbattle, SLED
 Engineer

Date: April 27, 2018

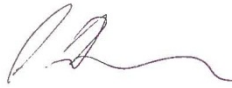
DATA SHEET 24
OCCUPANT EXCURSION – TEST 2
(FMVSS 213, S5.1.3.3)

CAR BED RESTRAINTS

Section	Requirement	Measurement	Pass / Fail
Head – Torso Retention (FMVSS 213, S5.1.3.3)	Retain within confines of system	N/A	N/A

Remarks

Recorded by: _____



Adam Hardbatt, SLED
Engineer

Date: _____

April 27, 2018

**DATA SHEET 25
DYNAMIC IMPACT TEST CONDITIONS – TEST 3
(FMVSS 213, S6.1)**

Report No.:	213-CAL-18-040	Sled Test No.	FM04-18-46A
Test Date:	25 April 2018	Item Code	040-196321-03-12CFNLTU

Laboratory Ambient Conditions During Testing:

Temperature Degrees C (F)	21.6C (70.9F)
Relative Humidity %	46.3%

Pulse:

Test Configuration (I or II):	I
Velocity (km/h (mph)):	47.2 km/h (29.3 mph)

Dummy:

Dummy Description:	CRABI 12 Month Old (Part 572R)
Dummy Serial Number:	085

Restraint Installation:

Installed Direction:	Forward Facing
Base Usage:	Other Configuration
Attachment Method:	Lower Anchors
Tether Usage:	Top Tether
Seat Back Position:	Upright - 4
Internal Shoulder Harness Position:	Slot 6, Counted from bottom up
Buckle Harness Position:	Forward

Remarks:

Pre and Post Test Photos are presented in Section 9.

Recorded by: 

Adam Hardbattle, SLED
Engineer

Date: April 30, 2018

DYNAMIC IMPACT SLED PULSE – TEST 3 (FMVSS 213, S6.1)

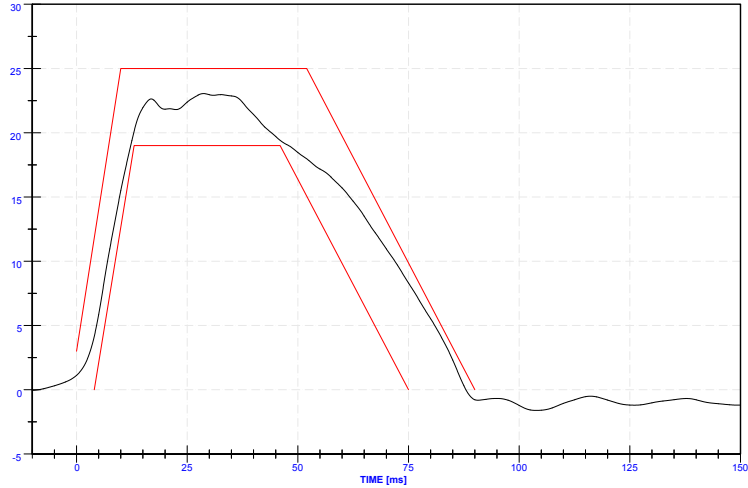
Report No.:	213-CAL-18-040	Sled Test No.:	FM04-18-46A
Test Date:	25 April 2018	Item Code	040-196321-03-12CFNLTU



NHTSA FM04-18-046

Test Date: April 25, 2018

SLED Pulse Corridor



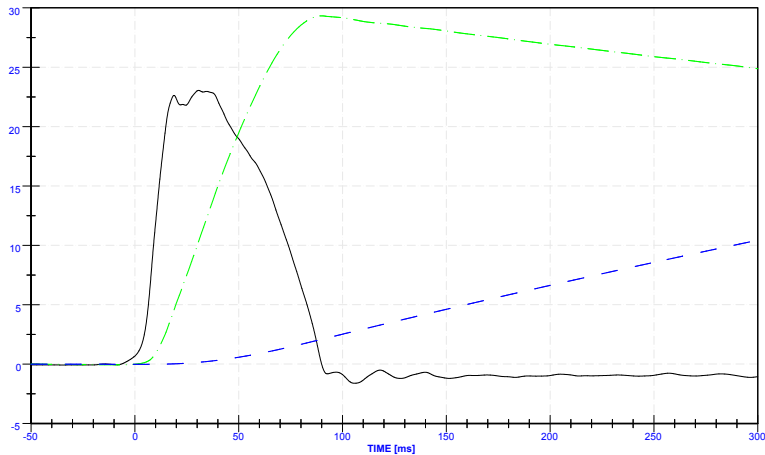
	Maximum	Time (ms)	Filter Class	Legend
SLED Acceleration (G's)	23.05	30.8	CFC 60	S0SLED0000R00ACXD



NHTSA FM04-18-046

Test Date: April 25, 2018

SLED Pulse



	Maximum	Time (ms)	Filter Class	Legend
SLED Acceleration (G's)	23.05	105.8	CFC 60	S0SLED000000ACXD
SLED Velocity (mph)	29.32	-6.1	CFC 180	S0SLED000000VAXC
SLED Displacement (ft)	10.44	0.5	CFC 180	S0SLED000000DVXC

DATA SHEET 26
BELT RESTRAINT – TEST 3
(FMVSS 213, S5.4.3)

Report No.:	213-CAL-18-040	Sled Test No.	FM04-18-46A
Test Date:	25 April 2018	Item Code	040-196321-03-12CFNLTU

Section	Requirement	Pass / Fail
S5.4.3.1	Snug Fit of Belts. Belts that are part of the restraint and designed to restrain the child are adjustable to snugly fit any child of height and weight identified by the manufacturer in accordance with the manufacturers installation instructions.	Pass

Section	Requirement	Yes / No	Pass / Fail
S5.4.3.2	Direct Restraint. Belts impose no loads on the child resulting from mass of the system or the test seat		Pass
	The restraint has one or more belts that contact the dummy for restraint	Yes	If all are "Yes" Restraint fails S5.4.3.2
	The restraint has a rigid structure behind the dummy	Yes	
	The restraint could move relative to the belt	No	

Section	Requirement	Pass / Fail
S5.4.3.3	Seating Systems. Except for harness and infant restraints for children up to 10kg (22lb), each restraint designed for a child in a seated position and having belts shall provide.	Pass
S5.4.3.3(a)	Upper torso restraint (either belts or a shield)	Pass
S5.4.3.3(b)	Lower torso restraint (either belts or a shield)	Pass
S5.4.3.3(c)	Crotch restraint (either a belt attached to the lap belt or a shield)	Pass

Section	Requirement	Pass / Fail
S5.4.3.4	Harnesses. Each harness shall:	N/A
S5.4.3.3(a)	Provide upper torso restraint)	N/A
S5.4.3.3(b)	Provide lower torso restraint (lap & crotch)	N/A
S5.4.3.3(c)	Prevent Standing	N/A

Remarks

Recorded by: 
Adam Hardbattle, SLED Engineer

Date: April 30, 2018

DATA SHEET 27
BUCKLE RELEASE – TEST 3
(FMVSS 213, S5.4.3.5, S6.2)


Report No.:	213-CAL-18-040	Sled Test No.	FM04-18-46A
Test Date:	25 April 2018	Item Code	040-196321-03-12CFNLTU

Section	Requirement	Measurement	Pass / Fail
S5.4.3.5(a)	Pre-Impact Release Force Releases under 40-60 N	54 N	Pass
S5.4.3.5(a)	Post-Impact Release Force* Releases \leq 71 N	60 N	Pass
S5.4.3.5(a)	Minimum Surface Area of Buckle \geq 3.9 cm ² (0.6 in ²)	4 cm ²	Pass
S5.4.3.5(a)	Buckle Integrity Shall not release during testing	No Release	Pass

*Not applicable unless determined using the largest test dummy specified in S7 for use in testing the seat.

Remarks

None

Recorded by: 
Adam Hardbattle, SLED
Engineer

Date: April 30, 2018

DATA SHEET 28
SYSTEM INTEGRITY – TEST 3
(FMVSS 213, S5.1.1)

Report No.:	213-CAL-18-040	Sled Test No.	FM04-18-46A
Test Date:	25 April 2018	Item Code	040-196321-03-12CFNLTU

S5.1.1 When dynamically tested, the child restraint shall:

Section	Requirement	Pass / Fail
S5.1.1(a)	Structural Integrity – Exhibit no complete separation of any load bearing structural element	Pass
	Exhibit no partial separation with exposing surfaces with a radius of less than 9.53 mm (3/8 in.)	Pass
	Exhibit no partial separation with exposing surfaces with protrusions greater than 6.35 mm (1/4 in.)	Pass
S5.1.1(b)(1)	Adjustment Position – Remain in the same adjustment position during the test that it was immediately before the test	Pass
S5.1.1(b)(2)(ii)	Exposed Openings – Have no exposed opening larger than 6.35 mm (1/4 in.) before the test becomes smaller during the testing as a result of the movement of the seating service relative to the restraint system as a whole.	Pass
S5.1.1(c)	Seating Surface Angle – Forward facing restraints do not allow the angle between the system's back support surface and seating surface and seating surface to be less than 45 degrees at the completion of the test	Pass

Remarks

None

Recorded by: 
 Adam Hardbatt, SLED
 Engineer

Date: April 30, 2018

**DATA SHEET 29
INJURY CRITERIA – TEST 3
(FMVSS 213, S5.1.2)**

Report No.:	213-CAL-18-040	Sled Test No.	FM04-18-46A
Test Date:	25 April 2018	Item Code	040-196321-03-12CFNLTU

Section	Requirement
S5.1.2.1(a)	Head Injury Criterion The maximum calculated head injury criterion for a 36 millisecond time interval (HIC36) shall not exceed 1,000. HIC is not calculated when using the 6-year-old weighted and 10-year-old test dummies.
S5.1.2.1(b)	Chest Injury Criterion The chest acceleration shall not exceed 60g for intervals whose cumulative duration is more than 3 milliseconds

Head Injury Criterion Results

Calculated HIC36	Pass / Fail
198	Pass

Chest Injury Criterion Results

Max Acceleration lasting 3ms (g)	Pass / Fail
43	Pass

Remarks

Recorded by: 
 Adam Hardbattle, SLED
 Engineer

Date: April 30, 2018

**INJURY CRITERIA – HEAD ACCELERATION PLOTS – TEST 3
(FMVSS 213, S5.1.2)**

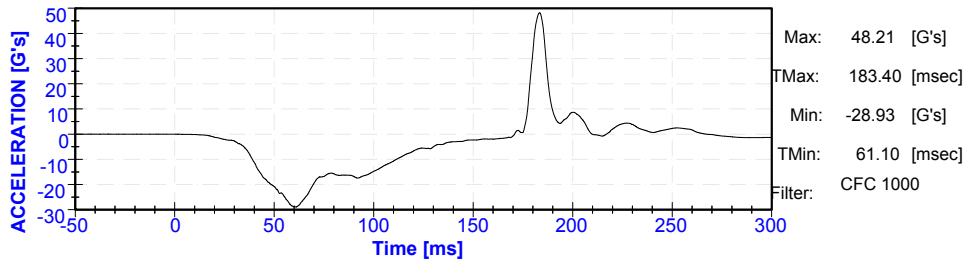
Report No.:	213-CAL-18-040	Sled Test No.	FM04-18-46A
Test Date:	25 April 2018	Item Code	040-196321-03-12CFNLTU
HIC 36ms	198	Resultant	50 g's



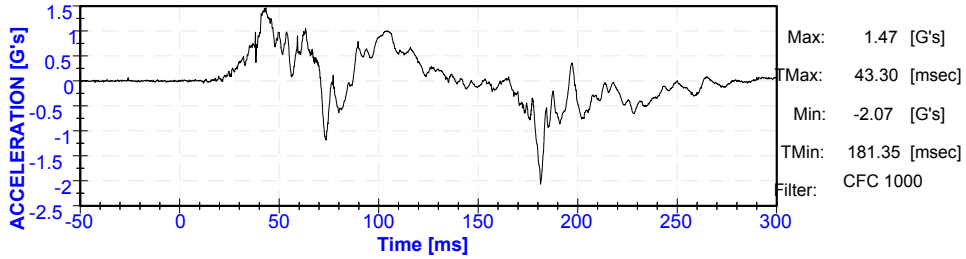
NHTSA FM04-18-046

Test Date: April 25, 2018

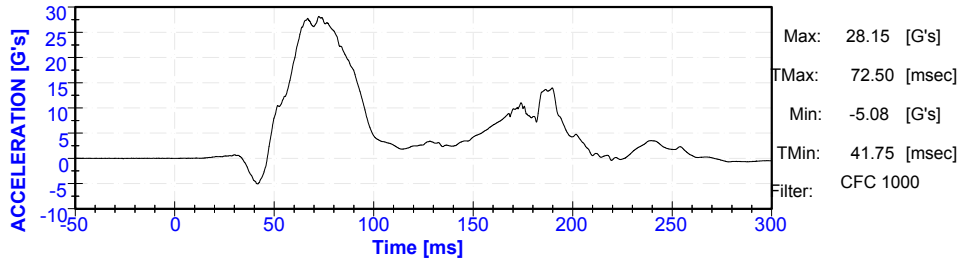
A Bench ATD Head X Acceleration



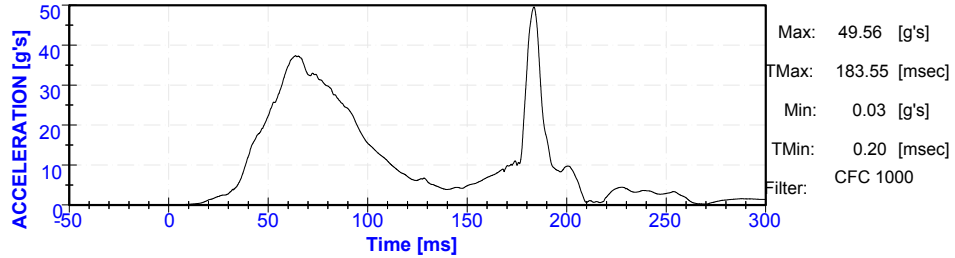
A Bench ATD Head Y Acceleration



A Bench ATD Head Z Acceleration



A Bench ATD Head Resultant Acceleration



INJURY CRITERIA – CHEST ACCELERATION PLOTS – TEST 3 (FMVSS 213, S5.1.2)

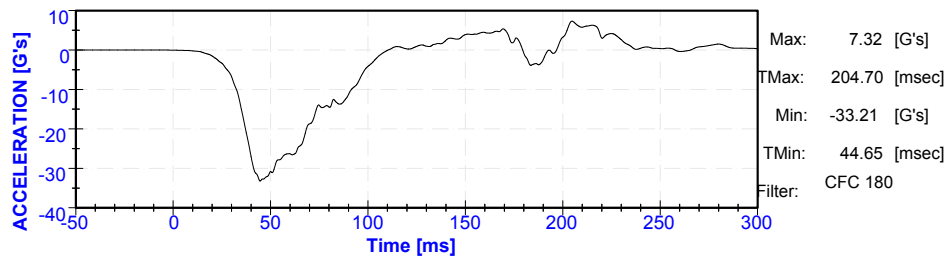
Report No.:	213-CAL-18-040	Sled Test No.	FM04-18-46A
Test Date:	25 April 2018	Item Code	040-196321-03-12CFNLTU
3ms Clip	43 g's	Resultant	44 g's



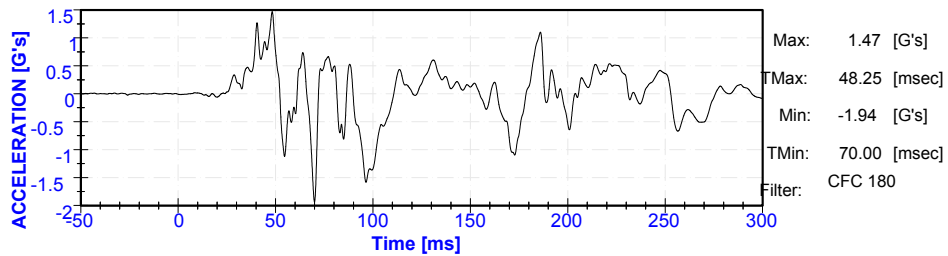
NHTSA FM04-18-046

Test Date: April 25, 2018

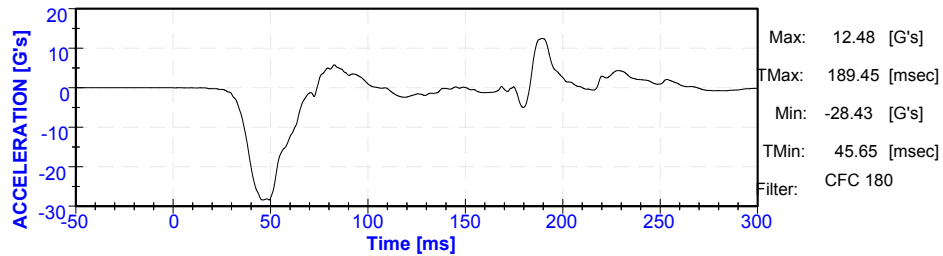
A Bench ATD Chest X Acceleration



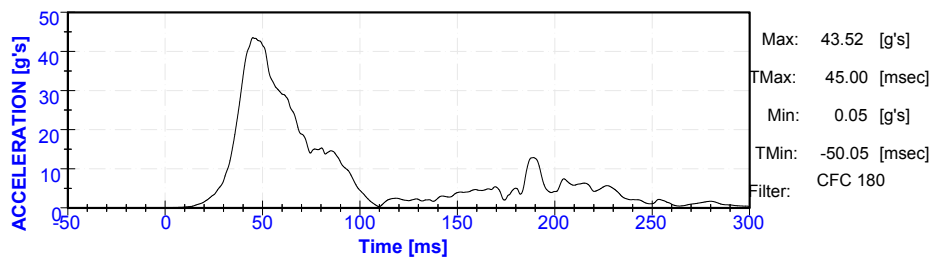
A Bench ATD Chest Y Acceleration



A Bench ATD Chest Z Acceleration



A Bench ATD Chest Resultant Acceleration



DATA SHEET 30
OCCUPANT EXCURSION – TEST 3
(FMVSS 213, S5.1.3, S5.1.4, S5.2.1.1(c))

Report No.:	213-CAL-18-040	Sled Test No.	FM04-18-46A
Test Date:	25 April 2018	Item Code	040-196321-03-12CFNLTU

FORWARD-FACING RESTRAINTS


Section	Requirement	Measurement	Pass / Fail
S5.1.3.1	Torso Retention – CRS shall retain the torso within system		Pass
S5.1.3.1(a)(1)	Head Excursion - ≤ 720 mm (28.4 in.) with tether ≤ 813 mm (32 in.) No tether	491	Pass
S5.1.3.1(a)(2)	Knee Excursion - ≤ 91.5 cm (36 in.)	527	Pass
S5.2.1.1(c)	Head-Torso Angle - Rearward change ≤ 45 degrees	≤ 45°	Pass

REAR-FACING RESTRAINTS

Section	Requirement	Measurement	Pass / Fail
S5.1.3.2	Torso Retention – CRS shall retain the torso within system		N/A
S5.1.3.2	Head Target Excursion – Not beyond restraint's top and forward edge		N/A
S5.1.4	Back Support Angle - Angle between the back support surface and vertical ≤ 70 degrees	N/A	N/A
S5.2.1.1(c)	Head-Torso Angle - Rearward change ≤ 45 degrees	N/A	N/A

Remarks

Excursion camera locations (forward of Z point) are 28.4", Camera speed = 2000fps and focal length of lenses = 12.5mm

Recorded by: 
 Adam Hardbattle, SLED
 Engineer

Date: April 30, 2018

**DATA SHEET 31
OCCUPANT EXCURSION – TEST 3
(FMVSS 213, S5.1.3.3)**

CAR BED RESTRAINTS

Section	Requirement	Measurement	Pass / Fail
Head – Torso Retention (FMVSS 213, S5.1.3.3)	Retain within confines of system	N/A	N/A

Remarks

Recorded by: _____



Adam Hardbatt, SLED
Engineer

Date: _____

April 30, 2018

**DATA SHEET 32
DYNAMIC IMPACT TEST CONDITIONS – TEST 4
(FMVSS 213, S6.1)**

Report No.:	213-CAL-18-040	Sled Test No.	FM04-18-46B
Test Date:	25 April 2018	Item Code	040-196321-04-3H3FNLFU

Laboratory Ambient Conditions During Testing:

Temperature Degrees C (F)	21.6C (70.9F)
Relative Humidity %	46.3%

Pulse:

Test Configuration (I or II):	I
Velocity (km/h (mph)):	47.2 km/h (29.3 mph)

Dummy:

Dummy Description:	H3 3 Year Old (Part 572R)
Dummy Serial Number:	034


Restraint Installation:

Installed Direction:	Forward Facing
Base Usage:	Other Configuration
Attachment Method:	Low Anchors
Tether Usage:	NO, Tether Free
Seat Back Position:	Upright - 4
Internal Shoulder Harness Position:	Slot 7, Counted from bottom up
Buckle Harness Position:	Forward

Remarks:

Pre and Post Test Photos are presented in Section 9.

Recorded by: _____


Adam Hardbattle, SLED
Engineer

Date: _____

April 30, 2018

**DYNAMIC IMPACT SLED PULSE – TEST 4
(FMVSS 213, S6.1)**

Report No.:	213-CAL-18-040
Test Date:	25 April 2018

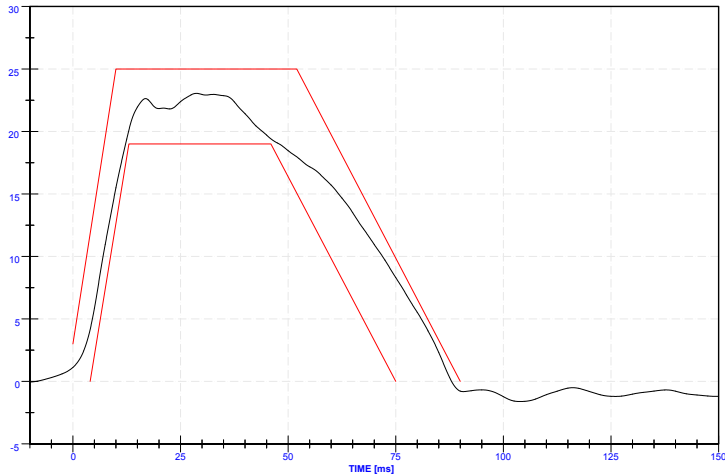
Sled Test No.	FM04-18-46B
Item Code	040-196321-04-3H3FNLFU



NHTSA FM04-18-046

Test Date: April 25, 2018

SLED Pulse Corridor



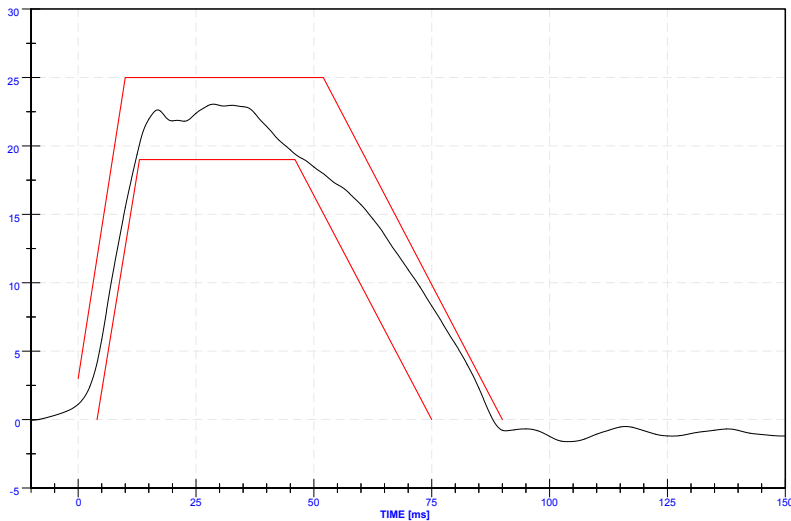
	Maximum	Time (ms)	Filter Class	Legend
SLED Acceleration (G's)	23.05	30.8	CFC 60	S0SLED000B00ACXD



NHTSA FM04-18-046

Test Date: April 25, 2018

SLED Pulse Corridor



	Maximum	Time (ms)	Filter Class	Legend
SLED Acceleration (G's)	23.05	30.8	CFC 60	S0SLED000B00ACXD

DATA SHEET 33
BELT RESTRAINT – TEST 4
(FMVSS 213, S5.4.3)

Report No.:	213-CAL-18-040	Sled Test No.	FM04-18-46B
Test Date:	25 April 2018	Item Code	040-196321-04-3H3FNLFU

Section	Requirement	Pass / Fail
S5.4.3.1	Snug Fit of Belts. Belts that are part of the restraint and designed to restrain the child are adjustable to snugly fit any child of height and weight identified by the manufacturer in accordance with the manufacturers installation instructions.	Pass

Section	Requirement	Yes / No	Pass / Fail
S5.4.3.2	Direct Restraint. Belts impose no loads on the child resulting from mass of the system or the test seat		Pass
	The restraint has one or more belts that contact the dummy for restraint	Yes	If all are "Yes" Restraint fails S5.4.3.2
	The restraint has a rigid structure behind the dummy	Yes	
	The restraint could move relative to the belt	No	

Section	Requirement	Pass / Fail
S5.4.3.3	Seating Systems. Except for harness and infant restraints for children up to 10kg (22lb), each restraint designed for a child in a seated position and having belts shall provide.	Pass
S5.4.3.3(a)	Upper torso restraint (either belts or a shield)	Pass
S5.4.3.3(b)	Lower torso restraint (either belts or a shield)	Pass
S5.4.3.3(c)	Crotch restraint (either a belt attached to the lap belt or a shield)	Pass

Section	Requirement	Pass / Fail
S5.4.3.4	Harnesses. Each harness shall:	N/A
S5.4.3.3(a)	Provide upper torso restraint)	N/A
S5.4.3.3(b)	Provide lower torso restraint (lap & crotch)	N/A
S5.4.3.3(c)	Prevent Standing	N/A

Remarks

Recorded by: 
Adam Hardbattle, SLED Engineer

Date: April 30, 2018

DATA SHEET 34
BUCKLE RELEASE – TEST 4
(FMVSS 213, S5.4.3.5, S6.2)


Report No.:	213-CAL-18-040	Sled Test No.	FM04-18-46B
Test Date:	25 April 2018	Item Code	040-196321-04-3H3FNLFU

Section	Requirement	Measurement	Pass / Fail
S5.4.3.5(a)	Pre-Impact Release Force Releases under 40-60 N	55 N	Pass
S5.4.3.5(a)	Post-Impact Release Force* Releases ≤ 71 N	55 N	Pass
S5.4.3.5(a)	Minimum Surface Area of Buckle ≥ 3.9 cm ² (0.6 in ²)	4 cm ²	Pass
S5.4.3.5(a)	Buckle Integrity Shall not release during testing	No Release	Pass

*Not applicable unless determined using the largest test dummy specified in S7 for use in testing the seat.

Remarks

None

Recorded by: 
Adam Hardbattle, SLED
Engineer

Date: April 30, 2018

DATA SHEET 35
SYSTEM INTEGRITY – TEST 4
(FMVSS 213, S5.1.1)

Report No.:	213-CAL-18-040	Sled Test No.	FM04-18-46B
Test Date:	25 April 2018	Item Code	040-196321-04-3H3FNLFU

S5.1.1 When dynamically tested, the child restraint shall:

Section	Requirement	Pass / Fail
S5.1.1(a)	Structural Integrity – Exhibit no complete separation of any load bearing structural element	Pass
	Exhibit no partial separation with exposing surfaces with a radius of less than 9.53 mm (3/8 in.)	Pass
	Exhibit no partial separation with exposing surfaces with protrusions greater than 6.35 mm (1/4 in.)	Pass
S5.1.1(b)(1)	Adjustment Position – Remain in the same adjustment position during the test that it was immediately before the test	Pass
S5.1.1(b)(2)(ii)	Exposed Openings – Have no exposed opening larger than 6.35 mm (1/4 in.) before the test becomes smaller during the testing as a result of the movement of the seating service relative to the restraint system as a whole.	Pass
S5.1.1(c)	Seating Surface Angle – Forward facing restraints do not allow the angle between the system's back support surface and seating surface and seating surface to be less than 45 degrees at the completion of the test	Pass

Remarks

None

Recorded by: 
 Adam Hardbatt, SLED
 Engineer

Date: April 30, 2018

**DATA SHEET 36
INJURY CRITERIA – TEST 4
(FMVSS 213, S5.1.2)**

Report No.:	213-CAL-18-040	Sled Test No.	FM04-18-46B
Test Date:	25 April 2018	Item Code	040-196321-04-3H3FNLFU

Section	Requirement
S5.1.2.1(a)	Head Injury Criterion The maximum calculated head injury criterion for a 36 millisecond time interval (HIC36) shall not exceed 1,000. HIC is not calculated when using the 6-year-old weighted and 10-year-old test dummies.
S5.1.2.1(b)	Chest Injury Criterion The chest acceleration shall not exceed 60g for intervals whose cumulative duration is more than 3 milliseconds

Head Injury Criterion Results

Calculated HIC36	Pass / Fail
337	Pass

Chest Injury Criterion Results

Max Acceleration lasting 3ms (g)	Pass / Fail
40	Pass

Remarks

Recorded by: 
Adam Hardbattle, SLED
Engineer

Date: April 30, 2018

**INJURY CRITERIA – HEAD ACCELERATION PLOTS – TEST 4
(FMVSS 213, S5.1.2)**

Report No.:	213-CAL-18-040
Test Date:	25 April 2018
HIC 36ms	337

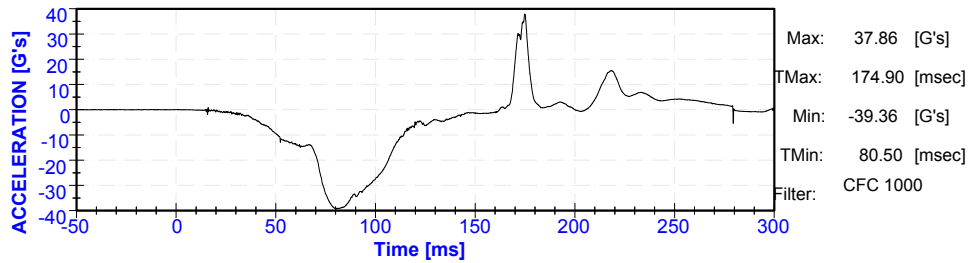
Sled Test No.	FM04-18-46B
Item Code	040-196321-04-3H3FNLFU
Resultant	46 g's



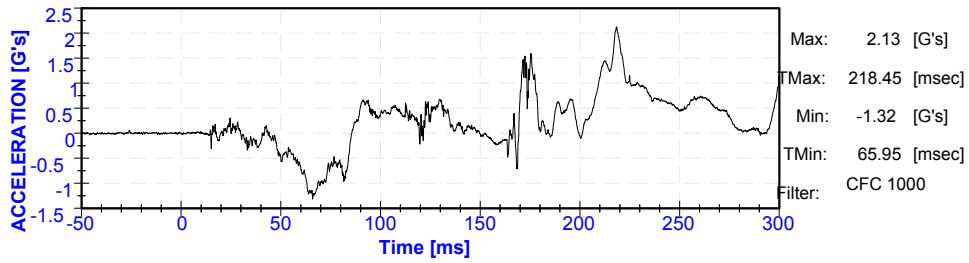
NHTSA FM04-18-046

Test Date: April 25, 2018

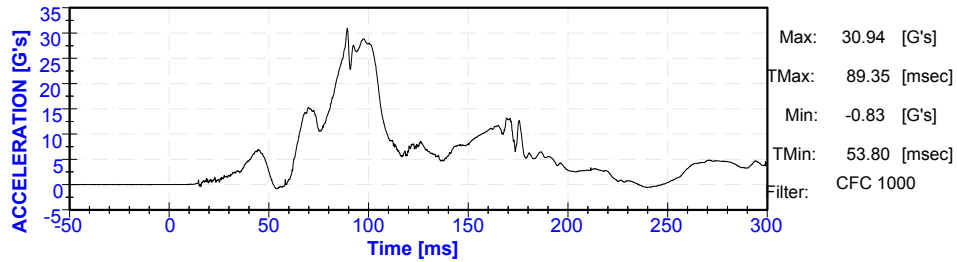
B Bench ATD Head X Acceleration



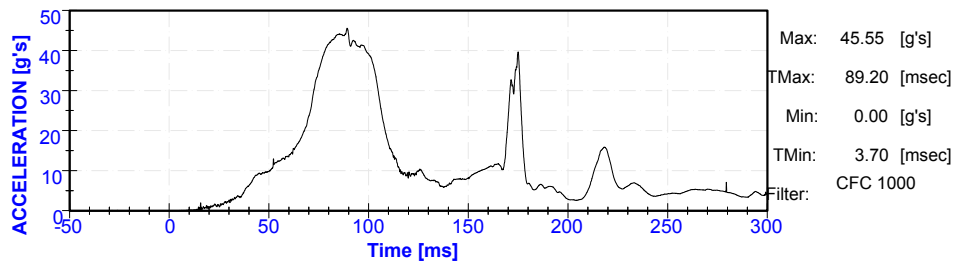
B Bench ATD Head Y Acceleration



B Bench ATD Head Z Acceleration



B Bench ATD Head Resultant Acceleration



**INJURY CRITERIA – CHEST ACCELERATION PLOTS – TEST 4
(FMVSS 213, S5.1.2)**

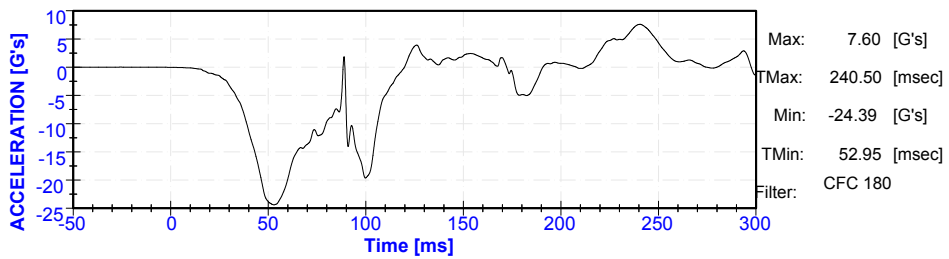
Report No.:	213-CAL-18-040	Sled Test No.	FM04-18-46B
Test Date:	25 April 2018	Item Code	040-196321-04-3H3FNLFU
3ms Clip	40 g's	Resultant	41 g's



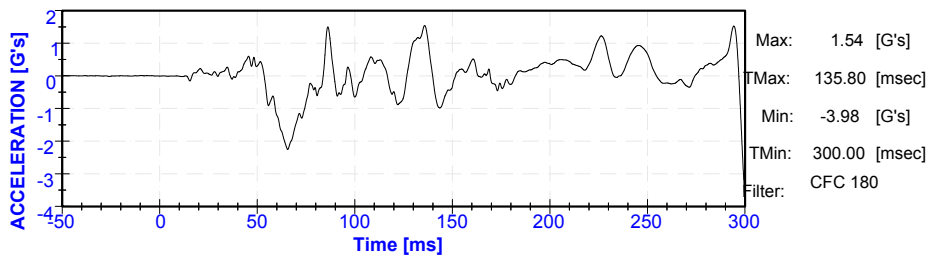
NHTSA FM04-18-046

Test Date: April 25, 2018

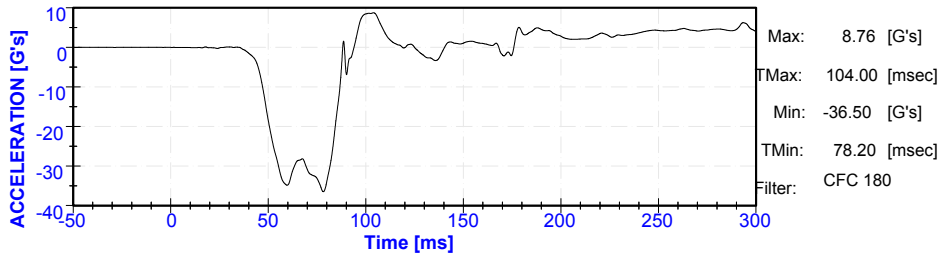
B Bench ATD Chest X Acceleration



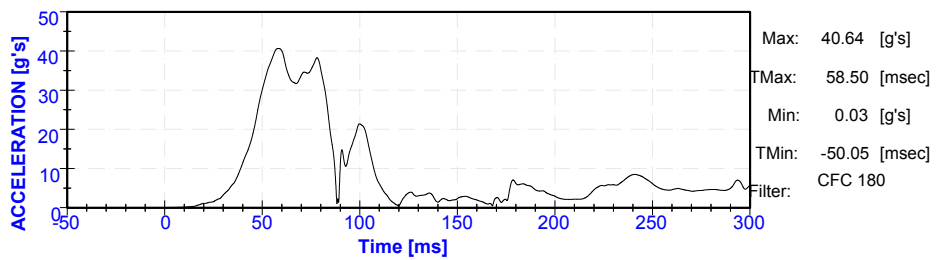
B Bench ATD Chest Y Acceleration



B Bench ATD Chest Z Acceleration



B Bench ATD Chest Resultant Acceleration



**DATA SHEET 37
OCCUPANT EXCURSION – TEST 4
(FMVSS 213, S5.1.3, S5.1.4, S5.2.1.1(c))**

Report No.:	213-CAL-18-040	Sled Test No.	FM04-18-46B
Test Date:	25 April 2018	Item Code	040-196321-04-3H3FNLFU

FORWARD-FACING RESTRAINTS


Section	Requirement	Measurement	Pass / Fail
S5.1.3.1	Torso Retention – CRS shall retain the torso within system		Pass
S5.1.3.1(a)(1)	Head Excursion - ≤ 720 mm (28.4 in.) with tether ≤ 813 mm (32 in.) No tether	675	Pass
S5.1.3.1(a)(2)	Knee Excursion - ≤ 91.5 cm (36 in.)	807	Pass
S5.2.1.1(c)	Head-Torso Angle - Rearward change ≤ 45 degrees	≤ 45°	Pass

REAR-FACING RESTRAINTS

Section	Requirement	Measurement	Pass / Fail
S5.1.3.2	Torso Retention – CRS shall retain the torso within system		N/A
S5.1.3.2	Head Target Excursion – Not beyond restraint's top and forward edge		N/A
S5.1.4	Back Support Angle - Angle between the back support surface and vertical ≤ 70 degrees	N/A	N/A
S5.2.1.1(c)	Head-Torso Angle - Rearward change ≤ 45 degrees	N/A	N/A

Remarks

Excursion camera locations (forward of Z point) are 28.4", Camera speed = 2000fps and focal length of lenses = 12.5mm

Recorded by: 
Adam Hardbattle, SLED
Engineer

Date: April 30, 2018

**DATA SHEET 38
OCCUPANT EXCURSION – TEST 4
(FMVSS 213, S5.1.3.3)**

CAR BED RESTRAINTS

Section	Requirement	Measurement	Pass / Fail
Head – Torso Retention (FMVSS 213, S5.1.3.3)	Retain within confines of system	N/A	N/A

Remarks

Recorded by: _____



Adam Hardbatt, SLED
Engineer

Date: _____

April 30, 2018

DATA SHEET 39
DYNAMIC IMPACT TEST CONDITIONS – TEST 5
(FMVSS 213, S6.1)

Report No.:	213-CAL-18-011	Sled Test No.	FM04-18-47A
Test Date:	25 April 2018	Item Code	040-196321-05-6H3FN2TU

Laboratory Ambient Conditions During Testing:

Temperature Degrees C (F)	21.5C (70.7 F)
Relative Humidity %	48.4%

Pulse:

Test Configuration (I or II):	I
Velocity (km/h (mph)):	47.4 km/h (29.5 mph)

Dummy:

Dummy Description:	H3 6 Year Old (Part 572R)
Dummy Serial Number:	158


Restraint Installation:

Installed Direction:	Forward Facing
Base Usage:	Other Configuration
Attachment Method:	Lap belt
Tether Usage:	Top Tether
Seat Back Position:	Upright - 6
Internal Shoulder Harness Position:	Slot 10, Counted from bottom up
Buckle Harness Position:	Forward

Remarks:

Pre and Post Test Photos are presented in Section 9.

Recorded by: _____


Adam Hardbattle, SLED
Engineer

Date: _____ April 30, 2018

DYNAMIC IMPACT SLED PULSE – TEST 5 (FMVSS 213, S6.1)

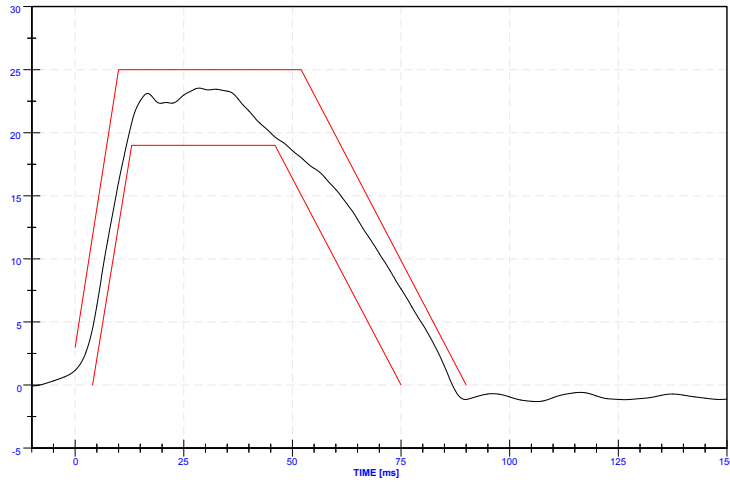
Report No.:	213-CAL-18-040	Sled Test No.:	FM04-18-47A
Test Date:	25 April 2018	Item Code	040-196321-05-6H3FN2TU



NHTSA FM04-18-047

Test Date: April 25, 2018

SLED Pulse Corridor



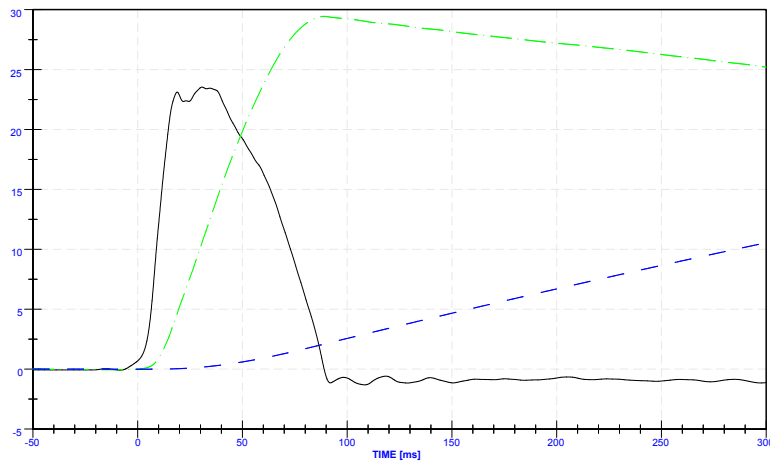
	Maximum	Time (ms)	Filter Class	Legend
SLED Acceleration (Gs)	23.53	30.8	CFC 60	S0SLED0000R00ACXD



NHTSA FM04-18-047

Test Date: April 25, 2018

SLED Pulse



	Maximum	Time (ms)	Filter Class	Legend
SLED Acceleration (G's)	23.53	108.4	CFC 60	S0SLED000000ACXD
SLED Velocity (mph)	29.43	-5.5	CFC 180	S0SLED000000VAXC
SLED Displacement (ft)	10.54	0.5	CFC 180	S0SLED000000DVXC

DATA SHEET 40
BELT RESTRAINT – TEST 5
(FMVSS 213, S5.4.3)

Report No.:	213-CAL-18-040	Sled Test No.	FM04-18-47A
Test Date:	25 April 2018	Item Code	040-196321-05-6H3FN2TU

Section	Requirement	Pass / Fail
S5.4.3.1	Snug Fit of Belts. Belts that are part of the restraint and designed to restrain the child are adjustable to snugly fit any child of height and weight identified by the manufacturer in accordance with the manufacturers installation instructions.	Pass


Section	Requirement	Yes / No	Pass / Fail
S5.4.3.2	Direct Restraint. Belts impose no loads on the child resulting from mass of the system or the test seat		Pass
	The restraint has one or more belts that contact the dummy for restraint	Yes	If all are "Yes" Restraint fails S5.4.3.2
	The restraint has a rigid structure behind the dummy	Yes	
	The restraint could move relative to the belt	No	

Section	Requirement	Pass / Fail
S5.4.3.3	Seating Systems. Except for harness and infant restraints for children up to 10kg (22lb), each restraint designed for a child in a seated position and having belts shall provide.	Pass
S5.4.3.3(a)	Upper torso restraint (either belts or a shield)	Pass
S5.4.3.3(b)	Lower torso restraint (either belts or a shield)	Pass
S5.4.3.3(c)	Crotch restraint (either a belt attached to the lap belt or a shield)	Pass

Section	Requirement	Pass / Fail
S5.4.3.4	Harnesses. Each harness shall:	N/A
S5.4.3.3(a)	Provide upper torso restraint)	N/A
S5.4.3.3(b)	Provide lower torso restraint (lap & crotch)	N/A
S5.4.3.3(c)	Prevent Standing	N/A

Remarks

Recorded by:


 Adam Hardbattle, SLED Engineer

Date:

April 30, 2018

**DATA SHEET 41
BUCKLE RELEASE – TEST 5
(FMVSS 213, S5.4.3.5, S6.2)**


Report No.:	213-CAL-18-040	Sled Test No.	FM04-18-47A
Test Date:	25 April 2018	Item Code	040-196321-05-6H3FN2TU

Section	Requirement	Measurement	Pass / Fail
S5.4.3.5(a)	Pre-Impact Release Force Releases under 40-60 N	52 N	Pass
S5.4.3.5(a)	Post-Impact Release Force* Releases \leq 71 N	61 N	Pass
S5.4.3.5(a)	Minimum Surface Area of Buckle \geq 3.9 cm ² (0.6 in ²)	4 cm ²	Pass
S5.4.3.5(a)	Buckle Integrity Shall not release during testing	No Release	Pass

*Not applicable unless determined using the largest test dummy specified in S7 for use in testing the seat.

Remarks

None

Recorded by: 
Adam Hardbattle, SLED
Engineer

Date: April 30, 2018

DATA SHEET 42
SYSTEM INTEGRITY – TEST 5
(FMVSS 213, S5.1.1)


Report No.:	213-CAL-18-040	Sled Test No.	FM04-18-47A
Test Date:	25 April 2018	Item Code	040-196321-05-6H3FN2TU

S5.1.1 When dynamically tested, the child restraint shall:

Section	Requirement	Pass / Fail
S5.1.1(a)	Structural Integrity – Exhibit no complete separation of any load bearing structural element	Pass
	Exhibit no partial separation with exposing surfaces with a radius of less than 9.53 mm (3/8 in.)	Pass
	Exhibit no partial separation with exposing surfaces with protrusions greater than 6.35 mm (1/4 in.)	Pass
S5.1.1(b)(1)	Adjustment Position – Remain in the same adjustment position during the test that it was immediately before the test	Pass
S5.1.1(b)(2)(ii)	Exposed Openings – Have no exposed opening larger than 6.35 mm (1/4 in.) before the test becomes smaller during the testing as a result of the movement of the seating service relative to the restraint system as a whole.	Pass
S5.1.1(c)	Seating Surface Angle – Forward facing restraints do not allow the angle between the system's back support surface and seating surface and seating surface to be less than 45 degrees at the completion of the test	Pass

Remarks

None

Recorded by: 
 Adam Hardbattle, SLED
 Engineer

Date: April 30, 2018

**DATA SHEET 43
INJURY CRITERIA – TEST 5
(FMVSS 213, S5.1.2)**

Report No.:	213-CAL-18-040	Sled Test No.	FM04-18-47A
Test Date:	25 April 2018	Item Code	040-196321-05-6H3FN2TU

Section	Requirement
S5.1.2.1(a)	Head Injury Criterion The maximum calculated head injury criterion for a 36 millisecond time interval (HIC36) shall not exceed 1,000. HIC is not calculated when using the 6-year-old weighted and 10-year-old test dummies.
S5.1.2.1(b)	Chest Injury Criterion The chest acceleration shall not exceed 60g for intervals whose cumulative duration is more than 3 milliseconds

Head Injury Criterion Results

Calculated HIC36	Pass / Fail
362	Pass

Chest Injury Criterion Results

Max Acceleration lasting 3ms (g)	Pass / Fail
38	Pass

Remarks

Recorded by: 
Adam Hardbattle, SLED
Engineer

Date: April 30, 2018

**INJURY CRITERIA – HEAD ACCELERATION PLOTS – TEST 5
(FMVSS 213, S5.1.2)**

Report No.:	213-CAL-18-040
Test Date:	25 April 2018
HIC 36ms	362

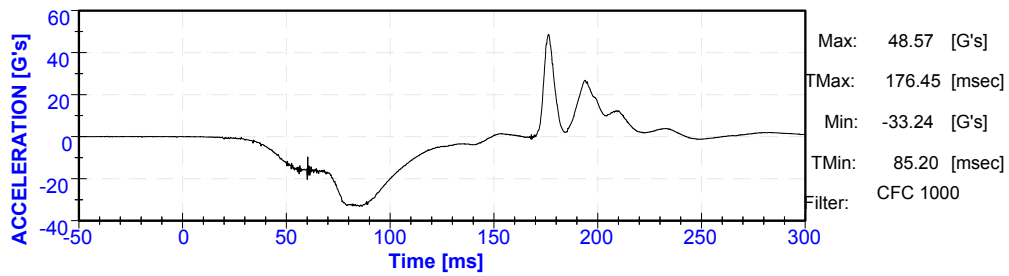
Sled Test No.	FM04-18-47A
Item Code	040-196321-05-6H3FN2TU
Resultant	51 g's



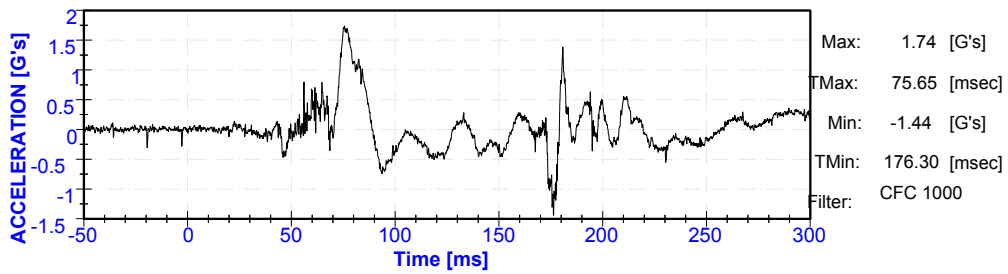
NHTSA FM04-18-047

Test Date: April 25, 2018

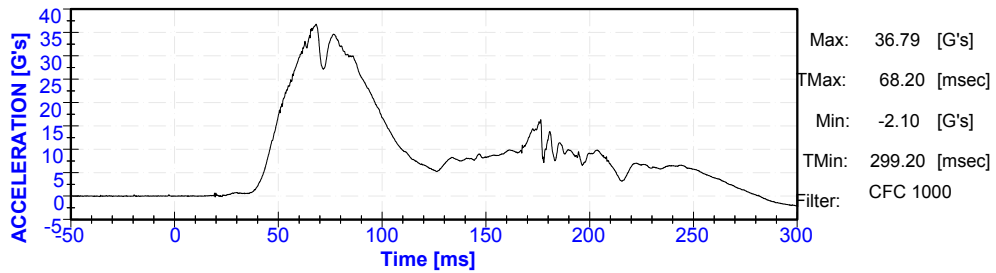
A Bench ATD Head X Acceleration



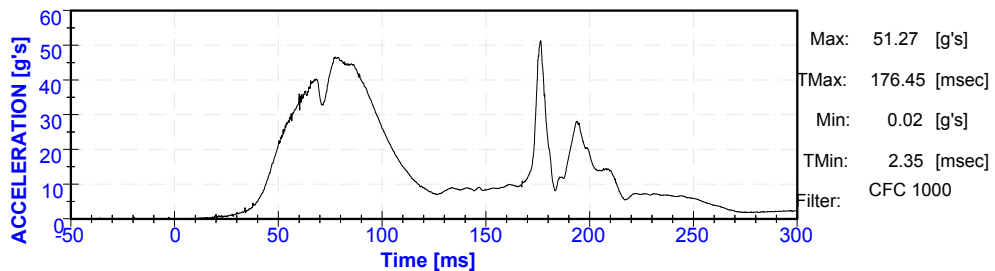
A Bench ATD Head Y Acceleration



A Bench ATD Head Z Acceleration



A Bench ATD Head Resultant Acceleration



INJURY CRITERIA – CHEST ACCELERATION PLOTS – TEST 5 (FMVSS 213, S5.1.2)

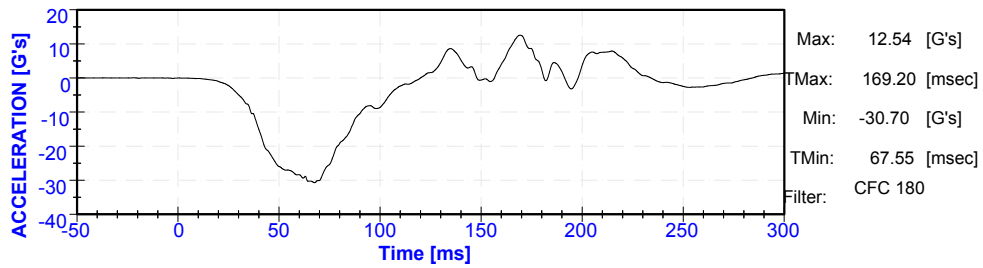
Report No.:	213-CAL-18-040	Sled Test No.	FM04-18-47A
Test Date:	25 April 2018	Item Code	040-196321-05-6H3FN2TU
3ms Clip	38 g's	Resultant	39 g's



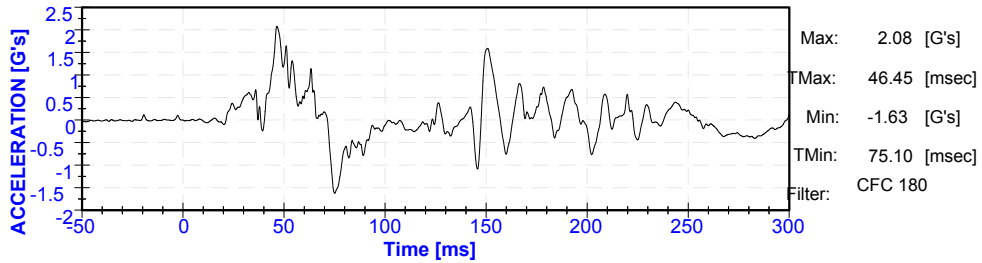
NHTSA FM04-18-047

Test Date: April 25,;

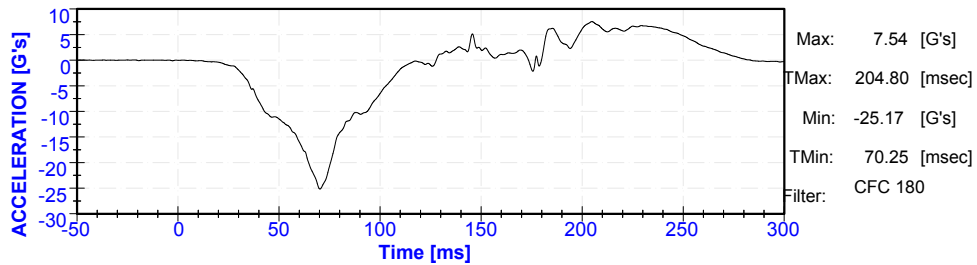
A Bench ATD Chest X Acceleration



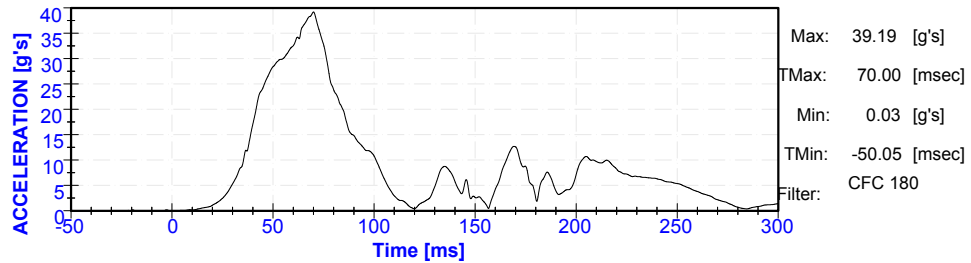
A Bench ATD Chest Y Acceleration



A Bench ATD Chest Z Acceleration



A Bench ATD Chest Resultant Acceleration



**DATA SHEET 44
OCCUPANT EXCURSION – TEST 5
(FMVSS 213, S5.1.3, S5.1.4, S5.2.1.1(c))**

Report No.:	213-CAL-18-040	Sled Test No.	FM04-18-47A
Test Date:	25 April 2018	Item Code	040-196321-05-6H3FN2TU

FORWARD-FACING RESTRAINTS

Section	Requirement	Measurement	Pass / Fail
S5.1.3.1	Torso Retention – CRS shall retain the torso within system		Pass
S5.1.3.1(a)(1)	Head Excursion - ≤ 720 mm (28.4 in.) with tether ≤ 813 mm (32 in.) No tether	549	Pass
S5.1.3.1(a)(2)	Knee Excursion - ≤ 91.5 cm (36 in.)	735	Pass
S5.2.1.1(c)	Head-Torso Angle - Rearward change ≤ 45 degrees	≤ 45°	Pass

REAR-FACING RESTRAINTS

Section	Requirement	Measurement	Pass / Fail
S5.1.3.2	Torso Retention – CRS shall retain the torso within system		N/A
S5.1.3.2	Head Target Excursion – Not beyond restraint’s top and forward edge		N/A
S5.1.4	Back Support Angle - Angle between the back support surface and vertical ≤ 70 degrees	N/A	N/A
S5.2.1.1(c)	Head-Torso Angle - Rearward change ≤ 45 degrees	N/A	N/A

Remarks

Excursion camera locations (forward of Z point) are 28.4”, Camera speed = 2000fps and focal length of lenses = 12.5mm

Recorded by: 
Adam Hardbattle, SLED
Engineer

Date: April 30, 2018


**DATA SHEET 45
OCCUPANT EXCURSION – TEST 5
(FMVSS 213, S5.1.3.3)**

CAR BED RESTRAINTS

Section	Requirement	Measurement	Pass / Fail
Head – Torso Retention (FMVSS 213, S5.1.3.3)	Retain within confines of system	N/A	N/A

Remarks

Recorded by: _____



Adam Hardbatt, SLED
Engineer

Date: _____

April 30, 2018

DATA SHEET 46
DYNAMIC IMPACT TEST CONDITIONS – TEST 6
(FMVSS 213, S6.1)

Report No.:	213-CAL-18-040	Sled Test No.	FM04-18-47B
Test Date:	25 April 2018	Item Code	040-196321-06-6W3FN2TU

Laboratory Ambient Conditions During Testing:

Temperature Degrees C (F)	21.5C (70.7 F)
Relative Humidity %	48.4%

Pulse:

Test Configuration (I or II):	I
Velocity (km/h (mph)):	47.4 km/h (29.5 mph)

Dummy:

Dummy Description:	Weighted H3 6 Year Old (Part 572R)
Dummy Serial Number:	163


Restraint Installation:

Installed Direction:	Forward Facing
Base Usage:	Other Configuration
Attachment Method:	Lap Belt
Tether Usage:	Top Tether
Seat Back Position:	Upright - 6
Internal Shoulder Harness Position:	Slot 10, Counted from bottom up
Buckle Harness Position:	Forward

Remarks:

Pre and Post Test Photos are presented in Section 9.

Recorded by: _____


Adam Hardbattle, SLED
Engineer

Date: _____ April 30, 2018

DYNAMIC IMPACT SLED PULSE – TEST 6 (FMVSS 213, S6.1)

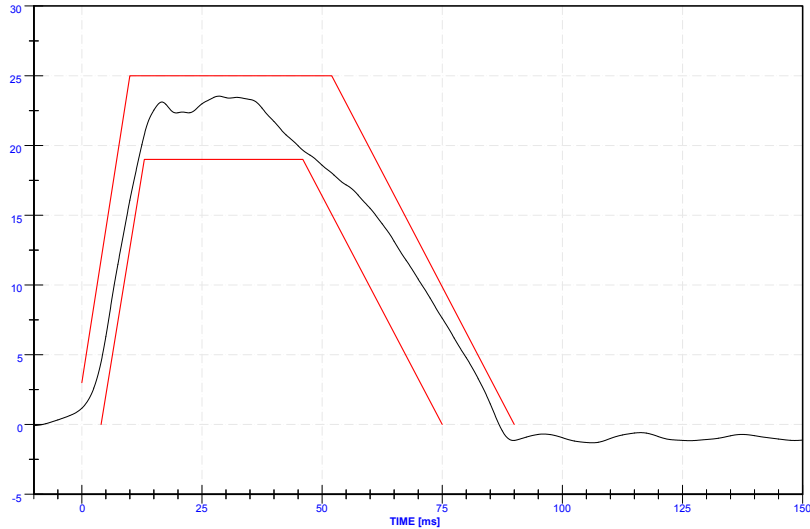
Report No.:	213-CAL-18-040	Sled Test No.:	FM04-18-47B
Test Date:	25 April 2018	Item Code:	040-196321-06-6W3FN2TU



NHTSA FM04-18-047

Test Date: April 25, 2018

SLED Pulse Corridor



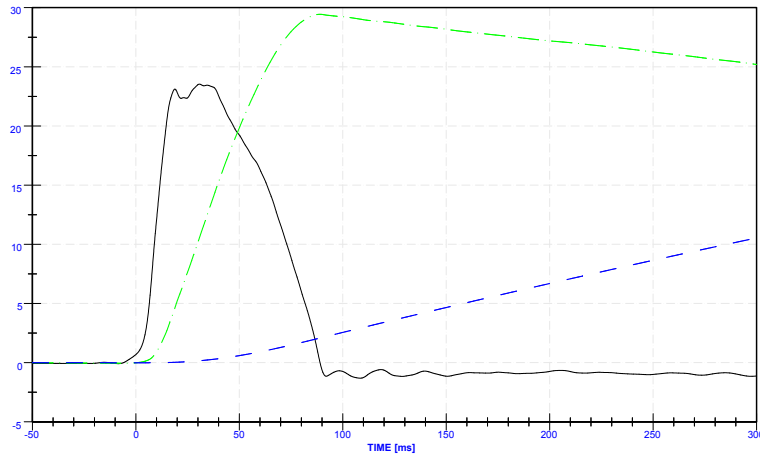
	Maximum	Time (ms)	Filter Class	Legend
SLED Acceleration (Gs)	23.53	30.8	CFC 60	S0SLED00000ACXD



NHTSA FM04-18-047

Test Date: April 25, 2018

SLED Pulse



	Maximum	Time (ms)	Filter Class	Legend
SLED Acceleration (Gs)	23.53	108.4	CFC 60	S0SLED00000ACXD
SLED Velocity (mph)	29.43	-5.5	CFC 180	S0SLED00000VAXC
SLED Displacement (ft)	10.54	0.5	CFC 180	S0SLED00000DVXC

DATA SHEET 47
BELT RESTRAINT – TEST 6
(FMVSS 213, S5.4.3)

Report No.:	213-CAL-18-040	Sled Test No.	FM04-18-47B
Test Date:	25 April 2018	Item Code	040-196321-06-6W3FN2TU

Section	Requirement	Pass / Fail
S5.4.3.1	Snug Fit of Belts. Belts that are part of the restraint and designed to restrain the child are adjustable to snugly fit any child of height and weight identified by the manufacturer in accordance with the manufacturers installation instructions.	Pass


Section	Requirement	Yes / No	Pass / Fail
S5.4.3.2	Direct Restraint. Belts impose no loads on the child resulting from mass of the system or the test seat		Pass
	The restraint has one or more belts that contact the dummy for restraint	Yes	If all are "Yes" Restraint fails S5.4.3.2
	The restraint has a rigid structure behind the dummy	Yes	
	The restraint could move relative to the belt	No	

Section	Requirement	Pass / Fail
S5.4.3.3	Seating Systems. Except for harness and infant restraints for children up to 10kg (22lb), each restraint designed for a child in a seated position and having belts shall provide.	Pass
S5.4.3.3(a)	Upper torso restraint (either belts or a shield)	Pass
S5.4.3.3(b)	Lower torso restraint (either belts or a shield)	Pass
S5.4.3.3(c)	Crotch restraint (either a belt attached to the lap belt or a shield)	Pass

Section	Requirement	Pass / Fail
S5.4.3.4	Harnesses. Each harness shall:	N/A
S5.4.3.3(a)	Provide upper torso restraint)	N/A
S5.4.3.3(b)	Provide lower torso restraint (lap & crotch)	N/A
S5.4.3.3(c)	Prevent Standing	N/A

Remarks

Recorded by:


 Adam Hardbattle, SLED Engineer

Date:

April 30, 2018

DATA SHEET 48
BUCKLE RELEASE – TEST 6
(FMVSS 213, S5.4.3.5, S6.2)

Report No.:	213-CAL-18-040	Sled Test No.	FM04-18-47B
Test Date:	25 April 2018	Item Code	040-196321-06-6W3FN2TU


Section	Requirement	Measurement	Pass / Fail
S5.4.3.5(a)	Pre-Impact Release Force Releases under 40-60 N	55 N	Pass
S5.4.3.5(a)	Post-Impact Release Force* Releases \leq 71 N	54 N	Pass
S5.4.3.5(a)	Minimum Surface Area of Buckle \geq 3.9 cm ² (0.6 in ²)	4 cm ²	Pass
S5.4.3.5(a)	Buckle Integrity Shall not release during testing	No Release	Pass

*Not applicable unless determined using the largest test dummy specified in S7 for use in testing the seat.

Remarks

None

Recorded by: _____


Adam Hardbattle, SLED
Engineer

Date: _____ April 30, 2018

DATA SHEET 49
SYSTEM INTEGRITY – TEST 6
(FMVSS 213, S5.1.1)

Report No.:	213-CAL-18-040	Sled Test No.	FM04-18-47B
Test Date:	25 April 2018	Item Code	040-196321-06-6W3FN2TU

S5.1.1 When dynamically tested, the child restraint shall:

Section	Requirement	Pass / Fail
S5.1.1(a)	Structural Integrity – Exhibit no complete separation of any load bearing structural element	Pass
	Exhibit no partial separation with exposing surfaces with a radius of less than 9.53 mm (3/8 in.)	Pass
	Exhibit no partial separation with exposing surfaces with protrusions greater than 6.35 mm (1/4 in.)	Pass
S5.1.1(b)(1)	Adjustment Position – Remain in the same adjustment position during the test that it was immediately before the test	Pass
S5.1.1(b)(2)(ii)	Exposed Openings – Have no exposed opening larger than 6.35 mm (1/4 in.) before the test becomes smaller during the testing as a result of the movement of the seating service relative to the restraint system as a whole.	Pass
S5.1.1(c)	Seating Surface Angle – Forward facing restraints do not allow the angle between the system's back support surface and seating surface and seating surface to be less than 45 degrees at the completion of the test	Pass

Remarks

None

Recorded by: 
 Adam Hardbatt, SLED
 Engineer

Date: April 30, 2018

**DATA SHEET 50
INJURY CRITERIA – TEST 6
(FMVSS 213, S5.1.2)**

Report No.:	213-CAL-18-040	Sled Test No.	FM04-18-47B
Test Date:	25 April 2018	Item Code	040-196321-06-6W3FN2TU

Section	Requirement
S5.1.2.1(a)	Head Injury Criterion The maximum calculated head injury criterion for a 36 millisecond time interval (HIC36) shall not exceed 1,000. HIC is not calculated when using the 6-year-old weighted and 10-year-old test dummies.
S5.1.2.1(b)	Chest Injury Criterion The chest acceleration shall not exceed 60g for intervals whose cumulative duration is more than 3 milliseconds

Head Injury Criterion Results

Calculated HIC36	Pass / Fail
N/A	N/A

Chest Injury Criterion Results

Max Acceleration lasting 3ms (g)	Pass / Fail
N/A	N/A

Remarks

Weighted H3 6YO ATD: No Instrumentation or injury criteria

Recorded by: 
 Adam Hardbottle, SLED
 Engineer

Date: April 30, 2018

**DATA SHEET 51
OCCUPANT EXCURSION – TEST 6
(FMVSS 213, S5.1.3, S5.1.4, S5.2.1.1(c))**

Report No.:	213-CAL-18-040	Sled Test No.	FM04-18-47B
Test Date:	25 April 2018	Item Code	040-196321-06-6W3FN2TU

FORWARD-FACING RESTRAINTS

Section	Requirement	Measurement	Pass / Fail
S5.1.3.1	Torso Retention – CRS shall retain the torso within system		Pass
S5.1.3.1(a)(1)	Head Excursion - ≤ 720 mm (28.4 in.) with tether ≤ 813 mm (32 in.) No tether	557	Pass
S5.1.3.1(a)(2)	Knee Excursion - ≤ 91.5 cm (36 in.)	755	Pass
S5.2.1.1(c)	Head-Torso Angle - Rearward change ≤ 45 degrees	≤ 45°	Pass

REAR-FACING RESTRAINTS

Section	Requirement	Measurement	Pass / Fail
S5.1.3.2	Torso Retention – CRS shall retain the torso within system		N/A
S5.1.3.2	Head Target Excursion – Not beyond restraint’s top and forward edge		N/A
S5.1.4	Back Support Angle - Angle between the back support surface and vertical ≤ 70 degrees	N/A	N/A
S5.2.1.1(c)	Head-Torso Angle - Rearward change ≤ 45 degrees	N/A	N/A

Remarks

Excursion camera locations (forward of Z point) are 28.4”, Camera speed = 2000fps and focal length of lenses = 12.5mm

Recorded by: 
Adam Hardbattle, SLED
Engineer

Date: April 30, 2018

DATA SHEET 52
OCCUPANT EXCURSION – TEST 6
(FMVSS 213, S5.1.3.3)

CAR BED RESTRAINTS

Section	Requirement	Measurement	Pass / Fail
Head – Torso Retention (FMVSS 213, S5.1.3.3)	Retain within confines of system	N/A	N/A

Remarks

Recorded by: _____



Adam Hardbatt, SLED
Engineer

Date: _____

April 30, 2018

DATA SHEET 53
AIRCRAFT PASSENGER SEAT INVERSION – TEST A
(FMVSS 213, S8.2, S8.2.5, S8.2.6)

Report No.:	213-CAL-18-040	Test No.	FM05-18-59
Test Date:	1 May 2018	Item Code	040-196321-Inv01-NINRN2FR

Laboratory Ambient Conditions During Testing:

Temperature Degrees C (F)	21.6 C (80.8F)
Relative Humidity %	27.7%

Dummy:

Dummy Description:	CAMI Newborn (Part 572R)
Dummy Serial Number:	032

Restraint Installation:

Installed Direction:	Rearward Facing
Base Usage:	N/A
Attachment Method	Lap belt
Tether Usage	No
Seat Back Position:	Recline - 2
Internal Harness Shoulder Strap Position:	Slot 2, Counted from bottom up
Internal Harness Crotch Strap Position:	Rearward

Rotation About Y-Axis (Forward):


Section	Requirement	Pass/Fail
S8.2.5	The test dummy shall be retained within the CRS	Pass
S8.2.5	The CRS shall be restrained within the aircraft seat	Pass

Rotation About X-Axis (Lateral):

Section	Requirement	Pass/Fail
S8.2.6	The test dummy shall be retained within the CRS	Pass
S8.2.6	The CRS shall be restrained within the aircraft seat	Pass

Remarks:

None

Recorded by: 
Adam Hardbatt, SLED
Engineer

Date: May 2, 2018

DATA SHEET 54
AIRCRAFT PASSENGER SEAT INVERSION - TEST B
(FMVSS 213, S8.2, S8.2.5, S8.2.6)

Report No.:	213-CAL-18-040	Test No.	FM05-18-58
Test Date:	1 May 2018	Item Code	040-196321-Inv02-12CFN2FU

Laboratory Ambient Conditions During Testing:

Temperature Degrees C (F)	21.8 C (71.3F)
Relative Humidity %	27.5%

Dummy:

Dummy Description:	CRABI 12 Month Old (Part 572R)
Dummy Serial Number:	085

Restraint Installation:

Installed Direction:	Forward Facing
Base Usage:	N/A
Attachment Method	Lap belt
Tether Usage	No
Seat Back Position:	Upright - 6
Internal Harness Shoulder Strap Position:	Slot 6, Counted from bottom up
Internal Harness Crotch Strap Position:	Forward

Rotation About Y-Axis (Forward):

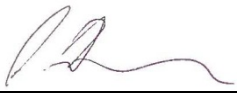
Section	Requirement	Pass/Fail
S8.2.5	The test dummy shall be retained within the CRS	Pass
S8.2.5	The CRS shall be restrained within the aircraft seat	Pass

Rotation About X-Axis (Lateral):

Section	Requirement	Pass/Fail
S8.2.6	The test dummy shall be retained within the CRS	Pass
S8.2.6	The CRS shall be restrained within the aircraft seat	Pass

Remarks:

None

Recorded by: 
Adam Hardbattle, SLED
Engineer

Date: May 2, 2018

DATA SHEET 55
AIRCRAFT PASSENGER SEAT INVERSION - TEST C
(FMVSS 213, S8.2, S8.2.5, S8.2.6)

Report No.:	213-CAL-18-040	Test No.	FM05-18-57
Test Date:	1 May 2018	Item Code	040-196321-Inv03-3H3FN2FU

Laboratory Ambient Conditions During Testing:

Temperature Degrees C (F)	21.6 C (70.9F)
Relative Humidity %	28.6%

Dummy:

Dummy Description:	H3 3 Year Old (Part 572R)
Dummy Serial Number:	034

Restraint Installation:

Installed Direction:	Forward Facing
Base Usage:	N/A
Attachment Method	Lap belt
Tether Usage	No
Seat Back Position:	Upright - 6
Internal Harness Shoulder Strap Position:	Slot 5, Counted from bottom up
Internal Harness Crotch Strap Position:	Front

Rotation About Y-Axis (Forward):


Section	Requirement	Pass/Fail
S8.2.5	The test dummy shall be retained within the CRS	Pass
S8.2.5	The CRS shall be restrained within the aircraft seat	Pass

Rotation About X-Axis (Lateral):

Section	Requirement	Pass/Fail
S8.2.6	The test dummy shall be retained within the CRS	Pass
S8.2.6	The CRS shall be restrained within the aircraft seat	Pass

Remarks:

None

Recorded by: 
Adam Hardbattle, SLED
Engineer

Date: May 2, 2018

SECTION 6

INTERPRETATION AND/OR DEVIATIONS FROM FMVSS 213

There were no deviations from FMVSS 213

SECTION 7 TEST CONFIGURATION CODES

The following table explains the code used to describe the test configurations in this report. For example, the test configuration code 12CFNLFU indicates that the child restraint sled test was conducted using a 12-month old CRABI dummy, installed in the forward facing direction with no optional base, the latch system, no tether, and in the upright position.

Dummy Description	NIN – Newborn Infant
	3H3 – 3 YO, Hybrid III
	12C -12 MO, CRABI
	6H2 – 6YO Hybrid II
	6H3 – 6YO, Hybrid III
	6W3 – 6 YO, Weighted Hybrid III
	10H3 – 10YO, Hybrid III
Installed Direction	R – Rear Facing
	F – Forward Facing
	S- Faces Sideways (applies to carbeds)
Base Usage	B – Optional base used with CRS
	N – All other configurations
Attachment Method	L – Lower anchors
	2 – Lap belt
	3 – Lap & shoulder belt
	M – Seat back mount
Tether Usage	T – Tether
	F – Tether Free
Seat Back Position	U – Upright
	R – Reclined
	N – Not Applicable

**SECTION 8
INSTRUMENTATION CALIBRATION**

Sled and Facility Calibrations

<i>Instrument</i>	<i>Serial Number</i>	<i>Certification Test</i>	<i>Calibration Date</i>	<i>Due Date</i>
KT Minidau Unit #1	ESL 400186	All	5/12/2017	5/11/2018
Temp and Humidity Recorder Onset HOBO	ESL 400632	All	11/14/2017	11/13/2018
Digital Angle Gauge Digi-Pas	ESL 400482	All	9/12/2017	9/11/2018
Bosch/Kent Moore Belt Tension Gauge +/- 1 lb.	ESL 400415	All	1/10/2018	7/9/2018
Bosch/Kent Moore Belt Tension Gauge +/- 1 lb..	ESL 400943	All	1/10/2018	7/9/2018
Imada Force Gauge Model DPSH-440R	ESL 400931	All	3/06/2018	3/05/2019
Imada Force Gauge Model DS2-110	ESL 400368	All	7/25/2017	7/24/2018
Imada Force Gauge Model ZTS-550	ESL 400474	All	8/18/2017	8/17/2018
Proto Torque Wrench	ESL 400460	All	7/11/2017	7/10/2018
Sled Primary x Accelerometer Endevco	AC-10302	All	1/22/2018	7/21/2018
Sled Secondary X Endevco 7264	AC-P69795	All	1/22/2018	7/21/2018
Sled Secondary Y Endevco 7264	AC-P69794	All	1/22/2018	7/21/2018
Sled Secondary Z Endevco 7264	AC-P71301	All	1/22/2018	7/21/2018

ATD Calibrations

<i>Instrument</i>	<i>Serial Number</i>	<i>Certification Test</i>	<i>Calibration Date</i>	<i>Due Date</i>
NewBorn	032	ATD	NA	NA

<i>Instrument</i>	<i>Serial Number</i>	<i>Certification Test</i>	<i>Calibration Date</i>	<i>Due Date</i>
12 Month CRABI	085	ATD	2/28/2018	5/09/2018
<i>Instrument</i>	<i>Serial Number</i>	<i>Certification Test</i>	<i>Calibration Date</i>	<i>Due Date</i>
Head X Accelerometer Endevco 7264	AC-P83422	ATD	4/19/2018	10/18/2018
Head Y Accelerometer Endevco 7264	AC-P84349	ATD	4/19/2018	10/18/2018
Head Z Accelerometer Endevco 7264	AC-P82321	ATD	4/19/2018	10/18/2018
Chest X Accelerometer Endevco 7264	AC-P74971	ATD	4/19/2018	10/18/2018
Chest Y Accelerometer Endevco 7264	AC-P74780	ATD	4/19/2018	10/18/2018
Chest Z Accelerometer Endevco 7264	AC-P52158	ATD	4/19/2018	10/18/2018

<i>Instrument</i>	<i>Serial Number</i>	<i>Certification Test</i>	<i>Calibration Date</i>	<i>Due Date</i>
3 year old Hybrid 3	034	ATD	1/04/2018	5/05/2018
<i>Instrument</i>	<i>Serial Number</i>	<i>Certification Test</i>	<i>Calibration Date</i>	<i>Due Date</i>
Head X Accelerometer Endevco 7264	AC-P51732	ATD	2/12/2018	8/11/2018
Head Y Accelerometer Endevco 7264	AC-P77601	ATD	2/12/2018	8/11/2018
Head Z Accelerometer Endevco 7264	AC-P64084	ATD	2/12/2018	8/11/2018
Chest X Accelerometer Endevco 7264	AC-P51874	ATD	2/12/2018	8/11/2018
Chest Y Accelerometer Endevco 7264	AC-P74969	ATD	2/12/2018	8/11/2018
Chest Z Accelerometer Endevco 7264	AC-P58862	ATD	2/12/2018	8/11/2018

<i>Instrument</i>	<i>Serial Number</i>	<i>Certification Test</i>	<i>Calibration Date</i>	<i>Due Date</i>
6 year old Hybrid 2	220	ATD	1/22/2018	5/05/2018
<i>Instrument</i>	<i>Serial Number</i>	<i>Certification Test</i>	<i>Calibration Date</i>	<i>Due Date</i>
Head X Accelerometer Endevco 7264	AC-P50073	ATD	01/30/2018	7/31/2018
Head Y Accelerometer Endevco 7264	AC-P82751	ATD	01/30/2018	7/31/2018
Head Z Accelerometer Endevco 7264	AC-P72377	ATD	01/30/2018	7/31/2018
Chest X Accelerometer Endevco 7264	AC-P80250	ATD	01/30/2018	7/31/2018
Chest Y Accelerometer Endevco 7264	AC-P52098	ATD	01/30/2018	7/31/2018
Chest Z Accelerometer Endevco 7264	AC-P80269	ATD	01/30/2018	7/31/2018

<i>Instrument</i>	<i>Serial Number</i>	<i>Certification Test</i>	<i>Calibration Date</i>	<i>Due Date</i>
6 year old Hybrid 3	158	ATD	1/11/2018	5/05/2018
<i>Instrument</i>	<i>Serial Number</i>	<i>Certification Test</i>	<i>Calibration Date</i>	<i>Due Date</i>
Head X Accelerometer Endevco 7264	AC-P52128	ATD	2/23/2018	8/22/2018
Head Y Accelerometer Endevco 7264	AC-P83340	ATD	2/23/2018	8/22/2018
Head Z Accelerometer Endevco 7264	AC-P51684	ATD	2/23/2018	8/22/2018
Chest X Accelerometer Endevco 7264	AC-P51878	ATD	2/23/2018	8/22/2018
Chest Y Accelerometer Endevco 7264	AC-P63954	ATD	2/23/2018	8/22/2018
Chest Z Accelerometer Endevco 7264	AC-P74950	ATD	2/23/2018	8/22/2018

<i>Instrument</i>	<i>Serial Number</i>	<i>Certification Test</i>	<i>Calibration Date</i>	<i>Due Date</i>
6 year old Weighted Hybrid 3	163	ATD	1/22/2018	5/05/2018

<i>Instrument</i>	<i>Serial Number</i>	<i>Certification Test</i>	<i>Calibration Date</i>	<i>Due Date</i>
10 year old Hybrid 3	D023	ATD	1/22/2018	5/05/2018
<i>Instrument</i>	<i>Serial Number</i>	<i>Certification Test</i>	<i>Calibration Date</i>	<i>Due Date</i>
Chest X Accelerometer Endevco 7264	AC-P52004	ATD	10/26/2017	4/25/2018
Chest Y Accelerometer Endevco 7264	AC-P68051	ATD	10/26/2017	4/25/2018
Chest Z Accelerometer Endevco 7264	AC-P82749	ATD	10/26/2017	4/25/2018

Bench Foam Calibrations

Test #	Calibration	Bottom 2''	Bottom 4''	Back 2''	Back 4''
FM04-18-45A	Pre	C153-2x20 53.9 lbs	T52-4x20 26.3 lbs	H86-2x24 54.4 lbs	S20-4x24 26.3 lbs
	Post	C153-2x20 54.2 lbs	T52-4x20 25.7 lbs	H86-2x24 53.3 lbs	S20-4x24 25.9 lbs
FM04-18-45B	Pre	C143-2x20 54.0 lbs	T40-4x20 26.8 lbs	H72-2x24 53.7 lbs	S31-4x24 25.8 lbs
	Post	C143-2x20 53.1 lbs	T40-4x20 24.9 lbs	H72-2x24 53.6 lbs	S31-4x24 25.6 Lbs
FM04-18-46A	Pre	C162-2x20 55.8 lbs	T50-4x20 26.2 lbs	H88-2x24 52.3 lbs	S27-4x24 24.9 lbs
	Post	C162-2x20 55.7 lbs	T50-4x20 25.4 lbs	H88-2x24 54.4 lbs	S27-4x24 25.6 lbs
FM04-18-46B	Pre	C172-2x20 53.9 lbs	T45-4x20 26.8 lbs	H87-2x24 52.0 lbs	S22-4x24 26.9 lbs
	Post	C172-2x20 54.6 lbs	T45-4x20 25.0 lbs	H87-2x24 53.7 lbs	S22-4x24 25.7 lbs
FM04-18-47A	Pre	C176-2x20 53.2 lbs	T55-4x20 26.1 lbs	H85-2x24 53.5 lbs	S21-4x24 26.3 lbs
	Post	C176-2x20 54.5 lbs	T55-4x20 25.2 lbs	H85-2x24 54.8 lbs	S21-4x24 26.0 lbs
FM04-18-47B	Pre	C173-2x20 52.2 lbs	T42-4x20 25.8 lbs	H89-2x24 53.5 lbs	S28-4x24 24.1 lbs
	Post	C173-2x20 53.8 lbs	T42-4x20 25.6 lbs	H89-2x24 54.5 lbs	S28-4x24 25.3 lbs

Section 9 PHOTOGRAPHS

Sled Photos

Sled Buck – Standard Bench Seat and Configuration

213-CAL-18-040

040-196321-01-12CRNLFR

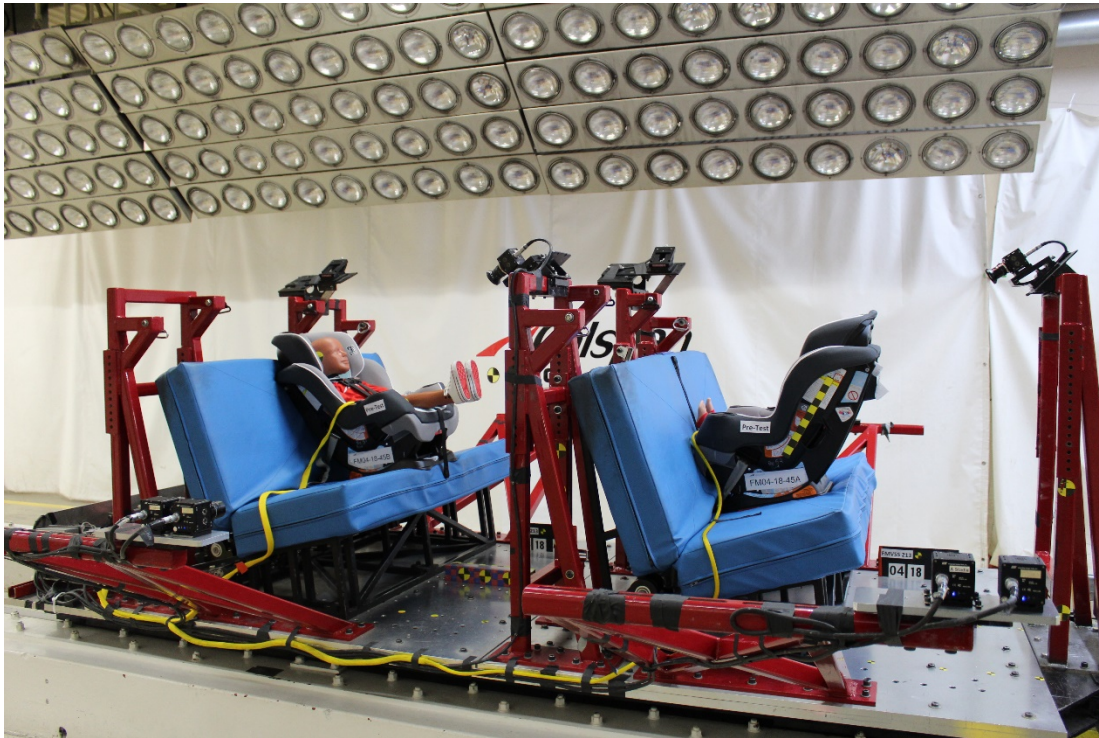
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040-196321-06-6W3FN2TU



Dynamic Test Photos

040-196321-01-12CRNLFR
Pre Test

213-CAL-18-040
FM04-18-45A



040-196321-01-12CRNLFR
Pre Test

213-CAL-18-040
FM04-18-45A



040-196321-01-12CRNLFR
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213-CAL-18-040
FM04-18-45A



040-196321-01-12CRNLFR Pre Test	213-CAL-18-040 FM04-18-45A
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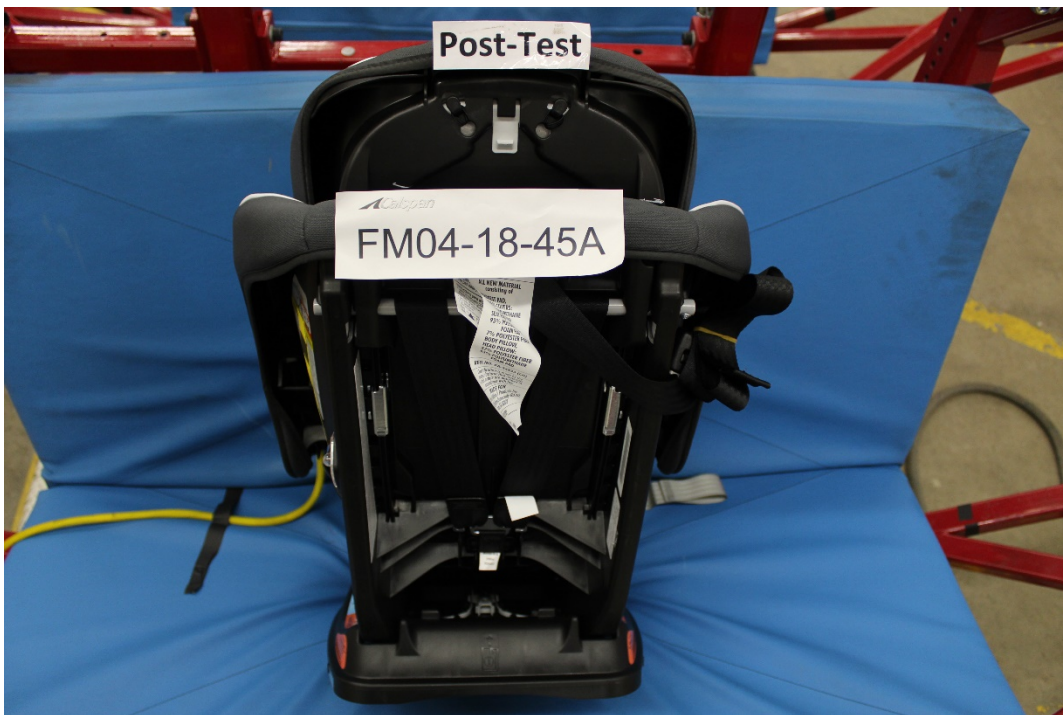
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FM04-18-45A



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FM04-18-45A



040-196321-01-12CRNLFR
Post Test

213-CAL-18-040
FM04-18-45A



Dynamic Test Photos

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Pre Test

213-CAL-18-040
FM04-18-45B



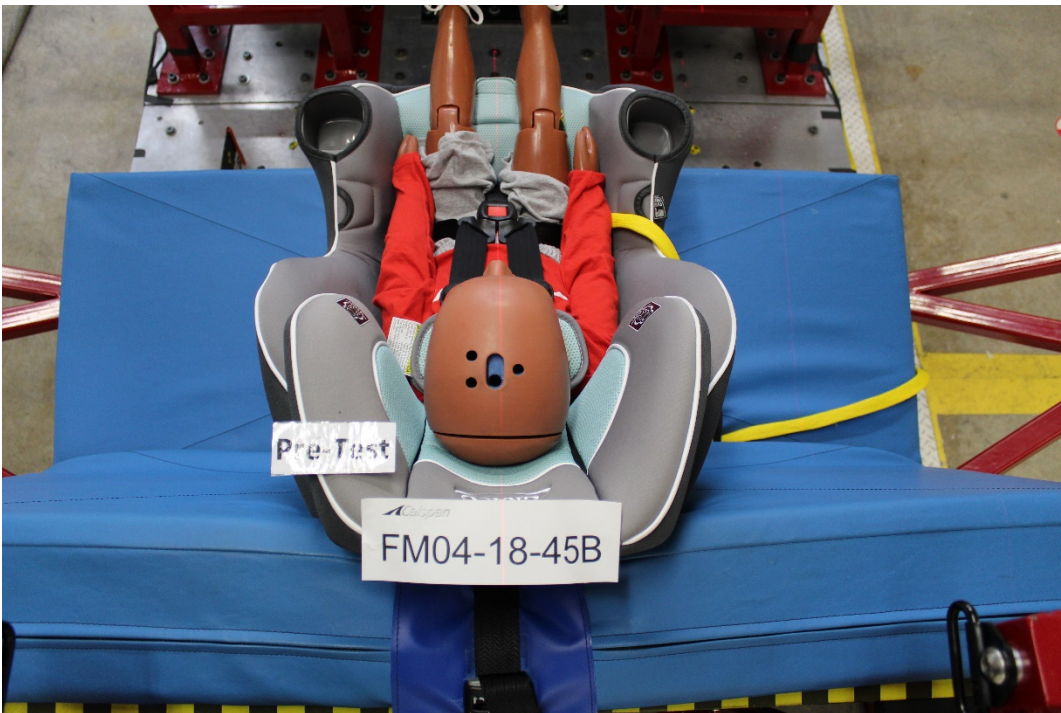
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FM04-18-45B



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FM04-18-45B



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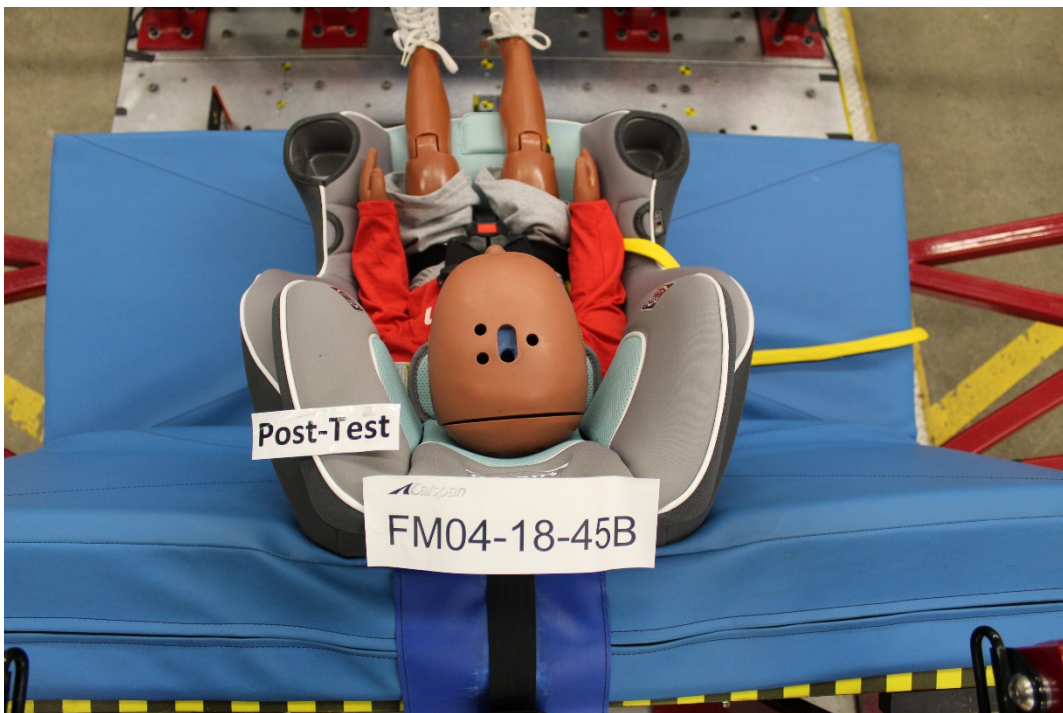
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FM04-18-45B



040-196321-02-3H3FNLTU
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213-CAL-18-040
FM04-18-45B



040-196321-02-3H3FNLTU
Post Test

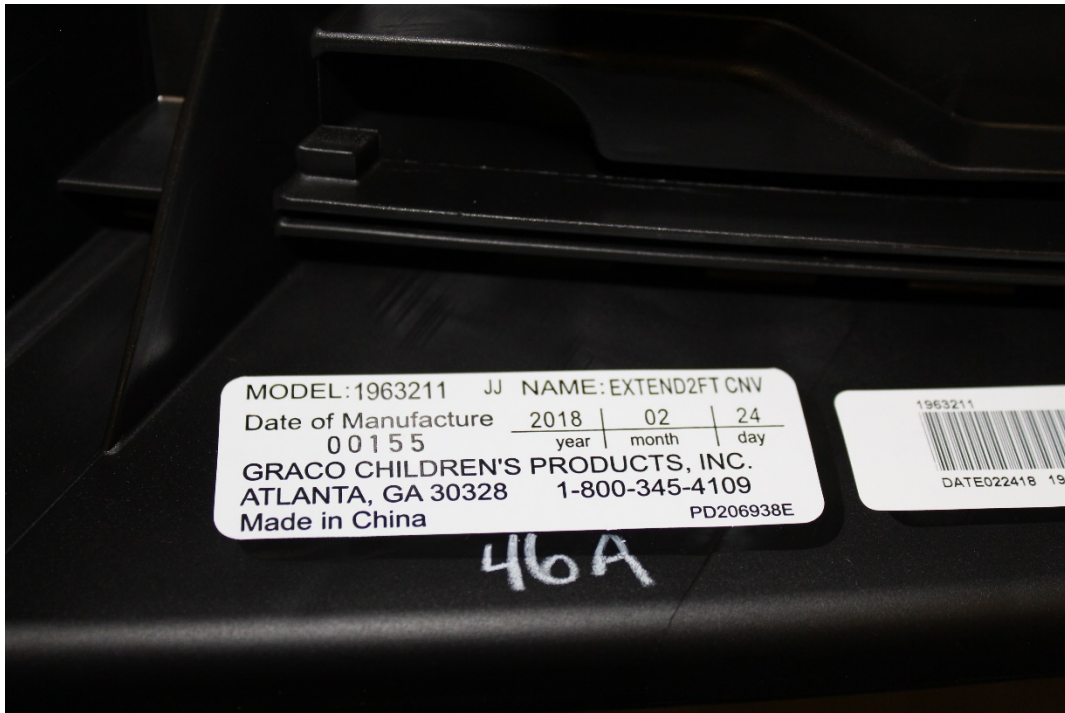
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FM04-18-45B



Dynamic Test Photos

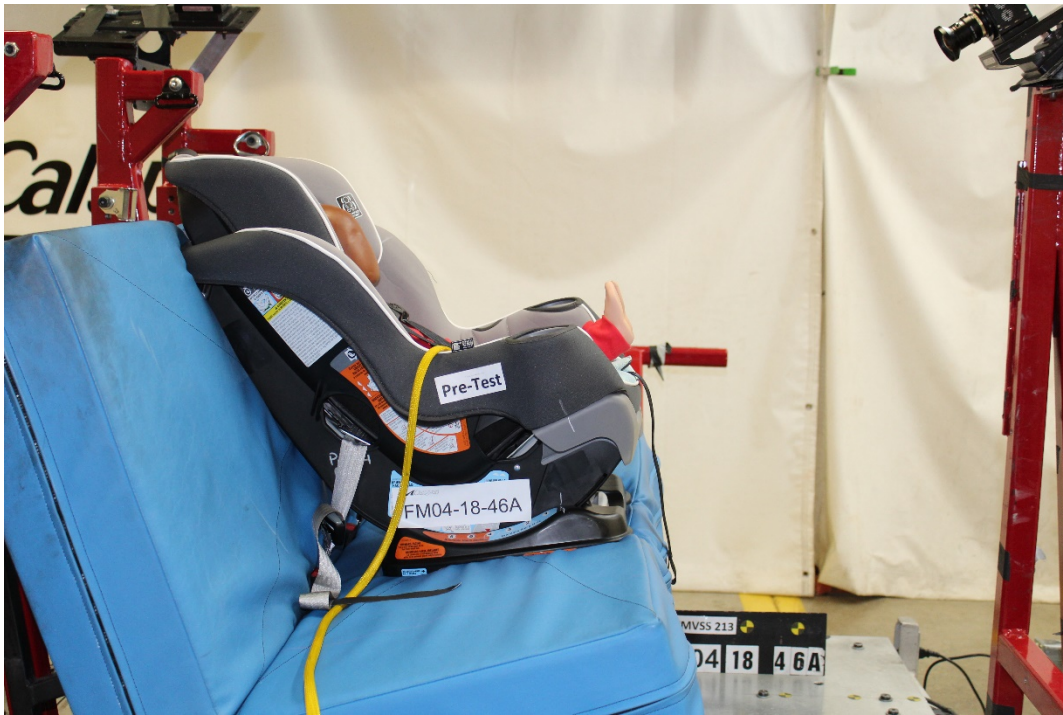
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FM04-18-46A



040-196321-03-12CFNLTU
Pre Test

213-CAL-18-040
FM04-18-46A



040-196321-03-12CFNLTU Pre Test	213-CAL-18-040 FM04-18-46A
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040-196321-03-12CFNLTU Pre Test	213-CAL-18-040 FM04-18-46A
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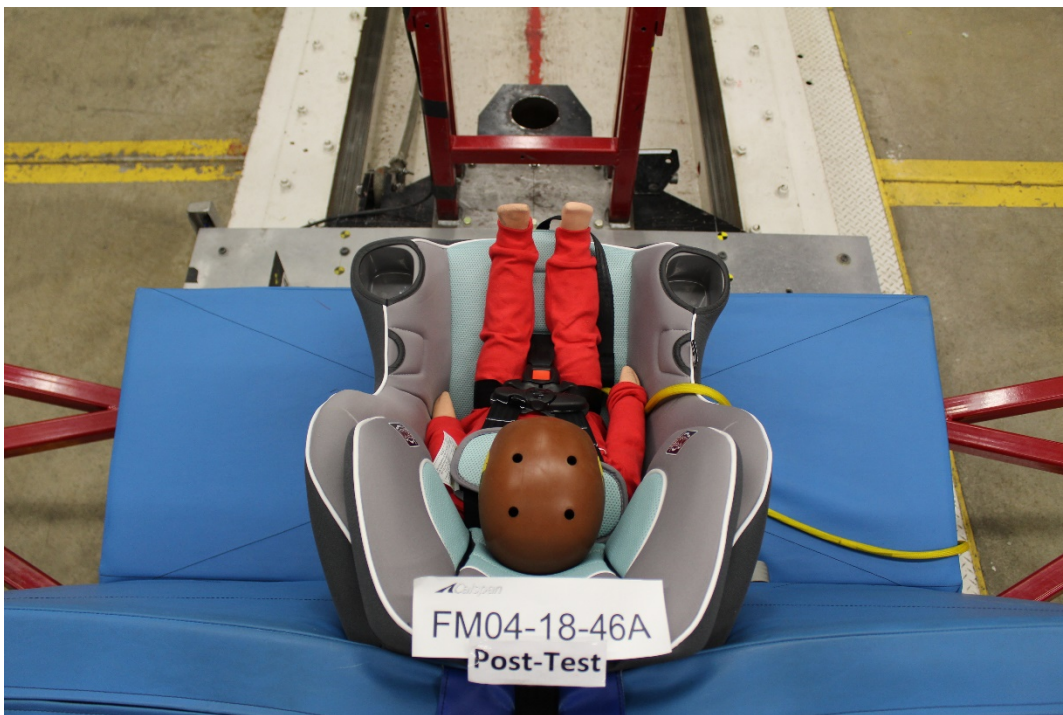
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Post Test

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FM04-18-46A

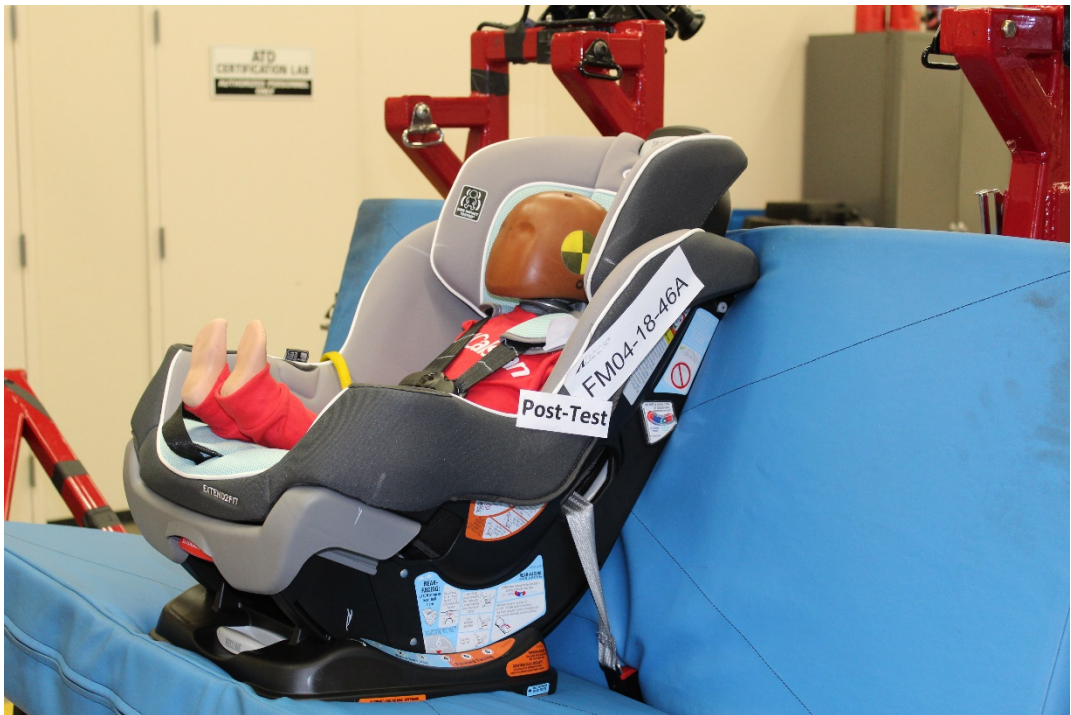


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Post Test

213-CAL-18-040
FM04-18-46A



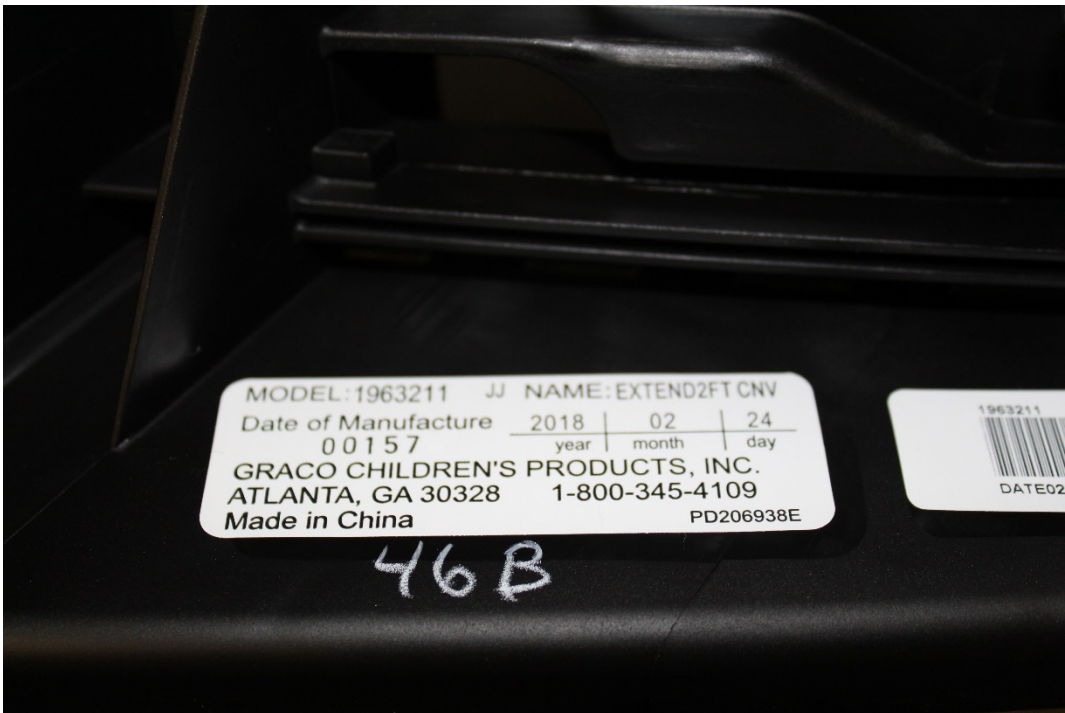
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Dynamic Test Photos

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Pre Test

213-CAL-18-040
FM04-18-46B



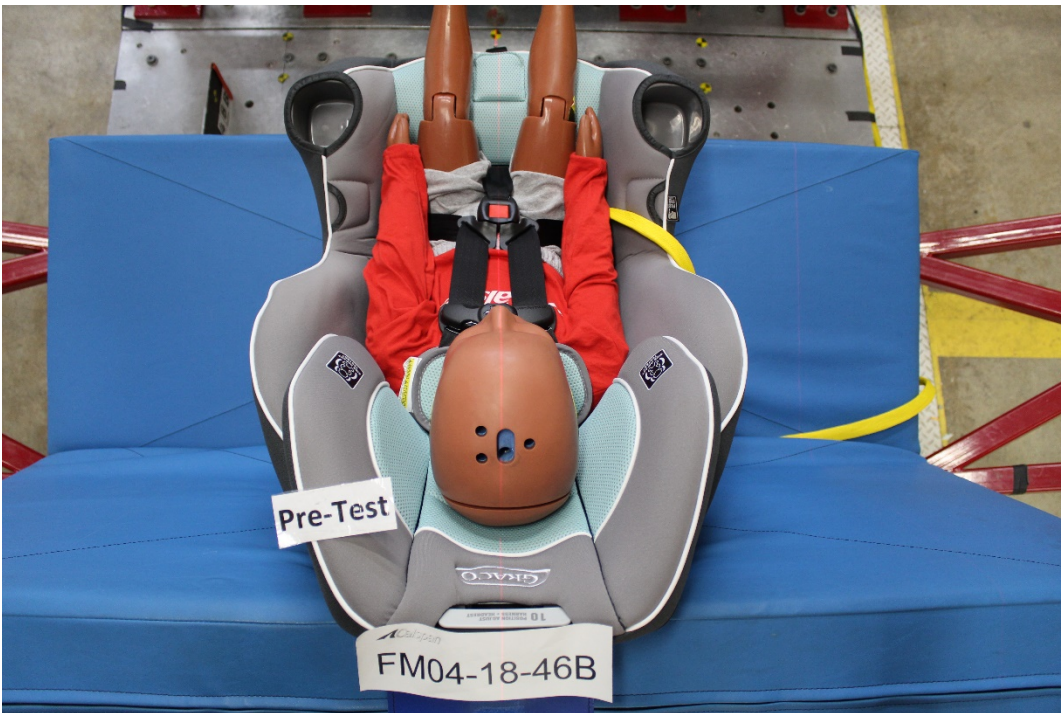
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FM04-18-46B



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FM04-18-46B



040-196321-04-3H3FNLFU Pre Test	213-CAL-18-040 FM04-18-46B
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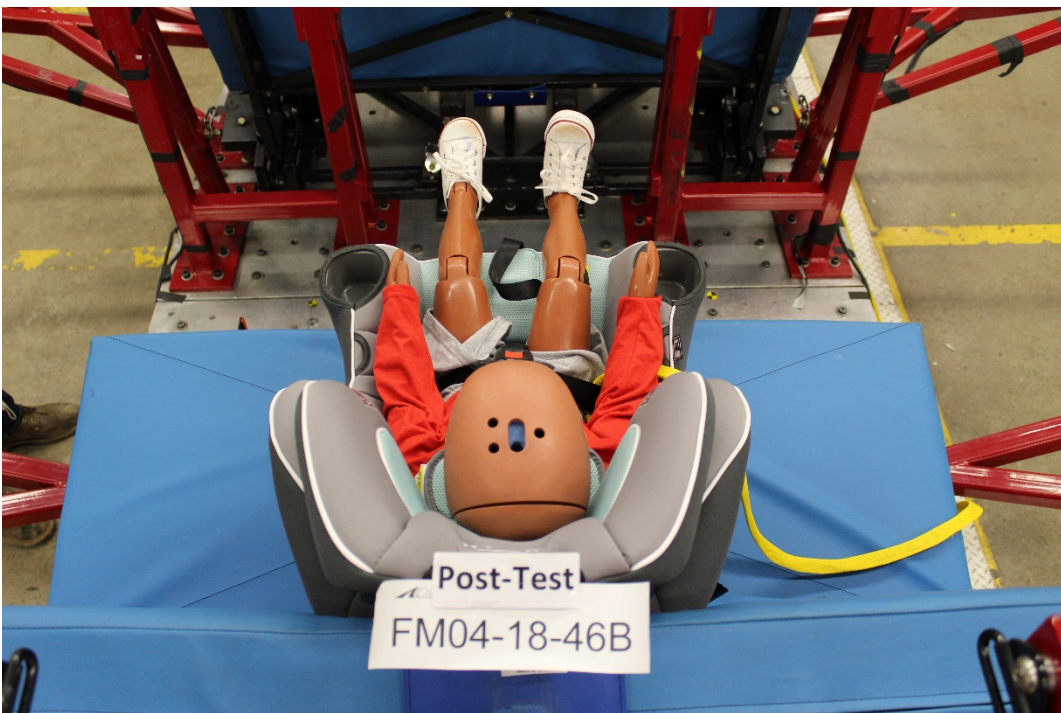
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FM04-18-46B



040-196321-04-3H3FNLFU
Post Test

213-CAL-18-040
FM04-18-46B



040-196321-04-3H3FNLFU
Post Test

213-CAL-18-040
FM04-18-46B



Dynamic Test Photos

040-196321-05-6H3FN2TU Pre Test	213-CAL-18-040 FM04-18-47A
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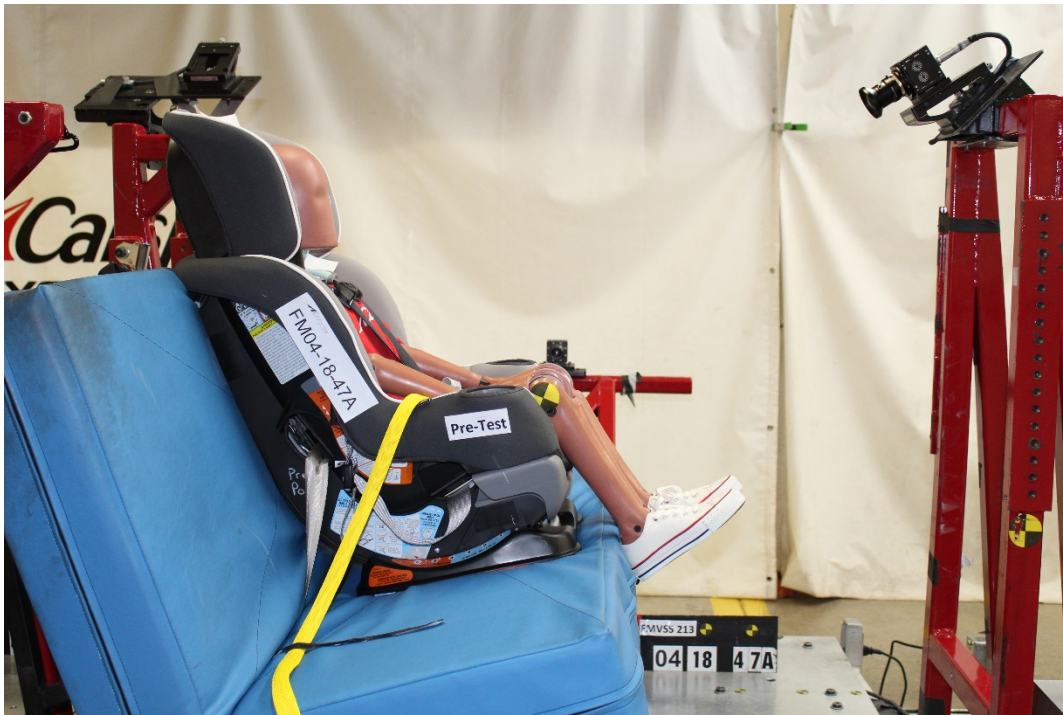
Your last name _____
Your street address _____
City _____
State _____ Zip Code _____

CHILD RESTRAINT REGISTRATION CARD

MODEL: 1963211	JJ	NAME: EXTEND2FT CNV	
Date of Manufacture	2018	02	24
00378	year	month	day
GRACO CHILDREN'S PRODUCTS, INC.			
ATLANTA, GA 30328		1-800-345-4109	
Made in China	47 A	PD206938E	

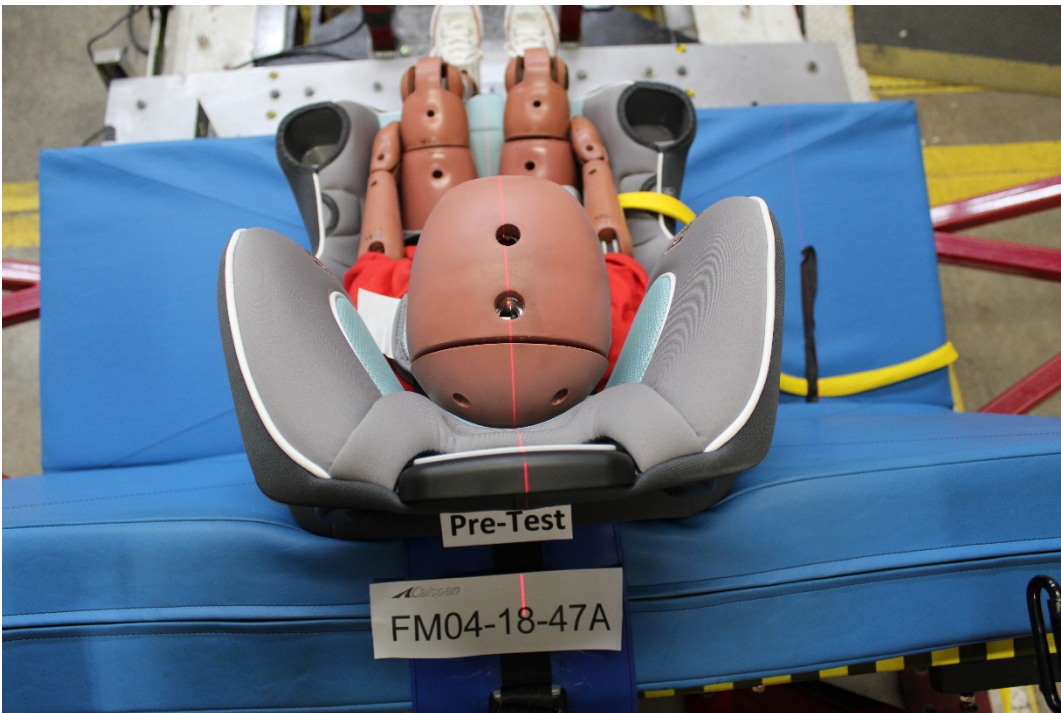
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Pre Test

213-CAL-18-040
FM04-18-47A



040-196321-05-6H3FN2TU
Pre Test

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FM04-18-47A



040-196321-05-6H3FN2TU
Pre Test

213-CAL-18-040
FM04-18-47A



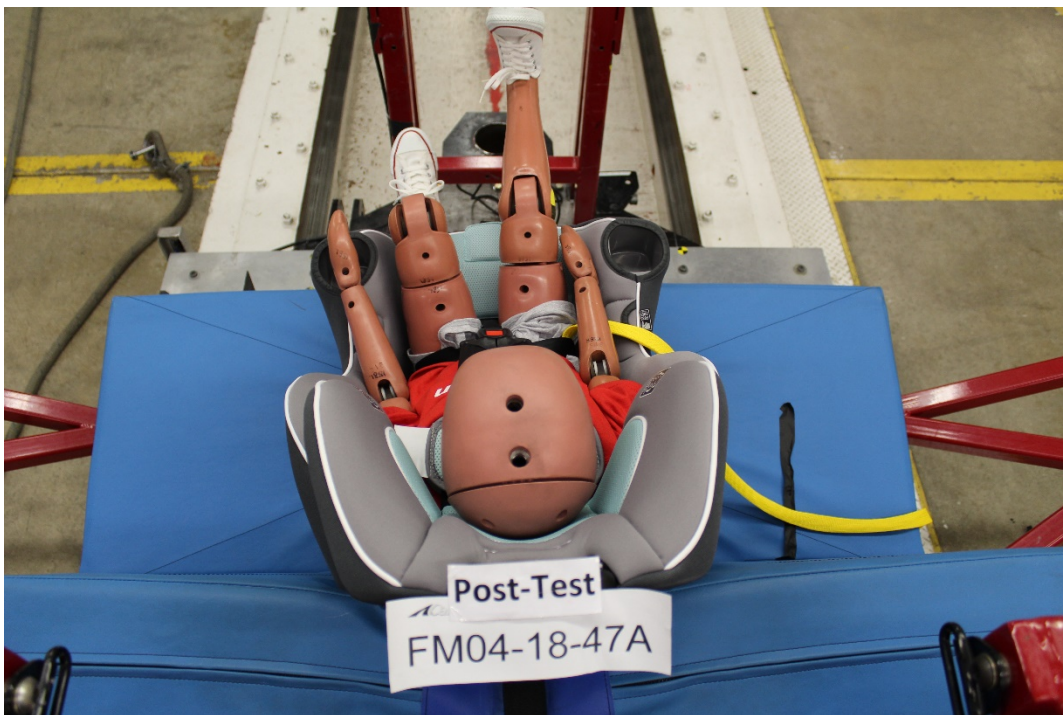
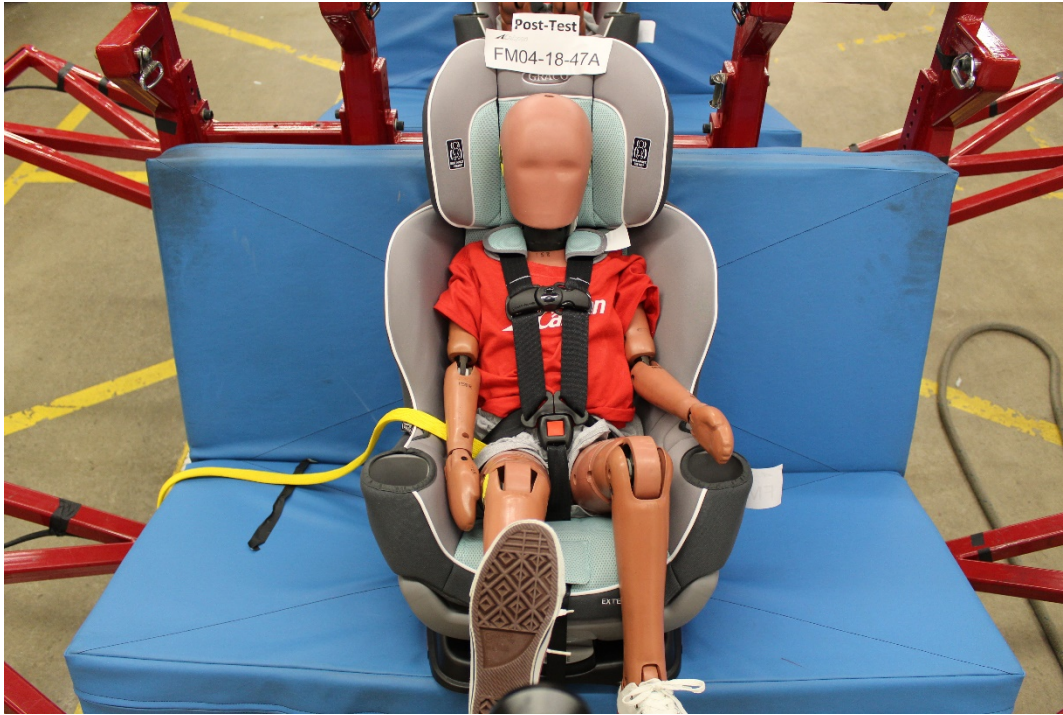
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FM04-18-47A



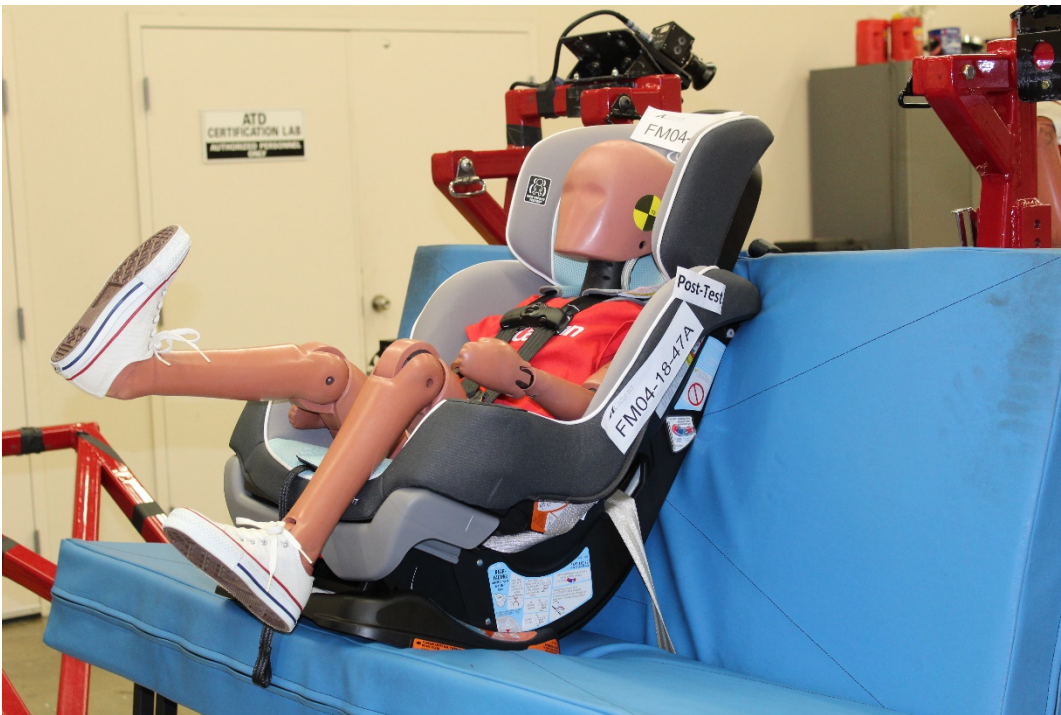
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FM04-18-47A



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Dynamic Test Photos

040-196321-06-6W3FN2TU
Pre Test

213-CAL-18-040
FM04-18-47B



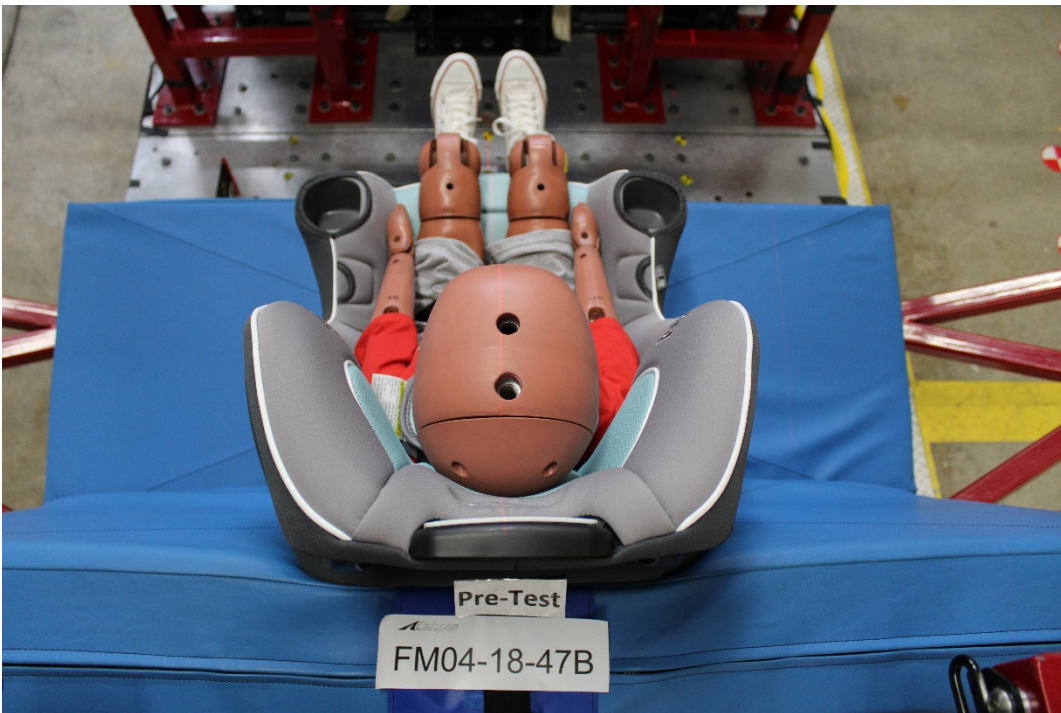
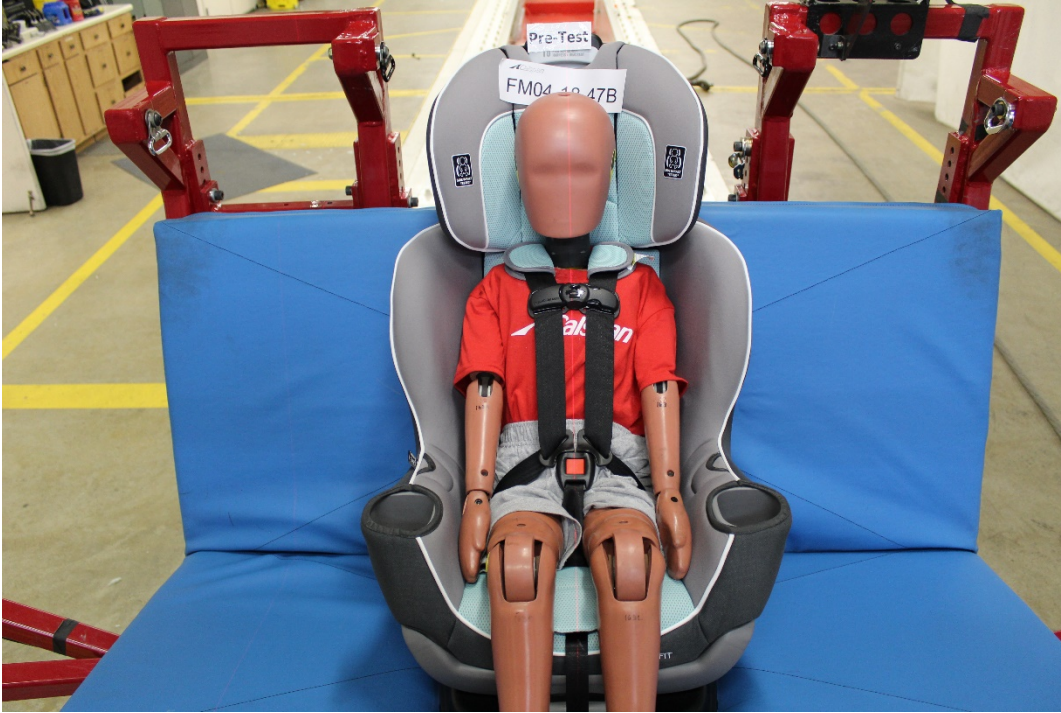
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213-CAL-18-040
FM04-18-47B



040-196321-06-6W3FN2TU
Pre Test

213-CAL-18-040
FM04-18-47B



040-196321-06-6W3FN2TU Pre Test	213-CAL-18-040 FM04-18-47B
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040-196321-06-6W3FN2TU
Post Test

213-CAL-18-040
FM04-18-47B



040-196321-06-6W3FN2TU
Post Test

213-CAL-18-040
FM04-18-47B



040-196321-06-6W3FN2TU
Post Test

213-CAL-18-040
FM04-18-47B



Inversion Test Photos

040-196321-Inv01-NINRN2FR
Pre Test Y-Axis

213-CAL-18-040
FM05-18-59



040-196321-Inv01-NINRN2FR
Post Test Y-Axis

213-CAL-18-040
FM05-18-59



Inversion Test Photos

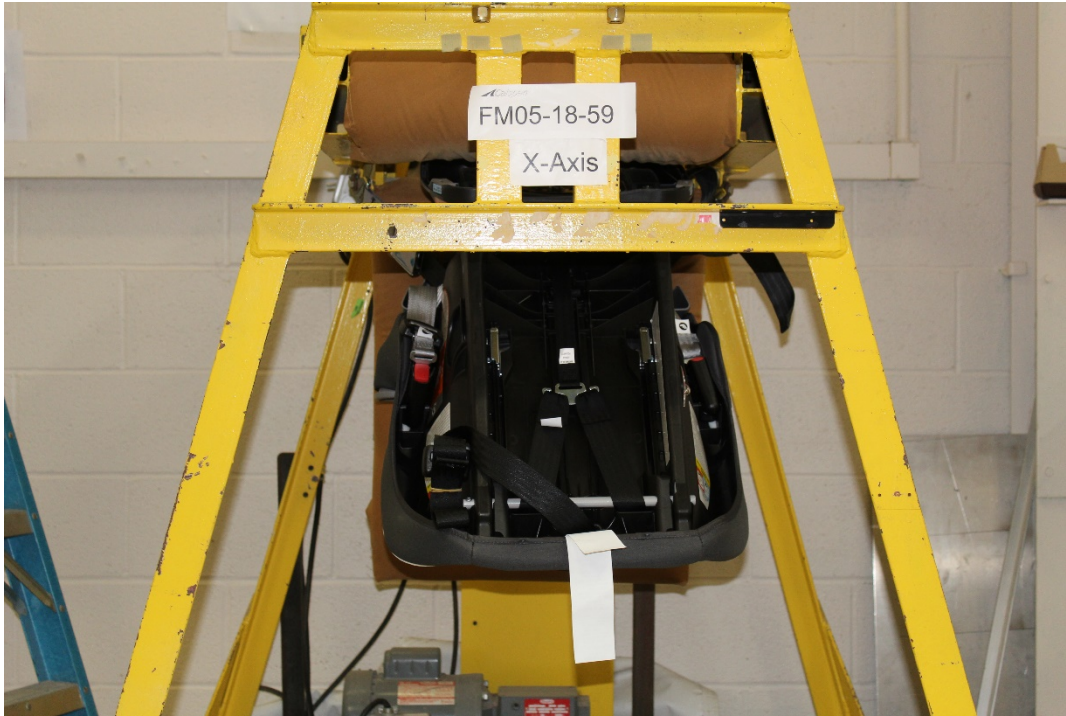
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Pre Test X-Axis

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FM05-18-59



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Post Test X-Axis

213-CAL-18-040
FM05-18-59



Inversion Test Photos

040-196321-Inv02-12CFN2FU
Pre Test Y-Axis

213-CAL-18-040
FM05-18-58



040-196321-Inv02-12CFN2FU
Post Test Y-Axis

213-CAL-18-040
FM05-18-58



Inversion Test Photos

040-196321-Inv02-12CFN2FU
Pre Test X-Axis

213-CAL-18-040
FM05-18-58



040-196321-Inv02-12CFN2FU
Post Test X-Axis

213-CAL-18-040
FM05-18-58



Inversion Test Photos

040-196321-Inv03-3H3FN2FU
Pre Test Y-Axis

213-CAL-18-040
FM05-18-57



040-196321-Inv03-3H3FN2FU
Post Test Y-Axis

213-CAL-18-040
FM05-18-57



Inversion Test Photos

040-196321-Inv03-3H3FN2FU
Pre Test X-Axis

213-CAL-18-040
FM05-18-57



040-196321-Inv03-3H3FN2FU
Post Test X-Axis

213-CAL-18-040
FM05-18-57



Inspection Photos

Registration
213-CAL-18-040

040-196321-01-12CRNLFR	040-196321-02-3H3FNLTU
040-196321-03-12CFNLTU	040-196321-04-3H3FNLFU
040-196321-05-6H3FN2TU	040-196321-06-6W3FN2TU

IMPORTANT: En caso de una retirada del mercado, solo podremos contactarle si tenemos su nombre y dirección. Usted DEBE enviarnos por correo la tarjeta adjunta o inscribirse en línea para añadirse a la lista para retiradas.

FOR YOUR CHILD'S CONTINUED SAFETY

Please take a few moments to promptly fill out and return the attached card or register online.

Although child restraint systems undergo testing and evaluation, it is possible that a child restraint could be recalled.

In case of recall, we can reach you only if we have your name and address, so please send in the card or register online to be on our recall list.

Please fill this card out and mail it NOW, or register online at <http://www.gracobaby.com/carseatregistration> while you are thinking about it.

The card is already addressed and we've paid the postage.

Tear off and mail this part

Consumer: Just fill in your name and address. Please print.

Your first name _____

Your last name _____

Your street address _____

City _____

State _____ Zip Code _____

CHILD RESTRAINT REGISTRATION CARD

MODEL: 1963211 JJ NAME: EXTENDZFT CNV
 Date of Manufacture 2018 02 24
 00300 year month day
 GRACO CHILDREN'S PRODUCTS, INC.
 ATLANTA, GA 30328 1-800-345-4109
 Made in China PD206938E

IMPORTANT

In case of a recall, we can reach you only if we have your name and address. You **MUST** send in the attached card or register online to be on our recall list.

We've already paid the postage.

Do it today.

BUSINESS REPLY MAIL
 FIRST-CLASS MAIL PERMIT NO. 66 ELVERSON PA

POSTAGE WILL BE PAID BY ADDRESSEE

GRACO
 CHILDREN'S PRODUCTS, INC.
 P.O. BOX 169
 ELVERSON, PA 19520-9901

NO POSTAGE
 NECESSARY
 IF MAILED
 IN THE
 UNITED STATES

The screenshot shows a web browser window displaying the Graco website. The URL is <https://www.gracobaby.com/ProductRegistrationCarSeatsView?catalogId=65051&langId=-1&storeId=65051>. The page title is "CAR SEAT REGISTRATION". Below the title, there is a section titled "FOR YOUR CHILD'S CONTINUED SAFETY" with explanatory text. The main content is a registration form with two columns: "CUSTOMER INFORMATION" and "PRODUCT INFORMATION".

CUSTOMER INFORMATION:

- First Name:
- Last Name:
- Address: Line 1, Line 2
- City:
- State: (dropdown menu)
- Zip Code:
- Email:
- Phone:

PRODUCT INFORMATION:

- Model Number:
- Manufacture Date: (format: mm/dd/yyyy)

Buttons: "Clear" and "Submit".

Label Photos

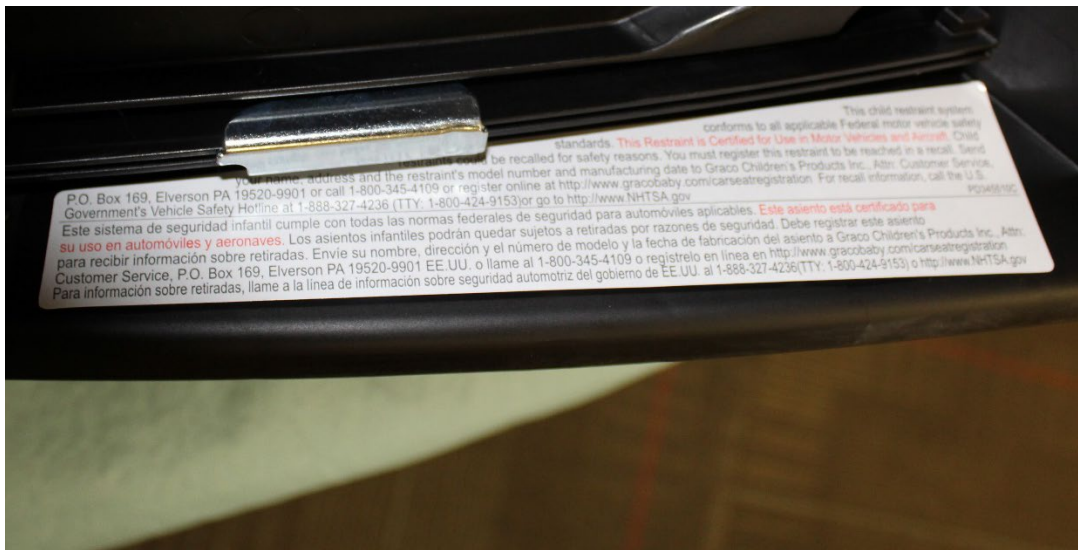
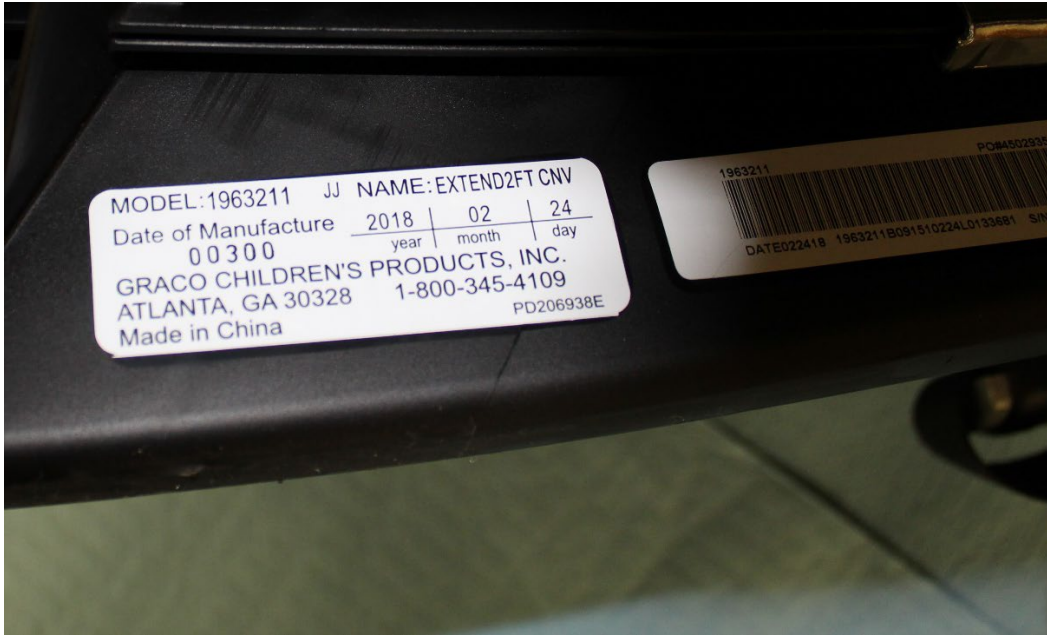
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040-196321-05-6H3FN2TU	040-196321-06-6W3FN2TU



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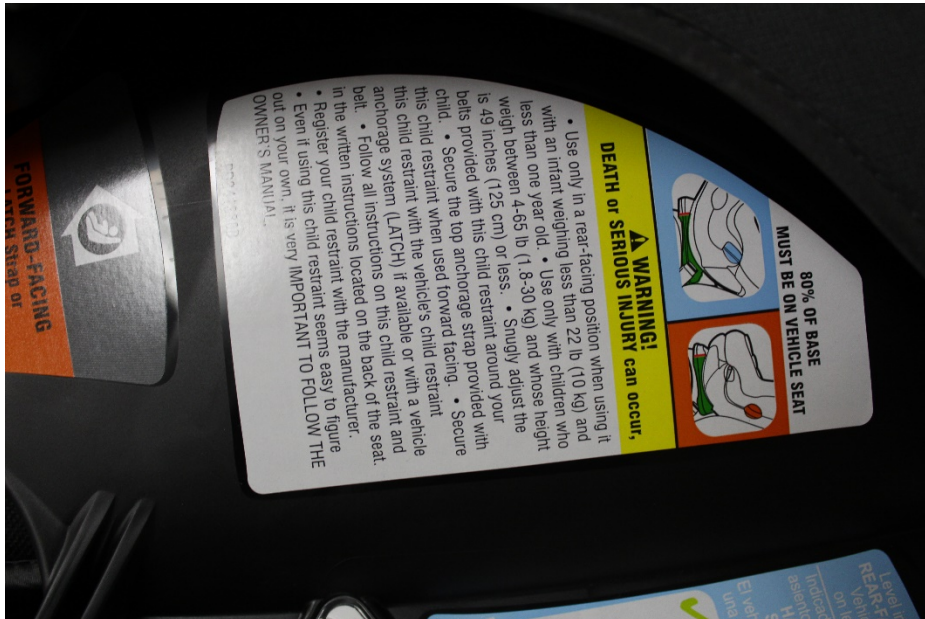
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040-196321-06-6W3FN2TU



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040-196321-02-3H3FNLTU
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040-196321-06-6W3FN2TU



Labels

213-CAL-18-040

040-196321-01-12CRNLFR

040-196321-02-3H3FNLTU

040-196321-03-12CFNLTU

040-196321-04-3H3FNLFU

040-196321-05-6H3FN2TU

040-196321-06-6W3FN2TU

