

REPORT NUMBER: 221-MGA-2009-001

**SAFETY COMPLIANCE TESTING FOR
FMVSS NO.: 221
SCHOOL BUS BODY JOINT STRENGTH**

**IC CORPORATION
2009 IC RE300 SCHOOL BUS
NHTSA NO.: C90900**

**PREPARED BY:
MGA RESEARCH CORPORATION
5000 WARREN ROAD
BURLINGTON, WI 53105**




FINAL REPORT DATE: OCTOBER 19, 2010

FINAL REPORT


**PREPARED FOR:
U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
ENFORCEMENT
OFFICE OF VEHICLE SAFETY COMPLIANCE
MAIL CODE: NVS-220
1200 NEW JERSEY AVENUE, S.E.
WASHINGTON, D.C. 20590**

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Prepared by:  Date: October 19, 2010
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FINAL REPORT ACCEPTED BY:



October 19, 2010
Date of Acceptance

Technical Report Documentation Page

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16. Abstract Compliance tests were conducted on the subject 2009 IC RE300 School Bus, NHTSA No.: C90900, in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No.: TP-221-03 for the determination of Compliance with FMVSS 221 requirements. Test Failures: None			
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SECTION 1
PURPOSE OF COMPLIANCE TEST

Tests were conducted on a 2009 IC RE 300 School Bus, NHTSA No. C90900, in accordance with the specifications of the Office of Vehicle Safety Compliance (OVSC) Test Procedures TP-221-03 to determine compliance with the requirements of Federal Motor Vehicle Safety Standards (FMVSS) 221, "School Bus Body Joint Strength".

This program is sponsored by the National Highway Traffic Safety Administration (NHTSA), under Contract No.: DTNH22-08-D-00075.

SECTION 2

TEST PROCEDURE

The 2009 IC RE 300 School Bus, NHTSA No.: C90900 was subjected to FMVSS 221 testing.

The joint samples were selected in conjunction with the Contract Officer's Technical Representative (COTR). Five 12 x 48 inch samples were selected along with an 11.5 x 48 inch sample. They were removed from the bus using a metal shear and/or SawzAll type of cutter.

After each sample area had been removed from the bus, the sample was cut to the specific selected dimensions. Each specimen was carefully shaped to the final size using supports as specified in FMVSS 221. Additionally, temperature monitoring stickers were placed at the specified locations of each sample to ensure the sample temperature did not exceed 140°F during the shaping operation.

The samples were tested using the MGA 50,000 pound tensile tester. The force applied was measured directly at the upper clamp. The upper clamp was attached to the load cell and the lower clamp was attached to the load frame.

The gripping devices were fabricated from 3" x 3" angle iron. Slots were milled on the face that mounted to the machine, in order to allow for fore and aft movement of the clamps. This allowed the specimens to be fixtured so that the axis of the test specimen coincided with the centerline axis of the tensile tester heads.

The test specimen was inserted in between the grips, and the grips were then bolted together using 7 size ½" bolts. The bolts were inserted through one grip, through the test specimen, and then through the other grip. This prevented any slipping of the test sample in the grips, while fully distributing the clamping force across the entire end width of the test sample. Post test examination of the specimens indicated that no loads were applied to the clamp mounting holes.

The rate of load application was ¼ inch per minute. The force and displacement were recorded and displacement vs. time was plotted to monitor the displacement rate.

SECTION 3
TEST DATA SUMMARY

A total of six samples were tested for this vehicle. The samples were selected from the right side exterior, right side interior, left side exterior, left side interior, mid roof exterior, and mid roof interior.

	Maximum Load (N)	60% of Material Strength (N)	PASS/FAIL
Right Side Interior	28,538.0	25,084.5	PASS
Left Side Exterior	49,764.0	47,409.0	PASS
Mid Roof Interior	30,403.0	25,707.8	PASS
Mid Roof Exterior	54,258.0	27,567.7	PASS
Left Side Interior	28,021.0	25,084.5	PASS
Right Side Exterior	72,249.0	47,409.0	PASS

The maximum forces measured, and the displacement rate used, are provided in Section 7.

The photographs taken from the samples are provided in Section 6 and Section 8.

SECTION 4
COMPLIANCE TEST DATA

The following data sheets document the results of FMVSS 221 testing on the 2009 IC RE 300 School Bus, NHTSA No.: C90900.

DATA SHEET 1
ADMINISTRATIVE DATA SHEET

Test Vehicle: **2009 IC RE 300 SCHOOL BUS**
Test Lab: **MGA RESEARCH CORPORATION**

NHTSA No.: **C90900**
Test Date: **6/10/09**

INCOMPLETE VEHICLE (IF APPLICABLE)

Manufacturer:	
Model:	
VIN:	
Build Date:	
Certification Date:	

COMPLETED VEHICLE (SCHOOL BUS)

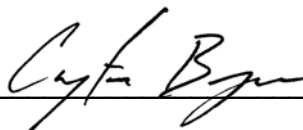
Manufacturer:	IC CORPORATION
Make/Model:	IC RE 300 SCHOOL BUS
VIN:	4DRBWAAN29A083456
NHTSA No.:	C90900
Color:	Yellow
GVWR:	14,424 kg / 31,800 lbs
Build Date:	04/08
Certification Date:	04/08

DATES

Vehicle Receipt:	09/08/08
Start of Compliance Test:	06/10/09
Completion of Compliance Test:	06/10/09

COMPLIANCE TEST:

All tests were performed in accordance with the references outlined in TP-221-03.

Recorded By: 

Approved By: 

Date: 06/10/09

DATA SHEET 2
SUMMARY OF DATA

Test Vehicle: **2009 IC RE 300 SCHOOL BUS**
Test Lab: **MGA RESEARCH CORPORATION**

NHTSA No.: **C90900**
Test Date: **6/10/09**

Joint Specimen I.D.	Joint Location	Joint Load Reqmt (60%) (N)	Max. Load at Joint Separation (N)	Calculated Material Strength (N)	PASS/ FAIL
ILSRM186BBH	Right Side Interior	25,084.5	28,538.0	41,807.5	PASS
ILSLFE187BAH	Left Side Exterior	47,409.0	49,764.0	79,015.1	PASS
ILRCME188BAH	Mid Roof Interior	25,707.8	30,403.0	42,846.4	PASS
ILSRM186BSH	Mid Roof Exterior	27,567.7	54,258.0	45,946.2	PASS
ILSLRI186CSH	Left Side Interior	25,084.5	28,021.0	41,807.5	PASS
ILSRME186BAH	Right Side Exterior	47,409.0	72,249.0	79,015.1	PASS

Comments: The signs in the photographs incorrectly identify the test specimen ID numbers.

Recorded By: 

Approved By: 

Date: 06/10/09

DATA SHEET 3

JOINT STRENGTH WHEN ASTM MATERIAL PROPERTIES ARE KNOWN

Test Vehicle: **2009 IC RE 300 SCHOOL BUS**
 Test Lab: **MGA RESEARCH CORPORATION**

NHTSA No.: **C90900**
 Test Date: **6/10/09**

Specimen Description:	Right Side Interior		
Joint Number:	ILSRMI186BBH	Test Number:	Q09200

	Weaker Member	Stronger Member
Material	ASTM 653, Grade 1008	N/A
Tensile Strength (MPa)	310.3	N/A
Gage/Thickness (mm)	22 / 0.762	N/A
Fastener Holes (No./Diameter – mm.)	6 / 4.39	N/A
Net Area (Sq. mm.)	134.7	N/A
Material Strength (N)	41,807.5	N/A
60% of Material Strength (N)	25,084.5	N/A
Maximum Load From Tensile Test of Joint (N)	28,538.0	N/A
PASS/FAIL	PASS	N/A

Comments: NONE

Recorded By: 

Approved By: 

Date: 06/10/09

DATA SHEET 3... (Continued)

JOINT STRENGTH WHEN ASTM MATERIAL PROPERTIES ARE KNOWN

Test Vehicle: **2009 IC RE 300 SCHOOL BUS**
 Test Lab: **MGA RESEARCH CORPORATION**


NHTSA No.: **C90900**
 Test Date: **6/10/09**

Specimen Description:	Left Side Exterior		
Joint Number:	ILSLFE187BAH	Test Number:	Q09201

	Weaker Member	Stronger Member
Material	ASTM 653, Grade 1008	N/A
Tensile Strength (MPa)	310.3	N/A
Gage/Thickness (mm)	16 / 1.524	N/A
Fastener Holes (No./Diameter – mm.)	7 / 5.16	N/A
Net Area (Sq. mm.)	254.7	N/A
Material Strength (N)	79,015.1	N/A
60% of Material Strength (N)	47,409.0	N/A
Maximum Load From Tensile Test of Joint (N)	49,764.0	N/A
PASS/FAIL	PASS	N/A

Comments: NONE

Recorded By: 

Approved By: 

Date: 06/10/09

DATA SHEET 3... (Continued)

JOINT STRENGTH WHEN ASTM MATERIAL PROPERTIES ARE KNOWN

Test Vehicle: **2009 IC RE 300 SCHOOL BUS**
 Test Lab: **MGA RESEARCH CORPORATION**

NHTSA No.: **C90900**
 Test Date: **6/10/09**

Specimen Description:	Mid Roof Interior		
Joint Number:	ILRCME188BAH	Test Number:	Q09202

	Weaker Member	Stronger Member
Material	ASTM 653, Grade 1008	N/A
Tensile Strength (MPa)	310.3	N/A
Gage/Thickness (mm)	22 / 0.762	N/A
Fastener Holes (No./Diameter – mm.)	5 / 4.39	N/A
Net Area (Sq. mm.)	138.1	N/A
Material Strength (N)	42,846.4	N/A
60% of Material Strength (N)	25,707.8	N/A
Maximum Load From Tensile Test of Joint (N)	30,403.0	N/A
PASS/FAIL	PASS	N/A

Comments: NONE

Recorded By: 

Approved By: 

Date: 06/10/09

DATA SHEET 3... (Continued)

JOINT STRENGTH WHEN ASTM MATERIAL PROPERTIES ARE KNOWN


Test Vehicle: **2009 IC RE 300 SCHOOL BUS**
 Test Lab: **MGA RESEARCH CORPORATION**


NHTSA No.: **C90900**
 Test Date: **6/10/09**

Specimen Description:	Mid Roof Exterior		
Joint Number:	ILSRMI186BSH	Test Number:	Q09203

	Weaker Member	Stronger Member
Material	ASTM 653, Grade 1008	N/A
Tensile Strength (MPa)	310.3	N/A
Gage/Thickness (mm)	20 / .0914	N/A
Fastener Holes (No./Diameter – mm.)	8 / 5.16	N/A
Net Area (Sq. mm.)	148.1	N/A
Material Strength (N)	45,946.2	N/A
60% of Material Strength (N)	27,567.7	N/A
Maximum Load From Tensile Test of Joint (N)	54,258.0	N/A
PASS/FAIL	PASS	N/A

Comments: NONE

Recorded By: 

Approved By: 

Date: 06/10/09

DATA SHEET 3... (Continued)

JOINT STRENGTH WHEN ASTM MATERIAL PROPERTIES ARE KNOWN

Test Vehicle: **2009 IC RE 300 SCHOOL BUS**
 Test Lab: **MGA RESEARCH CORPORATION**

NHTSA No.: **C90900**
 Test Date: **6/10/09**

Specimen Description:	Left Side Interior		
Joint Number:	ILSLR1186CSH	Test Number:	Q09205

	Weaker Member	Stronger Member
Material	ASTM 653, Grade 1008	N/A
Tensile Strength (MPa)	310.3	N/A
Gage/Thickness (mm)	22 / 0.762	N/A
Fastener Holes (No./Diameter – mm.)	6 / 4.39	N/A
Net Area (Sq. mm.)	134.7	N/A
Material Strength (N)	41,807.5	N/A
60% of Material Strength (N)	25,084.5	N/A
Maximum Load From Tensile Test of Joint (N)	28,021.0	N/A
PASS/FAIL	PASS	N/A

Comments: NONE

Recorded By: 

Approved By: 

Date: 06/10/09

DATA SHEET 3... (Continued)

JOINT STRENGTH WHEN ASTM MATERIAL PROPERTIES ARE KNOWN

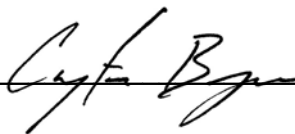
Test Vehicle: **2009 IC RE 300 SCHOOL BUS**
 Test Lab: **MGA RESEARCH CORPORATION**

NHTSA No.: **C90900**
 Test Date: **6/10/09**

Specimen Description:	Right Side Exterior		
Joint Number:	ILSRME186BAH	Test Number:	Q09205

	Weaker Member	Stronger Member
Material	ASTM 653, Grade 1008	N/A
Tensile Strength (MPa)	310.3	N/A
Gage/Thickness (mm)	16 / 1.524	N/A
Fastener Holes (No./Diameter – mm.)	7 / 5.16	N/A
Net Area (Sq. mm.)	254.7	N/A
Material Strength (N)	79,015.1	N/A
60% of Material Strength (N)	47,409.0	N/A
Maximum Load From Tensile Test of Joint (N)	72,249.0	N/A
PASS/FAIL	PASS	N/A

Comments: NONE

Recorded By: 

Approved By: 

Date: 06/10/09

**SECTION 5
INSTRUMENTATION AND EQUIPMENT LIST**

Test Vehicle: **2009 IC RE 300 SCHOOL BUS**
 Test Lab: **MGA RESEARCH CORPORATION**

NHTSA No.: **C90900**
 Test Date: **6/10/09**

Equipment	Description	Model/Serial No.	Cal. Date	Next Cal. Date
Load Cell	Interface	1210AF / 137781	5/13/09	11/13/09
Linear Potentiometer	Patriot	P25A / 1202-19365	5/25/09	11/25/09
Steel Tape	Stanley	Powerlock / 184	4/9/09	10/9/09
Temp. Stickers	McMaster Carr	60° C / 5952K21	One Time Use	---

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Test Vehicle: **2009 IC RE 300 SCHOOL BUS**
Test Lab: **MGA RESEARCH CORPORATION**

NHTSA No.: **C90900**
Test Date: **6/10/09**



Front View of School Bus

Test Vehicle: 2009 IC RE 300 SCHOOL BUS
Test Lab: MGA RESEARCH CORPORATION

NHTSA No.: C90900
Test Date: 6/10/09



Rear View of School Bus

Test Vehicle: **2009 IC RE 300 SCHOOL BUS**
Test Lab: **MGA RESEARCH CORPORATION**

NHTSA No.: **C90900**
Test Date: **6/10/09**



Left Side View of School Bus

Test Vehicle: 2009 IC RE 300 SCHOOL BUS
Test Lab: MGA RESEARCH CORPORATION

NHTSA No.: C90900
Test Date: 6/10/09



Right Side View of School Bus

Test Vehicle: 2009 IC RE 300 SCHOOL BUS
Test Lab: MGA RESEARCH CORPORATION

NHTSA No.: C90900
Test Date: 6/10/09



MANUFACTURED BY
IC CORPORATION

DATE OF MANUFACTURE 04 MO. 08 YR.

GVWR 14,424 KGS (31,800 LBS)
GAWR FRONT 5,443 KGS (12,000 LBS) WITH
295/75R22.5G TIRES 14 PLY AT
758 KPa (110 PSI) COLD
RIMS 22.5X8.25 AXLE SINGLE

GAWR REAR 8,981 KGS (19,800 LBS) WITH
10R22.5G TIRES 14 PLY AT
723 KPa (105 PSI) COLD
RIMS 22.5X7.50 AXLE DUAL

**THIS VEHICLE CONFORMS TO ALL
APPLICABLE FEDERAL MOTOR
VEHICLE SAFETY STANDARDS IN
EFFECT ON THE DATE OF
MANUFACTURE SHOWN ABOVE.**

VEHICLE IDENTIFICATION NO.
4DRBWAAN29A083456
VEHICLE TYPE
SCHOOL BUS # 083456

ATTENTION DRIVER!
SEE CROSS VIEW ARROWS TO VIEW RESTRICTIONS
WHEN AIR BRAKES ARE STOPPED DO NOT USE THESE
ARROWS TO BE STOPPED WHILE VEHICLE IS MOVING
ARROWS IN SUCH MANNER WHILE VEHICLE IS MOVING
SHOW - AVOIDER - VEHICLES - LEGISLATION
THE PARK CITY CROSS VIEW MIRROR SYSTEM BY
WORLD WIDE JAMBA, INC. (1-800-311-0100)

Close up View of Certification Label

Test Vehicle: 2009 IC RE 300 SCHOOL BUS
Test Lab: MGA RESEARCH CORPORATION

NHTSA No.: C909000
Test Date: 6/10/09



Vehicle Interior View Front to Rear

Test Vehicle: 2009 IC RE 300 SCHOOL BUS
Test Lab: MGA RESEARCH CORPORATION
NHTSA No.: C90900
Test Date: 6/10/09



Vehicle Interior View Rear to Front

Test Vehicle: 2009 IC RE 300 SCHOOL BUS
Test Lab: MGA RESEARCH CORPORATION

NHTSA No.: C90900
Test Date: 6/10/09



Joint Specimen I.D.
ILSRMI186BBH

Location of Joint #1

Test Vehicle: 2009 IC RE 300 SCHOOL BUS
Test Lab: MGA RESEARCH CORPORATION
NHTSA No.: C90900
Test Date: 6/10/09



Location of Joint #2

Test Vehicle: 2009 IC RE 300 SCHOOL BUS
Test Lab: MGA RESEARCH CORPORATION

NHTSA No.: C90900
Test Date: 6/10/09



Location of Joint #4

Test Vehicle: 2009 IC RE 300 SCHOOL BUS
Test Lab: MGA RESEARCH CORPORATION

NHTSA No.: C90900
Test Date: 6/10/09



Location of Joint #5

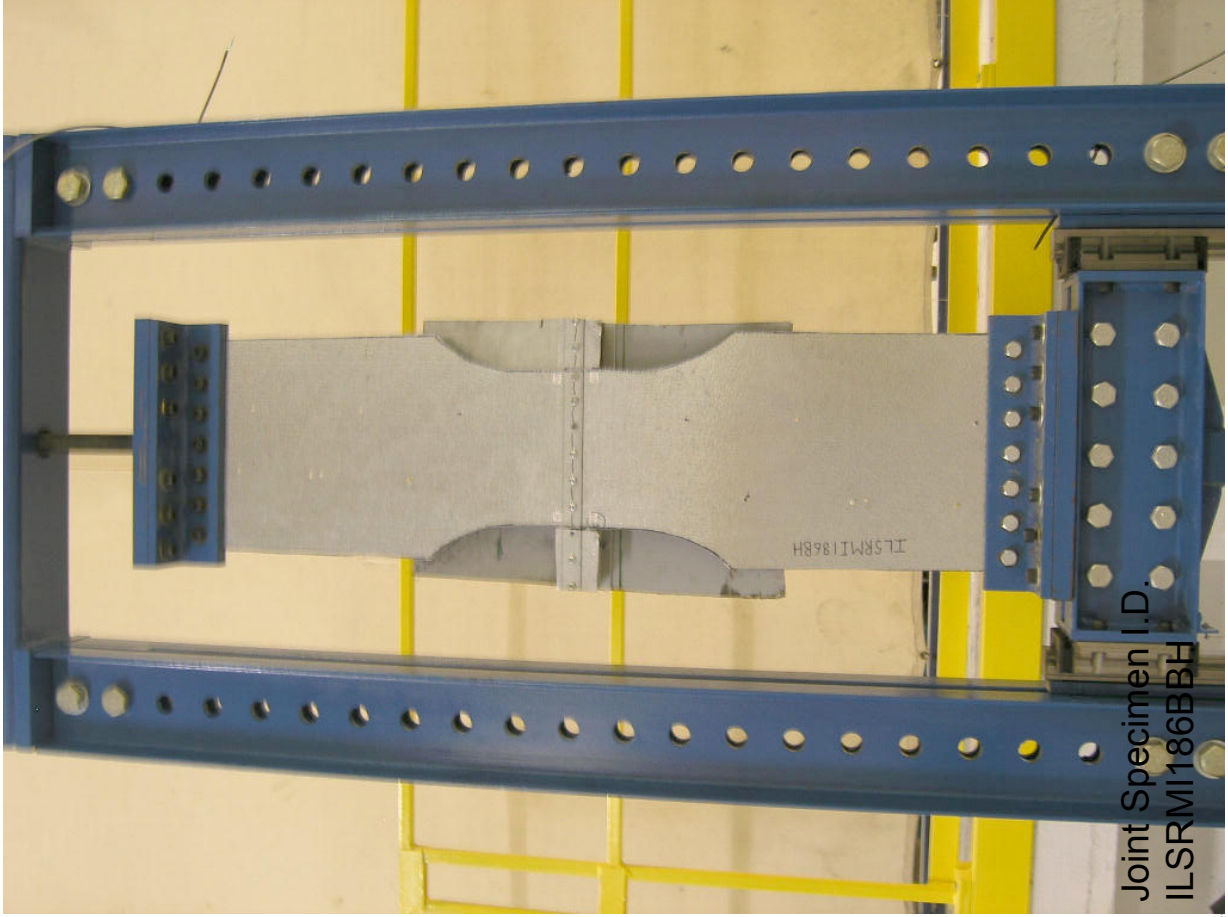
Test Vehicle: 2009 IC RE 300 SCHOOL BUS
Test Lab: MGA RESEARCH CORPORATION

NHTSA No.: C90900
Test Date: 6/10/09



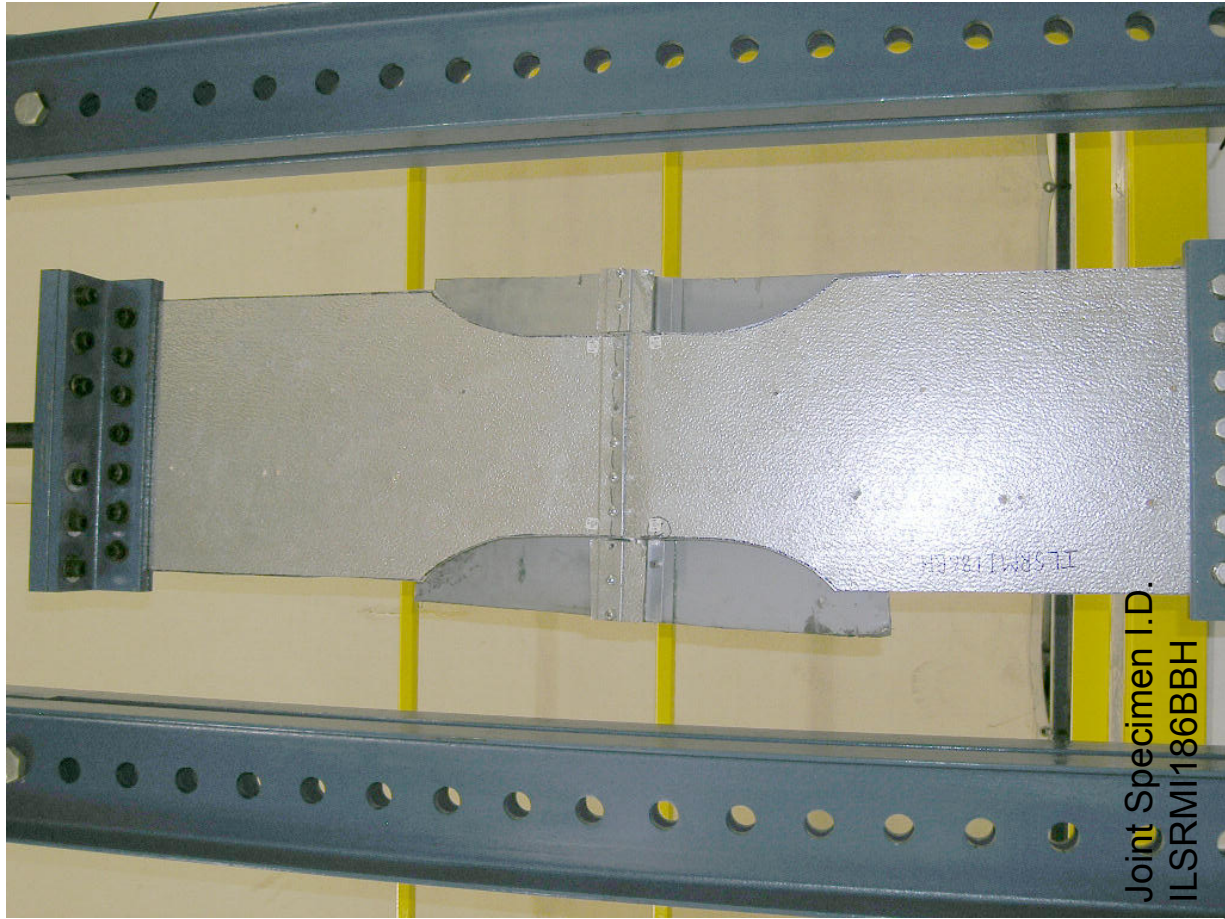
Location of Joint #6

Test Vehicle: 2009 IC RE 300 SCHOOL BUS
Test Lab: MGA RESEARCH CORPORATION
NHTSA No.: C90900
Test Date: 6/10/09



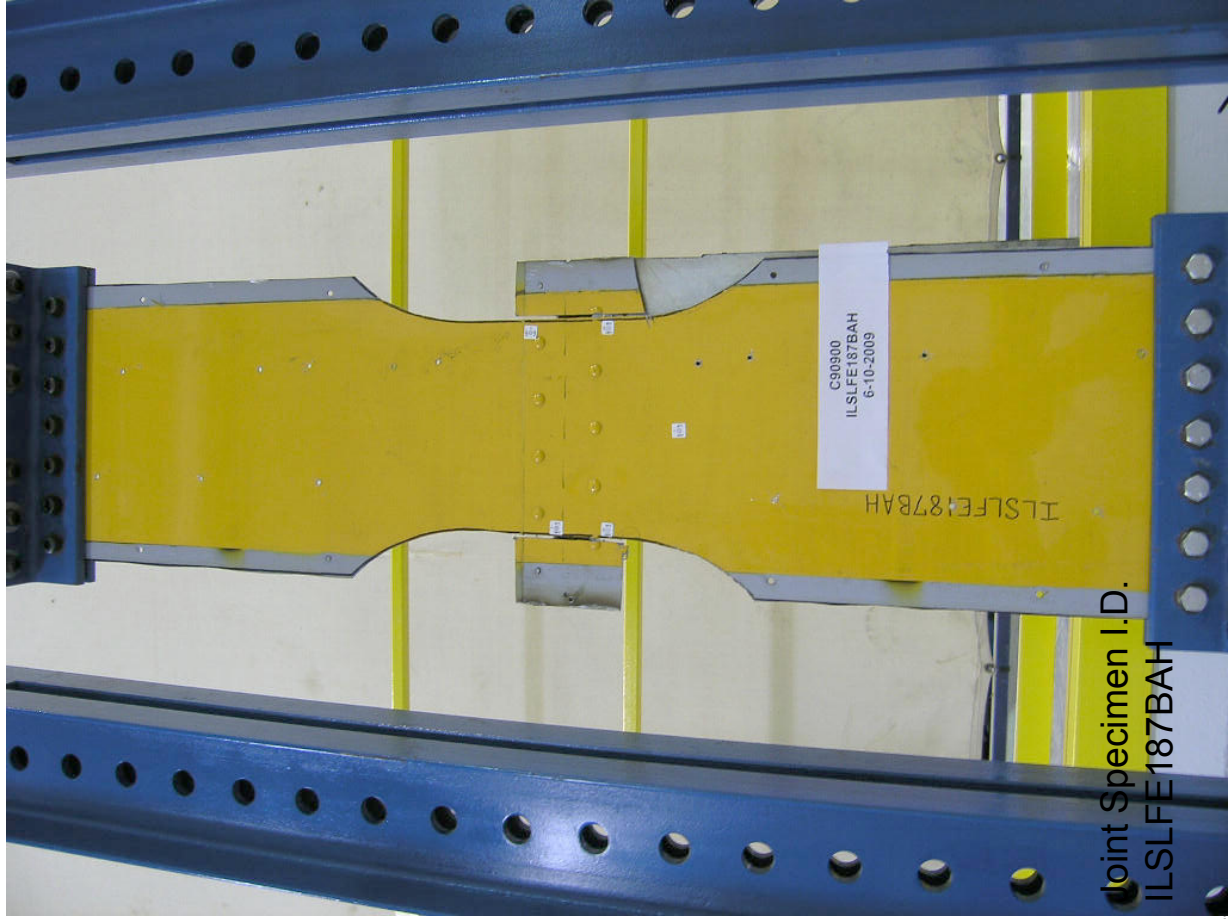
Pre-Test of Joint #1

Test Vehicle: 2009 IC RE 300 SCHOOL BUS
Test Lab: MGA RESEARCH CORPORATION
NHTSA No.: C90900
Test Date: 6/10/09



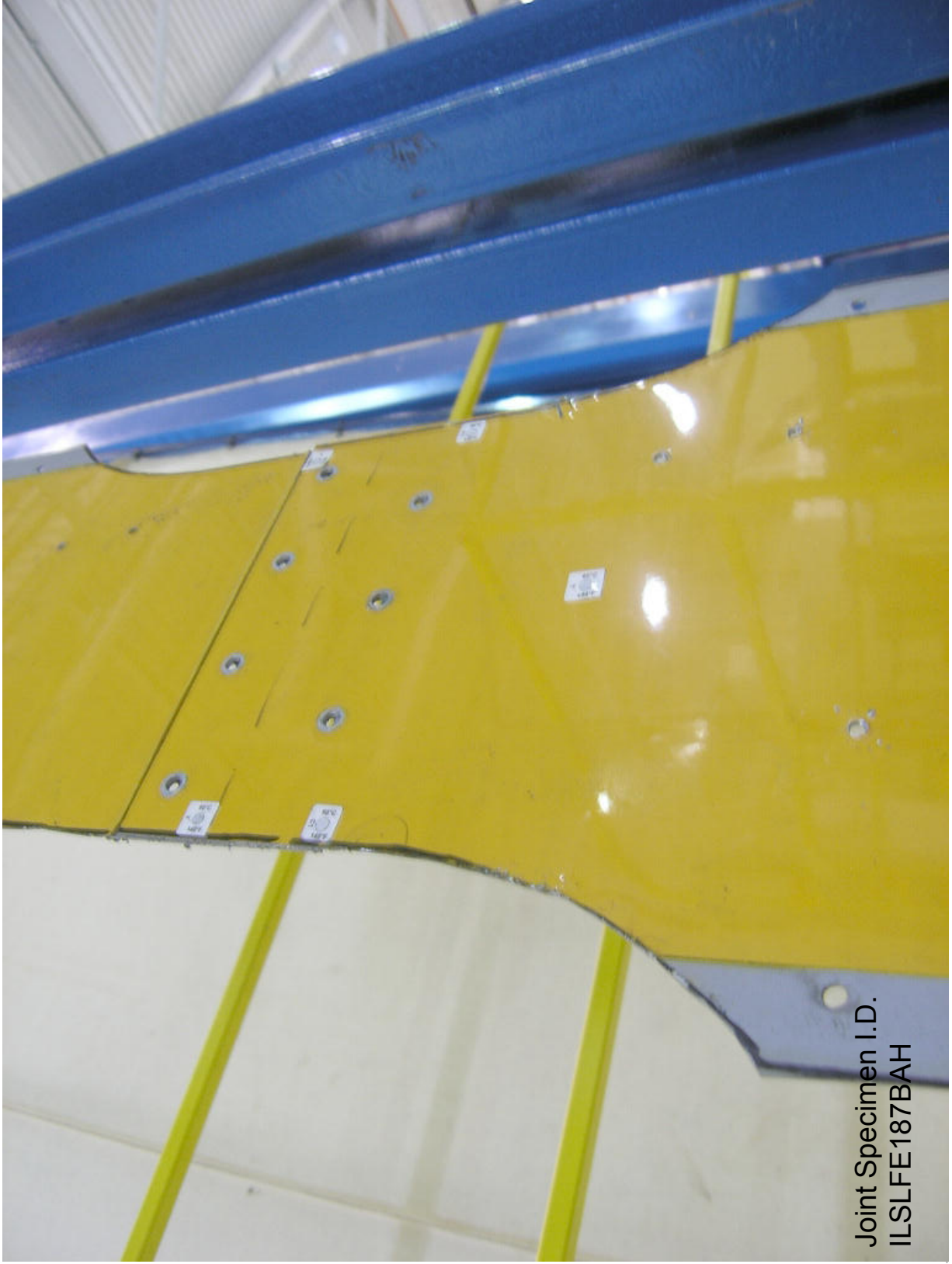
Post-Test of Joint #1

Test Vehicle: 2009 IC RE 300 SCHOOL BUS
Test Lab: MGA RESEARCH CORPORATION
NHTSA No.: C90900
Test Date: 6/10/09



Pre-Test of Joint #2

Test Vehicle: 2009 IC RE 300 SCHOOL BUS
Test Lab: MGA RESEARCH CORPORATION
NHTSA No.: C90900
Test Date: 6/10/09



Post-Test of Joint #2

Test Vehicle: 2009 IC RE 300 SCHOOL BUS
Test Lab: MGA RESEARCH CORPORATION

NHTSA No.: C90900
Test Date: 6/10/09

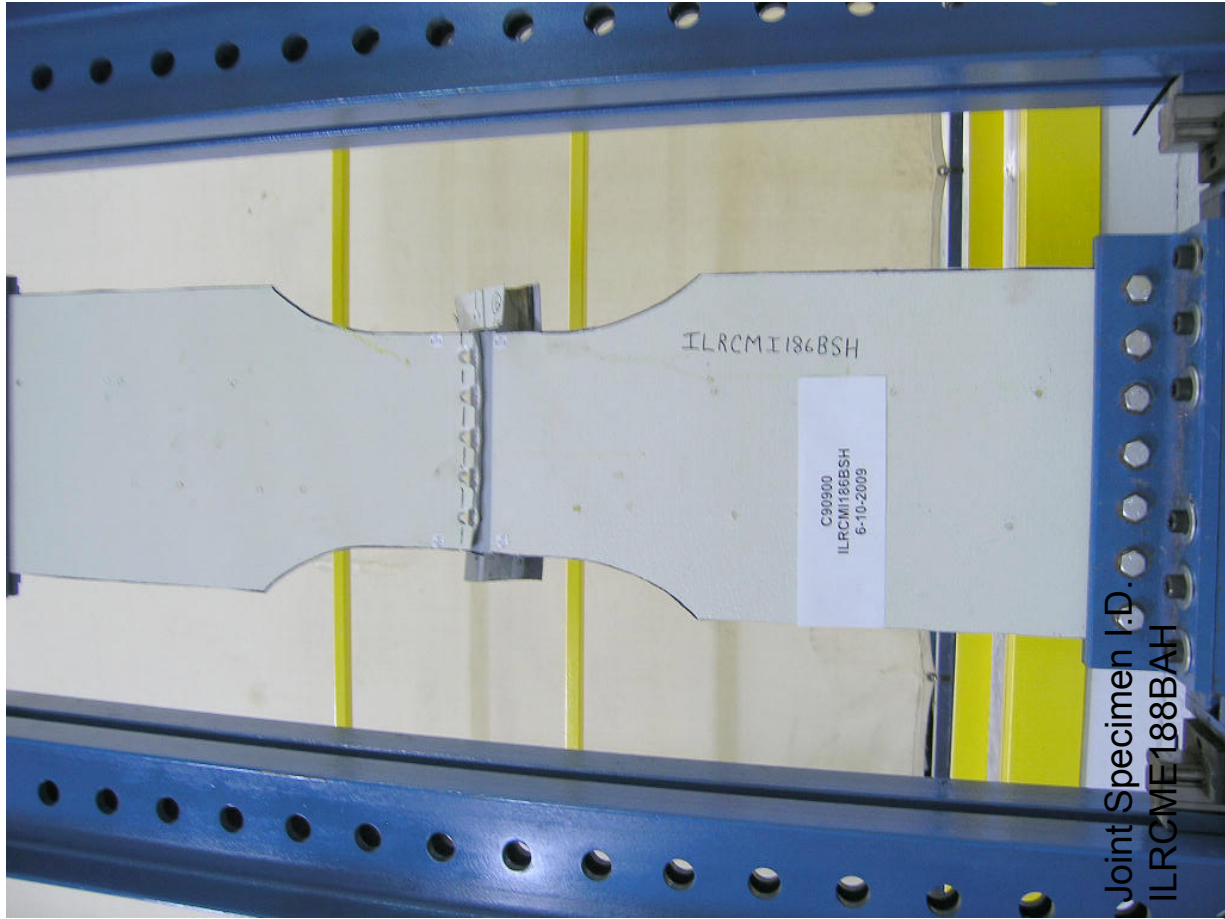


Joint Specimen I.D.
ILRCME188BAH

Pre-Test of Joint #3

Test Vehicle: 2009 IC RE 300 SCHOOL BUS
Test Lab: MGA RESEARCH CORPORATION

NHTSA No.: C90900
Test Date: 6/10/09

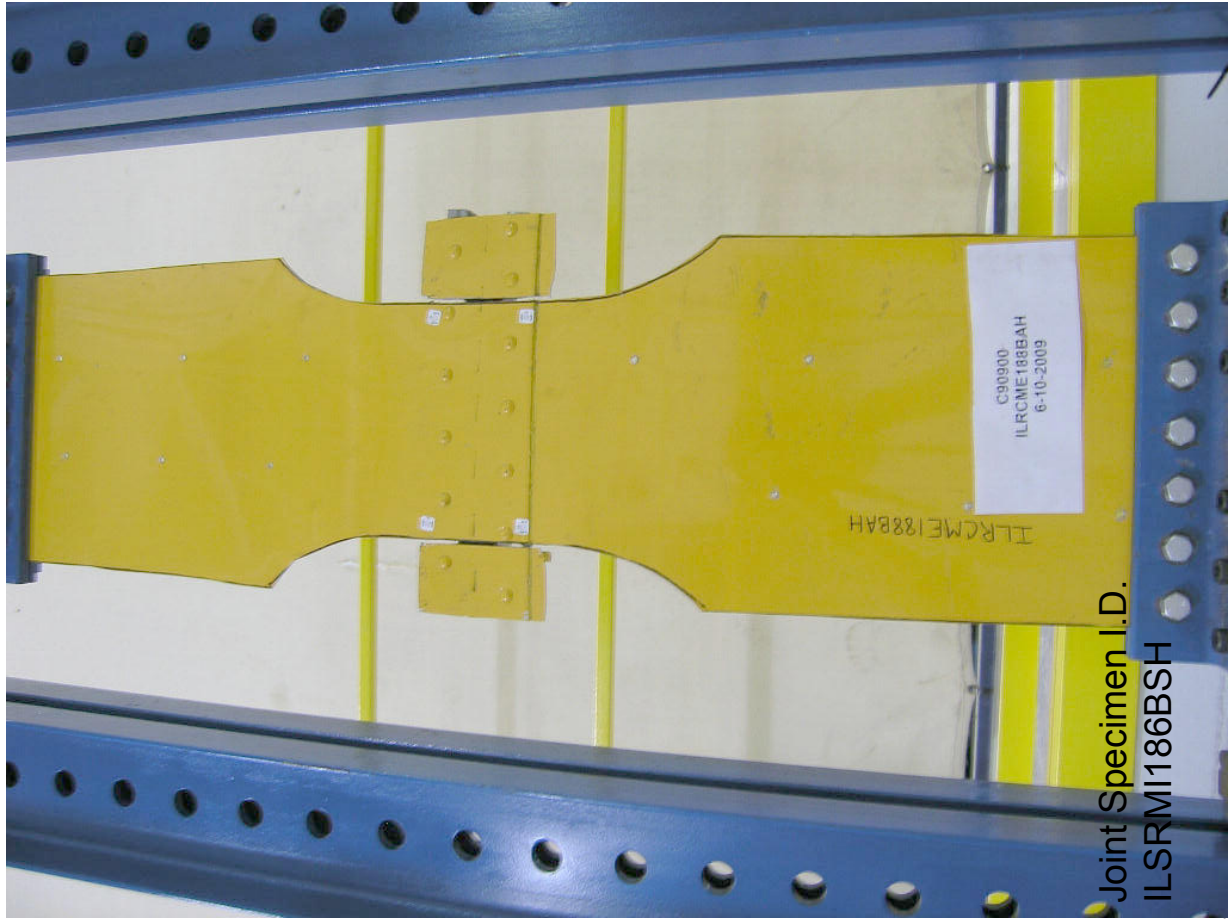


Joint Specimen I.D.
ILRCME188BAH

Post-Test of Joint #3

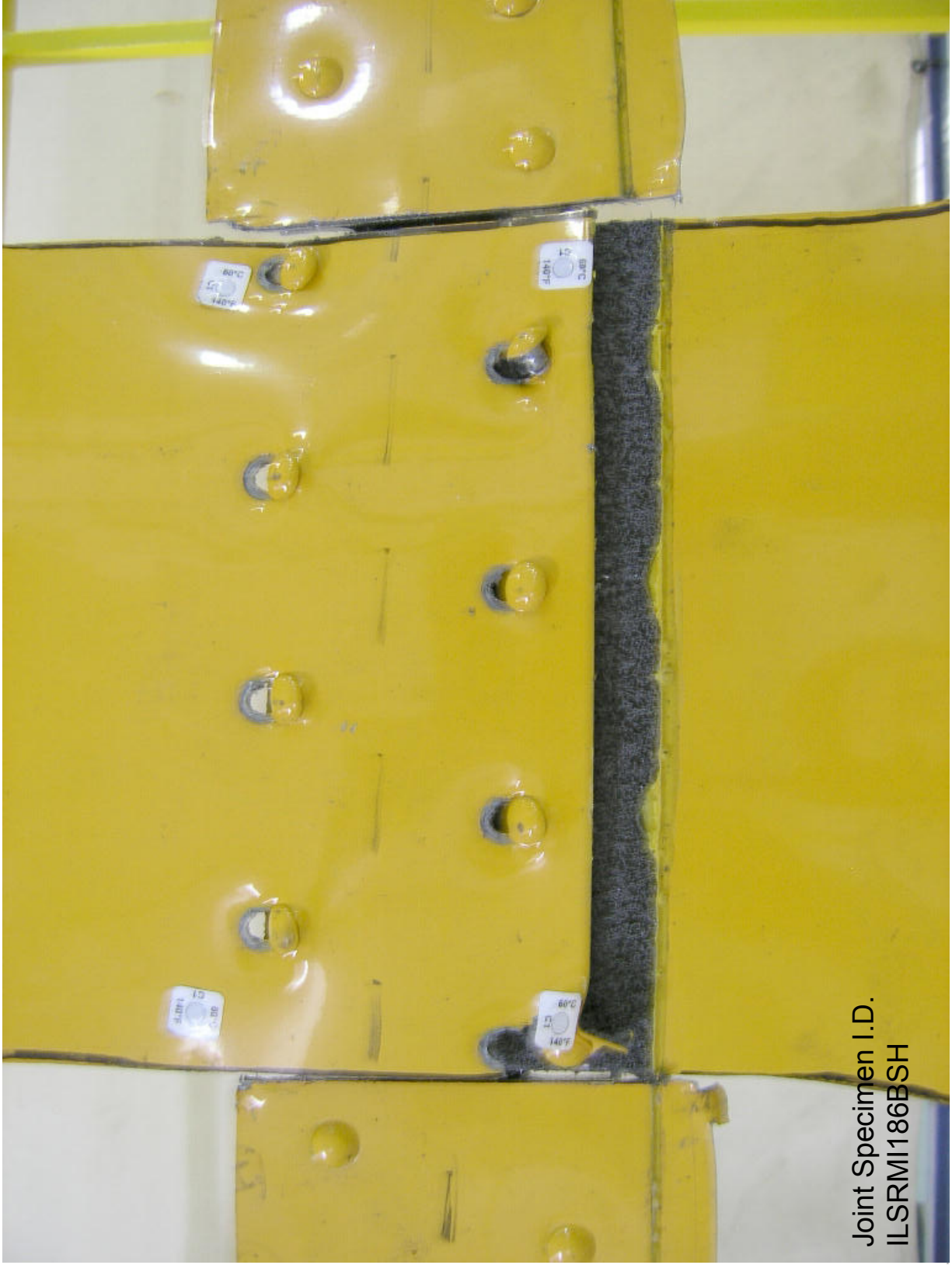
Test Vehicle: 2009 IC RE 300 SCHOOL BUS
Test Lab: MGA RESEARCH CORPORATION

NHTSA No.: C90900
Test Date: 6/10/09



Pre-Test of Joint #4

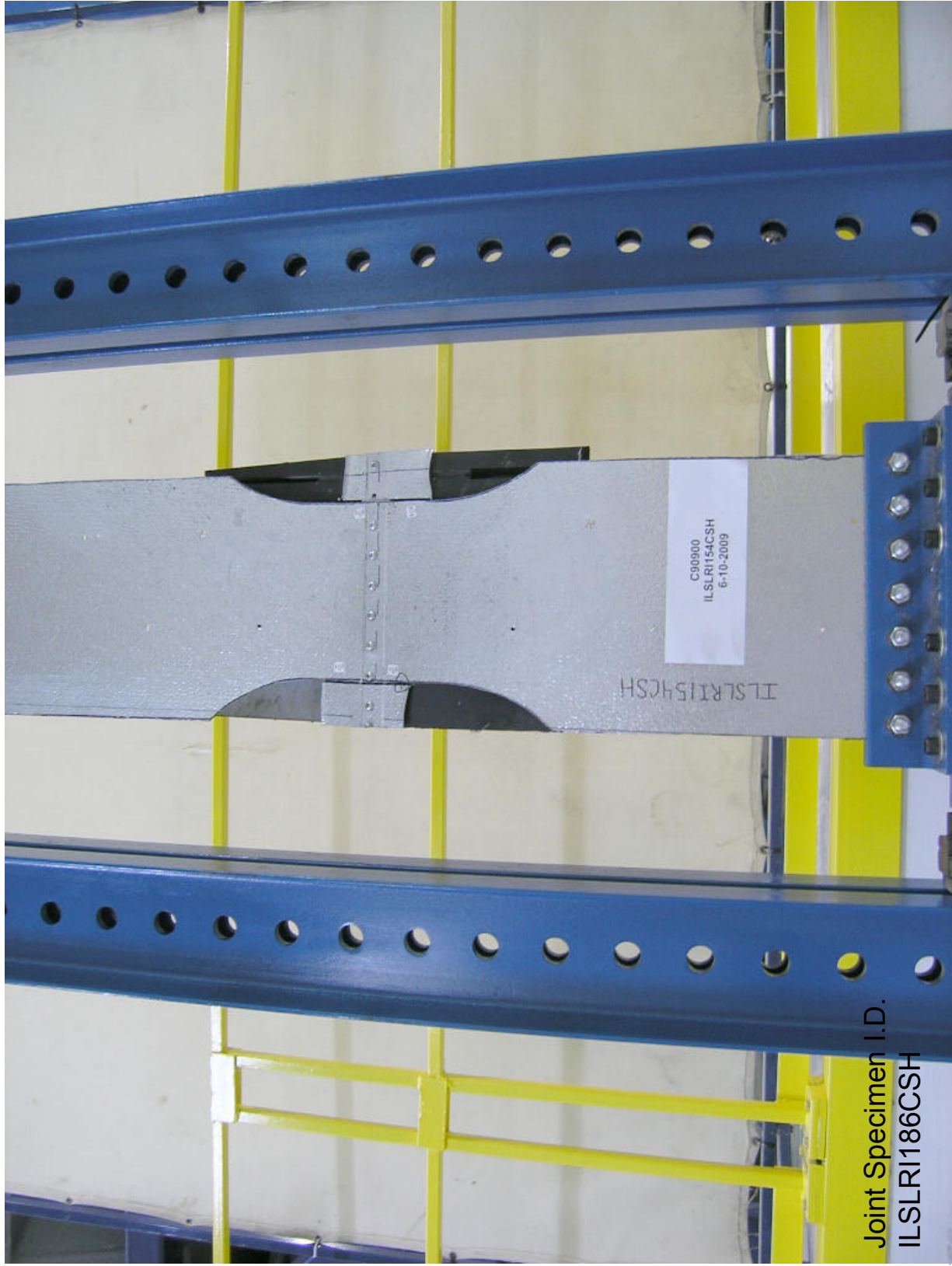
Test Vehicle: 2009 IC RE 300 SCHOOL BUS
Test Lab: MGA RESEARCH CORPORATION
NHTSA No.: C90900
Test Date: 6/10/09



Post-Test of Joint #4

Test Vehicle: 2009 IC RE 300 SCHOOL BUS
Test Lab: MGA RESEARCH CORPORATION

NHTSA No.: C90900
Test Date: 6/10/09



Joint Specimen I.D.
ILSLR1186CSH

Pre-Test of Joint #5

Test Vehicle: 2009 IC RE 300 SCHOOL BUS
Test Lab: MGA RESEARCH CORPORATION
NHTSA No.: C90900
Test Date: 6/10/09



Joint Specimen I.D.
ILSRME186BAH

Post-Test of Joint #6

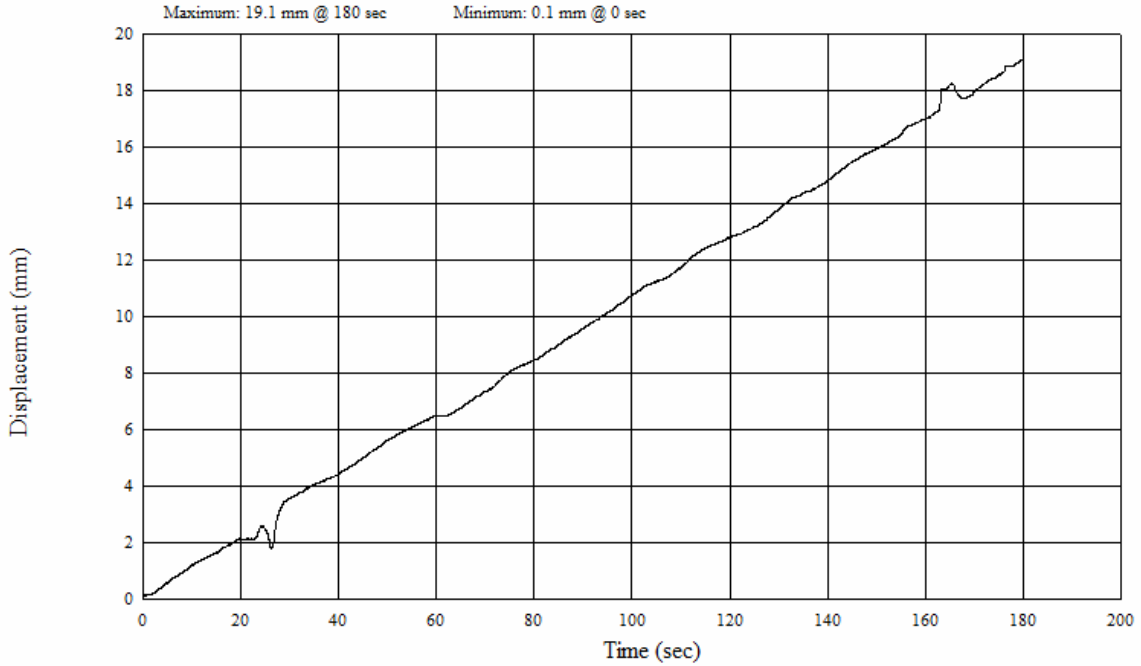
SECTION 7
TEST PLOTS
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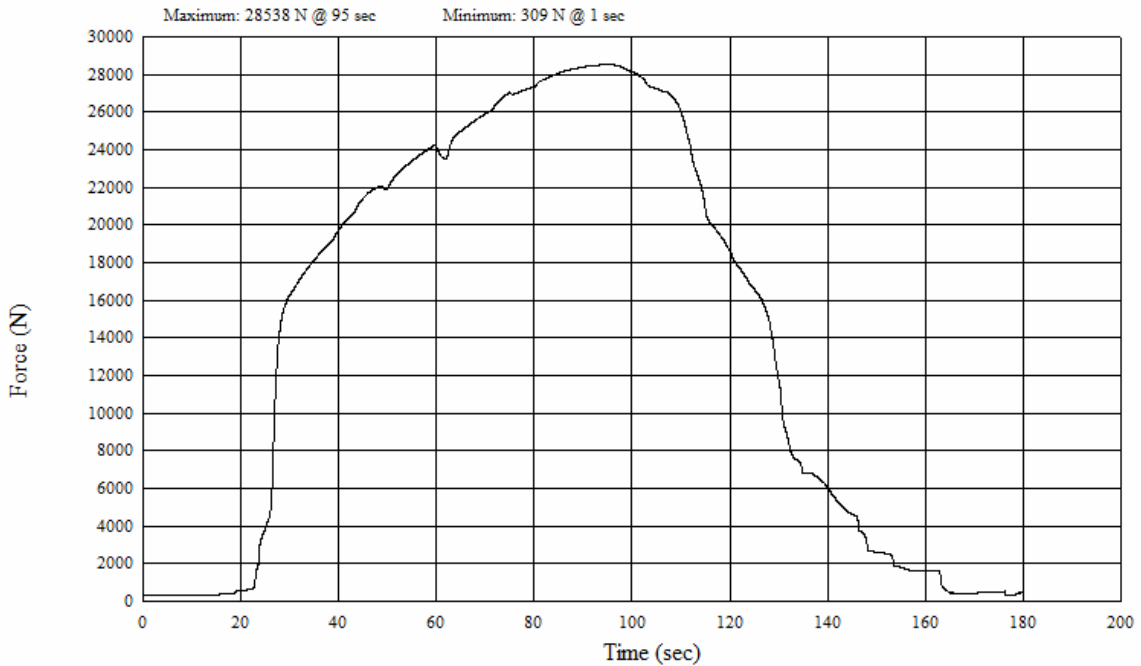
Displacement (mm) vs Time (sec)

Test Description: FMVSS 221
Component ID: 2009 IC RE300 School Bus, NHTSA No.: C90900
Sample No.: 1
Test Date: June 10, 2009



Force (N) vs Time (sec)

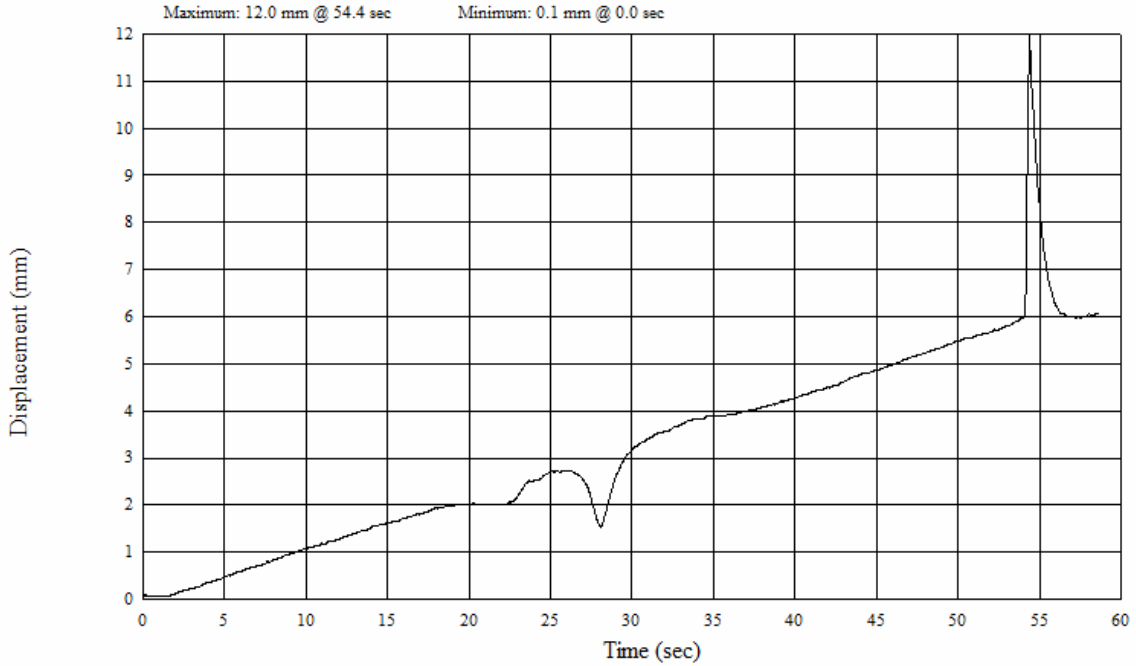
Test Description: FMVSS 221
Component ID: 2009 IC RE300 School Bus, NHTSA No.: C90900
Sample No.: 1
Test Date: June 10, 2009





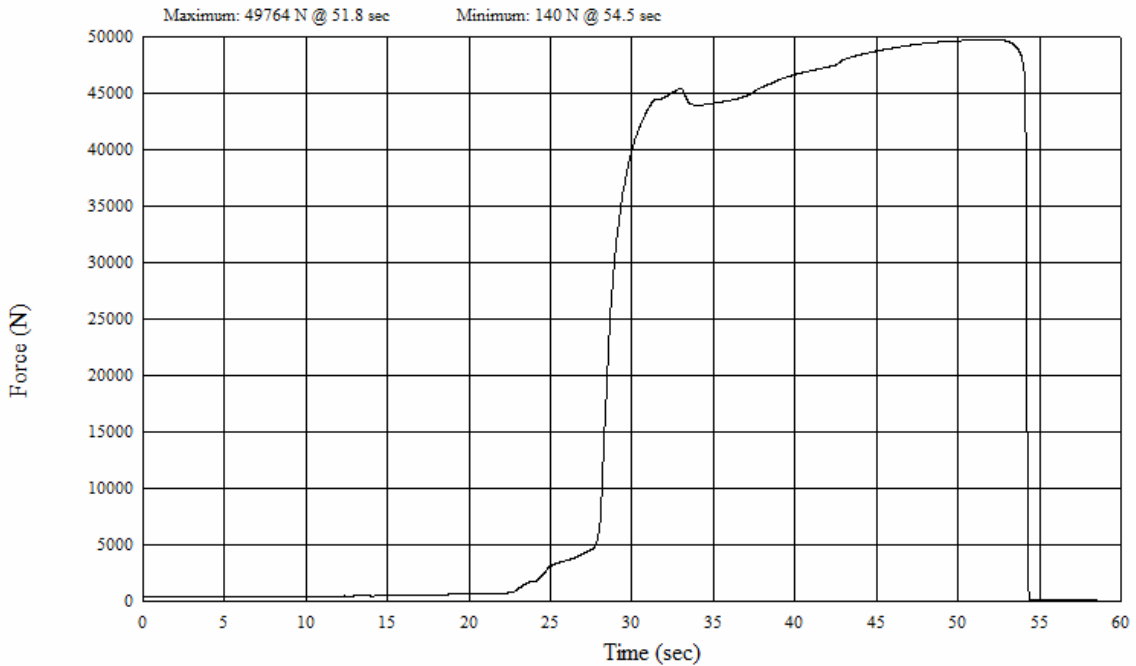
Displacement (mm) vs Time (sec)

Test Description: FMVSS 221
Component ID: 2009 IC RE300 School Bus, NHTSA No.: C90900
Sample No.: 2
Test Date: June 10, 2009



Force (N) vs Time (sec)

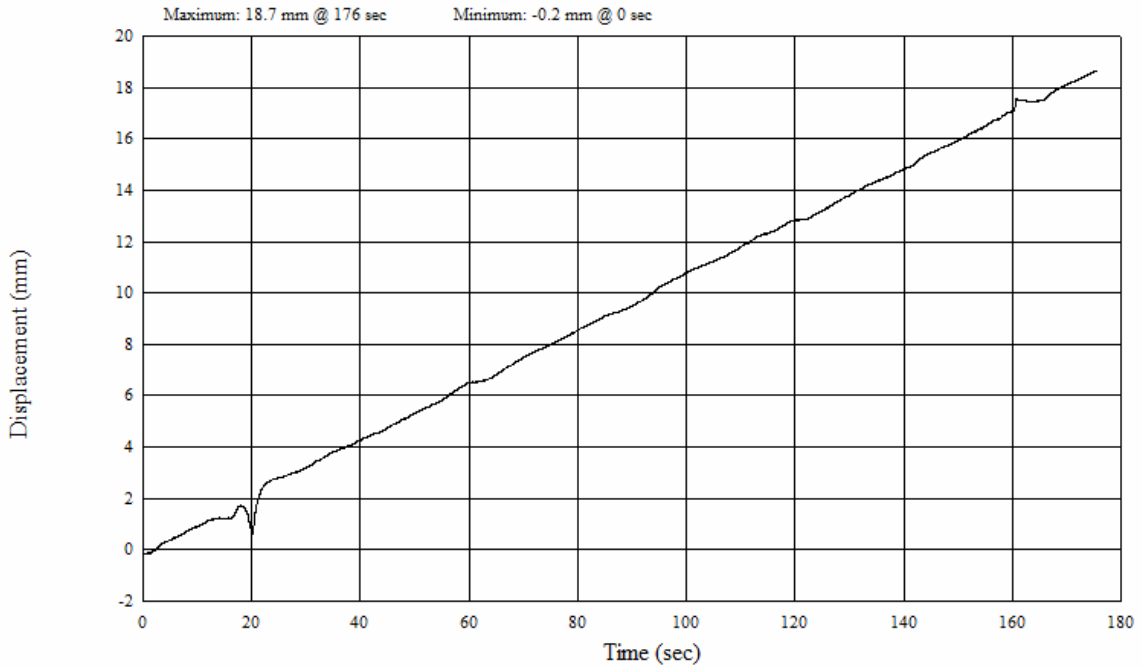
Test Description: FMVSS 221
Component ID: 2009 IC RE300 School Bus, NHTSA No.: C90900
Sample No.: 2
Test Date: June 10, 2009





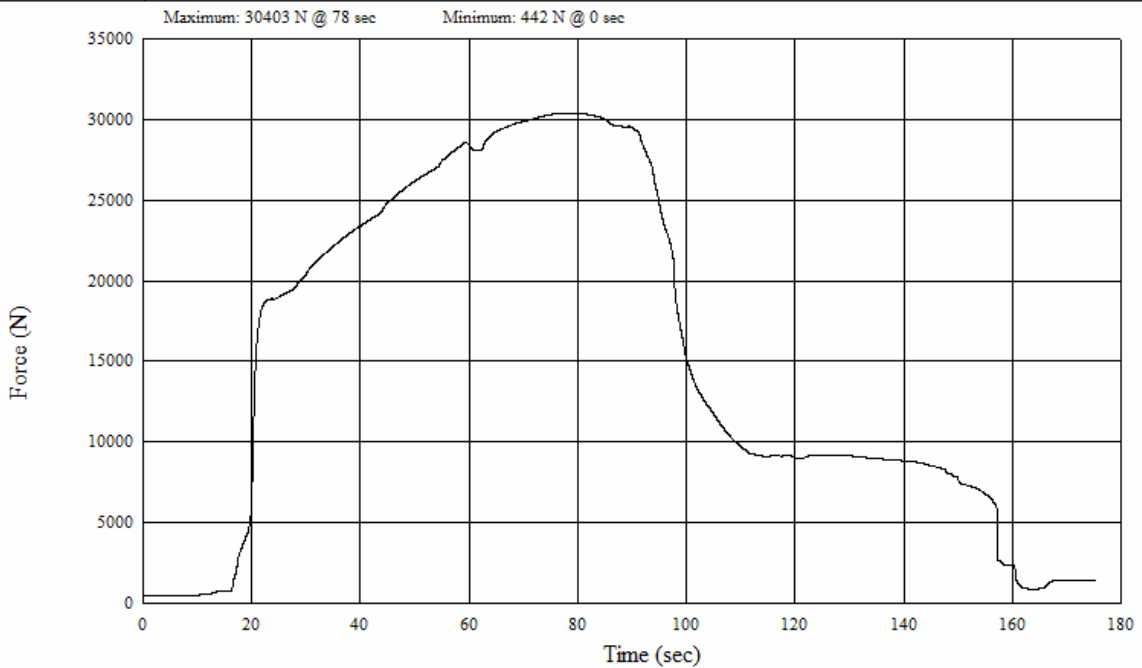
Displacement (mm) vs Time (sec)

Test Description: FMVSS 221
Component ID: 2009 IC RE300 School Bus, NHTSA No.: C90900
Sample No.: 3
Test Date: June 10, 2009



Force (N) vs Time (sec)

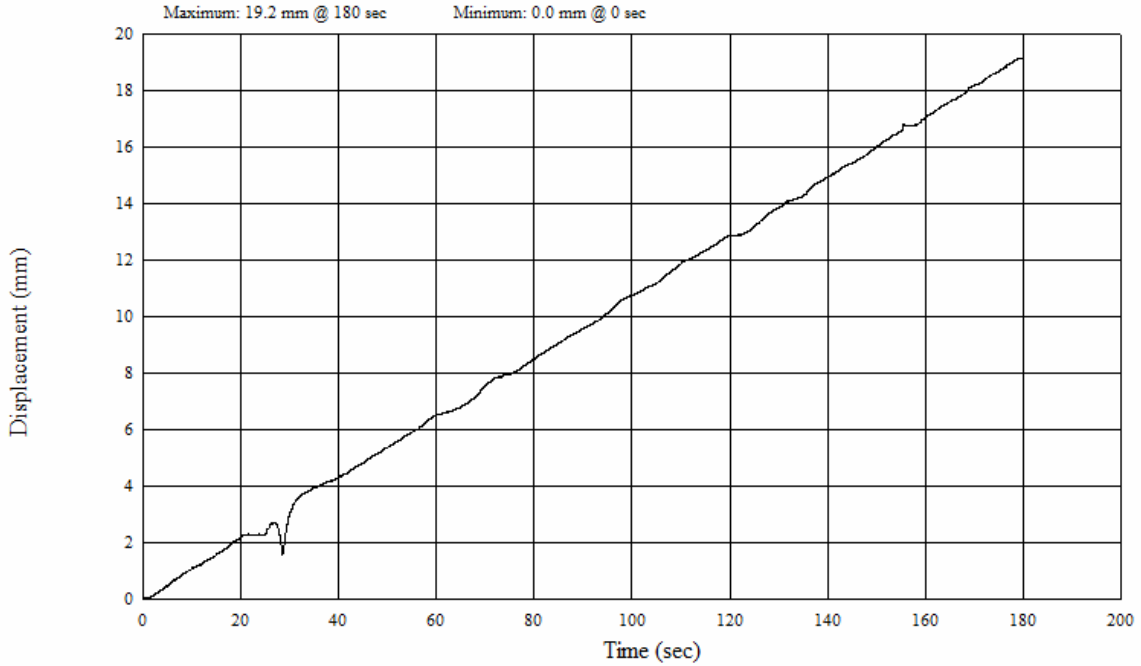
Test Description: FMVSS 221
Component ID: 2009 IC RE300 School Bus, NHTSA No.: C90900
Sample No.: 3
Test Date: June 10, 2009





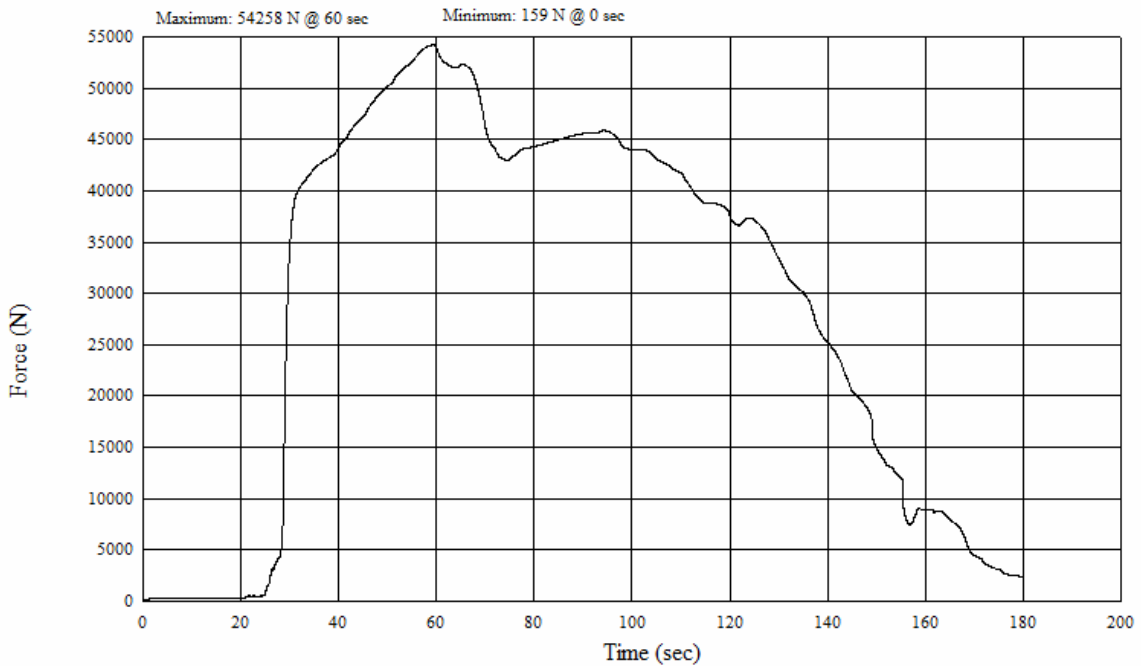
Displacement (mm) vs Time (sec)

Test Description: FMVSS 221
Component ID: 2009 IC RE300 School Bus, NHTSA No.: C90900
Sample No.: 4
Test Date: June 10, 2009



Force (N) vs Time (sec)

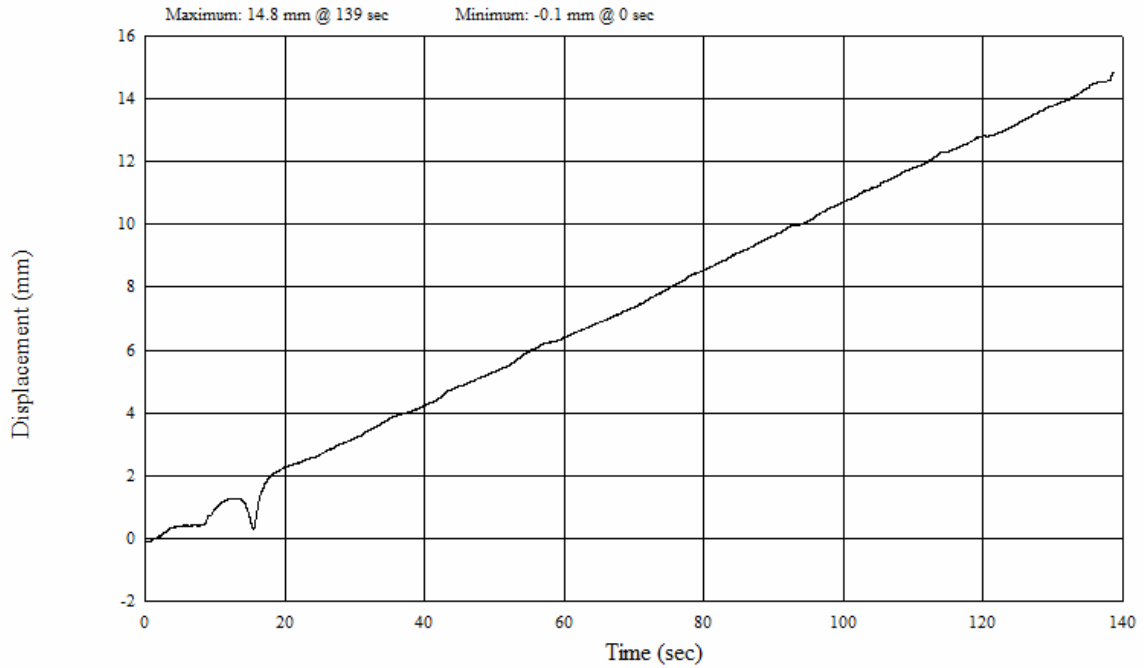
Test Description: FMVSS 221
Component ID: 2009 IC RE300 School Bus, NHTSA No.: C90900
Sample No.: 4
Test Date: June 10, 2009





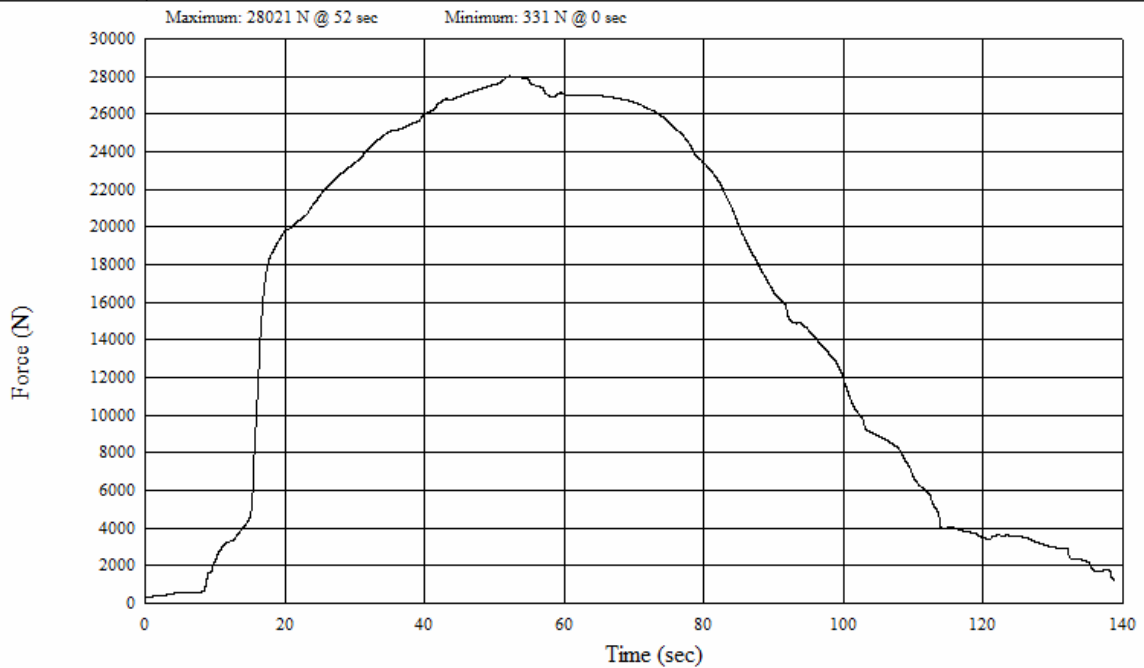
Displacement (mm) vs Time (sec)

Test Description: FMVSS 221
Component ID: 2009 IC RE300 School Bus, NHTSA No.: C90900
Sample No.: 5
Test Date: June 10, 2009



Force (N) vs Time (sec)

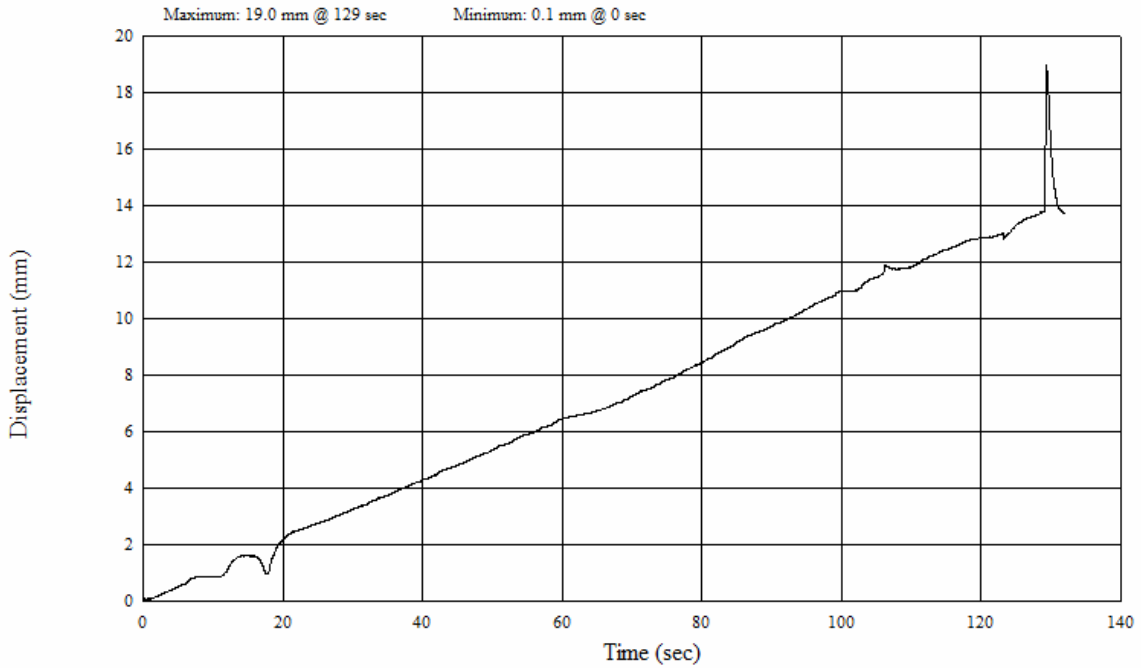
Test Description: FMVSS 221
Component ID: 2009 IC RE300 School Bus, NHTSA No.: C90900
Sample No.: 5
Test Date: June 10, 2009





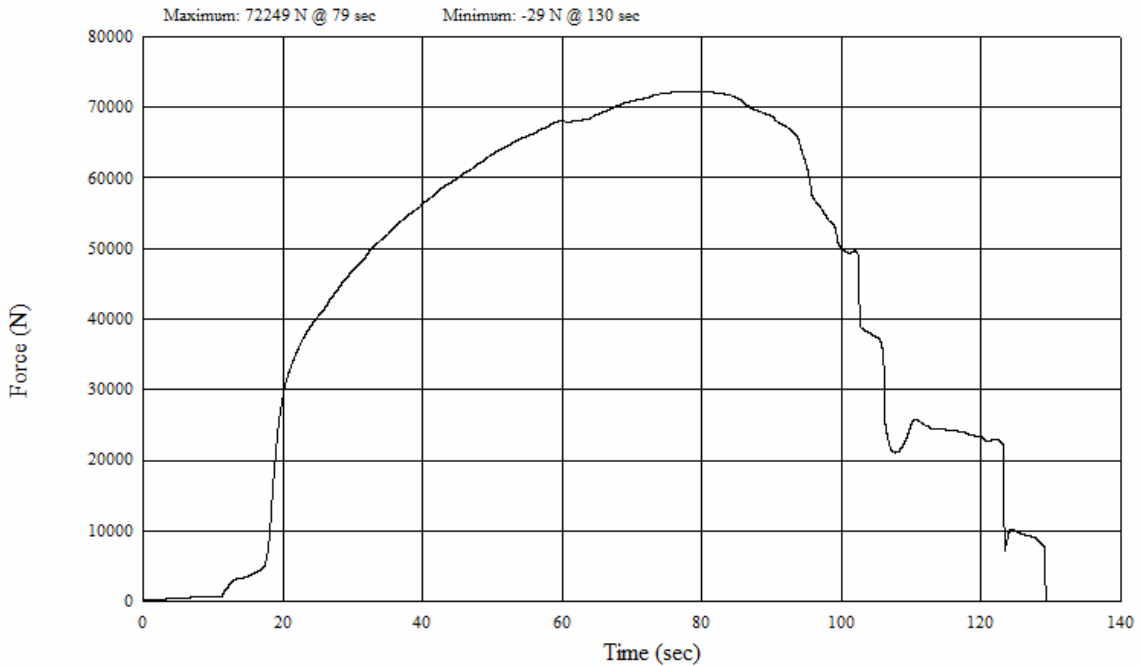
Displacement (mm) vs Time (sec)

Test Description: FMVSS 221
Component ID: 2009 IC RE300 School Bus, NHTSA No.: C90900
Sample No.: 6
Test Date: June 10, 2009



Force (N) vs Time (sec)

Test Description: FMVSS 221
Component ID: 2009 IC RE300 School Bus, NHTSA No.: C90900
Sample No.: 6
Test Date: June 10, 2009

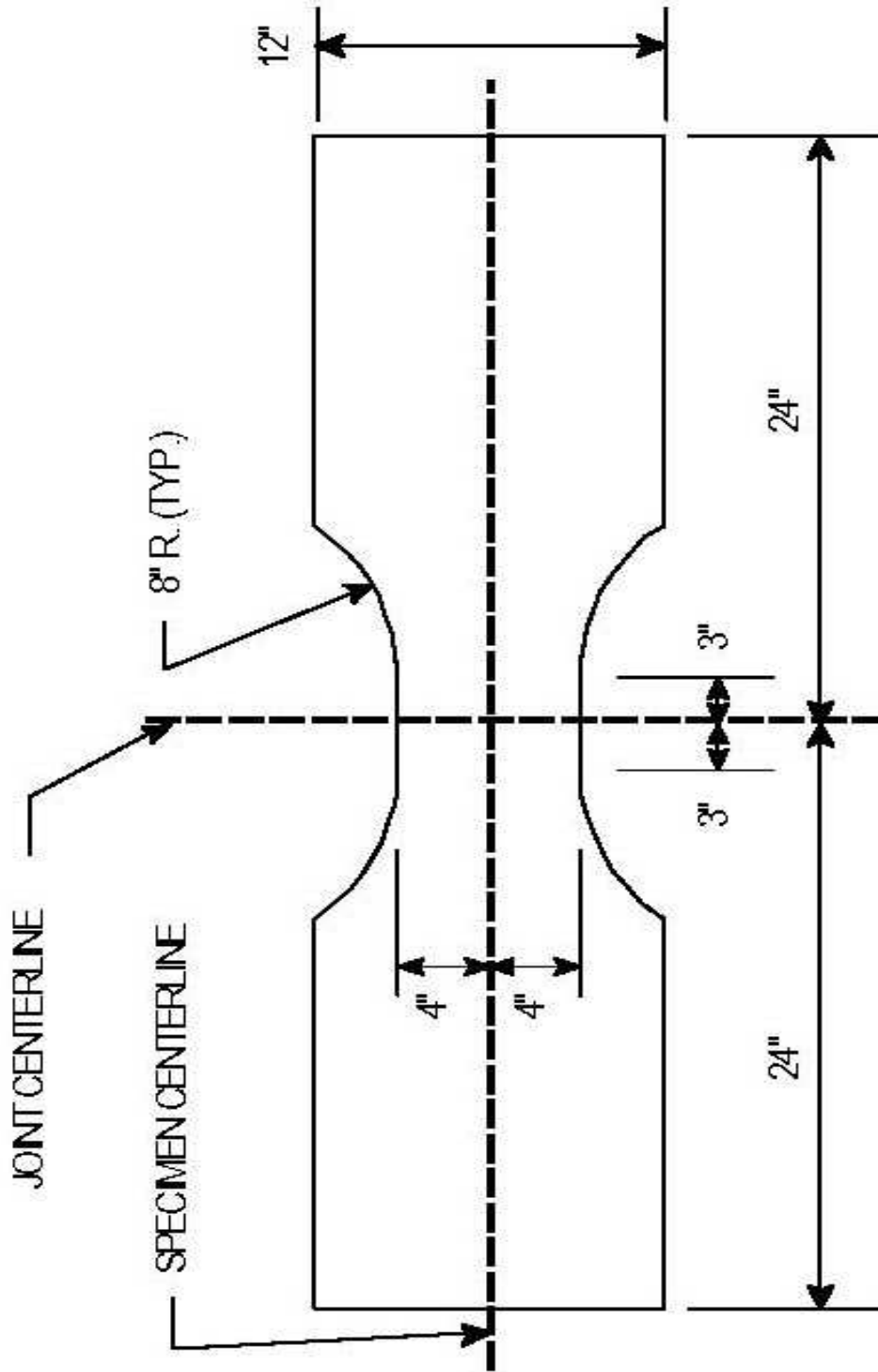


SECTION 8
JOINT CONFIGURATIONS
TABLE OF PHOTOGRAPHS

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Test Vehicle: 2009 IC RE 300 SCHOOL BUS NHTSA No.: C90900
Test Lab: MGA RESEARCH CORPORATION Test Date: 6/10/09

**DIMENSION REQUIREMENTS OF BODY PANEL SPECIMEN
WHOSE JOINT SEGMENT IS 8 INCHES LONG**



Test Vehicle: 2009 IC RE 300 SCHOOL BUS
Test Lab: MGA RESEARCH CORPORATION

NHTSA No.: C90900
Test Date: 6/10/09



View of Joint #1

Test Vehicle: 2009 IC RE 300 SCHOOL BUS
Test Lab: MGA RESEARCH CORPORATION

NHTSA No.: C90900
Test Date: 6/10/09



View of Joint #2

Test Vehicle: 2009 IC RE 300 SCHOOL BUS
Test Lab: MGA RESEARCH CORPORATION

NHTSA No.: C90900
Test Date: 6/10/09



View of Joint #3

Test Vehicle: 2009 IC RE 300 SCHOOL BUS
Test Lab: MGA RESEARCH CORPORATION

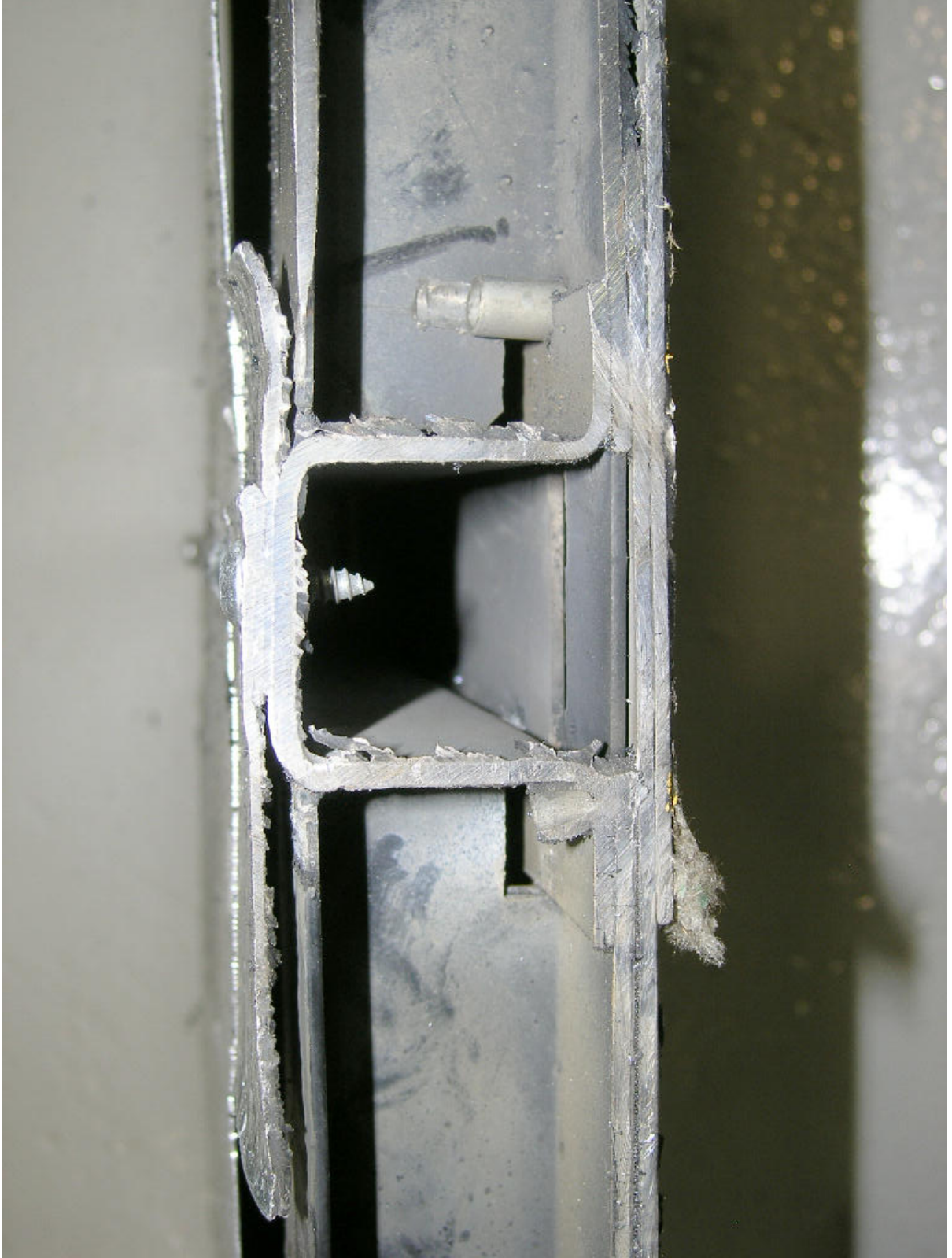
NHTSA No.: C90900
Test Date: 6/10/09



View of Joint #4

Test Vehicle: 2009 IC RE 300 SCHOOL BUS
Test Lab: MGA RESEARCH CORPORATION

NHTSA No.: C90900
Test Date: 6/10/09



View of Joint #5