12. POST TEST REQUIREMENTS

12.1 DATA PROCESSING

Dummy Data

The outputs of the accelerometers mounted on the ribs, spine and pelvis of the test dummy are processed with the software for the Finite Impulse Response (i.e., FIR 100 Filter Program, Version 1.0, July 16, 1990). The FORTRAN program for this FIR 100 software is incorporated by reference in 572.40 of the rule. The data are processed in the following manner:

A. Analog data recorded in accordance with SAE J211/1 (MAR1995) recommended practice channel Class 1000 specification

B. This data is then filtered with the FIR 100 Filter Program. The FIR 100 Filter does the following;

1. Filters the data with a 300 Hz, SAE Class 180 filter
2. Sub-samples the data to a 1600 Hz sampling rate
3. Removes the bias from the sub-sampled data

C. FIR 100 Filter Program has the following characteristics;

1. Passband frequency -- 100 Hz
2. Stopband frequency -- 189 Hz
3. Stopband gain -- 50 db
4. Passband ripple -- 0.0225 db

Vehicle and MDB Acceleration Data

Analog data is collected for at least 300 ms after time zero, pre-filtered (Class 1000) and digitized at a minimum rate of 10,000 samples per second. The data is then placed onto permanent storage media after the application of appropriate calibration scale factors.

As the data is recalled for integration or plotting, the appropriate phase-less digital filter, such as the Butterworth four-pole phase less digital filter is applied. These filters are in accordance with SAE Recommended Practice J211/1 MAR95, "Instrumentation for Impact Tests."

Filtering requirements from SAE J211/1 MAR95

	Filter Class	Cut-off Frequency
Vehicle acceleration	60	100
Velocity	180	300
Displacement	180	300

12. POST TEST REQUIREMENTS…Continued

12.2 PERFORMANCE REQUIREMENTS:

A. THORACIC TRAUMA INDEX (TTI(d))

Compute the thoracic trauma index (rounded to the nearest whole number) for the front and rear SIDs. The thoracic trauma index is computed as follows;

$$TTI(d) = ½ (G_r + G_{LS})$$

G_r - Is the greater of the peak accelerations of either the upper or lower rib
G_{LS} – Is the lower spine peak acceleration

TTI(d) shall not exceed –

(1) 85g's for passenger cars with 4 side doors and MPV, truck or bus
(2) 90g's for passenger cars with 2 side doors

B. PELVIS INJURY CRITERION

The pelvis injury criterion is the measured peak lateral acceleration of the pelvis (rounded to the nearest whole number). This shall not exceed 130 g’s.

C. DOOR OPENING CRITERIA

At the completion of each test, examine the test vehicle doors to determine the following;

(1) Whether the door(s) on the struck side of the test vehicle separated from the vehicle's main body at the hinges or latches.

(2) Whether the door(s) on the far side (side opposite from the struck side);
   i. Disengaged from the latched position during the side impact crash event.
   ii. The latch separated from the striker.
   iii. The hinge components separated from each other or from their attachment to the vehicle.
   iv. The latch or hinge systems were pulled out of their anchorages.

(3) On hatchback models, whether the hatch opened during the side impact crash event.

Record observations on Data Sheet No.

13. REPORTS

13.1 MONTHLY STATUS REPORTS

The Contractor shall submit a Monthly Status Report to the COTR in accordance with the contract requirements. The Monthly Status Report shall be submitted until all vehicles or items of equipment are disposed of. An example of the required format for the Monthly Status Report is contained in Section 14.

13.2 APPARENT TEST FAILURE

An apparent test failure shall be communicated by telephone to the COTR within 24 hours with written notification mailed within 48 hours (Saturday and Sundays excluded). A Notice of Test Failure (see report forms Section 14) with a copy of the particular compliance test data sheet(s) and preliminary data plot(s) shall be included. In the event of a test failure, a post test calibration check of some of the critically sensitive test equipment and instrumentation may be required for verification of accuracy. The necessity for the calibration shall be at the COTR's discretion and shall be performed without additional costs to the OVSC.

13.3 FINAL TEST REPORTS

FIRST THREE PAGES

A. FRONT COVER – A heavy paperback cover (or transparency) shall be provided for the protection of the final report. The information required on the cover is as follows:

(1) Final Report Number such as 214-ABC-0X-001 where

214	is the FMVSS tested, Side Impact Protection
ABC	are the initials for the laboratory
0X	is the Fiscal Year of the test program ()
001	is the Group Number (001 for the 1st test, 002 for the 2nd test, etc.)

(2) Final Report Title And Subtitle such as

SAFETY COMPLIANCE TESTING FOR FMVSS 214
SIDE IMPACT PROTECTION
* *
World Motors Corporation
2000 Ace Super 4-door sedan
NHTSA No. XXXXX

(3) Contractor's Name and Address such as

ABC LABORATORIES
405 Main Street
Detroit, MI 48070

13. REPORTS....Continued

NOTE: DOT SYMBOL WILL BE PLACED BETWEEN ITEMS (2) AND (3)

(4) Date of Final Report completion

(5) The words "FINAL REPORT"

(6) The sponsoring agency's name and address as follows

U. S. DEPARTMENT OF TRANSPORTATION
National Highway Traffic Safety Administration
Enforcement
Office of Vehicle Safety Compliance
400 Seventh Street, SW
Room 6111 (NVS-220)
Washington, DC 20590

B. FIRST PAGE AFTER FRONT COVER – A disclaimer statement and an acceptance signature block for the COTR shall be provided as follows;

This publication is distributed by the U.S. Department of Transportation, National Highway Traffic Safety Administration, in the interest of information exchange. The opinions, findings and conclusions expressed in this publication are those of the author(s) and not necessarily those of the Department of Transportation or the National Highway Traffic Safety Administration. The United States Government assumes no liability for its contents or use thereof. If trade or manufacturers' names or products are mentioned, it is only because they are considered essential to the object of the publication and should not be construed as an endorsement. The United States Government does not endorse products or manufacturers.

Prepared By:

Approved By:

Approval Date:

FINAL REPORT ACCEPTANCE BY OVSC:

Accepted By:

Acceptance Date:

13. REPORTS....Continued

C. SECOND PAGE AFTER FRONT COVER – A completed Technical Report Documentation Page (Form DOT F1700.7) shall be completed for those items that are applicable with the other spaces left blank. Sample data for the applicable block numbers of the title page follows.

Block 1 – REPORT NO.

214-ABC-0X-001

Block 2 – GOVERNMENT ACCESSION NUMBER (Leave blank)

Block 3 – RECIPIENT'S CATALOG NUMBER (Leave blank)

Block 4 – TITLE AND SUBTITLE

Final Report of FMVSS 214 Compliance
Side Impact Protection Testing of 200X Ace Super Sedan,
NHTSA No. XXXXX

Block 5 – REPORT DATE

March 1, 200X

Block 6 – PERFORMING ORGANIZATION CODE

ABC

Block 7 – AUTHOR(S)

John Smith, Project Manager
Bill Doe, Project Engineer

Block 8 – PERFORMING ORGANIZATION REPORT NUMBER

ABC-DOT-XXX-001

Block 9 – PERFORMING ORGANIZATION NAME AND ADDRESS

ABC Laboratories
405 Main Street
Detroit, MI 48070

13. REPORTS....Continued

Block 10 – WORK UNIT NUMBER (Leave blank)

Block 11 – CONTRACT OR GRANT NUMBER

DTNH22-0X-D-12345

Block 12 – SPONSORING AGENCY NAME AND ADDRESS

US Department of Transportation
National Highway Traffic Safety Administration
Office of Vehicle Safety Compliance (NVS-220)
400 Seventh Street, SW, Room 6111
Washington, DC 20590

Block 13 – TYPE OF REPORT AND PERIOD COVERED

Final Test Report
Feb. 15 to Mar. 15, 200X

Block 14 – SPONSORING AGENCY CODE

NVS-220

Block 15 – SUPPLEMENTARY NOTES (Leave blank)

Block 16 – ABSTRACT

A 48/24 kph 90° Impact (Moving Deformable Barrier) Compliance Tests was conducted on the subject 200X Ace Super 4-door sedan in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP-214D-0X for the determination of FMVSS No. 214 Side Impact Protection compliance. The test was conducted at the ABC Laboratories facility in Detroit, Michigan, on November 15, 20XX

13. REPORTS....Continued

The impact velocity of the Moving Deformable Barrier (MDB) was 52.9 kph, and the ambient temperature at the struck side (driver's) of the target vehicle at the time of impact was 28°C. The target vehicle post test maximum crush was 250 mm at level 3. The test vehicle's performance follows:

	DRV	PAS.
Left Upper Rib (LUR) Accel., g	99	59
Left Lower Rib (LLR) Accel., g	94	97
Lower Spine (T_{12}) Accel., g	61	69
Thoracic Trauma Index (TTI)	80	83
Pelvis (PEV) Accel., g	99	97

The two doors on the struck side of the vehicle did not separate from the body at the hinges or latches and the opposite doors did not open during side impact event.

Block 17 – KEY WORDS

Compliance Testing
Side Impact Protection
FMVSS 214
Side Impact Dummy (SID)

Block 18 – DISTRIBUTION STATEMENT

Copies of this report are available from--

National Highway Traffic Safety Administration
Technical Information Services (TIS)
Plaza Level #403 (NPO-230)
400 Seventh St., SW
Washington, DC 20590
Telephone No. (202) 366-2588

13. REPORTS....Continued

Block 19 – SECURITY CLASSIFICATION OF REPORT

Unclassified

Block 20 – SECURITY CLASSIFICATION OF PAGE

Unclassified

Block 21 – NUMBER OF PAGES

Add appropriate number

Block 22 – PRICE (Leave blank)

D. TABLE OF CONTENTS

Final test report Table Of Contents shall include the following:

Section 1 – Purpose of Compliance Test

Section 2 – Compliance Data Summary

Section 3 – Side Impact Dummy (SID) and Vehicle Test Data

Section 4 – Occupant and Vehicle Information

Appendix A – Photographs

Appendix B – Vehicle and SID Response Data

Appendix C – SID Configuration and Performance Verification Data

Appendix D – Test Equipment List and Calibration Information

13. REPORTS....Continued

SECTION 1 – PURPOSE AND TEST PROCEDURE

This section briefly outlines the purpose for conducting the side impact test and states the appropriate test procedure followed during the test. The following is provided as an example;

This side impact test is part of the FY__ FMVSS 214 Side Impact Protection Compliance Test Program sponsored by the National Highway Traffic Safety Administration (NHTSA), under contract No. _____. The purpose of this test was to evaluate side impact protection in a (description of vehicle being tested). The side impact test was conducted in accordance with the Office of Vehicle Safety Compliance's Laboratory Test Procedure (TP-214D-_____, dated _____, 200_).

NOTE: This section should be double-spaced and requires an entire separate page.

SECTION 2 – SUMMARY OF SIDE IMPACT TEST

This section gives a summary of the side impact event. The following is an example of the content needed in this section:

A 200X Ace Super 4-door sedan was impacted on the left or driver's side by a Moving Deformable Barrier (MDB) which was moving forward in a 27° crabbed position to the tow road guidance system at a velocity of ___ kph (___ mph). The target vehicle was stationary and was positioned at an angle of 63° to the line of forward motion. The side impact test was conducted by the ABC Laboratories in Detroit, Michigan, on November 15, 200X. Pretest and post test photographs of the test vehicle, the MDB and the side impact dummies (SIDs) are included in this report.

A SID was placed in both the driver and left rear designated seating position according to instructions specified in the OVSC Side Impact Laboratory Test Procedure dated (fill in date). The side impact event was documented by ___cameras. Camera locations and other pertinent camera information are included in this report.

The SIDs were instrumented with the following accelerometers:

1. Left Upper Rib (LUR) uniaxial accelerometer (Y-direction)

2. Left Lower Rib (LLR) uniaxial accelerometer (Y-direction)

3. Lower Thoracic Spine (T_{12}) uniaxial accelerometer (Y-direction)

4. Pelvic (PEV) section uniaxial accelerometer (Y-direction)

A summary of the SID configuration and performance verification test data has been included in this report along with the dummy response traces.

13. REPORTS....Continued

The following table summarizes the results of the test.

INJURY CRITERIA	FRONT SID	REAR SID
TTI (g)		
Pelvic (g)		

SECTION 3 – SUMMARY OF TEST RESULTS

This section requires the reporting of all information found in the following Data Sheets;

Data Sheet 1 – General Vehicle Test Parameter Data

Data Sheet 2 – Test Vehicle Summary of Results

Data Sheet 3 – Moving Deformable Barrier (MDB) Summary of Results

Data Sheet 4 – Post Test Observations

SECTION 4 – OCCUPANT AND VEHICLE INFORMATION

This section requires the Data Sheets and Graphs listed below;

Data Sheet 5 – SID Instrumentation Data

Data Sheet 6 – Vehicle Pre- and Post Test Vehicle Measurements

Data Sheet 7 – SID Longitudinal Clearance Dimensions

Data Sheet 8 – SID Lateral Clearance Dimensions

Data Sheet 9 – Vehicle Side Measurements

Data Sheet 10 – Vehicle Exterior Crush Profiles - All Levels

Data Sheet 11 – Vehicle Damage Profile Distances

13. REPORTS....Continued

Data Sheet 12 – Exterior Static Crush for Impactor Face

Data Sheet 13 – Test Vehicle Accelerometer Location and Data Summary

Data Sheet 14 – MDB Accelerometer Location and Data Summary

Data Sheet 15 – High Speed Camera Locations and Data

APPENDIX A - PHOTOGRAPHS

The following photographs shall be included in this appendix;

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Continued on next page

13. REPORTS....Continued

TABLE OF PHOTOGRAPHS

13. REPORTS....Continued

APPENDIX B – VEHICLE AND SID RESPONSE DATA

TABLE OF DATA PLOTS

Continued on next page

13. REPORTS....Continued

TABLE OF DATA PLOTS

Continued on next page

13. REPORTS....Continued

TABLE OF DATA PLOTS
Test Vehicle Instrumentation Plots
(Accel - CLASS 1000 Integration - Class 180)

Continued on next page

13. REPORTS....Continued

TABLE OF DATA PLOTS
Test Vehicle Instrumentation Plots
(Accel - CLASS 1000 Integration - Class 180)

Continued on next page

13. REPORTS....Continued

TABLE OF DATA PLOTS
Test Vehicle Instrumentation Plots
(Accel - CLASS 1000 Integration - Class 180)

MDB Instrumentation Plots
Accel - Class 60 Integration - Class 180

Continued on next page

13. REPORTS....Continued

MDB Instrumentation Plots
Accel - Class 60 Integration - Class 180

13. REPORTS....Continued

Front & Rear SID Instrumentation Plots
(FIR Filtered Data)

13. REPORTS....Continued

APPENDIX C
SID CONFIGURATION AND PERFORMANCE VERIFICATION DATA

SUMMARY
SID PRETEST AND POST TEST CALIBRATION
(CONFIGURED FOR A [LEFT / RIGHT] SIDE IMPACT)

Date:_____ Technician:_____

TEST PARAMETER	SPECIFICATION	SID NO.:____		SID NO.:___	
		PRE TEST	POST TEST	PRE TEST	POST TEST
SH- Seated Height (mm)	889 – 909				
RH- Rib Height (mm)	501 – 521				
HP- Hip Pivot Height (mm)	99 ref.				
RD- Rib from Back Line (mm)	229 – 241				
KV- Knee Pivot from Back Line (mm)	511 – 526				
SW- Knee Pivot to Floor (mm)	490 – 505				
HW- Hip Width (mm)	356 – 391				
THORAX IMPACTS					
TEMPERATURE (EC)	18.9 - 25.5				
RELATIVE. HUMIDITY (%)	10 -70				
PROBE SPEED (m/s)	4.27 – 4.33				
UPPER RIB (g's)	37 – 46				
LOWER RIB (g's)	37 – 46				
LOWER SPINE (g's)	15 -22				
PELVIS IMPACT					
TEMPERATURE (EC)	18.9 - 25.5				
RELATIVE HUMIDITY (%)	10 – 70				
PROBE SPEED (m/s)	4.27 – 4.33				
PELVIS (g's)	40 -60				

Continued on next page

13. REPORTS....Continued

CALIBRATION TEST RESULTS SUMMARY
SID NUMBER:_____

Date:_____ Technician:_____

TEST	Comments
External Dimensions	
Thoracic Shock Absorber Test	
Lateral Thorax Impact Test	
Lateral Pelvis Impact Test	
Abdominal Compression Test	
Lumbar Flexion Test	

ABDOMINAL COMPRESSION TEST
SID NUMBER:____

Date:_____ Technician:_____

TEST PARAMETER	SPEC,	TEST RESULTS	PASS or FAIL
TEMPERATURE (°C)	18.9 -25.5		
RELATIVE HUMIDITY (%)	10-70		
FORCE @ 13mm (N)	104 - 162		
FORCE @ 19mm (N)	163 - 221		
FORCE @ 25mm (N)	222 - 280		
FORCE @ 33mm (N)	325 - 391		

LUMBAR FLEXION TEST
SID NUMBER:_____

Date:_____ Technician:_____

TEST PARAMETER	SPEC.	TEST RESULTS	PASS or FAIL
TEMPERATURE (°C)	18.9 -25.5		
RELATIVE HUMIDITY (%)	10-70		
FORCE @ 0° (N)	0 - 26.7		
FORCE @ 20° (N)	97.8 - 151.2		
FORCE @ 30° (N)	151.2 - 204.6		
FORCE @ 40° (N)	204.6 -258		
RETURN ANGLE	12° (max)		

13. REPORTS....Continued

THORACIC SHOCK ABSORBER TESTS
SID NUMBER: _____
DAMPER IDENTIFICATION:_____

Date:_____ Technician:_____

TEST PARAMETER		SPEC.	TEST RESULTS	PASS or FAIL
TEMPERATURE (°C)		18.9 -25.5		
RELATIVE HUMIDITY (%)		10-70		
VELOCITY 3.05 m/s	FORCE (N)	836 – 1125		
	DISPLACEMENT (mm)	30 - 35		
VELOCITY 4.27 m/s	FORCE (N)	1730 - 2099		
	DISPLACEMENT (mm)	32 – 37		
VELOCITY 6.1 m/s	FORCE (N)	3741 - 4448		
	DISPLACEMENT (mm)	33 - 40		

DAMPER SETTING:

EXTERNAL DIMENSIONS
CONFIGURED FOR [LEFT / RIGHT] SIDE IMPACT
SID NUMBER:_____

Date:_____ Technician:_____

TEST PARAMETER	SPEC.	TEST RESULTS	PASS or FAIL
SH-Seated Height (mm)	889 - 909		
RH-Rib Height (mm)	502 - 520		
HP-Hip Pivot Height (mm)	99 ref.		
RD- Rib from Back Line (mm)	229 - 241		
KH- Knee Pivot from Back Line (mm)	511 - 526		
KV- Knee Pivot to Floor (mm)	490 - 505		
HW- Hip Width (mm)	356 - 391		

13. REPORTS....Continued

LATERAL THORAX IMPACT TEST
CONFIGURED FOR [LEFT/RIGHT] SIDE IMPACT
SID NUMBER:____

Date:_____ Technician:_____

TEST PARAMETER	SPEC.	TEST RESULTS	PASS or FAIL
TEMPERATURE (°C)	18.9 -25.5		
RELATIVE. HUMIDITY (%)	10 -70		
PROBE SPEED (m/s)	4.27 - 4.33		
UPPER RIB (g's)	37 - 46		
LOWER RIB (g's)	37 - 46		
LOWER SPINE (g's)	15 -22		

LATERAL PELVIS IMPACT TEST
CONFIGURED FOR [LEFT/RIGHT] SIDE IMPACT
SID NUMBER:____

Date:_____ Technician:_____

TEST PARAMETER	SPEC.	TEST RESULTS	PASS or FAIL
TEMPERATURE (°C)	18.9 -25.5		
RELATIVE. HUMIDITY (%)	10 -70		
PROBE SPEED (m/s)	4.27 - 4.33		
PELVIS ACCELERATION (g's)	40 -60		

13. REPORTS....Continued

POST TEST DUMMY INSPECTION LIST
SID NUMBER:____

Date:_____ Technician:_____

PART	ITEMS CHECKED	COMMENTS
SKIN	VISUAL INSPECTION	
HEAD	VISUAL, BALLAST, ACCELEROMETER MOUNT	
NECK	VISUAL, CABLE TORQUE	
SPINE BOX	VISUAL, BALLAST, WELDMENT, ACCELEROMETER MOUNT	
RIB CAGE	VISUAL, MEASURE, STIFFENERS	
STERNUM	VISUAL	
LUMBAR SPINE	VISUAL	
ABDOMEN	VISUAL	
PELVIS	VISUAL, PALPATE, ACCELEROMETER MOUNT	
UPPER LEGS	VISUAL	
KNEES	VISUAL, STOPS, INSERTS	
LOWER LEGS	VISUAL, RANGE OF MOTION	
ANKLES	VISUAL, RANGE OF MOTION	
FEET	VISUAL, RANGE OF MOTION	
JOINTS	1 TO 2 g RANGE,	
OTHER		

13. REPORTS....Continued

APPENDIX D
TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

Table 1
SID INSTRUMENTATION

	FRONT SID NO.____		
	SERIAL NUMBER	**MANUFACTURER**	**CALIBRATION DATE**
UPPER RIB			
LOWER RIB			
LOWER SPINE			
PELVIS			

	REAR SID NO.:____		
	SERIAL NUMBER	**MANUFACTURER**	**CALIBRATION DATE**
UPPER RIB			
LOWER RIB			
LOWER SPINE			
PELVIS			

REMARKS:

13. REPORTS....Continued

APPENDIX D
TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

Table 2

VEHICLE INSTRUMENTATION	SERIAL NUMBER	MANUFACTURER	CALIBRATION DATE
Right Front Sill at Front Seat (X)			
Right Front Sill at Front Seat (Y)			
Right Front Sill at Front Seat (Z)			
Right Rear Sill at Rear Seat (X)			
Right Rear Sill at Rear Seat (Y)			
Right Rear Sill at Rear Seat (Z)			
Rear Floor Pan Above Axle (X)			
Rear Floor Pan Above Axle (Y)			
Rear Floor Pan Above Axle (Z)			
Left Side Sill at Rear Seat (Y)			
Left Side Sill at Front Seat (Y)			
Left Front Door Centerline (Y)			
Right Rear Occupant Comp (Y)			
Mid Rear of Left Front Door (Y)			
Left Front Door Upper Centerline (Y)			
Mid Rear of Left Rear Door (Y)			
Left Rear Door Upper Centerline (Y)			
Left Lower B Post (Y)			
Left Middle B Post (Y)			
Left Lower A Post (Y)			
Left Middle A-Post (Y)			
Front Seat Track (Y)			
Rear Seat Track (Y)			
Vehicle CG (X)			
Vehicle CG (Y)			
Vehicle (Z)			
MDB INSTRUMENTATION			
MDB CG (X)			
MDB CG (Y)			
MDB CG (Z)			
MDB Rear Frame Member (X)			
MDB Rear Frame Member (Y)			

14. DATA SHEETS

Data sheets are provided as TOOLS to document test data in the Final Test Report format outlined in the previous section. The contractor is not restricted from using other tools or expanding the data sheets provided in this section. Nevertheless, for consistency and uniformity in reporting data, the contractor must present the data in the ORDER outlined in Section 13.

14. DATA SHEETS....Continued

DATA SHEET 1
GENERAL TEST VEHICLE PARAMETER DATA

TEST VEHICLE INFORMATION:

Year /Make/Model/BodyStyle:_____
Body Color _____ VIN:_____
NHTSA NO.:_____ Build Date:_____

ENGINE DATA: _____ cylinders _____ CID _____ Liter ____ cc
Engine Placement ___ longitudinal; or ___ lateral

TRANSMISSION: ____ speed ____ manual ____ automatic ____ overdrive

FINAL DRIVE: ____ rear wheel drive ____ front wheel drive ____ 4 - wheel drive

ODOMETER READING: ____ km.

OPTIONS: ___ A/C ___ power steering ___ power brakes ___ power windows

DATA RECORDED FROM VEHICLE'S TIRE PLACARD:

TIRE PRESSURE (AT CAPACITY): ____ kPa Front; ____ kPa Rear
RECOMMENDED TIRE SIZE:_____
TIRES ON TEST VEHICLE: _____ Mfr.:_____

VEHICLE CAPACITY DATA:

Number of Occupants: ____ front ____ rear ____ Total
Type of Front Seat(s): ____ buckets ____ bench ____ split bench
Type of Rear Seat: ____ bucket ____ bench ____ contoured
Type of Front Seat Back: ____ fixed ____ adjustable with ___ lever or ___ knob
Type of Rear Seat Back: ____ fixed ____ adjustable with ___ lever or ___ knob
Vehicle Maximum Capacity Loading = ____ kg. (A)
Number of Occupants X 68.04 kg. = ____ kg. (B)
Vehicle Cargo Capacity (A-B) = ____ kg.

***AS DELIVERED* TEST WEIGHT (WITH MAXIMUM FLUIDS):**

Right Front =	_____ kg.	Right Rear =	____ kg.
Left Front =	_____ kg.	Left Rear =	____ kg.
Total Front =	_____ kg.	Total Rear =	____ kg.

TOTAL WEIGHT= _____ kg.

% of Total weight in Front = _____% of Total weight in Rear =_____

14. DATA SHEETS....Continued

DATA SHEET 1
GENERAL TEST VEHICLE PARAMETER DATA

CALCULATION OF TEST VEHICLE TARGET WEIGHT:

As Delivered Test Weight (with Maximum Fluids) = ____ kg. (A)
Maximum Cargo Carrying Capacity of Test Vehicle = ____ kg. (B)
Weight of Side Impact Dummies = ____ kg. (C)

TEST VEHICLE TARGET WEIGHT:= ____kg. (A+B+C)

FULLY LOADED TEST VEHICLE (UDVW+1 or 2 SID(s) + CARGO):

Right Front = _____ kg. Right Rear = ____ kg.
Left Front = _____ kg. Left Rear = ____ kg.
Total Front = _____ kg. Total Rear = ____ kg.

TOTAL WEIGHT = _____ kg.

% of Total weight in Front = _____ % of Total weight in Rear =____

AS TESTED WEIGHT OF TEST VEHICLE
(1 or 2 SID(s) + CARGO + EQUIPMENT & INSTRUMENTATION):

Right Front = _____ kg. Right Rear = ____ kg.
Left Front = _____ kg. Left Rear = ____ kg.
Total Front = _____ kg. Total Rear = ____ kg.

TOTAL WEIGHT = _____ kg.

% of Total weight in Front = _____ % of Total weight in Rear = _____
C.G. = _____ mm rearward of front wheel centerline

TEST VEHICLE ATTITUDE:

(mm)	Right Front	Left Front	Right Rear	Left Rear
As Delivered				
As Tested				
Fully Loaded				

LOCATION OF IMPACT POINT

Total Vehicle Length:
Right Side = ____ mm Left Side = ____ mm Centerline = ____ mm
Test Vehicle Wheelbase = _____ mm
Impact point is _____ mm rearward of front axle centerline

Remarks:_____
_____

14. DATA SHEETS....Continued

DATA SHEET 1
GENERAL TEST VEHICLE PARAMETER DATA

Year /Make/Model/BodyStyle:_____NHTSA NO.:_____;

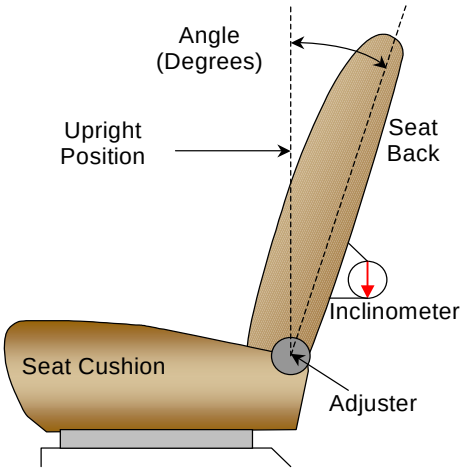
NORMAL DESIGN RIDING POSITION

Describe how the driver seat was positioned to the manufacturer's designated seating angle._____

_____

Driver seat back angle: _____

Passenger seat back angle: _____



FRONT SEAT ASSEMBLY

SEAT FORE/AFT POSITIONS

Describe the fore and aft operation of the front and rear seats and explain how the seats were set to the mid position: _____

_____

Driver seat fore/aft total travel: _____

Passenger seat fore/aft total travel: _____

Driver seat fore/aft position: _____

Passenger seat fore/aft position: _____

SEAT BELT UPPER ANCHORAGE

Describe the seat belt upper anchorages and explain how they are positioned

_____

_____

_____

14. DATA SHEETS...(continued)

DATA SHEET 1

GENERAL TEST VEHICLE PARAMETER DATA

Year /Make/Model/BodyStyle:_____NHTSA NO.:_____;

FUEL TANK CAPACITY DATA

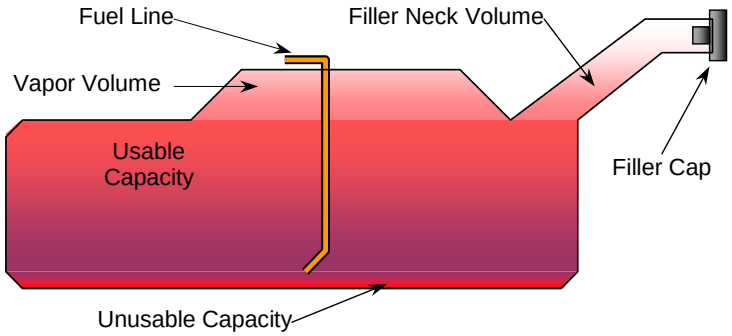
The "Usable Capacity" of the standard equipment fuel tank is: _____liters

The "Usable Capacity" of any optional equipment fuel tank is: _____liters

92-94% of "Usable Capacity" for certification to FMVSS 301 requirements: _____liters

Actual amount of Stoddard solvent added to vehicle for certification test: _____liters

The test vehicle is equipped with an electric fuel pump. The fuel filler door is located on the right rear fender.



VEHICLE FUEL TANK ASSEMBLY

STEERING COLUMN ADJUSTMENT

Describe how the steering wheel and column adjustments are made:_____

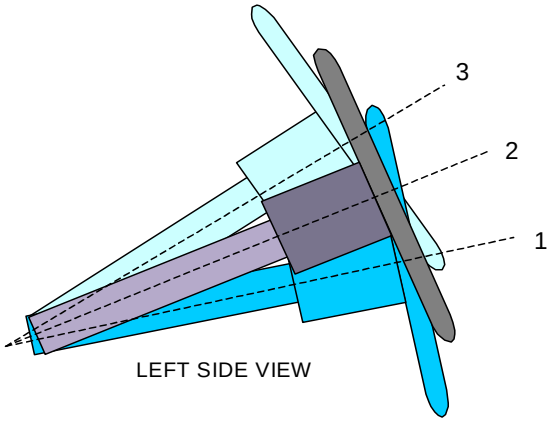
_____

_____

_____

_____

_____



STEERING COLUMN ASSEMBLY

Lowermost, position 1: _____

Geometric center, position 2: _____

Uppermost, position 3: _____

Telescoping steering wheel travel: _____

Test position: _____

14. DATA SHEETS....Continued

DATA SHEET 2
TEST VEHICLE SUMMARY OF RESULTS

Year /Make/Model/BodyStyle:_____NHTSA NO.:_____;

ACTUAL IMPACT POINT
Actual Impact Point is _____ mm [rearward or forward] of nominal impact ref. line (Lateral)
Actual Impact Point is _____ mm [above or below] nominal impact point (Vertical)

MAXIMUM EXTERIOR STATIC CRUSH:

LEVEL 1 (___ mm above ground) = ____ mm
LEVEL 2 (___ mm above ground) = ____ mm
LEVEL 3 (___ mm above ground) = ____ mm
LEVEL 4 (___ mm above ground) = ____ mm
LEVEL 5 (___ mm above ground) = ____ mm

Maximum Post Test Intrusion = _____ mm

OCCUPANTS:	Front Passenger	Rear Passenger
Dummy identification	SID# _____	SID# _____
Restraint Used:	_____	_____

INSTRUMENTATION:

Number of Vehicle Data Channels = _____
Number of Cameras: Onboard = _____ ; Offboard = _____ ; Total Cameras = _____

REMARKS:

14. DATA SHEETS....Continued

DATA SHEET 3
MOVING DEFORMABLE BARRIER (MDB) SUMMARY OF RESULTS

Year /Make/Model/BodyStyle:_____NHTSA NO.:_____;

MDB SPECIFICATIONS:

Overall Width of Framework Carriage = _____ mm
Overall Length of MDB = ____ mm (including honeycomb impact face)
Wheelbase of Frame work Carriage (front and rear) = ____ mm
C.G. location (rearward of front axle) = ____ mm

MDB WEIGHT:

Left Front	____ kg.	Left Rear	____ kg.
Right Front	____ kg.	Right Rear	____ kg.
Total Front	____ kg.	Total Rear	____ kg.

TOTAL WEIGHT OF MDB = ____ kg.

Impact Angle (MDB centerline to target vehicle centerline) = ____ degrees
Impact Speed = ____ km/hr

MAXIMUM STATIC CRUSH OF HONEYCOMB IMPACT FACE:

ROW A at center of bumper level = _____ mm
ROW B at top of bumper level = _____ mm
ROW C at mid level = _____ mm
ROW D at top of stack level = _____ mm

INSTRUMENTATION:

Number of MDB data channels = _____

REMARKS:

14. DATA SHEETS....Continued

DATA SHEET 4
POST TEST OBSERVATIONS

Year /Make/Model/BodyStyle:_____NHTSA NO.:_____;

VISIBLE DUMMY CONTACT POINTS:

Body Part	Vehicle interior contact area(s)	
	Front SID	Rear SID
Head		
Upper Torso		
Lower Torso		
Left Knee		
Right Knee		

DOOR OPENING DATA:

	LEFT SIDE	RIGHT SIDE
FRONT	_____	_____
REAR	_____	_____

ARM REST LOCATION:

Front – _____
Rear – _____

SEAT MOVEMENT:

Front – _____
Rear – _____

GLAZING DAMAGE:

Windshield –_____
Window –_____

PILLAR PERFORMANCE:

A-Pillar –_____
B- Pillar– _____
C Pillar - _____

SILL SEPARATION:_____

Remarks:

14. DATA SHEETS....Continued

DATA SHEET 5
SIDE IMPACT DUMMY (SID) INSTRUMENTATION DATA

Year /Make/Model/BodyStyle:_____NHTSA NO.:_____;

	FRONT SID ID#_____				REAR SID ID# _____			
	Positive		Negative		Positive		Negative	
	max (g)	time (msec)	max (g)	time (msec)	max (g)	time (msec)	max (g)	time (msec)
RIB ACCELERATIONS								
Left Upper Rib (LUR) Y								
Left Lower Rib (LLR) Y								
SPINE ACCELERATIONS								
Lower Lateral Y								
PELVIS ACCELERATIONS								
Lateral Y								

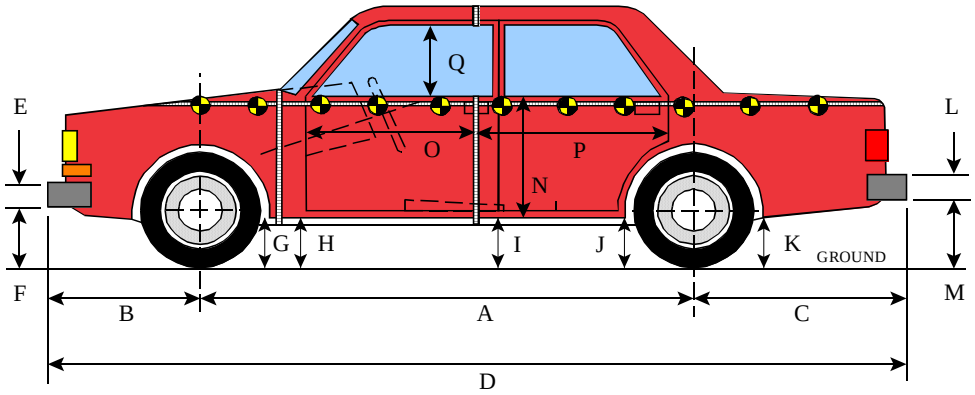
Reference: Positive Direction - Longitudinal (X) = forward
- Lateral (Y) = to right
- Vertical (Z) = down

REMARKS:

14. DATA SHEETS....Continued

DATA SHEET 6
VEHICLE PRETEST AND POST TEST MEASUREMENTS

Year /Make/Model/BodyStyle:_____NHTSA NO.:_____;



LEFT SIDE VIEW
All MEASUREMENTS IN (mm) WITH TOLERANCE OF ± 3mm

	PRETEST (As Delivered)	PRETEST (As Tested)	POST TEST	~ CHANGE
A				
B				
C				
D				
E				
F*				
G*				
H*				
I*				
J1*				
J2*				
K*				
L				
M*				
N				
O				
P				
Q				
R				
S				
T				

D = Length at Centerline
R = Right Side Length
T = Width at B -Post

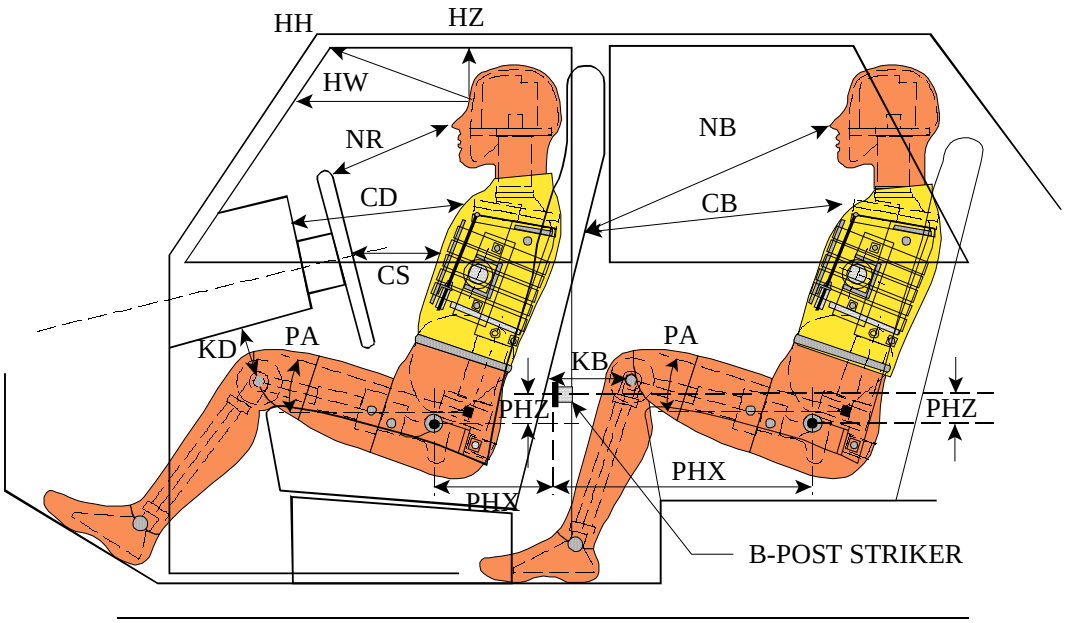
E&L = Bumper thickness
S = Left Side Length

J1 = To Pinch Weld
J2 = To Sill

* - These measurements are to be taken in the "AS DELIVERED" and in the "AS TESTED" configuration (which includes dummies, instrumentation, cameras, etc.)

14. DATA SHEETS....Continued

DATA SHEET 7
SID LONGITUDINAL CLEARANCE DIMENSIONS



NOTE: 2-DOOR VEHICLE SHOWN. REAR DUMMY PHX & PHZ MEASUREMENTS FOR A 4-DOOR VEHICLE WOULD USE THE C-POST STRIKER AS A REFERENCE POINT

LEFT SIDE VIEW

NOTE: 2-door vehicle shown. Rear dummy PHX and PHZ measurements for a 4-door vehicle would use the C post striker as a reference point.

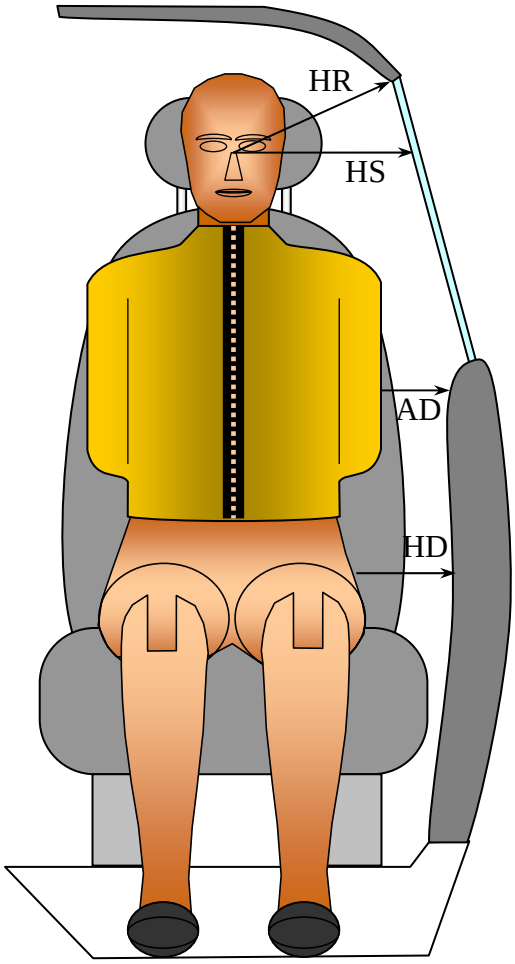
ALL MEASUREMENTS IN (mm) WITH TOLERANCE OF ± 3 mm

MEASUREMENT (mm)	FRONT SID ID# _____	REAR SID ID#_____
HH		N/A
HW		N/A
HZ		
NR/NB		
CD/CB		
CS		N/A
NR/NB		
KDL(KDA)/KBL(KDA)		
KDR(KBA)/KBR(KBA)		
PA		
PHX		
PHZ		

REMARKS:

14. DATA SHEETS....Continued

DATA SHEET 8
SID LATERAL CLEARANCE DIMENSIONS



ALL MEASUREMENTS IN (mm) WITH TOLERANCE OF ± 3 mm

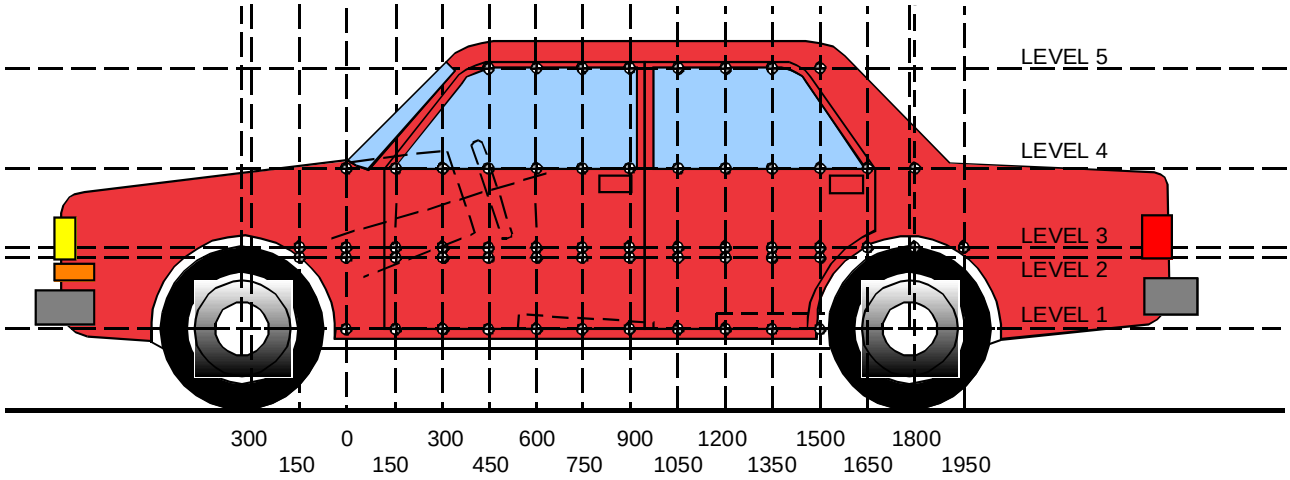
MEASUREMENT (mm)	FRONT SID ID#_____	REAR SID ID#_____
HR		
HS		
AD		
HD		

REMARKS:

14. DATA SHEETS....Continued

DATA SHEET 9
VEHICLE SIDE MEASUREMENTS

Year /Make/Model/BodyStyle:_____NHTSA NO.:_____;



LEFT SIDE VIEW

NOTE: All measurements are in millimeters (mm)

LEVEL 5 - WINDOW TOP
LEVEL 4 - WINDOW SILL
LEVEL 3 - MID-DOOR
LEVEL 2 - OCCUPANT H-POINT
LEVEL 1 - SILL TOP HEIGHT

MEASUREMENTS ARE TAKEN WHEN THE VEHICLE IS IN THE "AS TESTED" CONFIGURATION. MEASUREMENTS ALONG THE VERTICAL 750 mm LINE SHOWN ABOVE:

LEVEL 5 @ WINDOW TOP = _____ mm

LEVEL 4 @ WINDOW SILL = _____ mm

LEVEL 3 @ MID DOOR = _____ mm

LEVEL 2 @ OCCUPANT H-POINT = _____ mm

LEVEL 1 @ SILL TOP HEIGHT = _____ mm

14. DATA SHEETS....Continued

DATA SHEET 10
VEHICLE EXTERIOR CRUSH PROFILES

Location	Height		-900	-750	-600	-450	-300	0	150	300	450	600	750	900	1050	1200
Level 1 Side Sill		Pre														
		Post														
		Crush														
Level 2 H-Point		Pre														
		Post														
		Crush														
Level 3 Mid - Door		Pre														
		Post														
		Crush														
Level 4 Window Sill		Pre														
		Post														
		Crush														
Level 5 Window Top		Pre														
		Post														
		Crush														

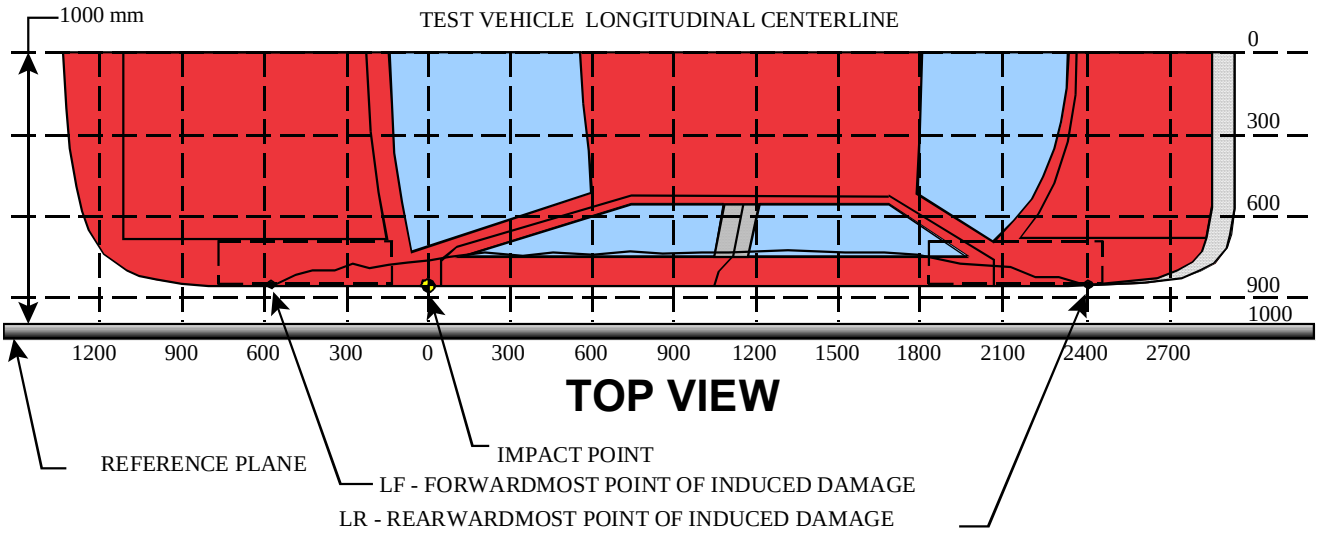
Location	Height		1350	1500	1650	1800	1950	2100	2250	2400	2550	2700	2850
Level 1 Side Sill		Pre											
		Post											
		Crush											
Level 2 H-Point		Pre											
		Post											
		Crush											
Level 3 Mid - Door		Pre											
		Post											
		Crush											
Level 4 Window Sill		Pre											
		Post											
		Crush											
Level 5 Window Top		Pre											
		Post											
		Crush											

14. DATA SHEETS....Continued

DATA SHEET 11
VEHICLE DAMAGE PROFILE DISTANCES

Year /Make/Model/BodyStyle:_____NHTSA NO.:_____;

NOTE: All measurements are in millimeters (mm) and should be accurate to ± 3 mm



MEASUREMENT CONVENTIONS:
Forward of the impact point (towards front of vehicle) is considered negative (—).
Rearward of the impact point (toward rearend of vehicle) is considered positive (+).

MEASUREMENT CONVENTIONS:

Forward of impact point (towards front of vehicle) is considered negative (-)

Rearward of impact point (toward rearend of vehicle) is considered positive (+)

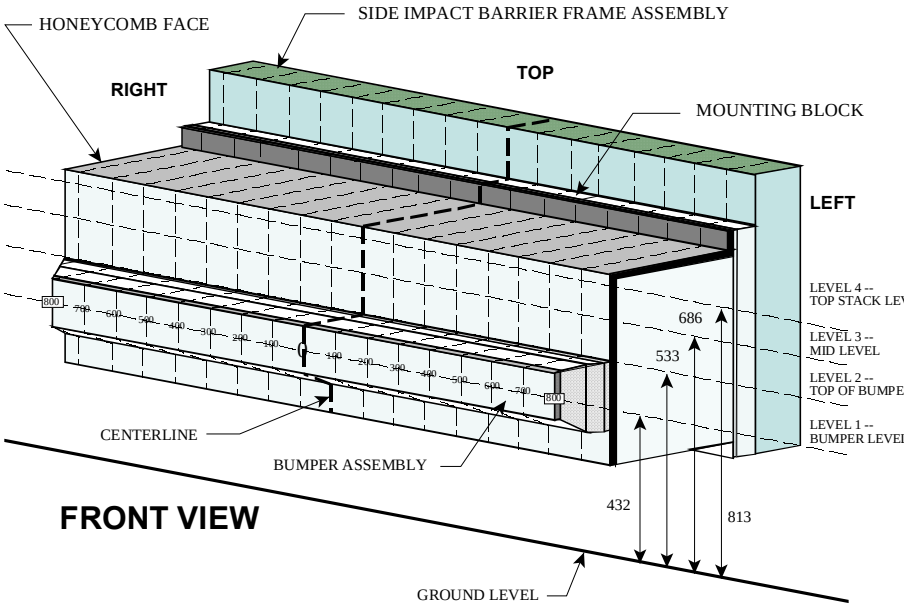
DPD MEASUREMENTS	POST TEST (mm)	PRETEST (mm)	STATIC CRUSH (mm)
1 (LR = _____ mm)			0.0
2			
3			
4			
5			
6 (LF = _____ mm)			0.0

REMARKS:

14. DATA SHEETS....Continued

DATA SHEET 12
EXTERIOR STATIC CRUSH FOR IMPACTOR FACE

Year /Make/Model/BodyStyle:_____NHTSA NO.:_____;



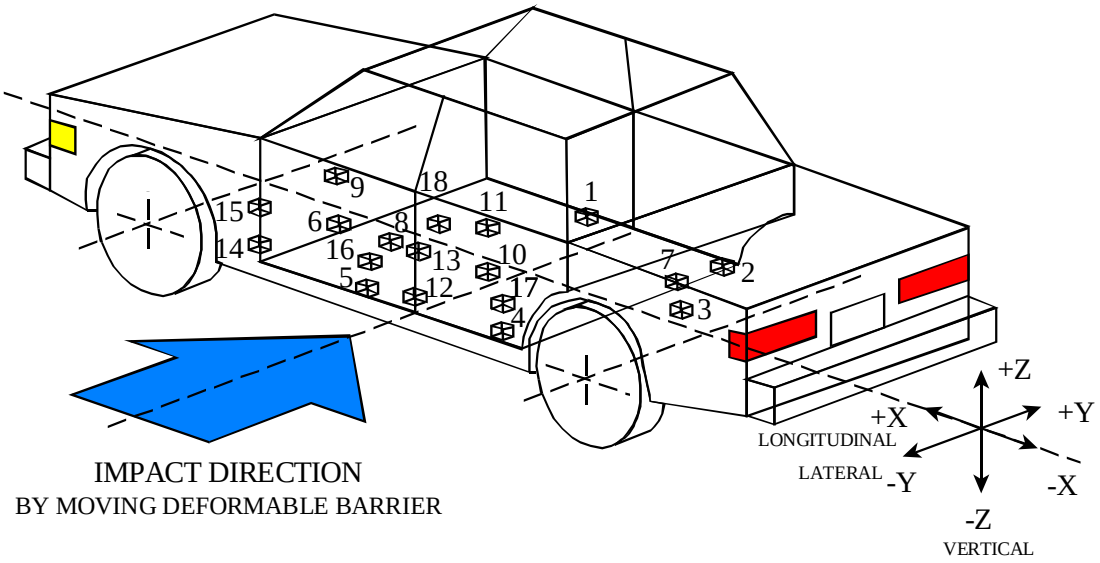
NOTE: Dimensions are shown in millimeters, mm

		Distance Right of Center mm									Distance Left of Center mm							
Location	Height At CL	800	700	600	500	400	300	200	100	0	100	200	300	400	500	600	700	800
Top Stack Level D																		
Mid Level Level C																		
Top Bumper Level B																		
Mid Bumper Level A																		

14. DATA SHEETS....Continued

DATA SHEET 13
TEST VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Year /Make/Model/BodyStyle:_____NHTSA NO.:_____;



No.	Accelerometer	No.	Accelerometer
1	Right Side Sill at Front Seat	10	Mid Rear of Left Rear Door
2	Right Side Sill at Rear Seat	11	Left Rear Door Upper Centerline
3	Rear Floorpan Above Axle	12	Left Lower B Post
4	Left Side Sill at Rear Seat	13	Left Middle B Post
5	Left Side Sill at Front Seat	14	Left Lower A Post
6	Left Front Door on Centerline	15	Left Middle A Post
7	Right Rear Occ. Compartment	16	Front Seat Track
8	Mid Rear of Left Front Door	17	Rear Seat Track
9	Left Front Door Upper Centerline	18	Vehicle C.G.

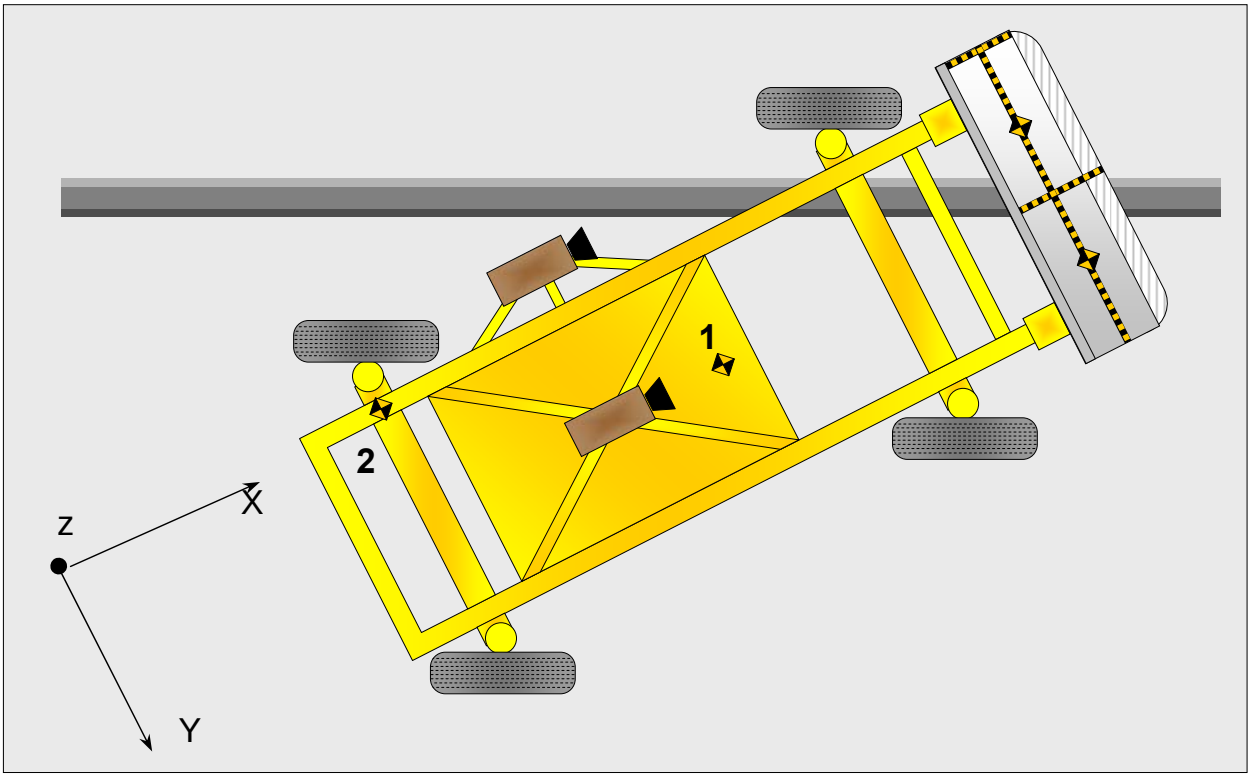
14. DATA SHEETS....Continued

		COORDINATES (mm) ± 3 mm				LONGITUDE (X)		LATERAL (Y)		VERTICAL (Z)		RESULTANT	
NO.	LOCATION	X	Y	Z		Max (g)	Time (ms)	Max (g)	Time (ms)	Max (g)	Time (ms)	Max (g)	Time (ms)
1	Right Front Sill at Front Seat				Pos Neg								
2	Right Rear Sill at Rear Seat				Pos Neg								
3	Rear Floor Pan Above Axle				Pos Neg								
4	Left Side Sill at Rear Seat				Pos Neg								
5	Left Side Sill at Front Seat				Pos Neg								
6	Left Front Door on Centerline				Pos Neg								
7	Right Rear Occ. Compartment				Pos Neg								
8	Mid-Rear of Left Front Door				Pos Neg								
9	Left Front Door Upper Centerline				Pos Neg								
10	Mid-Rear of Left Rear Door				Pos Neg								
11	Left Rear Door Upper Centerline				Pos Neg								
12	Left Lower B-Post				Pos Neg								
13	Left Middle B-Post				Pos Neg								
14	Left Lower A-Post				Pos Neg								
15	Left Middle A-Post				Pos Neg								
16	Front Seat Track				Pos Neg								
17	Rear Seat Track				Pos Neg								
18	Vehicle C.G.				Pos Neg								

Reference: + X = Forward + Y = To Right + Z = Down

14. DATA SHEETS....Continued

DATA SHEET 14
MDB ACCELEROMETER LOCATIONS AND DATA SUMMARY

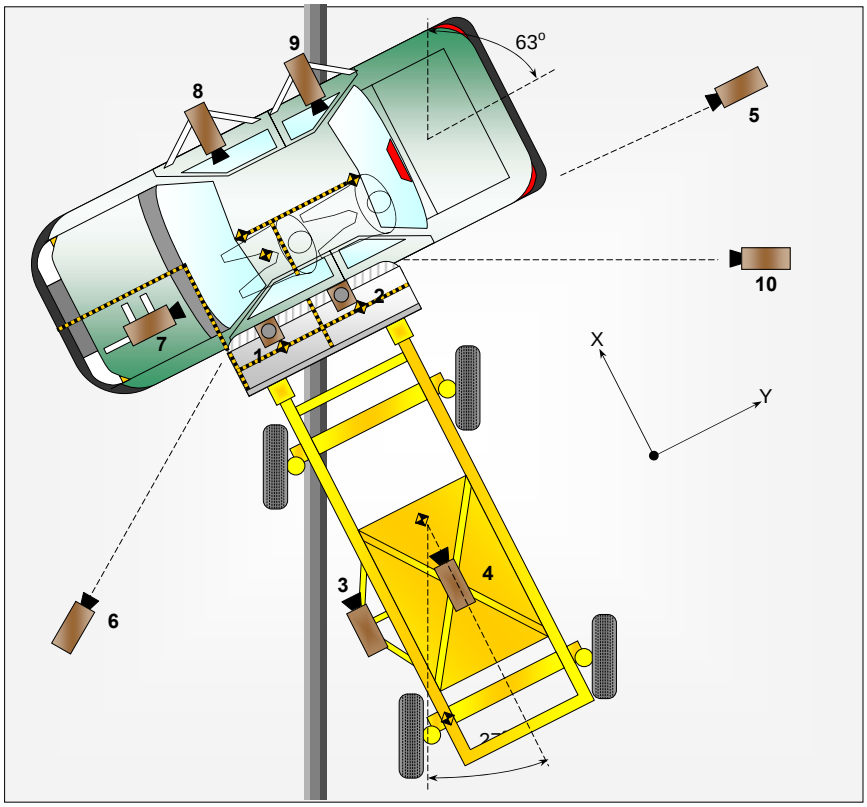


No.	Accelerometer Location	Corodinates (mm)			Peak Values (G's)				
		X	Y	Z	Axis	Max	Time	Min	Time
1	MDB CG				X				
					Y				
					Z				
					RES				
2	MDB Rear				X				
					Y				

All measurements accurate to ± 3 mm
Reference: +X = Forward, +Y = To Right, +Z = Down

14. DATA SHEETS....Continued

DATA SHEET 15
HIGH SPEED CAMERA LOCATIONS AND DATA



Camera No.	VIEW	Coordinates (mm)			Angle	Lens (mm)	Min.Film Speed (fps)
		X*	Y*	Z*			
1	Overhead View of Test Vehicle						1000
2	Overhead Closeup View of Impact Plane						1000
3	MDB Onboard Closeup of Impact Point						1000
4	MDB Onboard View of Driver Dummy						1000
5	Right Side Ground Level – Overall View						1000
6	Left Side Ground Level – Overall View						1000
7	Test Vehicle Onboard Driver – Front View						1000
8	Test Vehicle Onboard Driver – Side View						1000
9	Test Vehicle Onboard Pass. – Side View						1000
10	Real-Time (24 fps) Film Coverage of Test						24

NOTE: Reference (from point of impact): +X = Forward, +Y = To Right, +Z = Down
* All measurements accurate to ± 6 mm

14. DATA SHEETS....Continued

DATA SHEET 16

FMVSS 301 FUEL SYSTEM INTEGRITY DATA

NHTSA No.: _____ TEST DATE: _____

Vehicle Year./Make/Model: _____

****

TEST VEHICLE IMPACT TYPE:

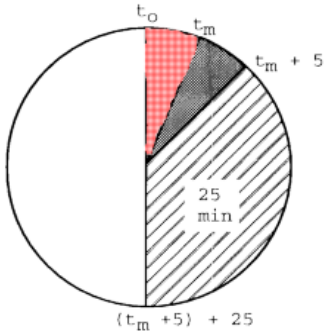
- ___ Frontal (___ kph)
- ___ Oblique (___ kph) - ___ ° barrier face first with - ___ contacting the - ___ side

(driver/passenger)

- ___ Rear Moving Barrier (___ kph)
- ___ Lateral Moving Barrier (___ kph)
- X Side Impact Moving Deformable Barrier (___kph) contacting the driver side side

(driver/passenger)

FUEL SPILLAGE MEASUREMENT:



1. From impact until vehicle motion ceases
2. For five minute period after vehicle motion ceases
3. For next 25 minutes

ACTUAL	MAX ALLOWED
0 g	28 g
0 g	142 g
0 g	28 g/1 min.

SOLVENT SPILLAGE DETAILS:

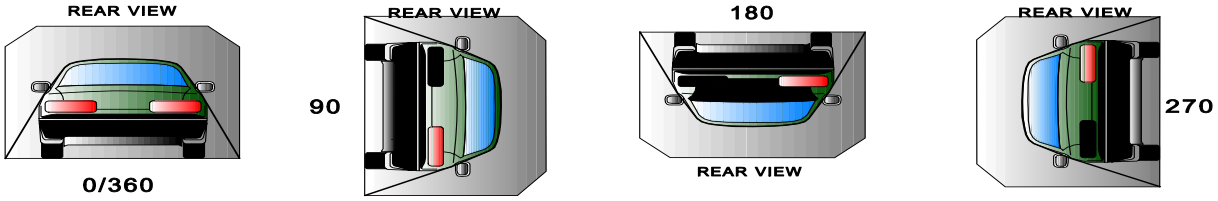
None

14. DATA SHEETS....Continued

DATA SHEET 17

ROLLOVER DATA

Vehicle: NHTSA No.:



I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Stage	Rotation Time (spec. 1 -3 min)				FMVSS 301 Hold Time		Total Time				Next Whole Minute Interval	
0º - 90º		minutes		seconds		minutes		minutes		seconds		minutes
90º - 180º		minutes		seconds		minutes		minutes		seconds		minutes
180º-270º		minutes		seconds		minutes		minutes		seconds		minutes
270º-360º		minutes		seconds		minutes		minutes		seconds		minutes

II. FMVSS 301 REQUIREMENTS: (Maximum allowable solvent spillage):

First 5 minutes from onset of rotation	6th min.	7th min.	8th min. (if required)
142 g	28 g	28 g	28 g

III. ACTUAL TEST VEHICLE SOLVENT SPILLAGE:

Rollover Stage	First 5 minutes from onset of rotation (g)	6th min. (g)	7th min. (g)	8th min. (if required) (g)
0º - 90º				
90º - 180º				
180º-270º				
270º-360º				

Note: Record spillage for whole minute intervals only as determined above.

IV. SOLVENT SPILLAGE LOCATION(S):

Rollover Stage	Spillage Location
0º - 90º	
90º - 180º	
180º-270º	
270º-360º	

14. DATA SHEETS....Continued

LABORATORY NOTICE OF TEST FAILURE TO OVSC REPORT

FMVSS: 214, SIDE IMPACT PROTECTION TEST DATE:_____

LABORATORY:_____

CONTRACT NO.: _____; DELV. ORDER NO.:_____

LAB. PROJECT ENGINEER'S NAME:_____

VEH. MY/MAKE/MODEL:_____

VEH. BODY STYLE: _____; BUILD DATE:_____

VEH. NHTSA NO.: _____; VIN:_____

DRIVER SID #: _____ ; PASS. SID #: _____ ; IMPACT FACE ID #:_____

TEST FAILURE DESCRIPTION:_____

_____

_____

S214 REQUIREMENT, PARAGRAPH §_____

NOTIFICATION TO NHTSA (COTR):_____

DATE: _____ BY: _____

REMARKS:

14. DATA SHEETS....Continued

MONTHLY STATUS REPORT

Test Program:_____ Contract Number:_____ Fiscal Year:_____ Laboratory: _____

Report Date:_____

Item No.	NHTSA No.	Date Of Delivery	Initial Odometer Reading	Test Date	Pass Or Fail	Date of Final Report	Vehicle Condition Report Date	Invoice No.	Invoice Date	Final Odometer Reading	Date Vehicle Is Disposed
1											
2											
3											
4											
5											
6											
7											
8											
9											

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