

REPORT NUMBER KAR21003-11

**NEW CAR ASSESSMENT PROGRAM
SIDE IMPACT TEST**

**MAZDA MOTOR CORPORATION
2001 MAZDA MIATA
TWO DOOR CONVERTIBLE
NHTSA NUMBER: M15402**

**PREPARED BY:
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ADELANTO, CALIFORNIA 92301**



APRIL 5, 2001

FINAL REPORT

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16. Abstract A 55/28 km/h 90 deg. Moving Deformable Barrier Side Impact NCAP Test was conducted on the subject 2001 Mazda Miata 2 Door Convertible in accordance with the specifications of the Office of Crash Worthiness Standards Test Procedure for the generation of consumer information on vehicle side crash protection. The test was conducted at KARCO Engineering laboratories in Adelanto, California, on February 26, 2001. The impact velocity of the Moving Deformable Barrier was 61.80 km/h, and the outside ambient temperature at the struck (driver's) side of the vehicle was 8.3 deg. C. The target vehicle's maximum post test static crush was 189 mm located at level 3. The test vehicle's occupant performance is as follows: <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 70%;">Measurement Description</th> <th style="width: 30%;">Driver SID</th> </tr> </thead> <tbody> <tr> <td>Left Upper Rib (LUR) G's</td> <td style="text-align: center;">80.9</td> </tr> <tr> <td>Left Lower Rib (LLR) G's</td> <td style="text-align: center;">84.2</td> </tr> <tr> <td>Lower Spine (T₁₂) G's</td> <td style="text-align: center;">72.9</td> </tr> <tr> <td>Thoracic Trauma Index (TTI) G's</td> <td style="text-align: center;">79</td> </tr> <tr> <td>Pelvis (PEV) G's</td> <td style="text-align: center;">67</td> </tr> </tbody> </table>				Measurement Description	Driver SID	Left Upper Rib (LUR) G's	80.9	Left Lower Rib (LLR) G's	84.2	Lower Spine (T ₁₂) G's	72.9	Thoracic Trauma Index (TTI) G's	79	Pelvis (PEV) G's	67
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17. Key Words New Car Assessment Program (NCAP) Side Impact Moving Deformable Barrier (MDB) Side Impact Dummy (SID)		18. Distribution Statement Copies of this report are available from: National Highway Traffic Safety Admin. NHTSA Technical Reference Division 400 Seventh St., SW, Room 5108 Washington, DC 20590													
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SECTION 1

PURPOSE and TEST PROCEDURE

1.1 PURPOSE

This Side Impact NCAP test is conducted as part of the FY' 2001 test program sponsored by the National Highway Traffic Safety Administration (NHTSA), under contract No. DTNH22-99-D-02041. The purpose of this test is to generate comparative side impact data on a 2001 Mazda Miata 2 Door Convertible manufactured by Mazda Motor Corporation.

1.2 TEST PROCEDURE

The side impact test was conducted in accordance with the current National Highway Traffic Safety Administration (NHTSA), Office of Crashworthiness Standards (OCS), laboratory test procedure NCAP Side Impact Testing, dated July 1997 and the corresponding KARCO Engineering Test Procedure KTP-214D, dated November 18, 1998. The procedures for receiving, inspection, testing, and reporting of test results are described in the test procedures and are not repeated in this report.

SECTION 2

SUMMARY OF SIDE IMPACT TEST

2.1 SUMMARY OF SIDE IMPACT NCAP TEST

A model year 2001 Mazda Miata 2 Door Convertible was impacted on the left (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 61.80 km/h. The specified impact velocity range is from 61.1 to 62.7 km/h. The test (target) vehicle was stationary and positioned 63° to the line of forward motion. The weight of the vehicle as tested was 1204 kg. and the test weight of the MDB was 1361 kg. The test was conducted at KARCO Engineering in Adelanto, California, on February 26, 2001.

One (1) real-time motion picture camera and nine (9) high-speed motion picture cameras were used to document the impact event. The pre-test and post-test conditions were recorded by one (1) real-time motion picture camera. Camera locations and pertinent camera information is documented in the data sheets. Pre- and post-test photographs of the vehicle and SID can be found in Appendix A. One 50th percentile adult male Side Impact Dummy (SID) was placed in the driver's designated seating positions according to the test procedure. The SID is instrumented with contact switches on the pelvis and thorax, and eleven accelerometers in the following locations:

- Left Upper Rib (LUR) uni-axial accelerometer (Y-axis primary and redundant)
- Left Lower Rib (LLR) uni-axial accelerometer (Y-axis primary and redundant)
- Lower Thoracic Spine (T12) uni-axial accelerometer (Y-axis primary and redundant)
- Pelvic (PEV) section uni-axial accelerometer (Y-axis primary and redundant)
- Head Center of Gravity (CG) tri-axial accelerometers (X, Y, and Z axes)

The test vehicle was instrumented with twenty-five (14) structural accelerometers and the MDB was instrumented with five (5) accelerometers and a one (1) contact switch on the right bumper to compare left side to right side bumper impact timing. All data channels were recorded with a fully self contained on-board Test Data Acquisition System (TDAS). The data was digitally sampled at 10,000 samples per second and processed per Appendix V of the Test Procedure.

2.2 GENERAL COMMENTS

The test vehicle sustained a maximum static crush of 189 mm at level 3, 1200mm rearward of the left vertical impact point. The driver SID, Serial No. 274 was calibrated just prior to this test. The SID injury criteria is summarized as follows:

Measurement	Units	Driver
Thoracic Trauma Index (TTI)	G's	79
Peak Pelvic G's (PEV)	G's	67

Tests summaries and post-test observations are presented in Section 3. The vehicle, camera, and occupant measurements are presented in Section 4. Appendix A contains the still photograph prints. Appendix B contains the driver SID, vehicle, and MDB response data traces. Appendix C contains the SID's Configuration and performance verification data. Appendix D contains the test equipment information.

SECTION 3
SIDE IMPACT DUMMY (SID) AND VEHICLE TEST DATA

Test Vehicle: 2001 Mazda Miata 2 Door Convertible
 Test Program: 55/28 km/h 90° Side Impact NCAP

NHTSA No. M15402
 Test Date: 02/26/01

CONVERSION FACTORS USED IN THIS REPORT*

Quantity	Typical Application	Std Units	Metric Unit	Multiply By
Mass	Vehicle Weight	lb	kg	0.4536
Linear Velocity	Impact Velocity	mile/h	km/h	1.609
Length or Distance	Measurements	in	mm	25.4
Volume	Fuel Systems	gal	liter	3.785
Volume	Small Fluids	oz	mL	29.573
Pressure	Tire Pressures	lbf/in ²	kPa	7.0
Volume	Liquid	gal	liter	3.785
Temperature	General Use	°F	°C	$=(t_f - 32)/1.8$
Force	Dynamic Forces	lbf	N	4.448
Moment	Torque	lbf/ft	Nm	1.355

* Based on the Recommended Practice in SAE J916, May 85

DATA SHEET NO. 1
GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2001 Mazda Miata 2 Door Convertible
Test Program: 55/28 km/h 90° Side Impact NCAP

NHTSA No.: M15402
Test Date: 02/26/01

TEST VEHICLE INFORMATION

Make	Mazda
Model	Miata
Body Style	2 Door Convertible
NHTSA No.	M15402
VIN	JN1NB353410206038
Color	Red
Delivery Date	2/2/01
Odometer Reading (mile)	42
Dealer	Romero Mazda
Transmission	5 Speed Manual
Final Drive	Rear
Number of Cylinders	4
Engine Displacement (L)	1.8
Engine Placement	Longitudinal

TEST VEHICLE OPTIONS

Driver Airbag	Yes
Passenger Airbag	Yes
Power Windows	Yes
Power Steering	Yes
Power Door Locks	Yes
Tilt Wheel	No
Air Conditioning	Yes
Power Brakes	Yes
Disc Brakes, Front	Yes
Disc Brakes, Rear	Yes
Anti-lock Brakes	No
AM/FM/Cassette	Yes
Anti-Theft System	No
Cruise Control	Yes

DATA FROM CERTIFICATION LABEL

Manufactured By	Mazda Motor Corporation	GVWR (kg)	1335
Date of Manufacture	October-00	GAWR Front (kg)	685
		GAWR Rear (kg)	670

DATA FROM TIRE PLACARD

Measured Parameter	Front	Rear
Maximum Tire Pressure (kPa)	185	185
Cold Pressure (kPa)	185	185
Recommend Tire Size	P205/45/R16	P205/45/R16
Tire Size on Vehicle	P205/45/R16	P205/45/R16
Tire Manufacturer	Bridgestone	Bridgestone

Measured Parameter	Front	Rear	Third	Total
Type of Seats	Bucket	Bench	Bench	
Number of Occupants	2	N/A	N/A	2
Capacity Wt. (VCW) (kg)				221
Cargo Weight (RCLW) (kg)				18

DATA SHEET NO. 1...(continued)
GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2001 Mazda Miata 2 Door Convertible
 Test Program: 55/28 km/h 90° Side Impact NCAP

NHTSA No.: M15402
 Test Date: 02/26/01

TEST VEHICLE WEIGHTS

	Units	As Delivered (UVW)			As Tested (ATW)		
		Front Axle	Rear Axle	Total	Front Axle	Rear Axle	Total
Left	kg	290	272		316	300	
Right	kg	288	264		304	284	
Ratio	%	51.9	48.1		51.5	48.5	
Totals	kg	578	536	1114	620	584	1204

TARGET TEST WEIGHT CALCULATION*

Measured Parameter	Units	Value
Total Delivered Weight (UVW)	kg	1114
Weight of 2 P572F Side Impact Dummies	kg	81
Rated Cargo/Luggage Weight (RCLW)	kg	18
Calculated Vehicle Target Weight (TVTW)	kg	1213

*Actual As Tested Weight (ATW) will be TVTW -5/-10 kg

TEST VEHICLE ATTITUDES AND CG

	Units	LF	RF	LR	RR	CG (aft of front axle)
As Delivered	mm	633	635	651	650	1093
As Tested	mm	621	629	633	636	1102
Fully Loaded	mm	622	635	624	633	

GENERAL TEST VEHICLE DATA

Measurement Description	Units	Value
Test Vehicle Wheel base	mm	2271
Total Vehicle Length at Left Side	mm	2834
Total Vehicle Length at Centerline	mm	3947
Total Vehicle Length at Right Side	mm	2832
Weight of Ballast In Cargo Area	kg	0
Amount of Stoddard Solvent in Fuel Tank	Liters	44.7

TEST VEHICLE VERTICAL IMPACT LINE DATA

Measurement Description	Units	Value
Test Vehicle Wheel base	mm	2271
Target Impact Point Aft of Front Axle	mm	196
Actual Impact Point Aft of Front Axle	mm	215

DATA SHEET NO. 1...(continued)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2001 Mazda Miata 2 Door Convertible

NHTSA No. M15402

Test Program: 55/28 km/h 90° Side Impact NCAP

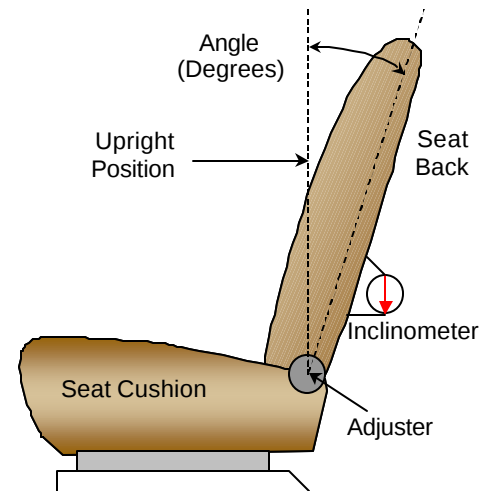
Test Date: 02/26/01

NOMINAL DESIGN RIDING POSITION

The driver's seat back is positioned to the manufacturers designated angle. The procedure for the seat is as follows:

A slit is cut into fabric of the seat at the outboard edge, approximately 10-13 inches above the pivot point to expose the frame of the seat. An inclinometer is firmly placed against the flat portion of the frame surface and the seat back is adjusted to the manufacturers designated angle.

Driver seat back angle: 20° with a seated dummy



FRONT SEAT ASSEMBLY

SEAT FORE/AFT POSITIONS

The driver's seat is adjustable. The fore/aft is set to the middle position.

Driver seat fore/aft total travel: 19 seat detent positions

Driver seat fore/aft position: Seat set at 10th detent

SEAT BELT UPPER ANCHORAGE

The driver's seat is equipped with an adjustable "D" ring anchorage. The anchorage has five positions; it is placed in the 2nd position from the top.

DATA SHEET NO. 1...(continued)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2001 Mazda Miata 2 Door Convertible

NHTSA No. M15402

Test Program: 55/28 km/h 90° Side Impact NCAP

Test Date: 02/26/01

FUEL TANK CAPACITY DATA

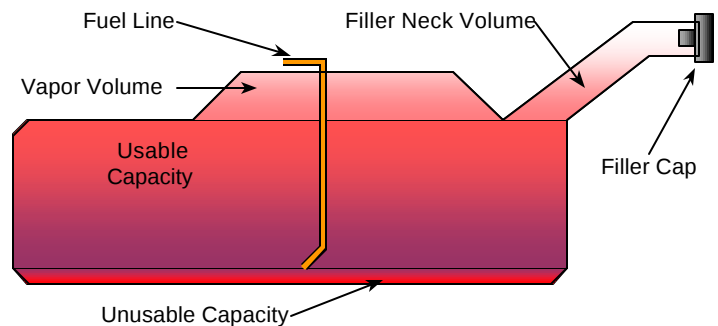
The "Usable Capacity" of the standard equipment fuel tank is: 48.0 liters

The "Usable Capacity" of any optional equipment fuel tank is: N/A liters

92-94% of "Usable Capacity" for certification to FMVSS 301 requirement: 44.2 to 45.1 liters

Actual amount of Stoddard solvent added to vehicle for certification test: 44.7 liters

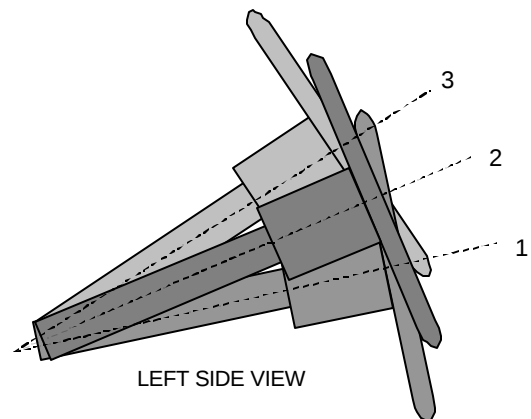
The test vehicle is equipped with an electric fuel pump. The fuel pump will operate for approximately three (3) seconds with the ignition in the "ON" position, after which the fuel pump automatically shuts off. The fuel filler door is located on the top of the left rear fender.



VEHICLE FUEL TANK ASSEMBLY

STEERING COLUMN ADJUSTMENT

Steering wheel and column adjustments are made so that the steering wheel hub is at the geometric center of the locus it describes, when it is moved through its full range of motion. An aluminum plate is placed across the rim of the steering wheel, an inclinometer is placed onto the plate and the angle is measured. The tested vehicle has its steering column set at position 2 as indicated in the drawing at right and the angle below. This vehicle's steering column is not adjustable; it's geometric center is at 19°.



STEERING COLUMN ASSEMBLY

Lowermost, position 1: N/A°

Geometric center, position 2: 19°

Uppermost, position 3: N/A°

DATA SHEET NO. 2
TEST VEHICLE SUMMARY OF RESULTS

Test Vehicle: 2001 Mazda Miata 2 Door Convertible
Test Program: 55/28 km/h 90° Side Impact NCAP

NHTSA No.: M15402
Test Date: 02/26/01

TEST VEHICLE WEIGHTS

	Units	As Delivered (UVW)			As Tested (ATW)		
		Front Axle	Rear Axle	Total	Front Axle	Rear Axle	Total
Left	kg	290	272		316	300	
Right	kg	288	264		304	284	
Weight Ratio	%	51.9	48.1		51.5	48.5	
Totals	kg	578	536	1114	620	584	1204

MAXIMUM EXTERIOR STATIC CRUSH

Level	Measured Parameter	Units	Maximum Crush	Above Ground
Level 1	Sill Top Height	mm	59	254
Level 2	Occupant H-Point	mm	184	385
Level 3	Mid Door	mm	189	525
Level 4	Window Sill	mm	125	778
Level 5	Window Top	mm	32	1125
N/A	Maximum Penetration	mm	189	

INSTRUMENTATION

Driver SID Accelerometers	11
Passenger SID Accelerometers	0
Vehicle Structure Accelerometers	14
MDB Accelerometers	5
Total	30

16mm MOVIE COVERAGE

High Speed, Vehicle On-Board	2
High Speed, Off-Board	4
High Speed, MDB On-Board	2
Real Time, Panning	1
Total	9

DATA SHEET NO. 3
MOVING DEFORMABLE BARRIER (MDB) SUMMARY OF RESULTS

Test Vehicle: 2001 Mazda Miata 2 Door Convertible
 Test Program: 55/28 km/h 90° Side Impact NCAP

NHTSA No.: M15402
 Test Date: 02/26/01

MDB SPECIFICATIONS (mm)

Measurement Description	Length
Overall Width of Framework Carriage	1252
Overall Length Including Honeycomb Face	4115
Wheel base of Framework Carriage	2590
C.G. Location aft of Front Axle	1127

MDB WEIGHTS

	Units	Front Axle	Rear Axle	Total
Left	kg	384	308	
Right	kg	385	284	
Ratio	%	56.5	43.5	
Totals	kg	769	592	1361

SPEED AND IMPACT ANGLE DATA

Measured Parameter	Units	Requirement	Value
Trap No. 1 Velocity (Primary)	km/h	61.1 to 62.7	61.80
Trap No. 2 Velocity (Redn.)	km/h	61.1 to 62.7	61.99
MDB CL to Target Vehicle CL	degrees	88.5 to 91.5	89.5

MAXIMUM STATIC CRUSH OF HONEYCOMB FACE (mm)

Vertical Location			From Centerline		Max
Row	Description	Height	Distance	Direction	Crush
A	Center of Bumper	432	800	Right	229
B	Top of Bumper	533	800	Right	182
C	Mid Level	686	800	Left	135
D	Top of Stack	813	800	Left	103

MDB INSTRUMENTATION AND CAMERAS

Accelerometers	5
Contact Switches	2
High Speed Cameras	2

**DATA SHEET NO. 4
POST TEST OBSERVATIONS**

Test Vehicle: 2001 Mazda Miata 2 Door Convertible

NHTSA No.: M15402

Test Program: 55/28 km/h 90° Side Impact NCAP

Test Date: 02/26/01

TEST DUMMY INFORMATION AND CONTACT POINTS

Description	Front Seat SID
Dummy Type / Serial No.	P572F, SID / No. 274
Head Contact	Side Header/Headrest
Upper Torso Contact	Panel
Lower Torso Contact	Panel
Left Knee Contact	Panel
Right Knee Contact	None

POST TEST DOOR OPENING AND SEAT TRACK INFORMATION

Description	Front
Left Side Door Opening	Remained closed inoperable
Right Side Door Opening	Remained closed operable
Seat Movement	None
Seat Back Failure	None

POST TEST STRUCTURAL OBSERVATIONS

Critical Areas of Performance	Observations and Conclusions
Pillar Performance	N/A
Sill Separation	N/A
Windshield Damage	Glazing Cracks on Struck Side Only
Window Damage	Left Side Window Broke.
Other Notable Effects	No significant items to note.

AIR BAG DEPLOYMENT

	Driver	Front Passenger	Rear Passenger
Front	Yes	Yes	N/A
Side	N/A	N/A	N/A

MDB LEFT EDGE IMPACT POINT DATA

Measured Parameter	Units	Requirement	Value
Horizontal Offset	mm	+/- 50	19 (right)
Vertical Offset	mm	+/- 20	9 (below)

SECTION 4
OCCUPANT AND VEHICLE INFORMATION

DATA SHEET NO. 5
SID INJURY CRITERIA AND SENSOR DATA

Test Vehicle: 2001 Mazda Miata 2 Door Convertible

NHTSA No.: M15402

Test Program: 55/28 km/h 90° Side Impact NCAP

Test Date: 02/26/01

THORAX AND PELVIS PEAK ACCELERATIONS, PRIMARY (FIR 100 Filtered)

Location	Axis	Units	Driver			
			Max	Time	Min	Time
Upper Rib (LUR)	Y	G's	80.9	32.0	-20.0	26.2
Lower Rib (LLR)	Y	G's	84.2	21.4	-26.8	26.5
Lower Spine (T ₁₂)	Y	G's	72.9	26.6	-15.2	57.7
Pelvis (PEV)	Y	G's	67.1	25.2	-3.2	126.0

THORACIC TRAUMA INDEX (TTI) AND PELVIC ACCELERATION, PRIMARY (FIR 100 Filtered)

Location	Driver			
	LLR	T ₁₂	TTI(g)	PEV(g)
Primary Rib, Spine, and Pelvis	84.225	72.871	79	67

THORAX AND PELVIS PEAK ACCELERATIONS, REDUNDANT (FIR 100 Filtered)

Location	Axis	Units	Driver			
			Max	Time	Min	Time
Upper Rib (LUR)	Y	G's	79.7	32.0	-19.8	26.1
Lower Rib (LLR)	Y	G's	84.5	21.4	-26.2	26.5
Lower Spine (T ₁₂)	Y	G's	72.4	26.5	-14.9	57.5
Pelvis (PEV)	Y	G's	66.9	25.2	-3.4	125.3

THORACIC TRAUMA INDEX (TTI) AND PELVIC ACCELERATION, REDUNDANT (FIR 100 Filtered)

Location	Driver			
	LLR	T ₁₂	TTI(g)	PEV(g)
Redundant Rib, Spine, and Pelvis	84.534	72.434	78	67

HEAD CG PEAK ACCELERATIONS (SAE CLASS 1000 Filtered)

Location	Axis	Units	Driver			
			Max	Time	Min	Time
Head CG	X	G's	6.4	172.7	-40.4	33.0
Head CG	Y	G's	148.5	32.9	-7.5	180.3
Head CG	Z	G's	95.6	32.9	-44.9	41.2
Head CG Resultant	N/A	G's	181.0	32.9		

HEAD INJURY CRITERIA (SAE CLASS 1000 Filtered)

Location	Driver			
	HIC	T ¹	T ²	Avg G
Head CG	460.2	32.0	48.1	60.5

Positive Acceleration Polarities: Longitudinal (X) = Forward
 (Conforms to SAE J211) Lateral (Y) = Right
 Vertical (Z) = Down

DATA SHEET NO. 6

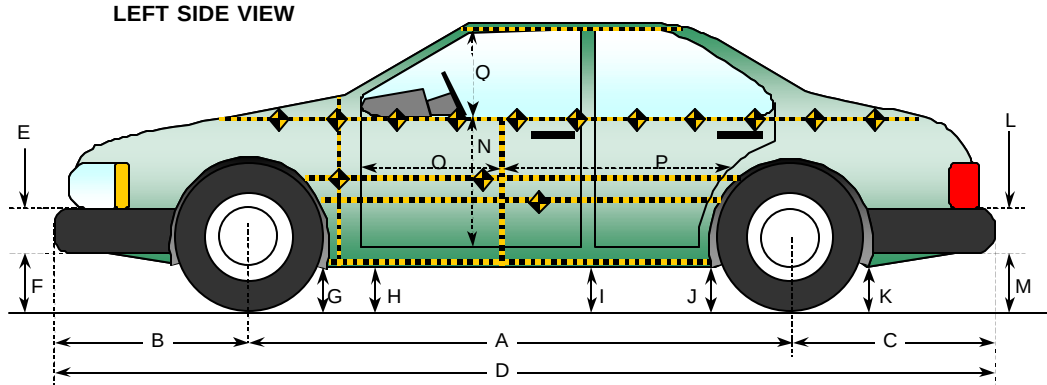
VEHICLE PRE-TEST AND POST-TEST MEASUREMENTS

Test Vehicle: 2001 Mazda Miata 2 Door Convertible

NHTSA No.: M15402

Test Program: 55/28 km/h 90° Side Impact NCAP

Test Date: 2/26/01



All Measurements in mm

Code	Measurement Description	Pre-Test	Post-Test	Difference
A	Wheelbase	2271	2235	36
B	Front Axle To FSOV	808	847	-39
C	Rear Axle to RSOV	880	878	2
D	Total Length at Centerline	3947	3949	-2
E	Front Bumper Thickness	373	383	-10
F	Front Bumper Bottom to Ground	196	208	-12
G	Sill Height at Front Wheel Well	175	177	-2
H	Sill Height at Front Door Leading Edge	177	192	-15
I	Sill Height at "B" Pillar	179	187	-8
J1	Sill Height at Rear Wheel Well	146	156	-10
J2	Pinch Weld Height at Rear Wheel Well	178	192	-14
K	Sill Height aft of Rear Wheel Well	226	248	-22
L	Rear Bumper Thickness	268	268	0
M	Rear Bumper Bottom to Ground	285	319	-34
N	Sill Height to Window Bottom Sill	515	527	-12
O	Front Door Leading Edge to Impact CL	416	412	4
P	Rear Door Trailing Edge to Impact CL	No Rear Door		
Q	Front Window Opening	344	327	17
R	Right Side Length	2832	2845	-13
S	Left Side Length	2834	2802	32
T	Vehicle Width at "B" Post	1660	1578	82

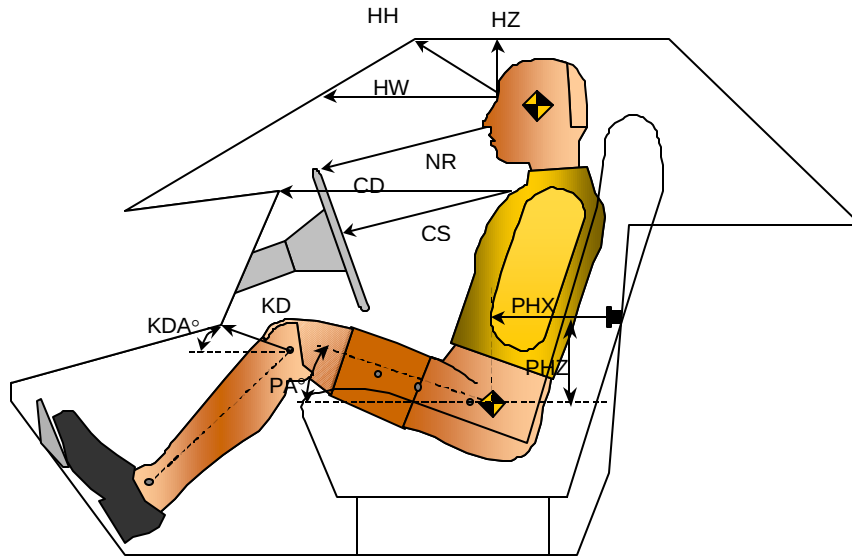
DATA SHEET NO. 7
SID LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle: 2001 Mazda Miata 2 Door Convertible

NHTSA No.: M15402

Test Program: 55/28 km/h 90° Side Impact NCAP

Test Date: 2/26/01



Driver Code	Measurement Description	Driver	
		Length(mm)	Angle(°)
HH	Head to Header	470	9
HW	Head to Windshield	583	
HZ	Head to Roof	127	90
NR	Nose to Rim	485	12
CD	Chest to Dash	535	5
CS	Chest to Steering Wheel	365	9
KDL	Left Knee to Dash	170	31
KDR	Right Knee to Dash	165	
PA	Pelvic Angle		23.5
PHX	H-Point to Striker (X-Axis)	252	
PHZ	H-Point to Striker (Z-Axis)	165	

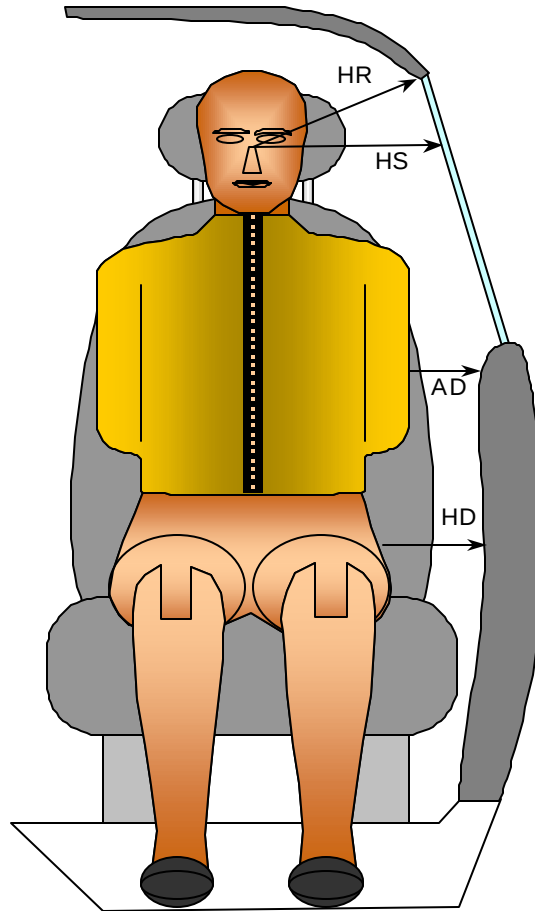
DATA SHEET NO. 8
SID LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2001 Mazda Miata 2 Door Convertible

NHTSA No.: M15402

Test Program: 55/28 km/h 90° Side Impact NCAP

Test Date: 2/26/01



FRONT VIEW OF DUMMY

Code	Measurement Description	Units	Driver
HR	Head to Side Header	mm	195
HS	Head to Side Window	mm	260
AD	Arm to Door	mm	45
HD	H-Point to Door	mm	86

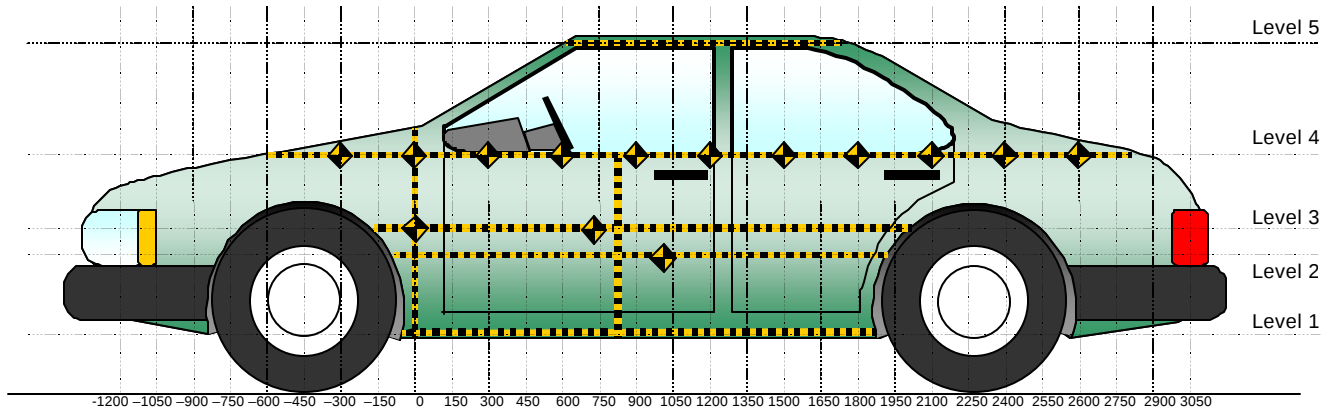
DATA SHEET NO. 9
VEHICLE SIDE MEASUREMENTS

Test Vehicle: 2001 Mazda Miata 2 Door Convertible

NHTSA No.: M15402

Test Program: 55/28 km/h 90° Side Impact NCAP

Test Date: 2/26/01



All Measurements Shown in mm

LEFT SIDE VIEW

Measurements are taken with vehicle in the as tested condition.

Measurements taken 900mm right of impact reference.

All measurements below in mm.

Level	Measurement Description	Height Above Ground
5	Window Top	1125
4	Window Sill	778
3	Mid Door	525
2	Occupant H-Point	385
1	Sill Top	254

DATA SHEET NO. 10 - VEHICLE EXTERIOR CRUSH PROFILES

Test Vehicle: 2001 Mazda Miata 2 Door Convertible

NHTSA No.: M15402

Test Program: 55/28 km/h 90° Side Impact NCAP

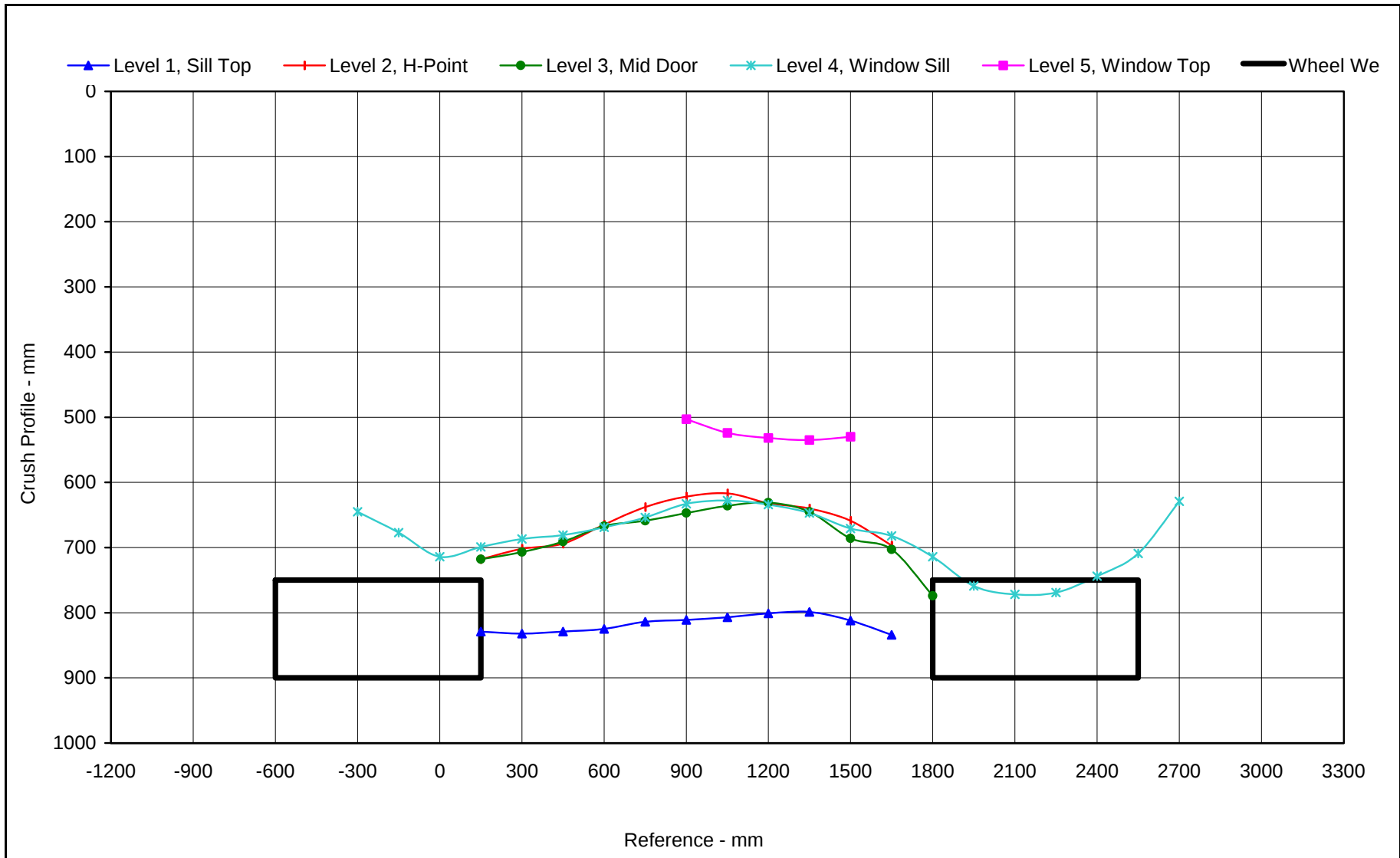
Test Date: 2/26/01

	Pre-Test					Post-Test					Difference				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
-900															
-750															
-600															
-450															
-300				677					645					32	
-150				710					677					33	
0				748					714					34	
150	853	811	826	762		829	718	718	699		24	93	108	63	
300	864	808	827	764		832	702	707	687		32	106	120	77	
450	865	805	829	762		829	694	691	681		36	111	138	81	
600	867	806	829	757		825	665	667	669		42	141	162	88	
750	867	805	827	752		814	638	659	654		53	167	168	98	
900	866	804	826	747	534	811	622	647	633	503	55	182	179	114	31
1050	862	801	823	753	556	807	617	636	628	524	55	184	187	125	32
1200	859	799	820	759	564	801	632	631	634	532	58	167	189	125	32
1350	858	796	818	768	566	799	640	645	647	535	59	156	173	121	31
1500	870	796	817	777	557	812	659	686	671	530	58	137	131	106	27
1650	886	802	821	786		834	697	703	682		52	105	118	104	
1800			827	797				774	714				53	83	
1950				801					759					42	
2100				801					772					29	
2250				784					769					15	
2400				756					744					12	
2550				718					709					9	
2700				642					629					13	
2850															
3000															

Pre-Test and Post-Test dimensions are actual distance from centerline of test vehicle.

DATA SHEET NO. 10...(continued)

18



Maximum Crush, Level 1: 59 mm at 1350 mm
 Maximum Crush, Level 2: 184 mm at 1050 mm
 Maximum Crush, Level 3: 189 mm at 1200 mm
 Maximum Crush, Level 4: 125 mm at 1050 mm
 Maximum Crush, Level 5: 32 mm at 1050 mm

Test Program: 55/28 km/h 90° Side Impact NCAP No.: M15402
 Test Vehicle: 2001 Mazda Miata 2 Door Convertible
 Test Date: 02/26/01



KAR21003-11

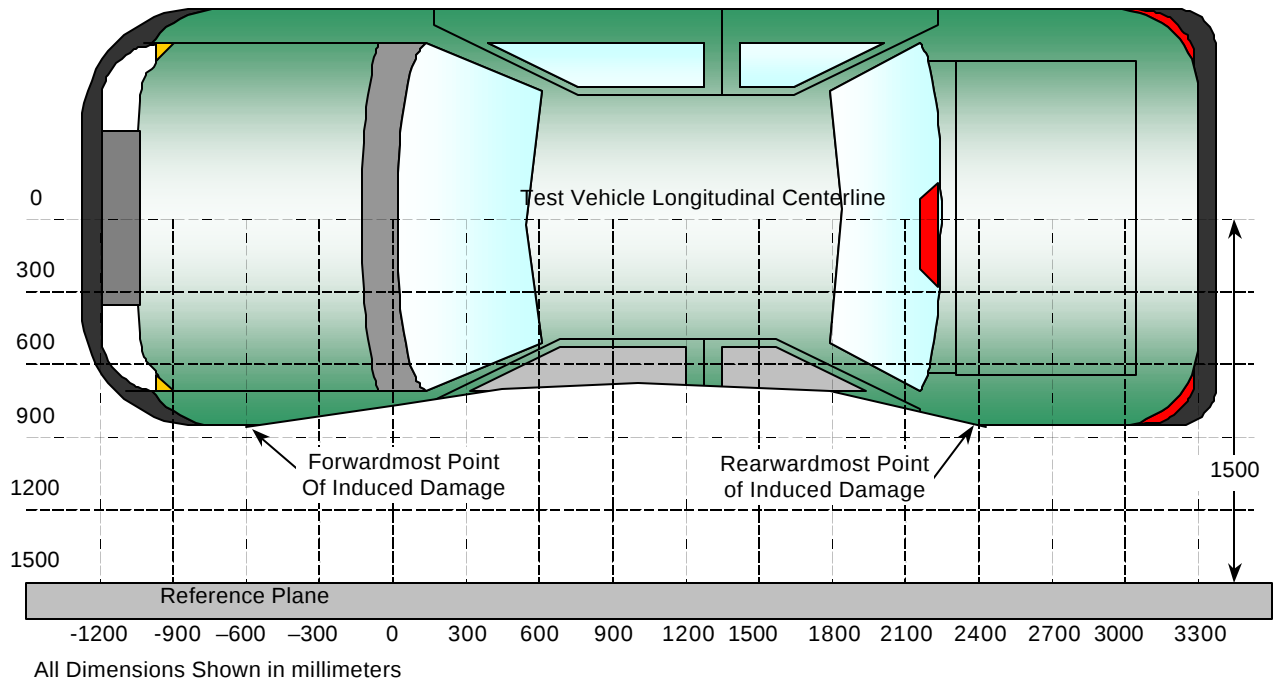
DATA SHEET NO. 11
VEHICLE DAMAGE PROFILE DISTANCES

Test Vehicle: 2001 Mazda Miata 2 Door Convertible

NHTSA No.: M15402

Test Program: 55/28 km/h 90° Side Impact NCAP

Test Date: 02/26/01



TOP VIEW

Damage Profile Distances

DPD	Distance From Impact Point in mm	Level	Pre-Test (mm)	Post-Test (mm)	Max Static Crush (mm)
1	-300	4	677	645	32
2	300	3	827	707	120
3	900	2	804	622	182
4	1500	2	796	659	137
5	2100	4	801	772	29
6	2700	4	642	629	13

Pre-Test and Post-Test measurements are distance from vehicle centerline.

DATA SHEET NO. 12

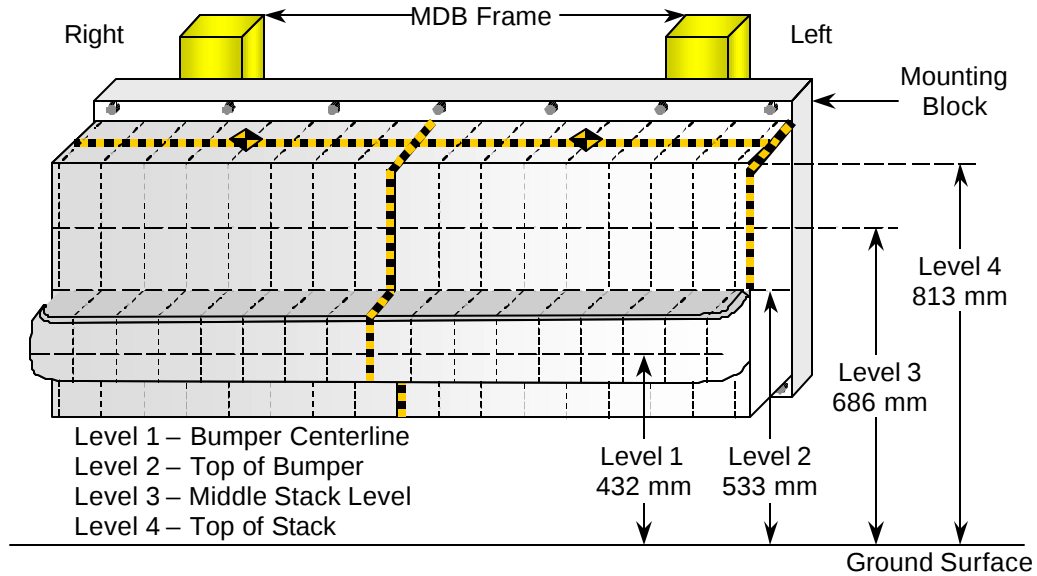
DEFORMABLE BARRIER HONEYCOMB FACE STATIC CRUSH

Test Vehicle: 2001 Mazda Miata 2 Door Convertible

NHTSA No.: M15402

Test Program: 55/28 km/h 90° Side Impact NCAP

Test Date: 02/26/01



DEFORMABLE BARRIER STATIC CRUSH

Stack	Distance Right of Center								C _L	Distance Left of Center							
Level	800	700	600	500	400	300	200	100	0	100	200	300	400	500	600	700	800
1	229	204	182	156	131	114	99	93	98	116	128	143	180	190	200	220	233
2	163	150	124	100	68	50	51	46	52	78	96	111	134	155	163	175	182
3	135	119	83	38	22	8	9	13	17	18	27	46	76	98	107	112	117
4	103	62	46	12	0	-5	-6	-4	12	-24	18	27	35	50	61	74	90

All Dimensions in mm

DATA SHEET NO. 13

VEHICLE ACCELEROMETER LOCATION AND DATA SUMMARY

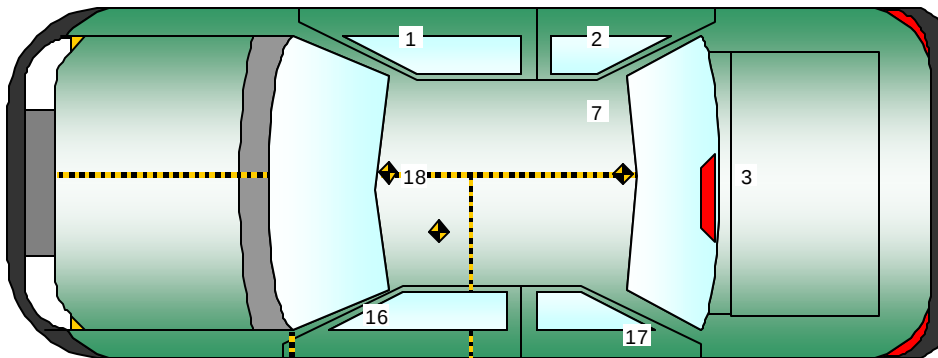
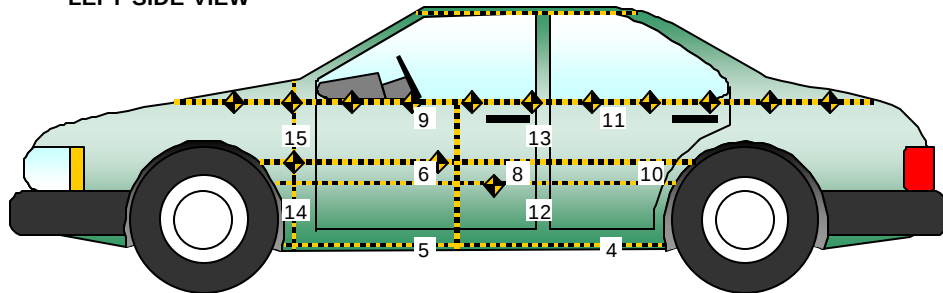
Test Vehicle: 2001 Mazda Miata 2 Door Convertible

NHTSA No.: M15402

Test Program: 55/28 km/h 90° Side Impact NCAP

Test Date: 02/26/01

LEFT SIDE VIEW



No.	Location
1	Right Sill at Front Seat
2	
3	Rear Floorpan Above Axle
4	
5	Left Sill at Front Door
6	Left Front Door Centerline
7	
8	Left Front Door Mid-Rear
9	Left Front Door Upper Centerline

No.	Location
10	
11	
12	Left Lower B-Post
13	Left Middle B-Post
14	Left Lower A-Post
15	Left Middle A-Post
16	Front Seat Track
17	
18	Vehicle CG

DATA SHEET NO. 13

VEHICLE ACCELEROMETER LOCATION AND DATA SUMMARY

Test Vehicle: 2001 Mazda Miata 2 Door Convertible

NHTSA No.: M15402

Test Program: 55/28 km/h 90° Side Impact NCAP

Test Date: 02/26/01

VEHICLE ACCELEROMETER PEAK DATA AND PRE-TEST LOCATIONS

Loc. No.	Accelerometer Location	Measurements (mm)			Peak Values (G's)				
		X	Y	Z	Axis	Max	Time	Min	Time
1	Right Sill at Front Seat	2040	575	200	X	5.9	23.5	-13.6	8.7
					Y	29.8	14.9	-3.0	80.1
					Z	11.8	34.9	-11.7	54.0
					RES	30.2	14.9		
2	Right Sill at Rear Seat				X				**
					Y				**
					Z				**
					RES				**
3	Rear Floorpan Above Axle	590	350	550	X	7.6	25.0	-16.0	8.3
					Y	34.7	35.2	-4.1	87.6
					Z	7.5	31.4	-5.0	81.6
					RES	35.0	35.2		
4	Left Sill at Rear Door				Y				**
5	Left Sill at Front Door	1790	-650	165	Y	44.0	5.2	-2.5	74.1
6	Front Door Centerline	1900	-680	590	Y	153.5	8.0	-52.2	22.5
7	Rear Occupant Compartment				Y				**
8	Front Door Mid-Rear	1510	-675	500	Y	182.6	3.2	-71.1	7.5
9	Front Door Upper Centerline	1860	-675	730	Y	151.3	9.2	-118.3	23.0
10	Rear Door Mid-Rear				Y				**
11	Rear Door Upper Centerline				Y				**
12	B-Post Lower				Y				**
13	B-Post Middle				Y				**
14	A-Post Lower	2450	-780	480	Y	34.4	2.9	-1.6	7.4*
15	A-Post Middle	2450	-780	630	Y	59.2	4.9	-14.2	23.7
16	Front Seat Track				Y				**
17	Rear Seat Structure				Y				**
18	Vehicle CG	2090	180	200	X	4.5	24.3	-9.5	7.3
					Y	42.9	16.6	-12.4	20.6
					Z	35.2	17.2	-18.4	12.4
					RES	54.8	16.9		

** Not installed on 2 door vehicle

* Channel failed at 7.4 msec.

DATA SHEET NO. 14

MDB ACCELEROMETER LOCATION AND DATA SUMMARY

Test Vehicle: 2001 Mazda Miata 2 Door Convertible

NHTSA No.: M15402

Test Program: 55/28 km/h 90° Side Impact NCAP

Test Date: 02/26/01

MDB ACCELEROMETER PEAK DATA AND LOCATIONS

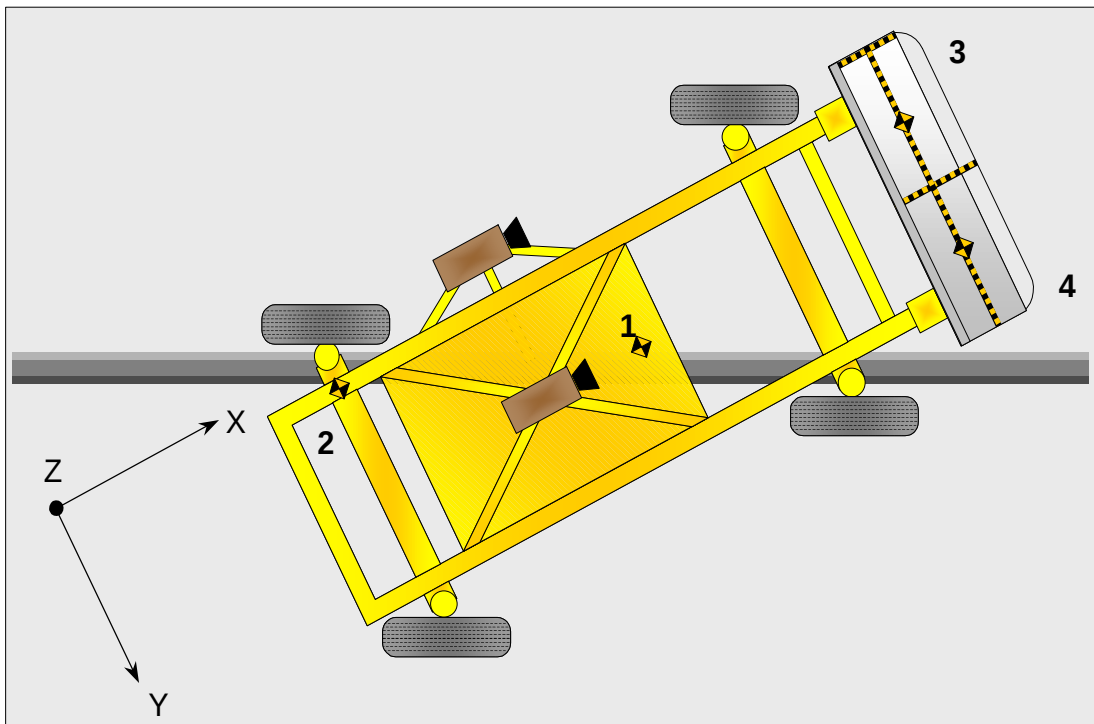
Loc. No.	Accelerometer Location	Measurements (mm)			Peak Values (G's)				
		X	Y	Z	Axis	Max	Time	Min	Time
1	MDB CG	-1195	0	430	X	2.5	145.9	-22.5	33.9
					Y	3.4	126.5	-8.2	15.1
					Z	13.3	165.1	-10.9	46.3
					RES	23.3	37.9		
2	MDB Rear	-2642	-593	608	X	0.0	0.0	0.0	0.0*
					Y	0.0	0.0	0.0	0.0*

Reference Points X - MDB Front Axle Y - MDB Centerline Z - Ground Plane

*Channels failed, no data

MDB BUMPER CONTACT SWITCH DATA

Loc. No.	Contact Switch Location	Units	Peak and 50% Crossing Point			
			Max	Time	50%	Time
3	MDB Left Bumper (T=0)	% F.S	100.0	0.0	0.0	0.0
4	MDB Right Bumper	% F.S.	101.0	8.0	50.5	0.2



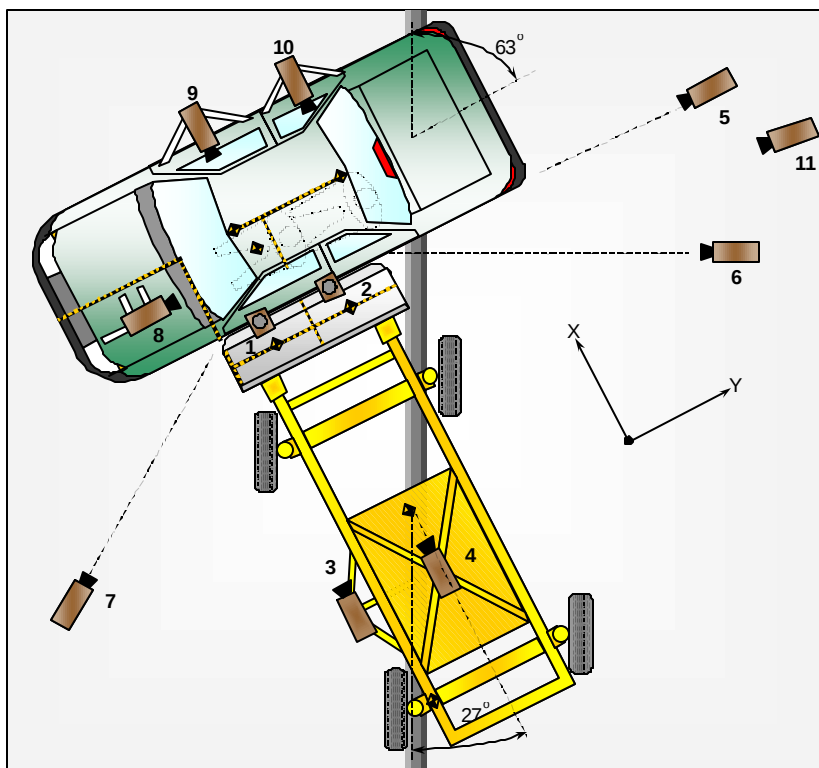
DATA SHEET NO. 15
HIGH SPEED CAMERA LOCATIONS AND DATA

Test Vehicle: 2001 Mazda Miata 2 Door Convertible

NHTSA No.: M15402

Test Program: 55/28 km/h 90° Side Impact NCAP

Test Date: 02/26/01



No.	Camera View	Location (mm)			Angle (deg.)	Lens (mm)	Film Speed (fr./sec.)
		X	Y	Z			
1	Overhead Overall	1652	-762	5486	-86	10	920
2	Overhead Close-up	-762	0	5791	-82	24	1020
3	MDB Onboard, Impact Point Close-Up	-2134	0	1143	-7	13	850
4	MDB Onboard, Centerline of Impact	-3048	-1652	1829	-11	13	1030
5	Right Side, Ground Level, Overall	9144	-18288	2210	-1	25	1110
6	Right Side, Ground Level, Close-up	0	18898	1524	0	60	1060
7	Left Side, Ground Level, Close-up	2362	-5410	1448	-6	13	1020
8	Vehicle Onboard Front SID, Front	Did Not Run					
9	Vehicle Onboard Front SID, Side	1970	-160	940	-8	10	1010
10	Real Time Coverage	3072	193000	587	2	Zoom	16

DATA SHEET NO. 16

FMVSS 301 FUEL SYSTEM INTEGRITY POST IMPACT DATA

Test Vehicle: 2001 Mazda Miata 2 Door Convertible

NHTSA No.: M15402

Test Program: 55/28 km/h 90° Side Impact NCAP

Test Date: 02/26/01

Test Time: 11:38 PM

Temperature at Time of Impact: 8.3 °C

STODDARD SOLVENT SPILLAGE MEASUREMENTS

- A. From impact until vehicle motion ceases: 0.0 oz.
(Maximum Allowable = 1 ounce)
- B. For the 5-minute period after motion ceases: 0.0 oz.
(Maximum Allowable = 5 ounces)
- C. For the following 25 minutes: 0.0 oz.
(Maximum Allowable = 1 oz./minute)
- D. Spillage Details: No leakage occurred

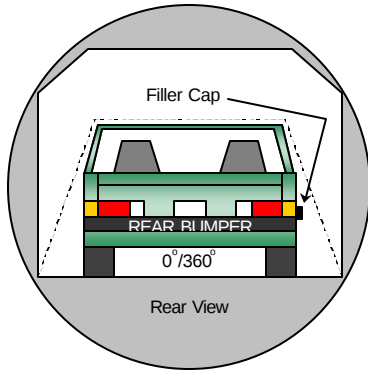
DATA SHEET NO. 17
FMVSS 301 STATIC ROLLOVER DATA SHEET

Test Vehicle: 2001 Mazda Miata 2 Door Convertible

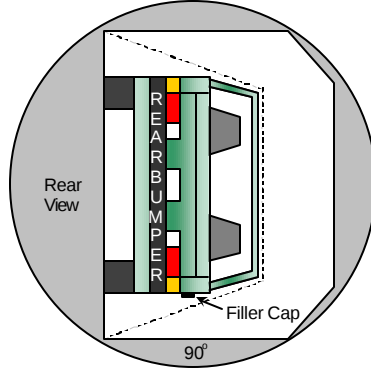
NHTSA No.: M15402

Test Program: 55/28 km/h 90° Side Impact NCAP

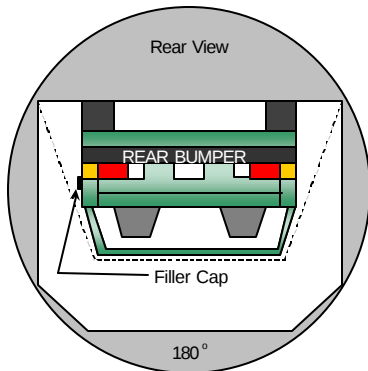
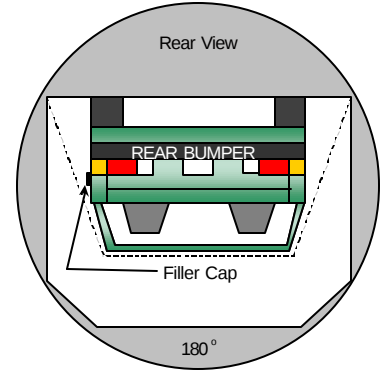
Test Date: 02/26/01



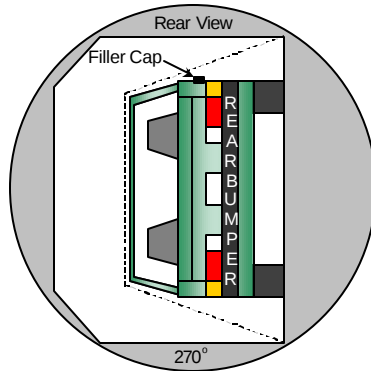
0° TO 90°



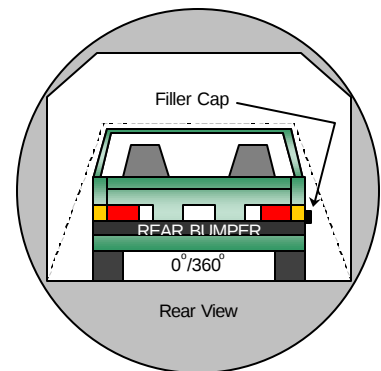
90° TO 180°



180° TO 270°



270° TO 360°



1. The specified fixture rollover rate for each 90° of rotation is 60 to 120 seconds.
2. The position hold time at each position is 300 seconds (minimum).
3. Details of Stoddard Solvent spillage locations:

No solvent leakage occurred during static rollover testing.

Test Phase	Rotation Time (sec.)	Hold Time (sec.)	Spillage (oz.)
0° TO 90°	85	300	0.0
90° TO 180°	80	300	0.0
180° TO 270°	77	300	0.0
270° TO 360°	80	300	0.0

APPENDIX A
PHOTOGRAPHS

LIST OF PHOTOGRAPHS

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Figure A-1: Left Front, as Received



Figure A-2: Right Rear, as Received

MFD. BY MAZDA MOTOR CORPORATION

DATE	GVWR/PNBV		GAWR/PNBE	FRT	GAWR/PNBE	RR
10/00	2943	LB	1510	LB	1477	LB
	1335	KG	685	KG	670	KG

THIS VEHICLE CONFORMS TO ALL APPLICABLE FEDERAL MOTOR VEHICLE SAFETY
/ BUMPER, AND THEFT PREVENTION
STANDARDS IN EFFECT ON THE DATE OF MANUFACTURE SHOWN ABOVE.

JM1NB353410206038

TYPE PASSENGER



BODY COLOR CODE; A3E

MADE IN JAPAN

Figure A-3: Vehicle Certification Label

VEHICLE CAPACITY WEIGHT

(NC74)

CAPACITÉ PORTEUSE DU VÉHICULE

154kg (340lbs)

SEATING CAPACITY

NOMBRE DE PLACES

FRONT SEAT

SIÈGE AVANT

REAR SEAT

SIÈGE ARRIÈRE

TOTAL

• • • • 2

• • 0

• • • • 2

TIRE INFLATION PRESSURE

PRESSION DE GONFLAGE DES PNEUS

kPa(kgf/cm²) <p.s.i.,lb/po²>

FRONT/AV.

REAR/AR.

180

180

(1.8)<26>

(1.8)<26>

TIRE SIZE

TAILLE DES PNEUS

205/45R16 83W

Figure A-4: Vehicle Tire Label



Figure A-5: Front View, Pre-Test



Figure A-6: Front View, Post-Test



Figure A-7: Rear View, Pre-Test



Figure A-8: Rear View, Post-Test



Figure A-9: Left (Impacted) Side View, Pre-Test



Figure A-10: Left (Impacted) Side View, Post-Test

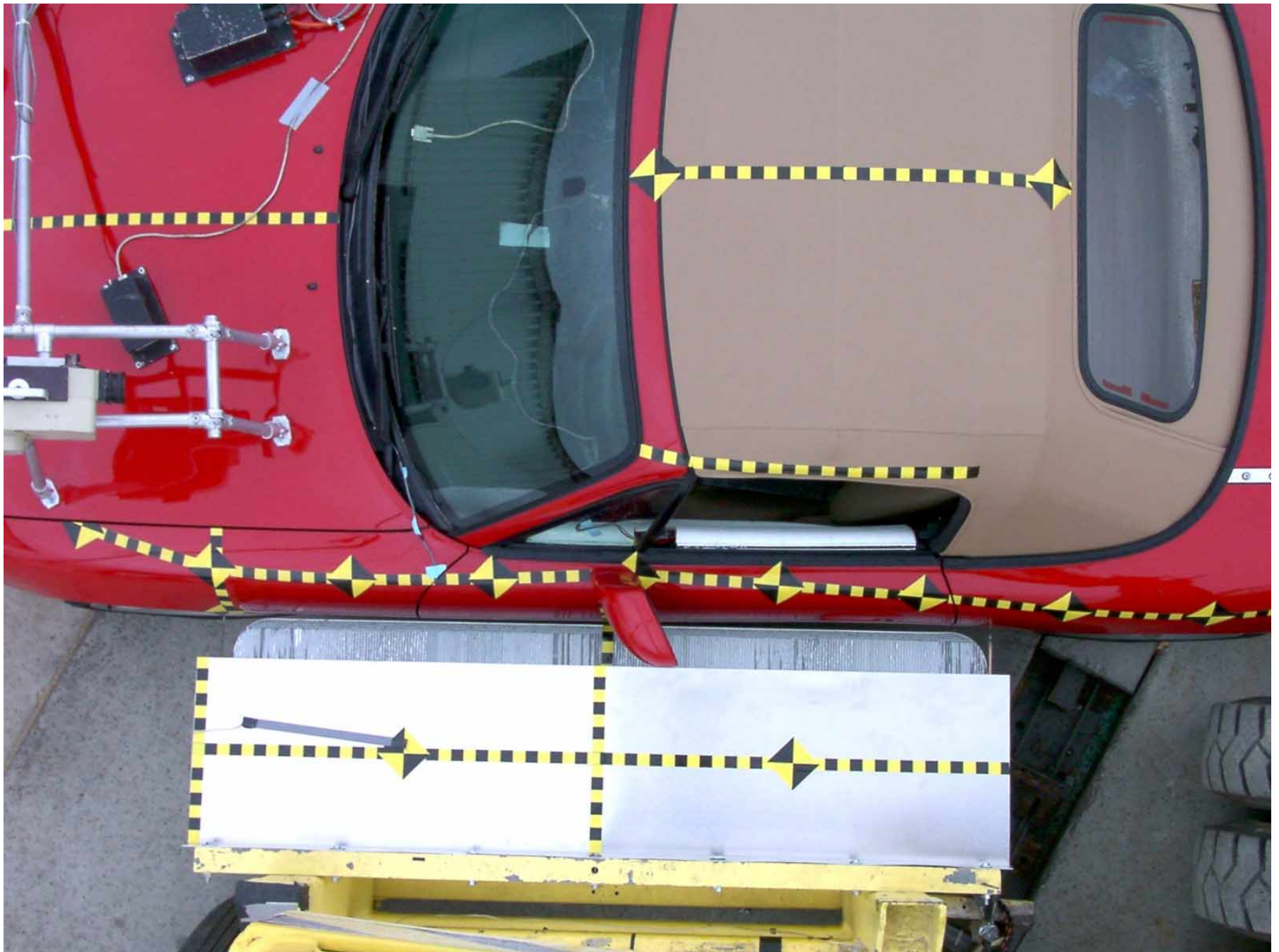


Figure A-11: Overall Overhead View (At Impact Position), Pre-Test

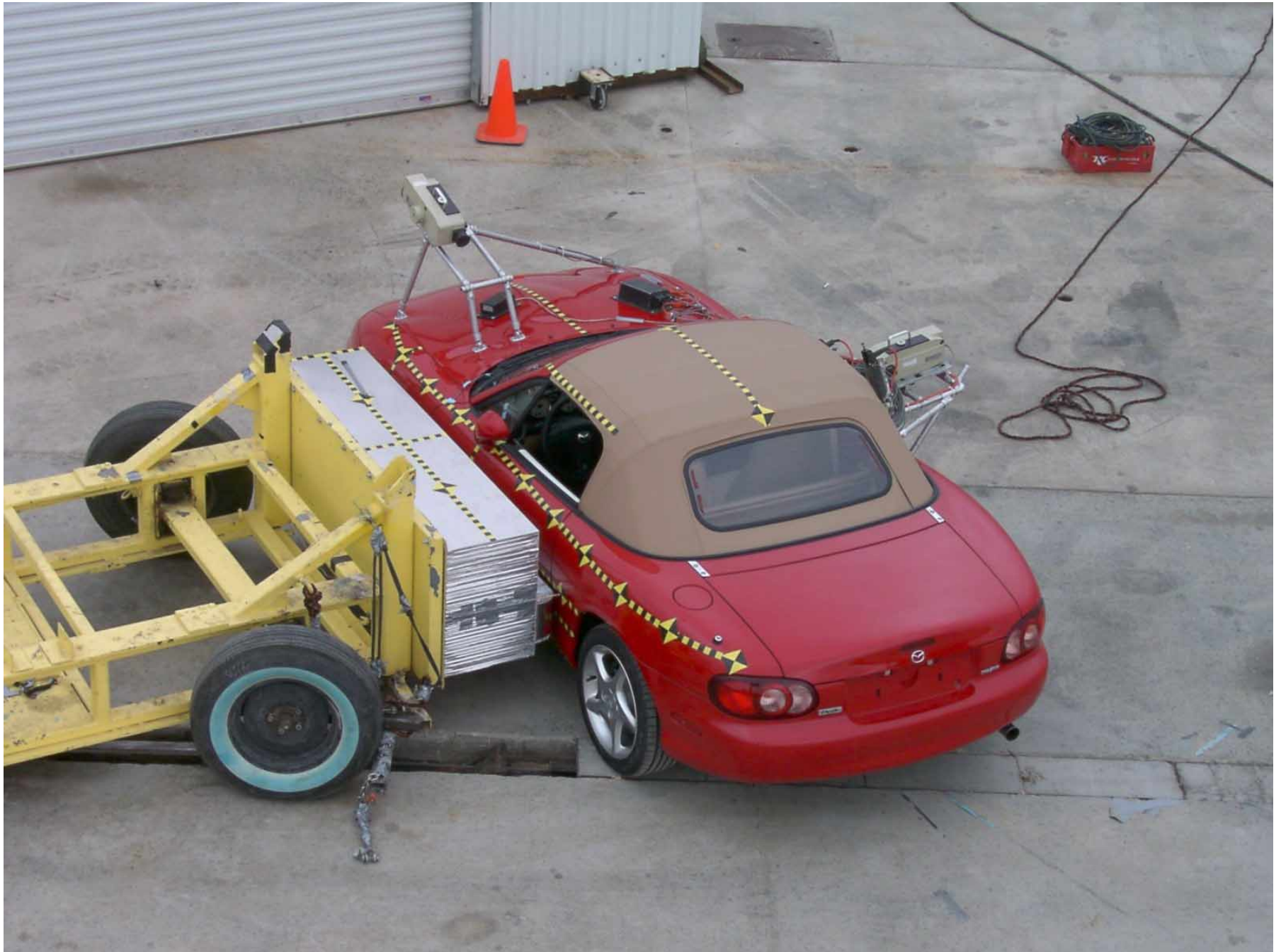


Figure A-12: Overall Overhead View, Pre-Test



Figure A-13: Overall Overhead View, Post-Test



Figure A-14: MDB Left Side View (At Impact Position), Pre-Test



Figure A-15: MDB Right Side View (At Impact Position), Pre-Test



Figure A-16: Impact Point Target Close-up, Pre-Test



Figure A-17: Impact Point Target Close-up, Post-Test



Figure A-18: Driver Dummy Left Side (Door Open), Pre-Test



Figure A-19: Driver Dummy Left Side, Pre-test



Figure A-20: Driver Dummy Left Side, Post-Test



Figure A-21: Driver Dummy Clearance, Pre-Test



Figure A-22: Driver Dummy Clearance, Post-Test



Figure A-23: Driver Dummy (Inside View), Pre-Test



Figure A-24: Driver Dummy (Inside View), Post-Test



Figure A-25: Driver Door (Inside View), Pre-Test



Figure A-26: Driver Dummy Contact Points (Inside View), Post-Test



Figure A-27: Front View of Deformable Barrier, Pre-Test



Figure A-28: Front View of Deformable Barrier, Post-Test



Figure A-29: Top View of Deformable Barrier, Pre-Test

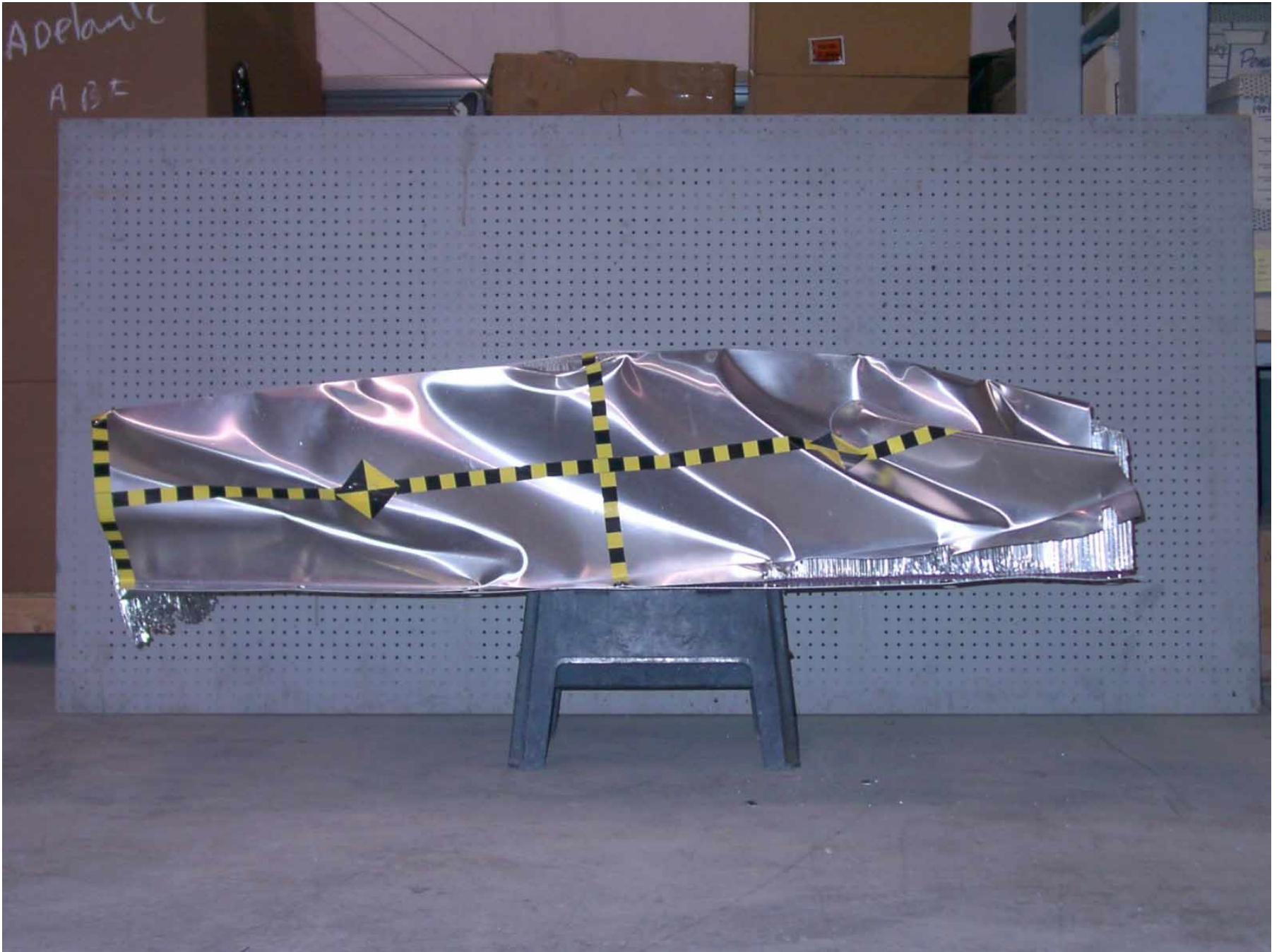


Figure A-30: Top View Deformable Barrier, Post-Test



Figure A-31: Right Side of Deformable Barrier, Pre-Test



Figure A-32: Right Side of Deformable Barrier, Post-Test



Figure A-33: Left Side of Deformable Barrier, Pre-Test



Figure A-34: Left Side of Deformable Barrier, Post-Test



Figure A-35: Vehicle on Rollover Device (Top View)

**Photograph Not
Available**

Figure A-36: Vehicle During Impact

APPENDIX B
SID, VEHICLE, AND MDB RESPONSE DATA

LIST OF DATA PLOTS, VEHICLE

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B-32	Right Sill at Front Seat Resultant	B-32

LIST OF DATA PLOTS, VEHICLE

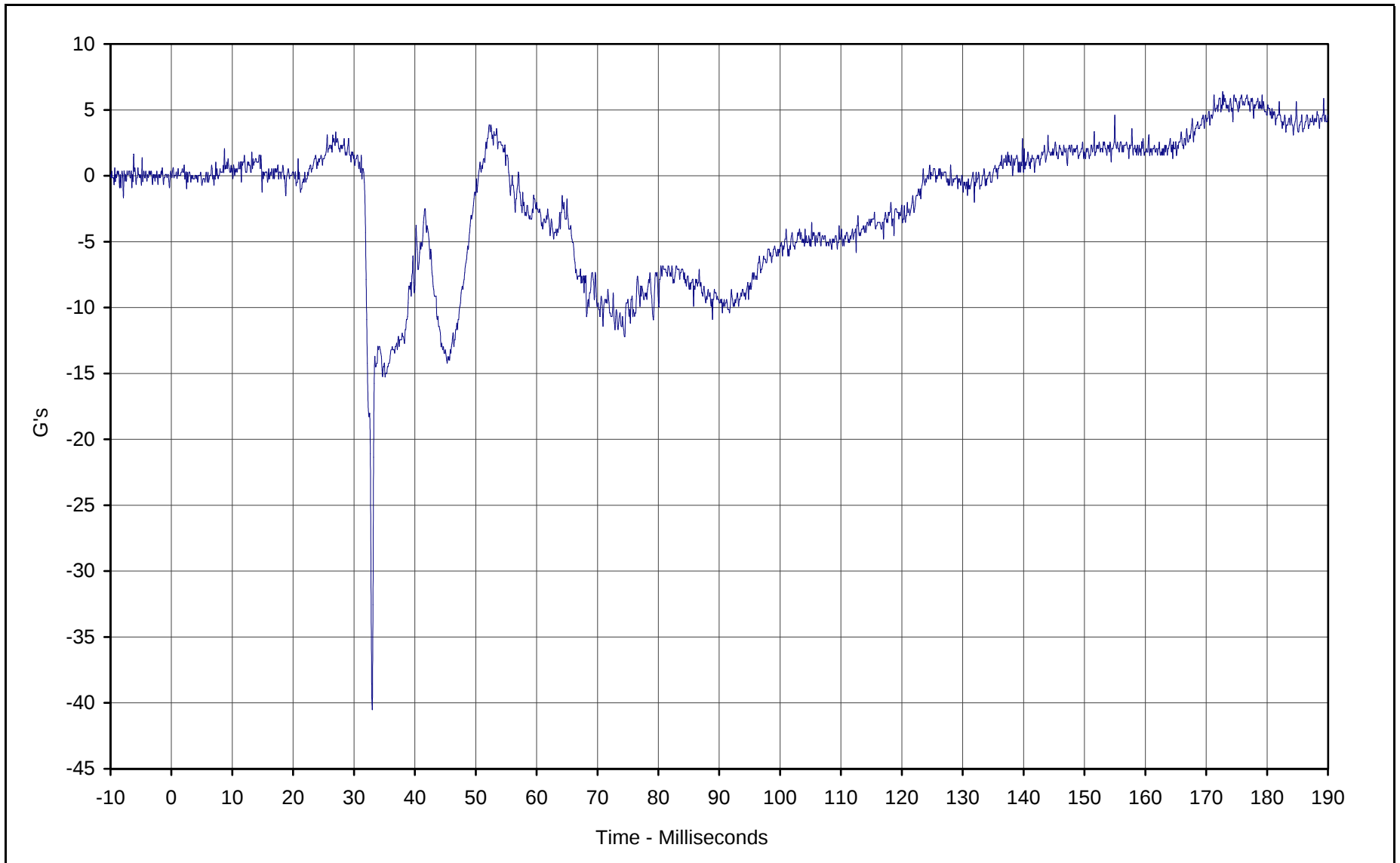
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Curve Description: Driver Head CG X

Maximum Value: 6.4 at 172.7 Milliseconds

Minimum Value: -40.4 at 33.0 Milliseconds

SAE Filter Class: 1000

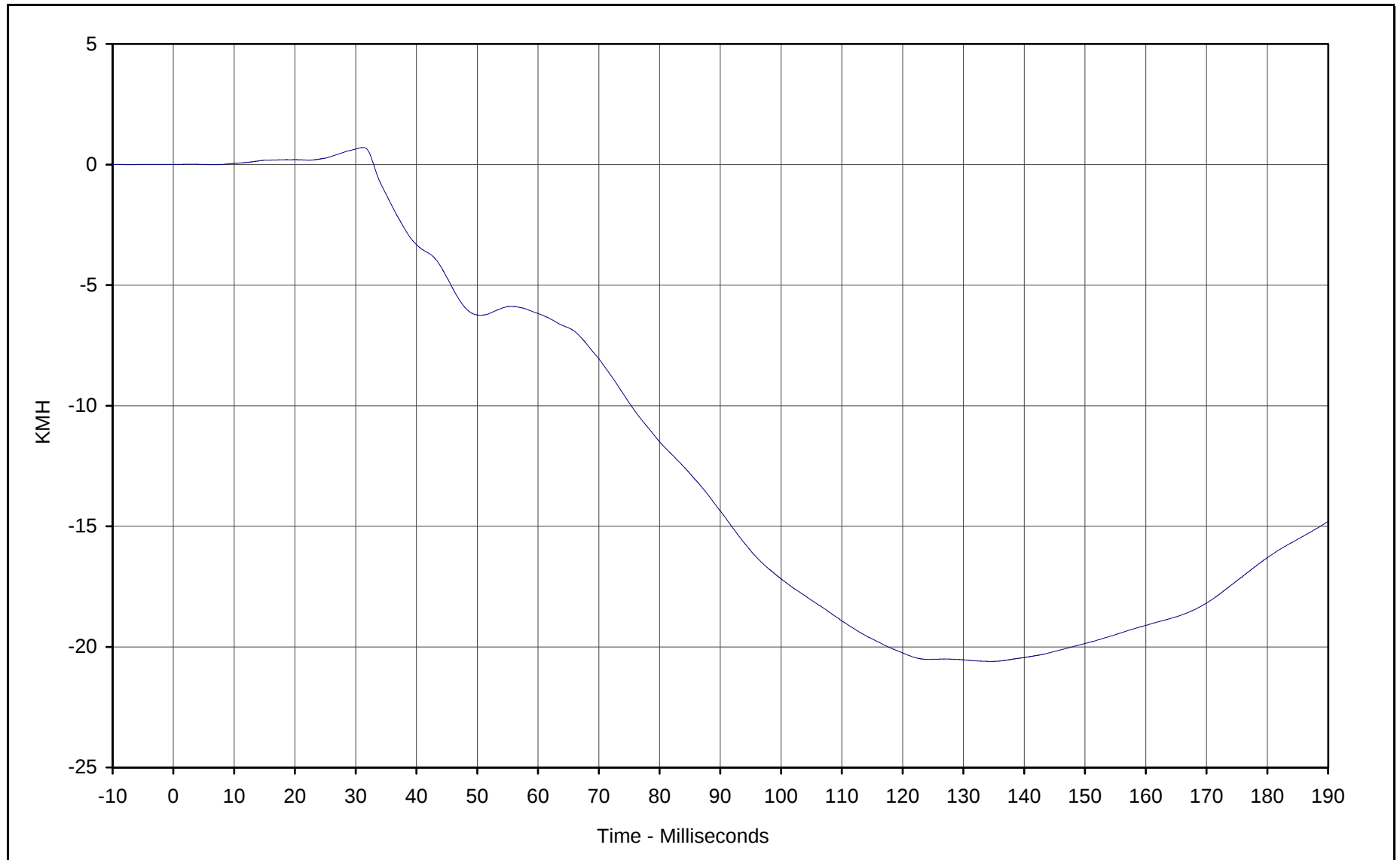
Date of Test: 02/26/01

Curve Number: FIL-001

Test Program: 55/28 km/h Side Impact NCAP No.: M15402

Test Vehicle: 2001 Mazda Miata 2 Door Convertible

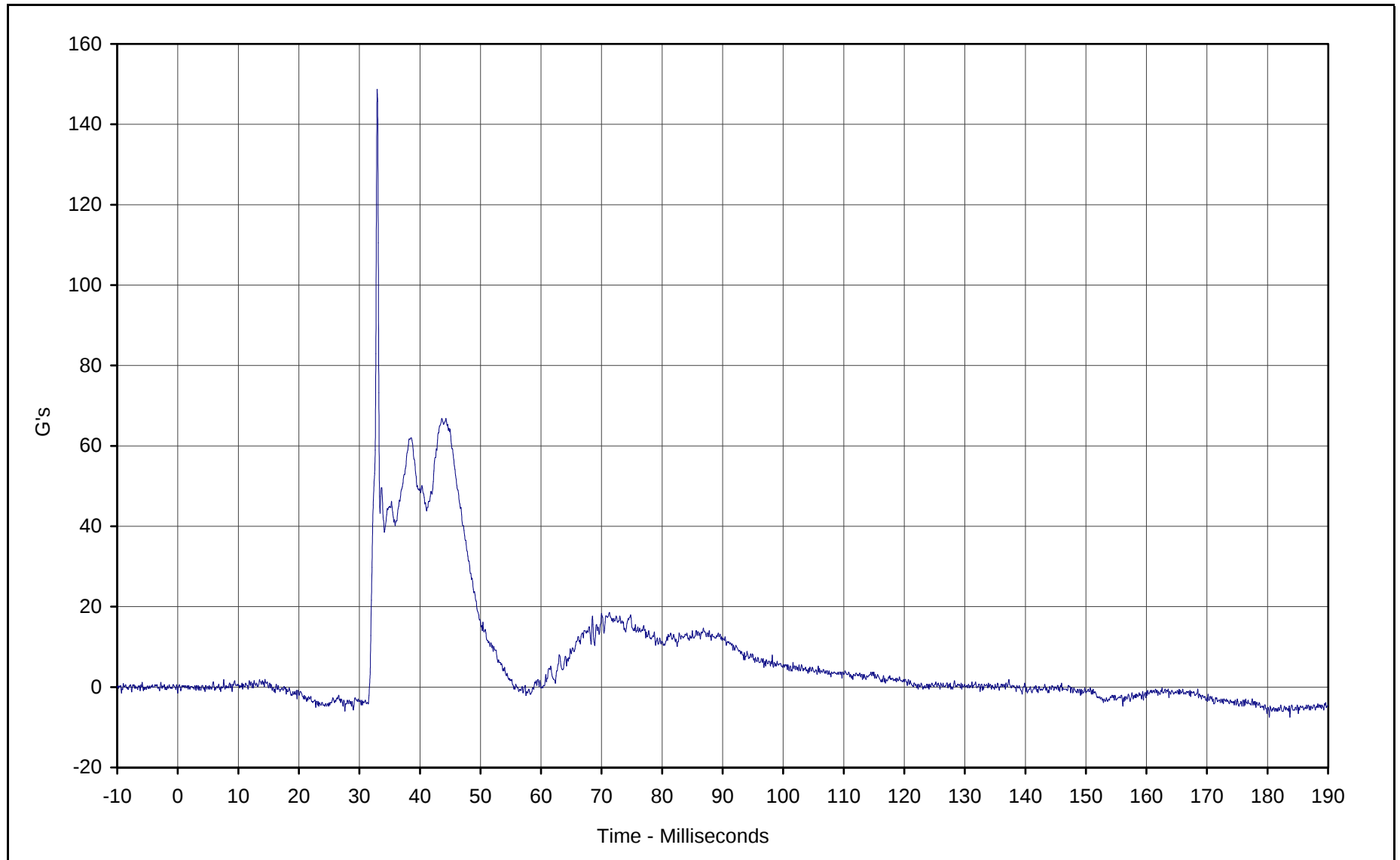




Curve Description: Driver Head CG X Velocity
Maximum Value: 0.7 at 31.2 Milliseconds
Minimum Value: -20.6 at 134.7 Milliseconds
SAE Filter Class: 180
Date of Test: 02/26/01
Curve Number: IN1-001

Test Program: 55/28 km/h Side Impact NCAP No.: M15402
Test Vehicle: 2001 Mazda Miata 2 Door Convertible

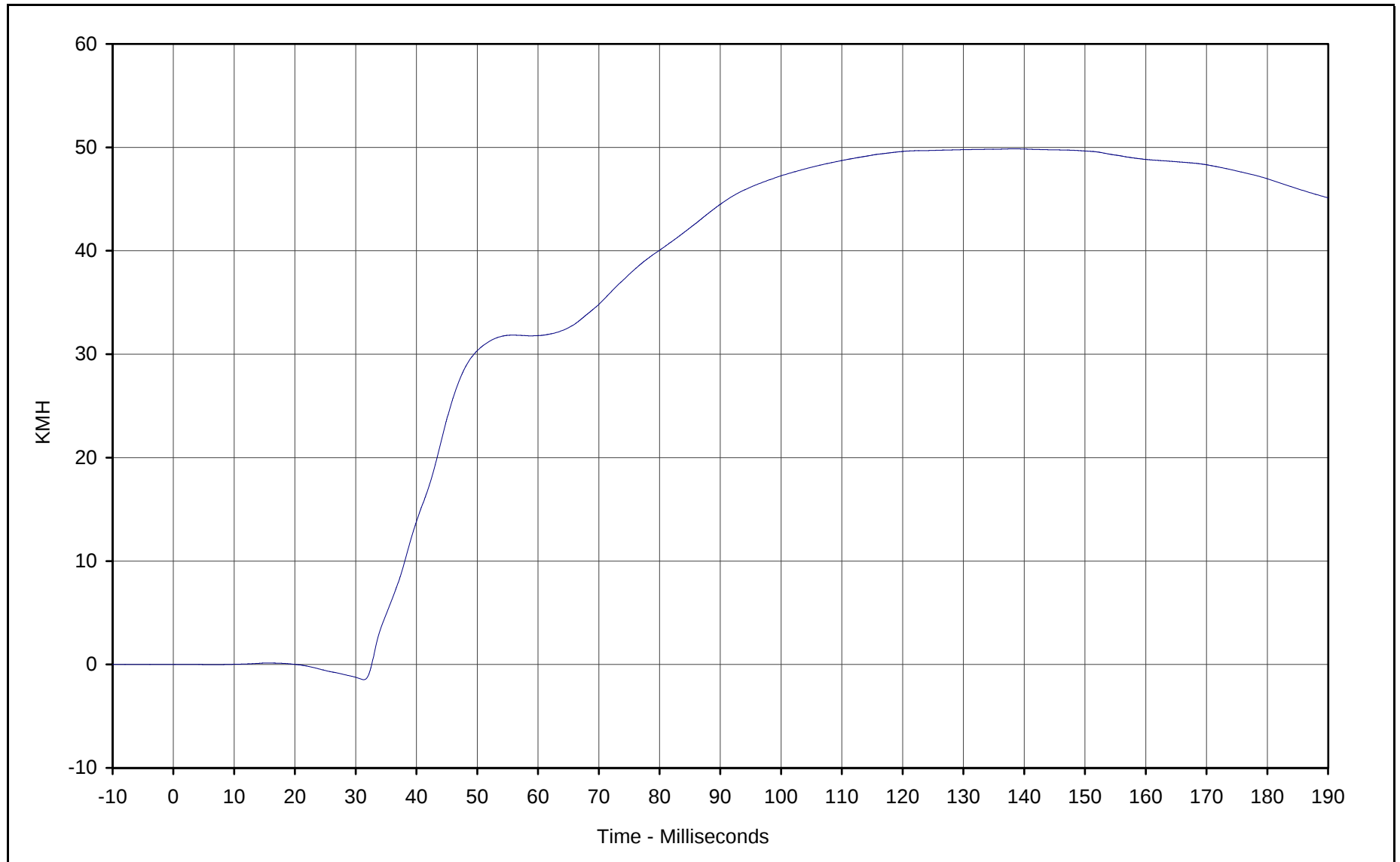




Curve Description: Driver Head CG Y
Maximum Value: 148.5 at 32.9 Milliseconds
Minimum Value: -7.5 at 180.3 Milliseconds
SAE Filter Class: 1000
Date of Test: 02/26/01
Curve Number: FIL-002

Test Program: 55/28 km/h Side Impact NCAP No.: M15402
Test Vehicle: 2001 Mazda Miata 2 Door Convertible

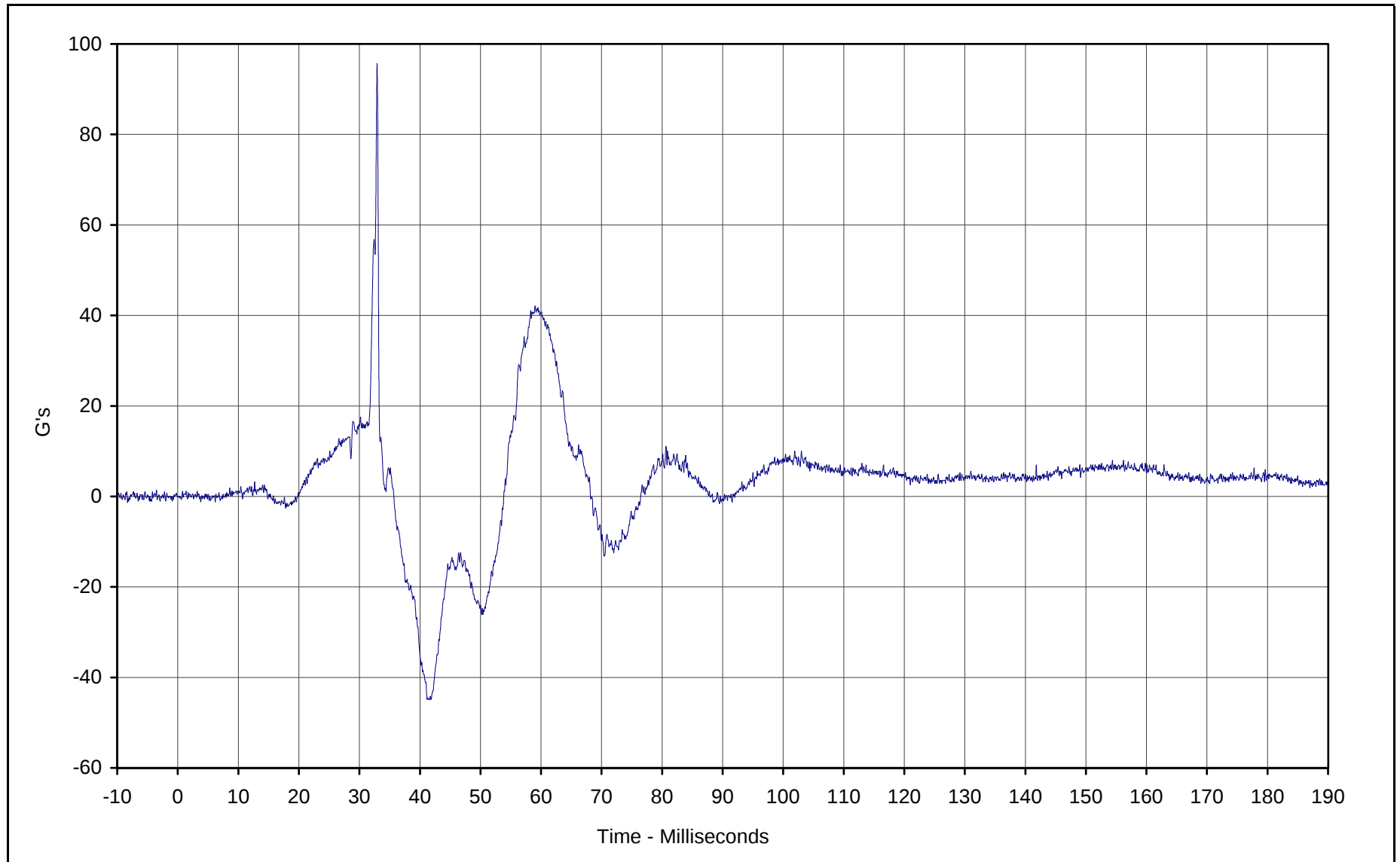




Curve Description: Driver Head CG Y Velocity
Maximum Value: 49.9 at 138.3 Milliseconds
Minimum Value: -1.5 at 31.3 Milliseconds
SAE Filter Class: 180
Date of Test: 02/26/01
Curve Number: IN1-002

Test Program: 55/28 km/h Side Impact NCAP No.: M15402
Test Vehicle: 2001 Mazda Miata 2 Door Convertible

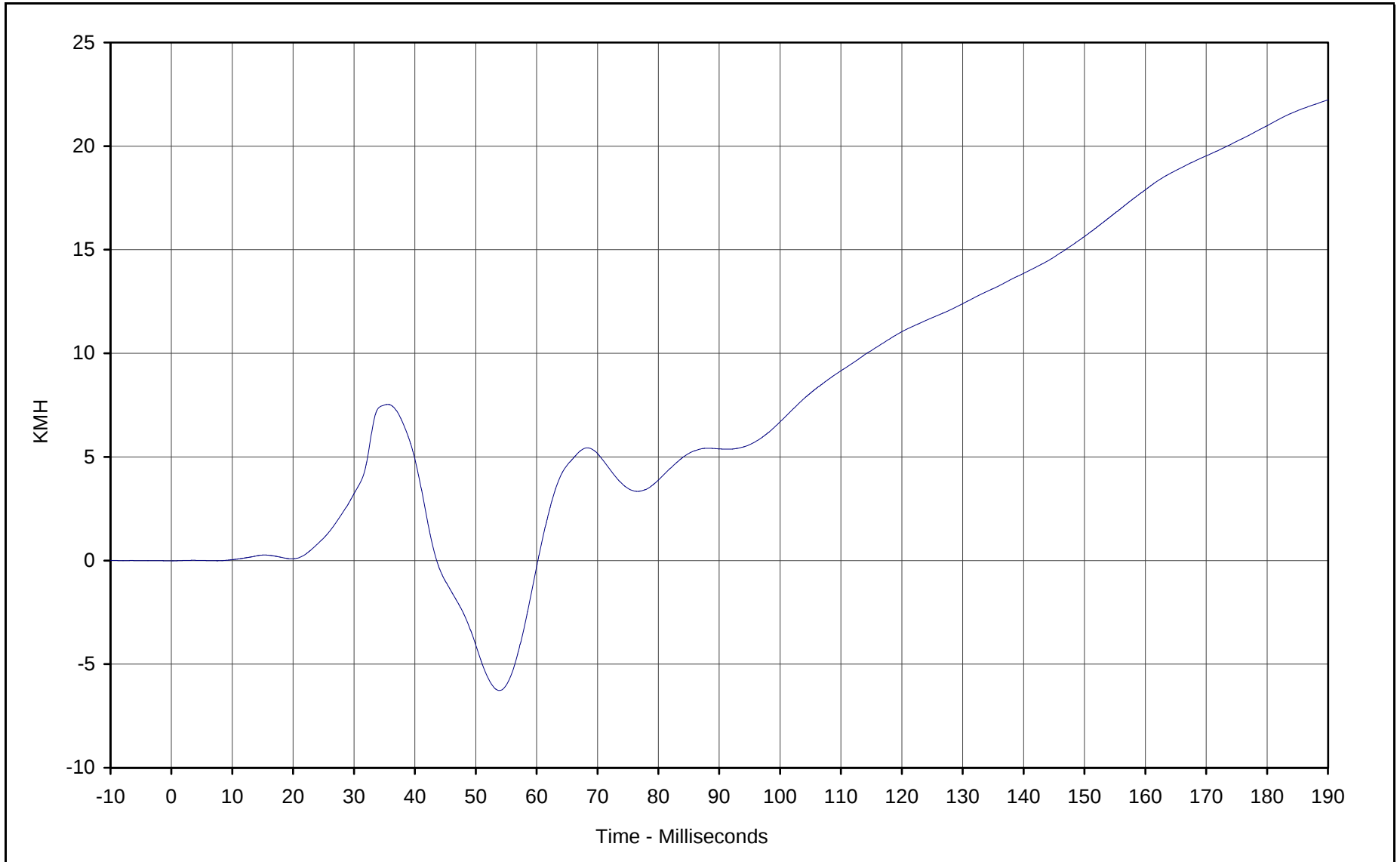




Curve Description: Driver Head CG Z
Maximum Value: 95.6 at 32.9 Milliseconds
Minimum Value: -44.9 at 41.2 Milliseconds
SAE Filter Class: 1000
Date of Test: 02/26/01
Curve Number: FIL-003

Test Program: 55/28 km/h Side Impact NCAP No.: M15402
Test Vehicle: 2001 Mazda Miata 2 Door Convertible

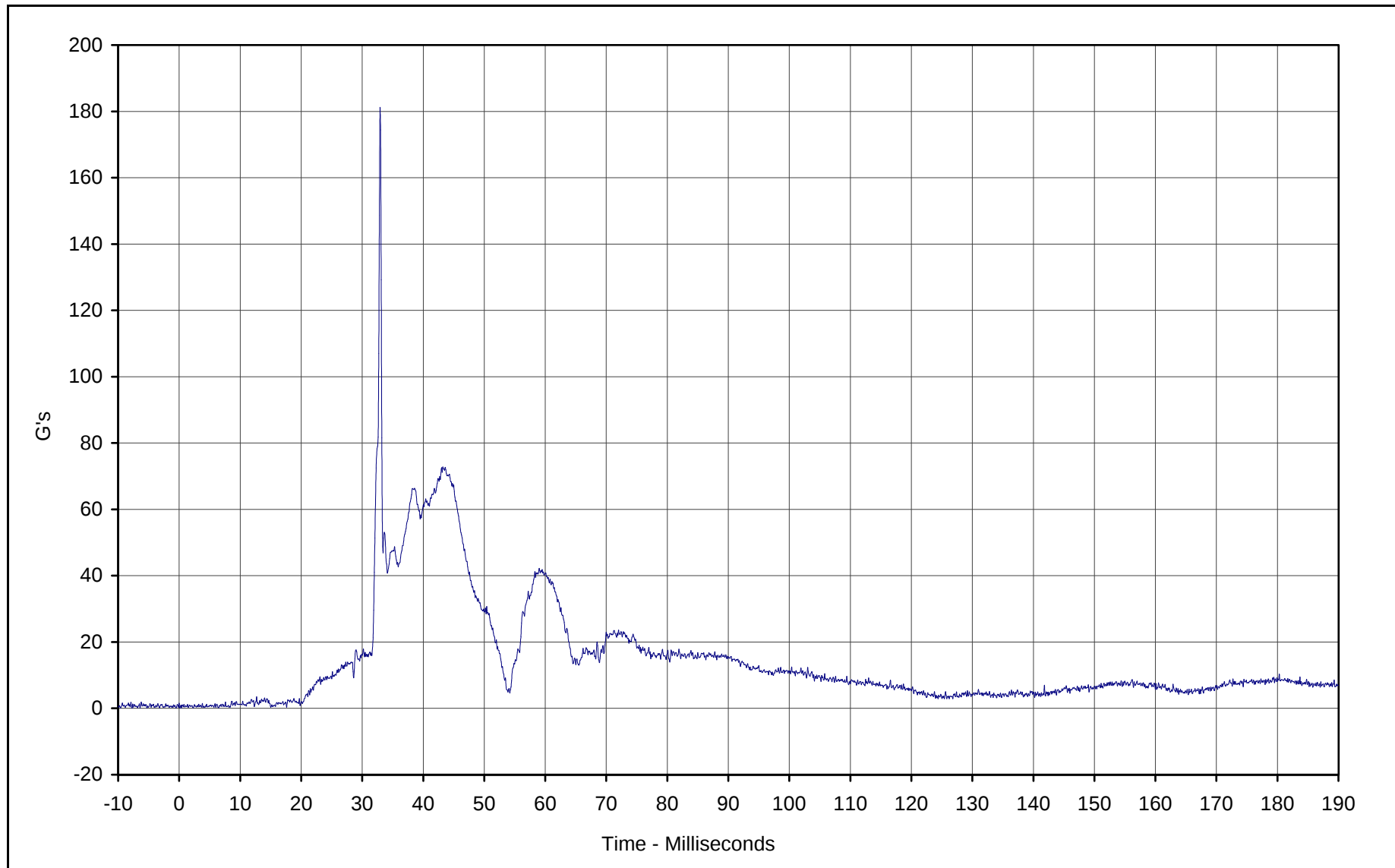




Curve Description: Driver Head CG Z Velocity
Maximum Value: 22.2 at 189.9 Milliseconds
Minimum Value: -6.3 at 53.9 Milliseconds
SAE Filter Class: 180
Date of Test: 02/26/01
Curve Number: IN1-003

Test Program: 55/28 km/h Side Impact NCAP No.: M15402
Test Vehicle: 2001 Mazda Miata 2 Door Convertible

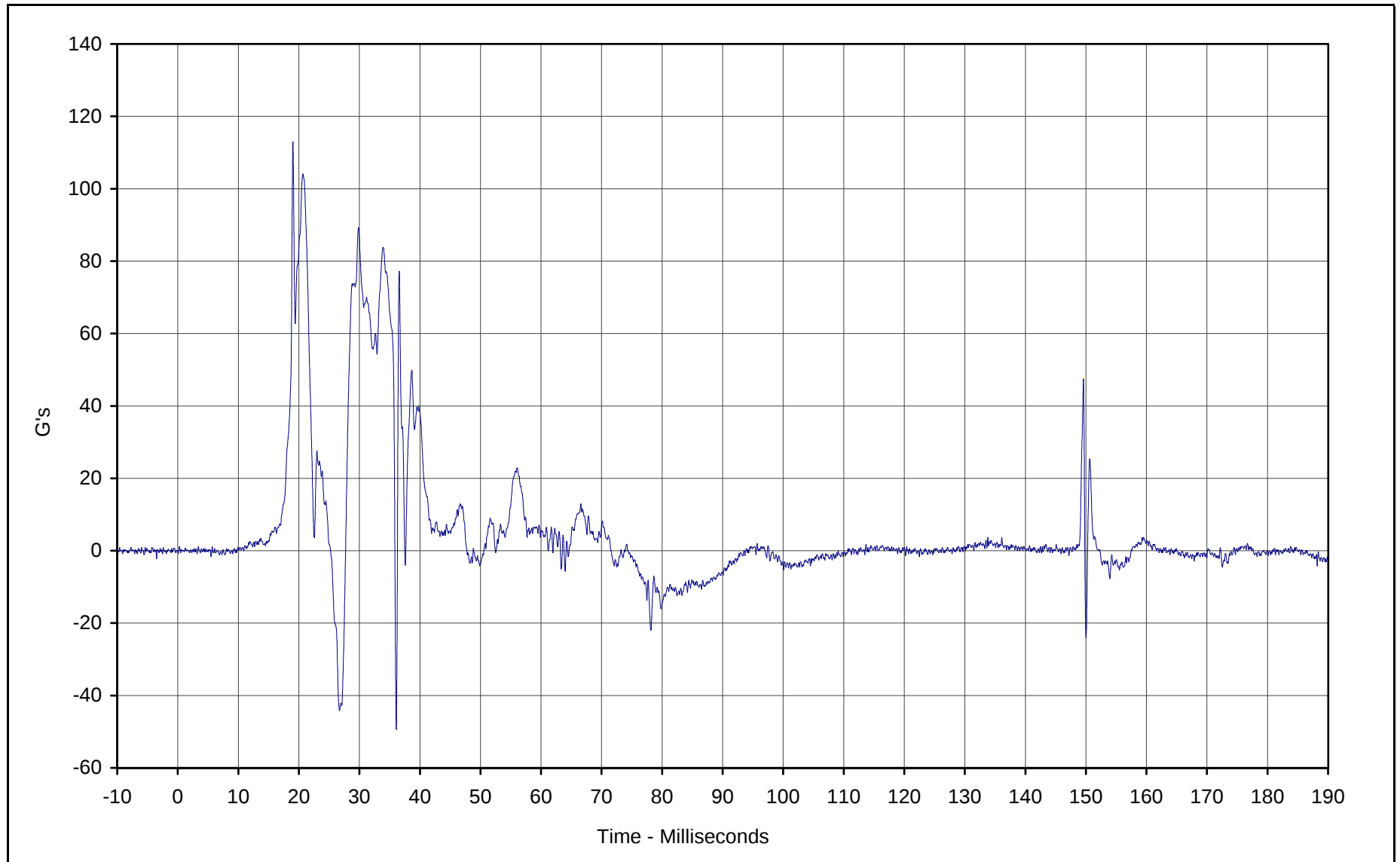




Curve Description: Driver Head CG Resultant
Maximum Value: 181.0 at 32.9 Milliseconds
Minimum Value: 0.2 at 0.1 Milliseconds
SAE Filter Class: 1000
Date of Test: 02/26/01
Curve Number: RES-001

Test Program: 55/28 km/h Side Impact NCAP No.: M15402
Test Vehicle: 2001 Mazda Miata 2 Door Convertible

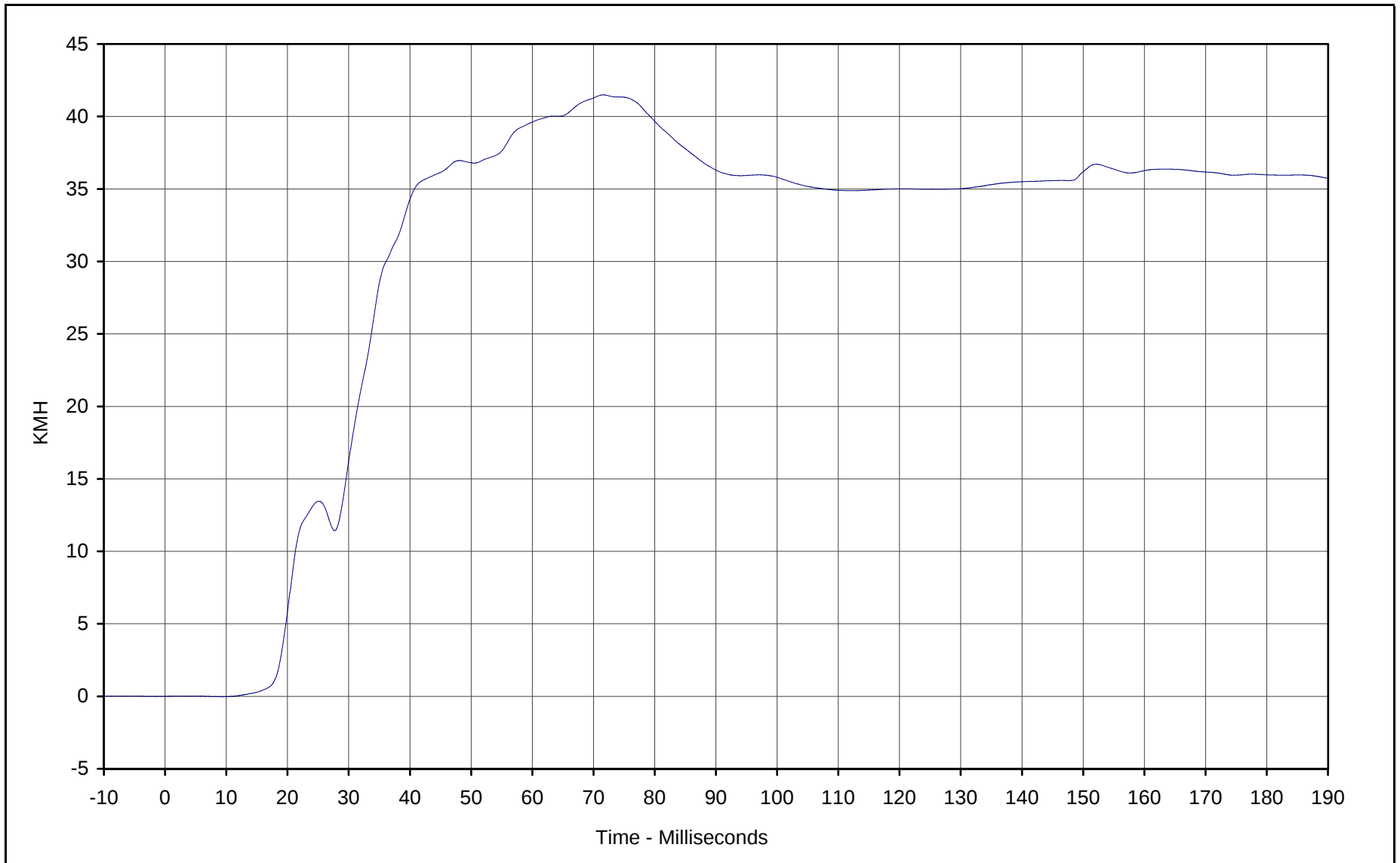




Curve Description: Driver Upper Rib Primary Y
Maximum Value: 112.8 at 19.0 Milliseconds
Minimum Value: -49.2 at 36.1 Milliseconds
SAE Filter Class: 1000
Date of Test: 02/26/01
Curve Number: FIL-004

Test Program: 55/28 km/h Side Impact NCAP No.: M15402
Test Vehicle: 2001 Mazda Miata 2 Door Convertible





Curve Description: Driver Upper Rib Primary Y Velocity

Maximum Value: 41.5 at 71.6 Milliseconds

Minimum Value: 0.0 at 9.3 Milliseconds

SAE Filter Class: 180

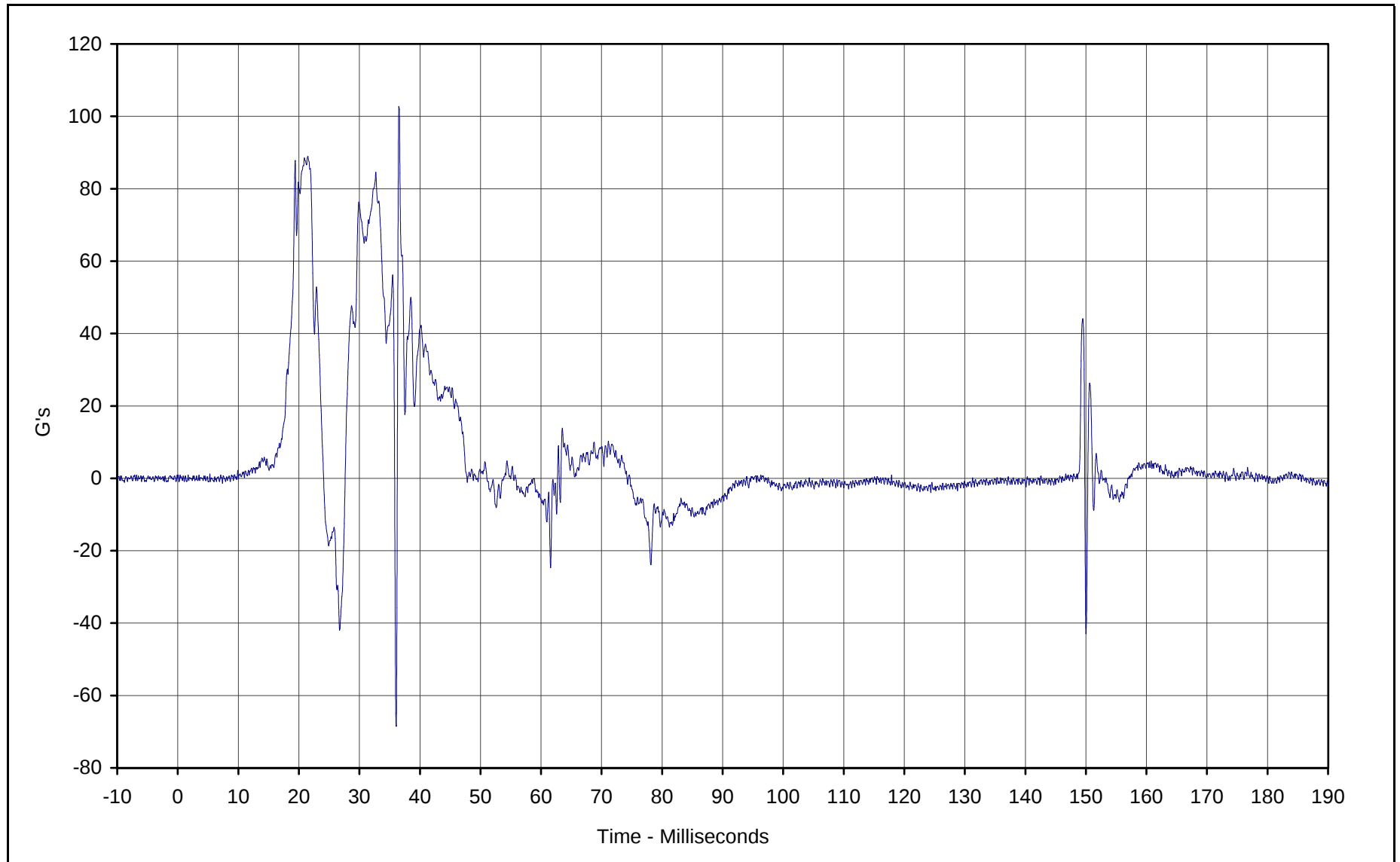
Date of Test: 02/26/01

Curve Number: IN1-004

Test Program: 55/28 km/h Side Impact NCAP No.: M15402

Test Vehicle: 2001 Mazda Miata 2 Door Convertible

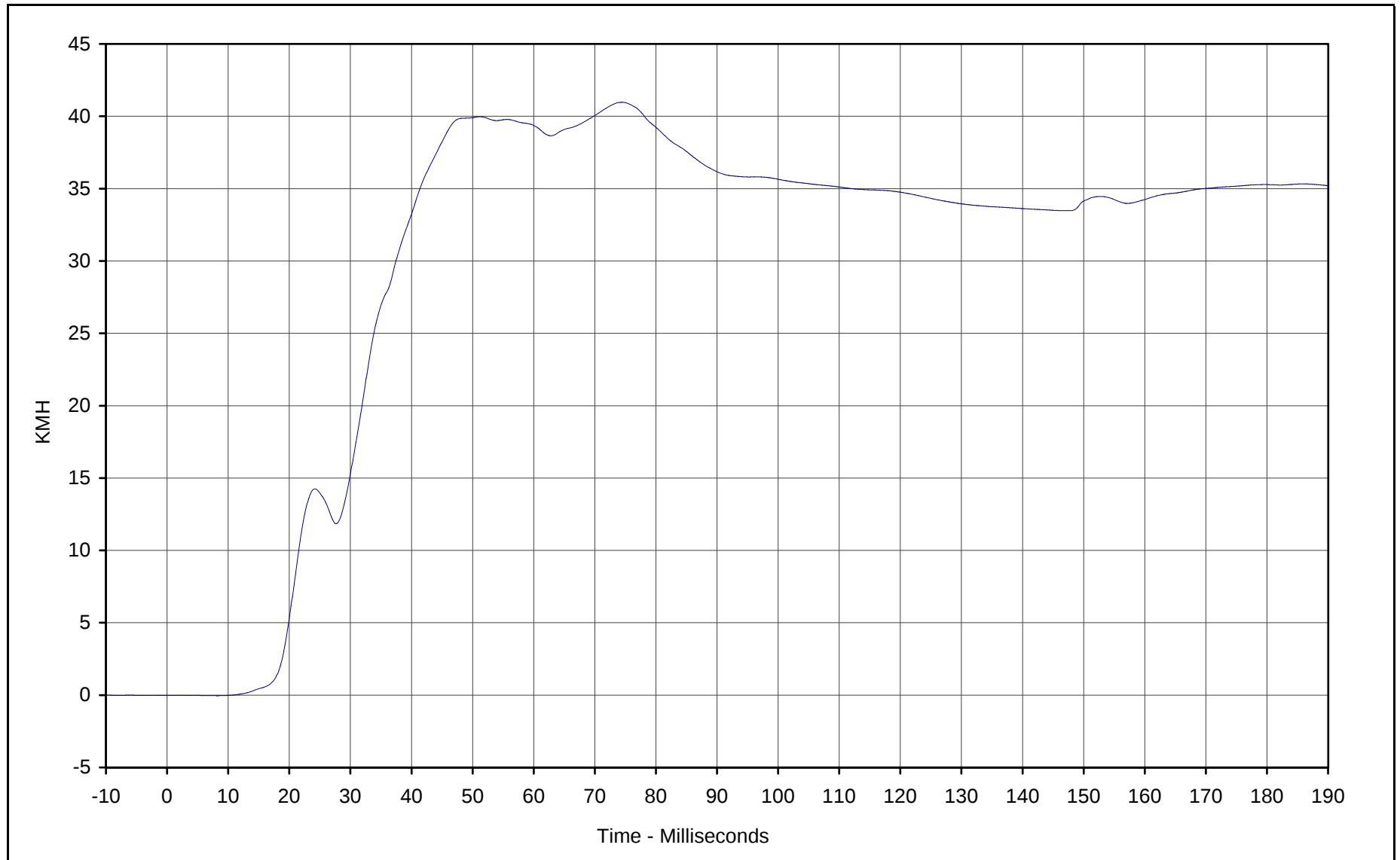




Curve Description: Driver Lower Rib Primary Y
Maximum Value: 102.6 at 36.5 Milliseconds
Minimum Value: -68.3 at 36.1 Milliseconds
SAE Filter Class: 1000
Date of Test: 02/26/01
Curve Number: FIL-005

Test Program: 55/28 km/h Side Impact NCAP No.: M15402
Test Vehicle: 2001 Mazda Miata 2 Door Convertible





Curve Description: Driver Lower Rib Primary Y Velocity

Maximum Value: 41.0 at 74.4 Milliseconds

Minimum Value: 0.0 at 8.3 Milliseconds

SAE Filter Class: 180

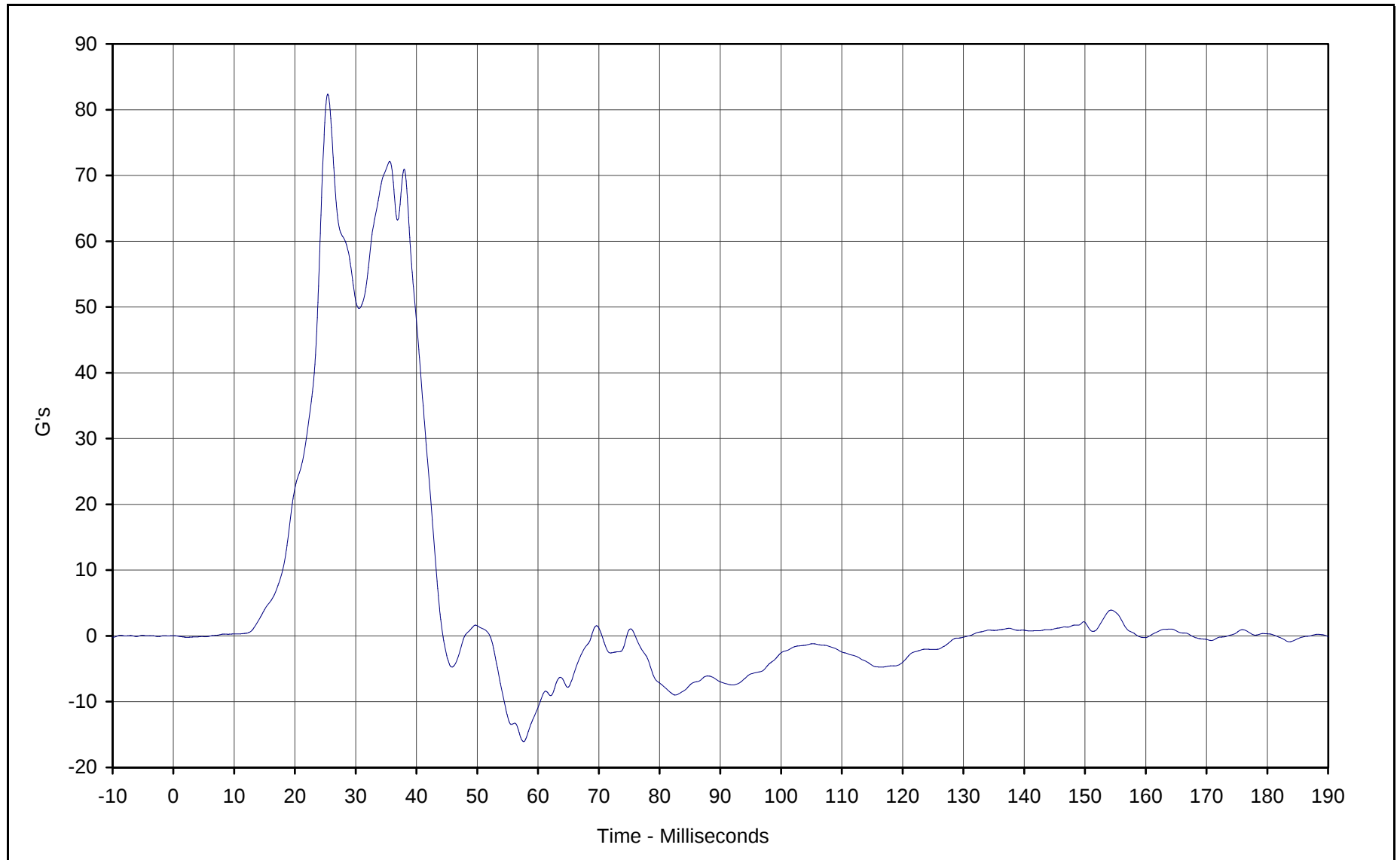
Date of Test: 02/26/01

Curve Number: IN1-005

Test Program: 55/28 km/h Side Impact NCAP No.: M15402

Test Vehicle: 2001 Mazda Miata 2 Door Convertible

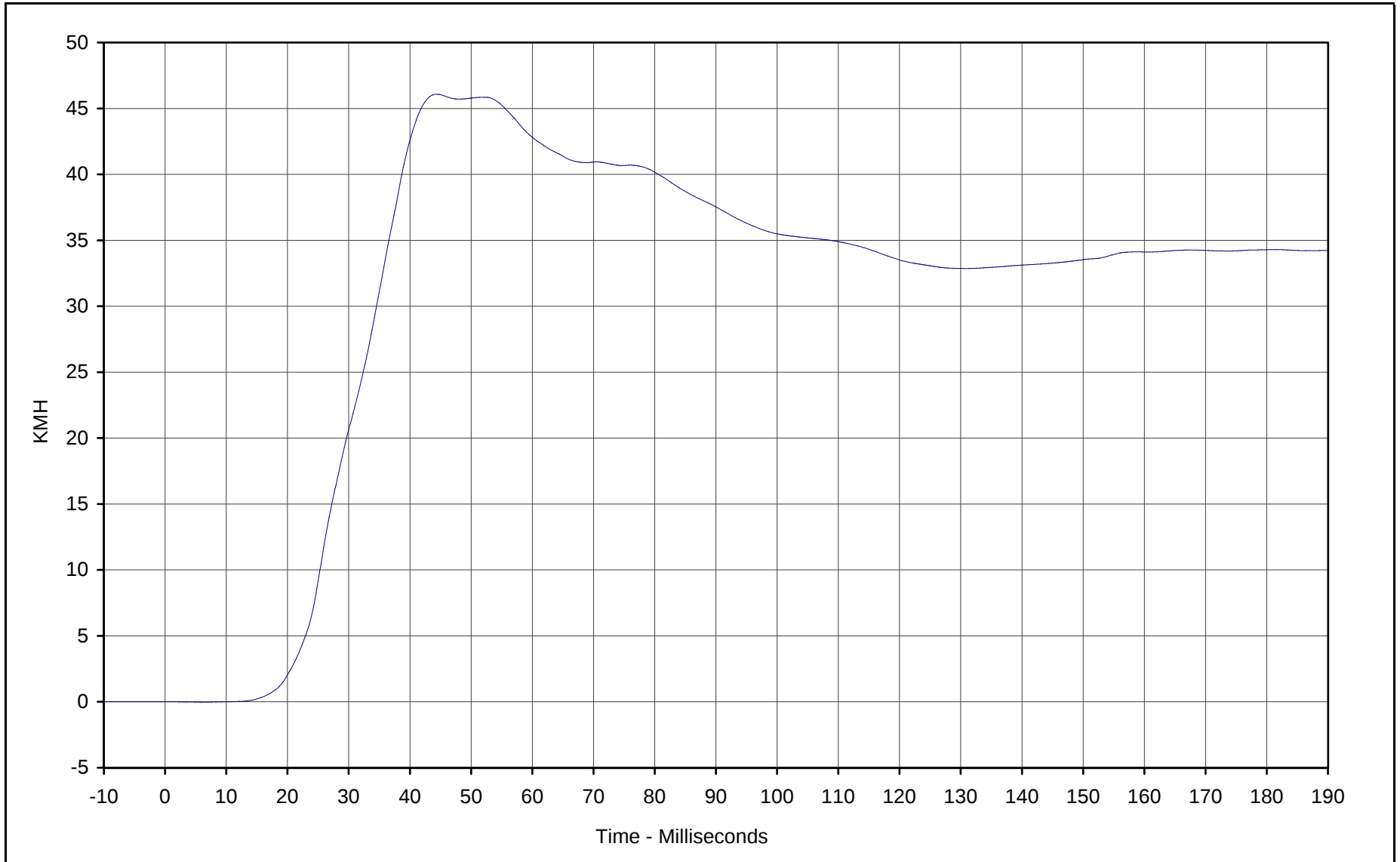




Curve Description: Driver Lower Spine Primary Y
Maximum Value: 82.4 at 25.4 Milliseconds
Minimum Value: -16.1 at 57.6 Milliseconds
SAE Filter Class: 180
Date of Test: 02/26/01
Curve Number: FIL-006

Test Program: 55/28 km/h Side Impact NCAP No.: M15402
Test Vehicle: 2001 Mazda Miata 2 Door Convertible





Curve Description: Driver Lower Spine Primary Y Velocity

Maximum Value: 46.1 at 44.4 Milliseconds

Minimum Value: 0.0 at 6.2 Milliseconds

SAE Filter Class: 180

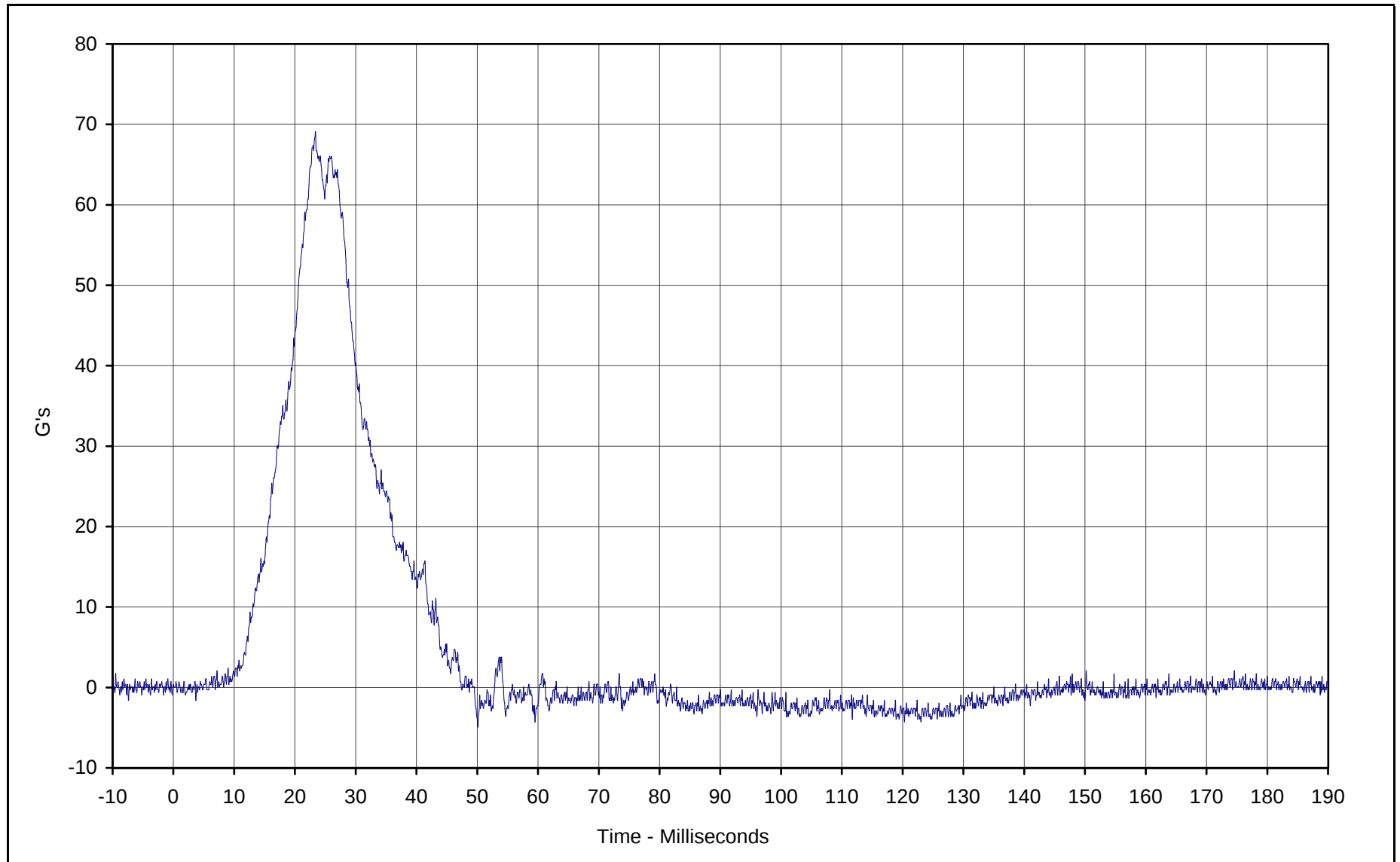
Date of Test: 02/26/01

Curve Number: IN1-006

Test Program: 55/28 km/h Side Impact NCAP No.: M15402

Test Vehicle: 2001 Mazda Miata 2 Door Convertible

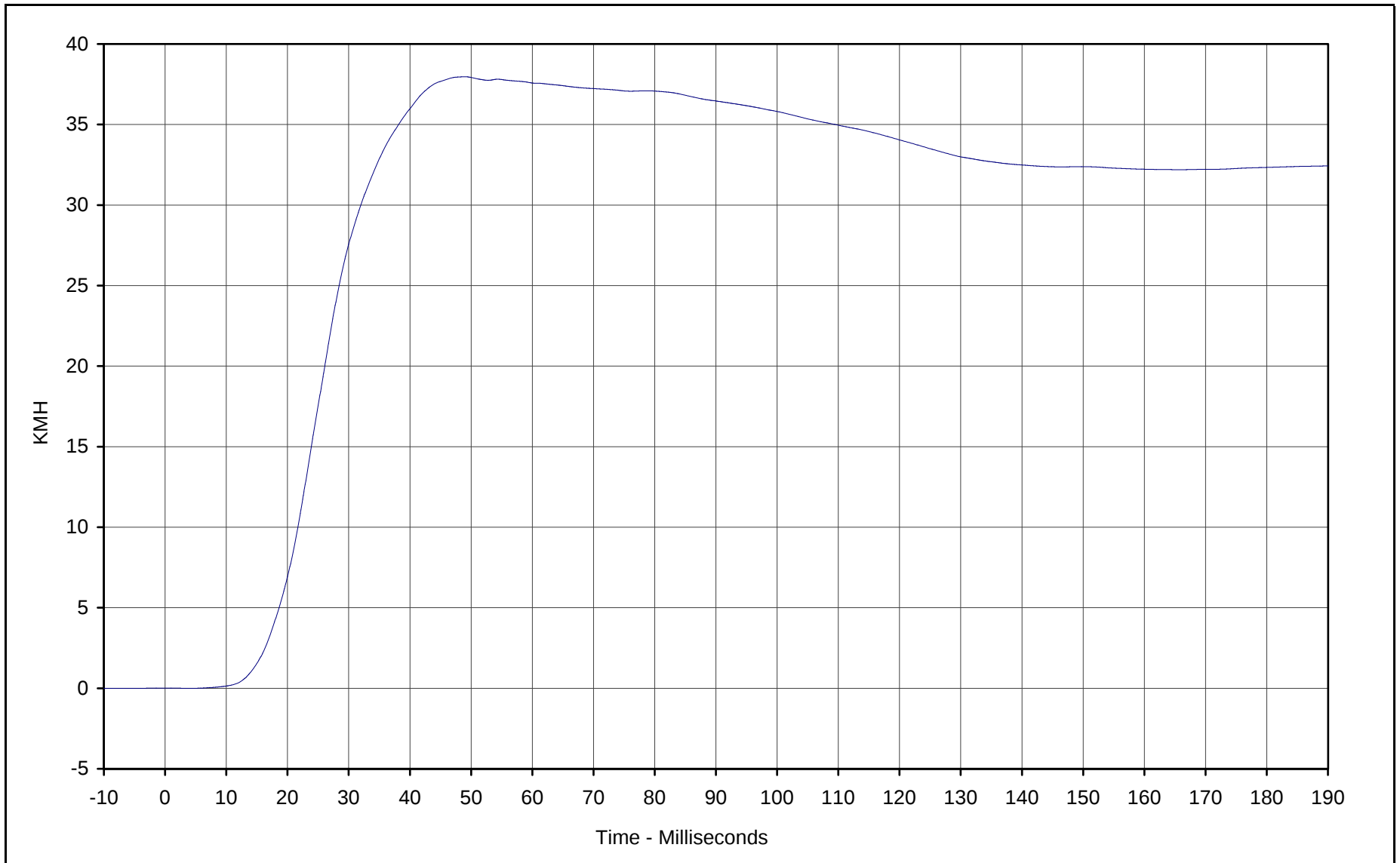




Curve Description: Driver Pelvis Primary Y
Maximum Value: 69.1 at 23.4 Milliseconds
Minimum Value: -4.9 at 50.1 Milliseconds
SAE Filter Class: 1000
Date of Test: 02/26/01
Curve Number: FIL-007

Test Program: 55/28 km/h Side Impact NCAP No.: M15402
Test Vehicle: 2001 Mazda Miata 2 Door Convertible

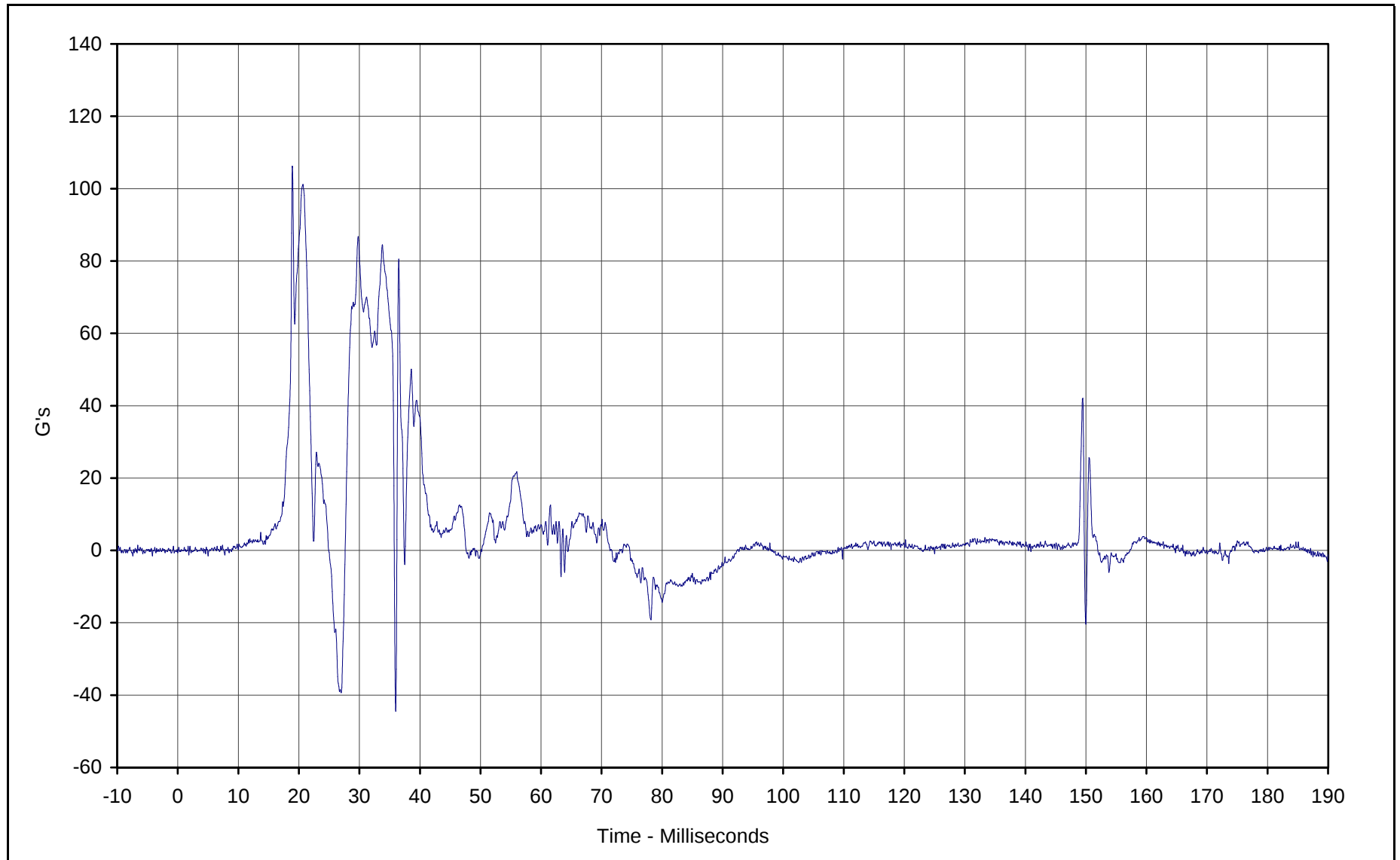




Curve Description: Driver Pelvis Primary Y Velocity
Maximum Value: 38.0 at 49.0 Milliseconds
Minimum Value: 0.0 at 4.2 Milliseconds
SAE Filter Class: 180
Date of Test: 02/26/01
Curve Number: IN1-007

Test Program: 55/28 km/h Side Impact NCAP No.: M15402
Test Vehicle: 2001 Mazda Miata 2 Door Convertible

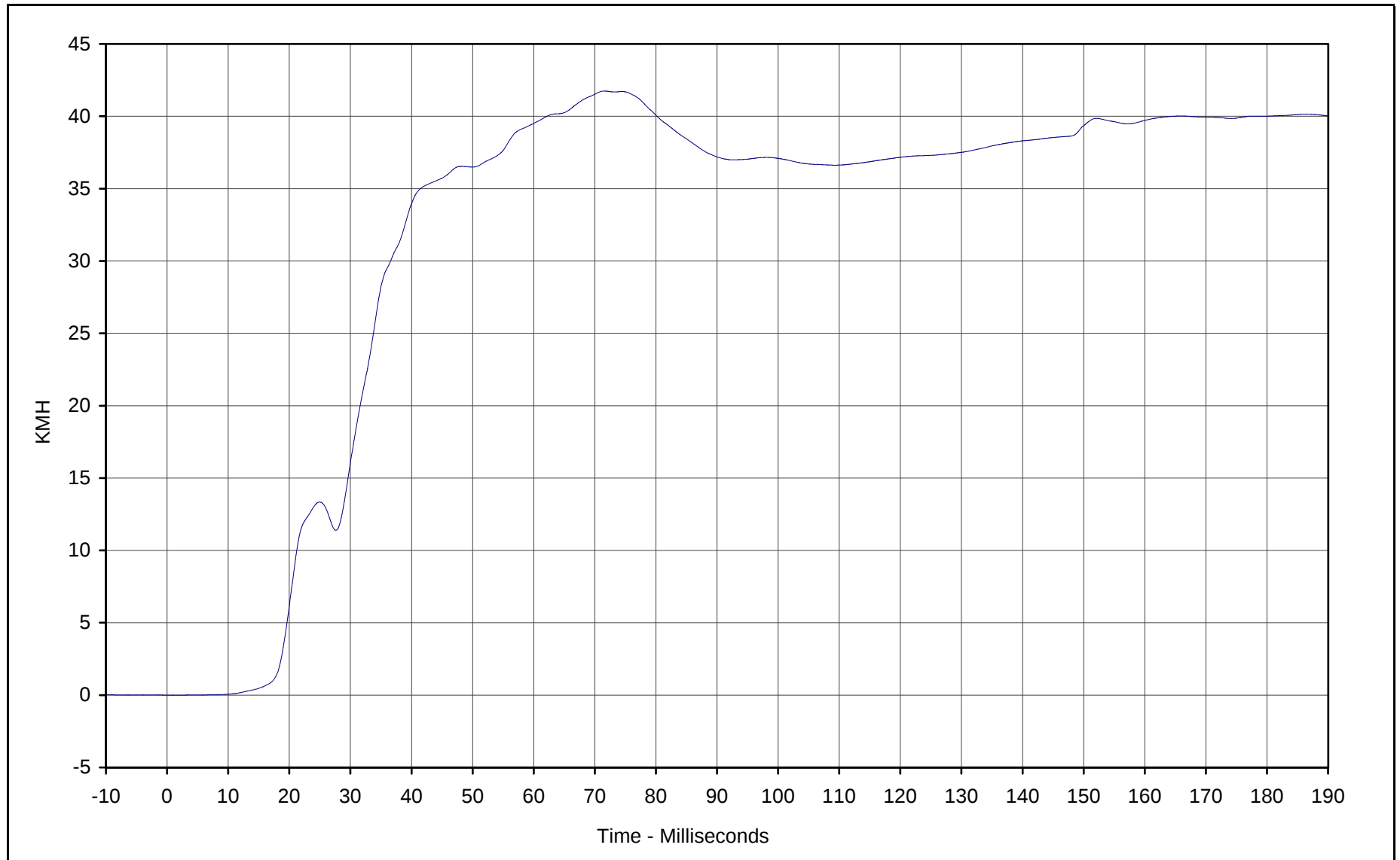




Curve Description: Driver Upper Rib Redundant Y
Maximum Value: 105.9 at 18.9 Milliseconds
Minimum Value: -44.5 at 36.0 Milliseconds
SAE Filter Class: 1000
Date of Test: 02/26/01
Curve Number: FIL-008

Test Program: 55/28 km/h Side Impact NCAP No.: M15402
Test Vehicle: 2001 Mazda Miata 2 Door Convertible





Curve Description: Driver Upper Rib Redundant Y Velocity

Maximum Value: 41.7 at 71.6 Milliseconds

Minimum Value: 0.0 at 0.4 Milliseconds

SAE Filter Class: 180

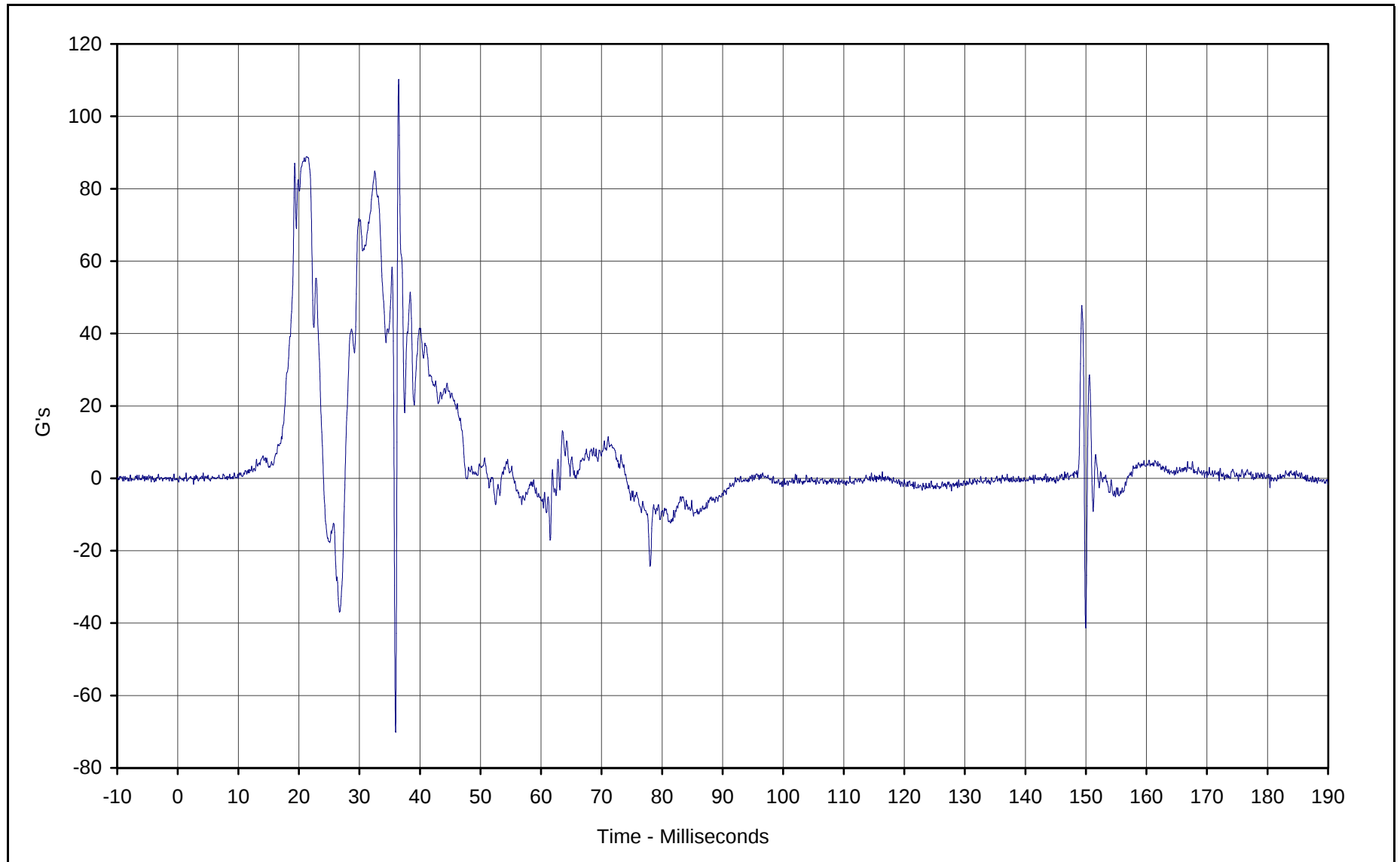
Date of Test: 02/26/01

Curve Number: IN1-008

Test Program: 55/28 km/h Side Impact NCAP No.: M15402

Test Vehicle: 2001 Mazda Miata 2 Door Convertible

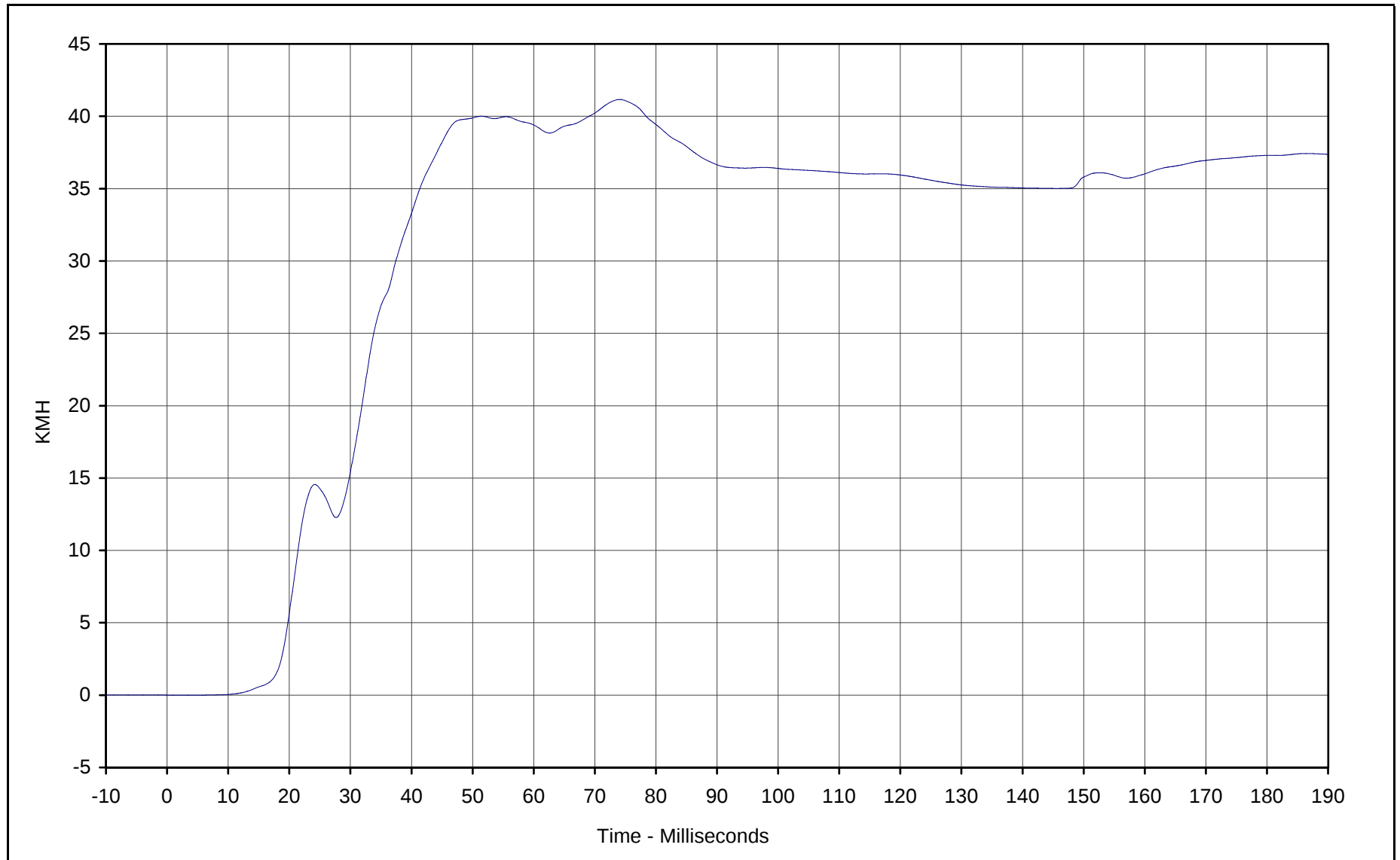




Curve Description: Driver Lower Rib Redundant Y
Maximum Value: 110.2 at 36.5 Milliseconds
Minimum Value: -69.8 at 36.0 Milliseconds
SAE Filter Class: 1000
Date of Test: 02/26/01
Curve Number: FIL-009

Test Program: 55/28 km/h Side Impact NCAP No.: M15402
Test Vehicle: 2001 Mazda Miata 2 Door Convertible





Curve Description: Driver Lower Rib Redundant Y Velocity

Maximum Value: 41.2 at 74.1 Milliseconds

Minimum Value: 0.0 at 3.4 Milliseconds

SAE Filter Class: 180

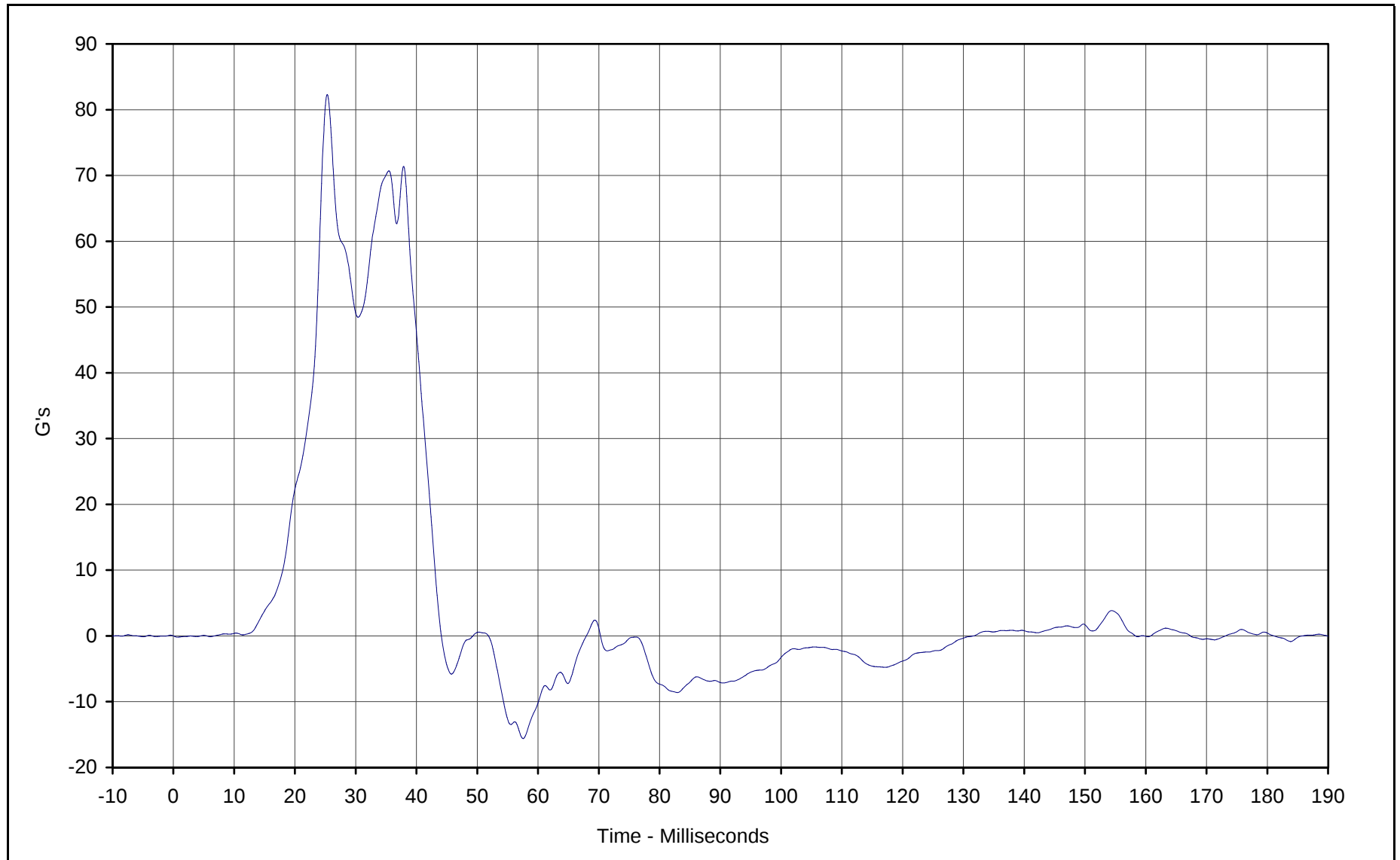
Date of Test: 02/26/01

Curve Number: IN1-009

Test Program: 55/28 km/h Side Impact NCAP No.: M15402

Test Vehicle: 2001 Mazda Miata 2 Door Convertible

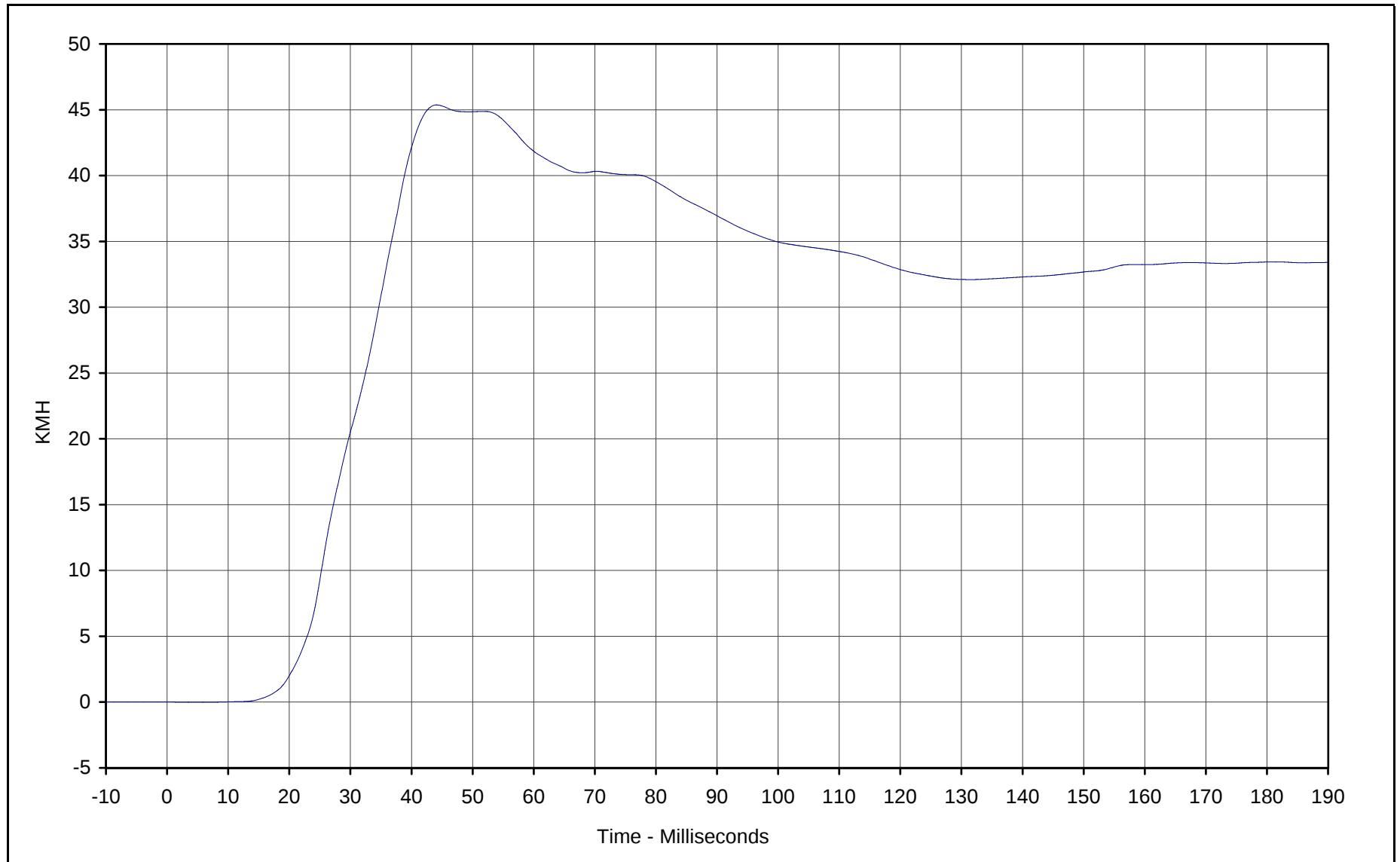




Curve Description: Driver Lower Spine Redundant Y
Maximum Value: 82.3 at 25.3 Milliseconds
Minimum Value: -15.6 at 57.5 Milliseconds
SAE Filter Class: 180
Date of Test: 02/26/01
Curve Number: FIL-010

Test Program: 55/28 km/h Side Impact NCAP No.: M15402
Test Vehicle: 2001 Mazda Miata 2 Door Convertible





Curve Description: Driver Lower Spine Redundant Y Velocity

Maximum Value: 45.4 at 44.1 Milliseconds

Minimum Value: 0.0 at 6.7 Milliseconds

SAE Filter Class: 180

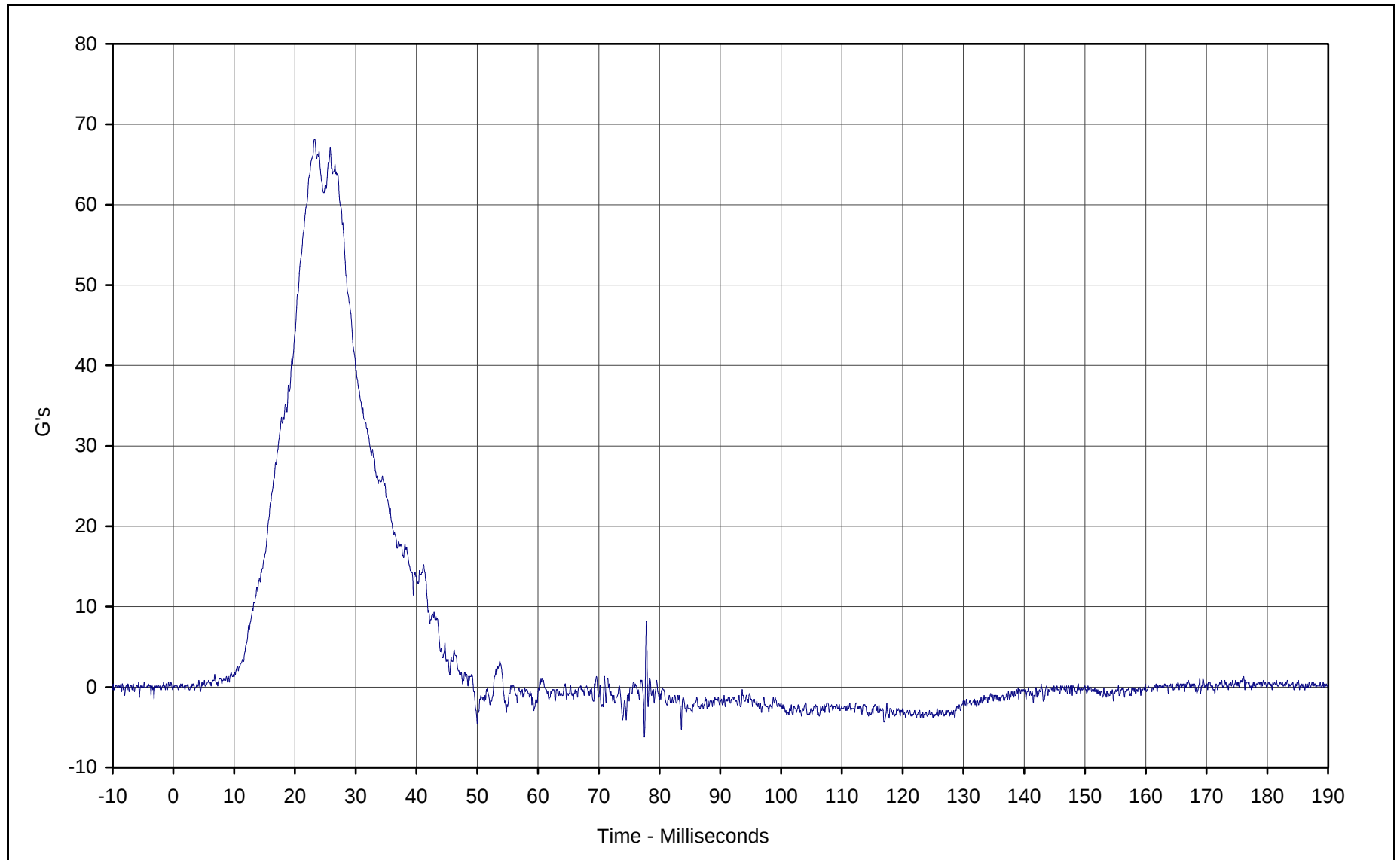
Date of Test: 02/26/01

Curve Number: IN1-010

Test Program: 55/28 km/h Side Impact NCAP No.: M15402

Test Vehicle: 2001 Mazda Miata 2 Door Convertible

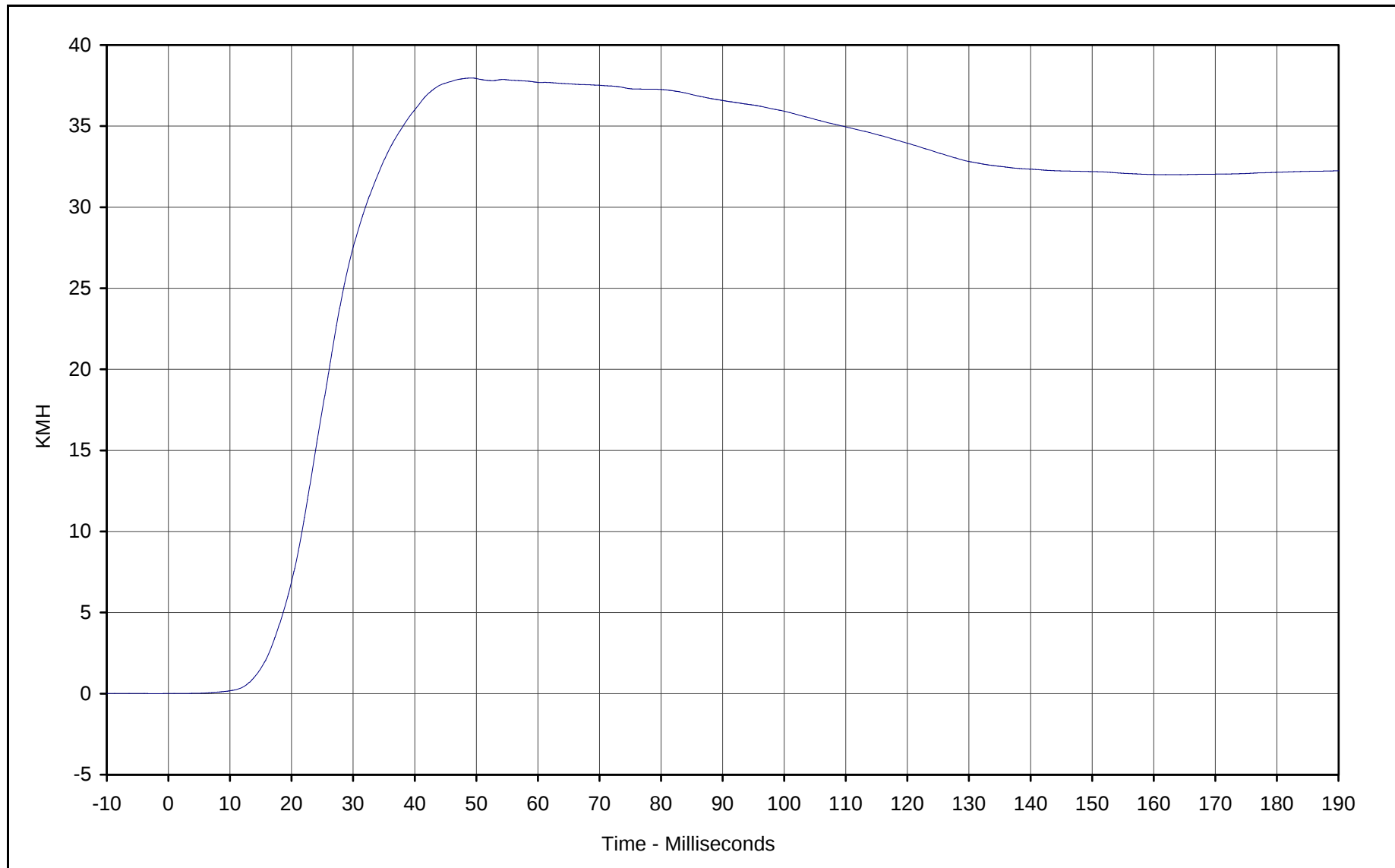




Curve Description: Driver Pelvis Redundant Y
Maximum Value: 68.1 at 23.2 Milliseconds
Minimum Value: -6.2 at 77.5 Milliseconds
SAE Filter Class: 1000
Date of Test: 02/26/01
Curve Number: FIL-011

Test Program: 55/28 km/h Side Impact NCAP No.: M15402
Test Vehicle: 2001 Mazda Miata 2 Door Convertible





Curve Description: Driver Pelvis Redundant Y Velocity

Maximum Value: 38.0 at 49.2 Milliseconds

Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 180

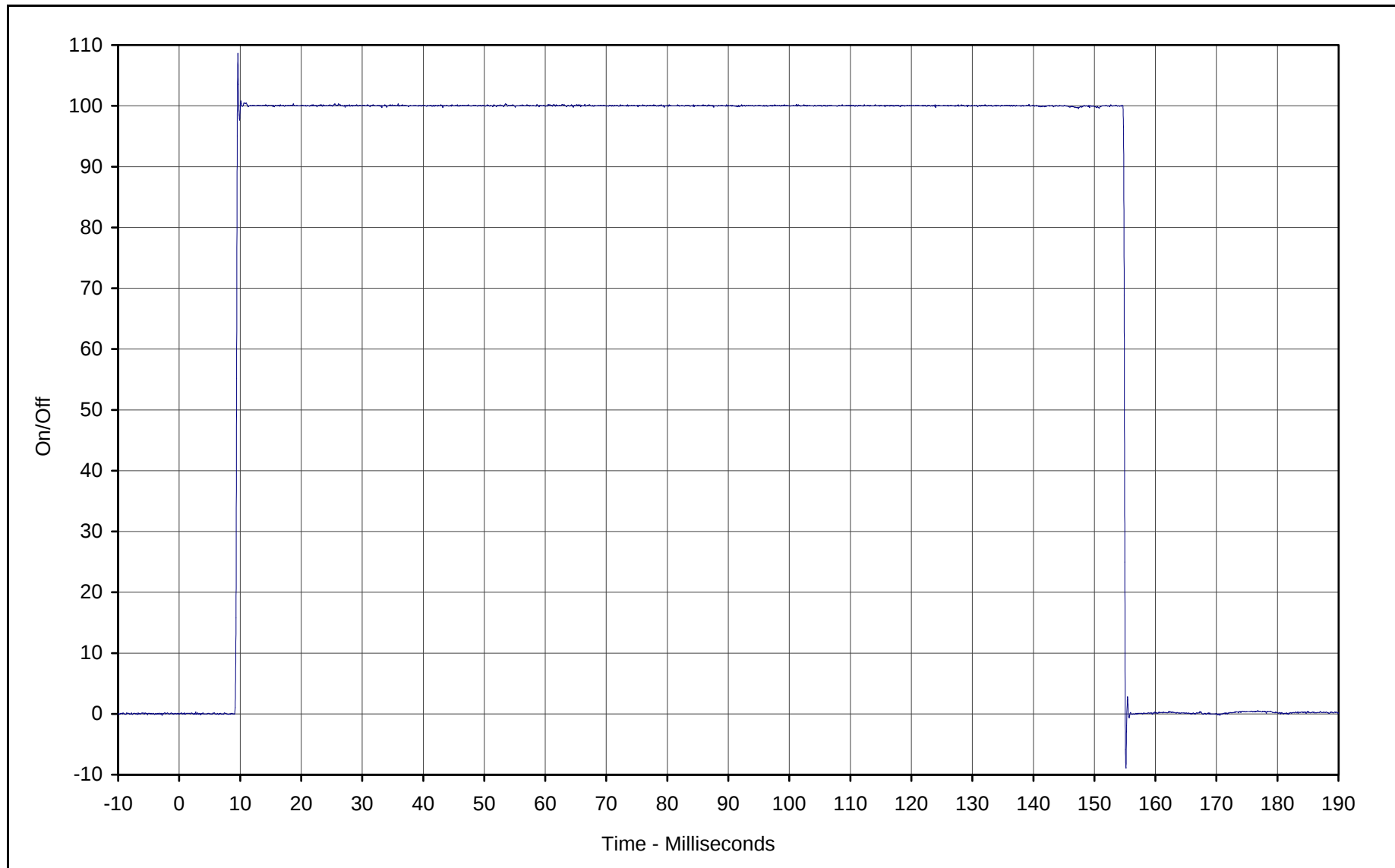
Date of Test: 02/26/01

Curve Number: IN1-011

Test Program: 55/28 km/h Side Impact NCAP No.: M15402

Test Vehicle: 2001 Mazda Miata 2 Door Convertible

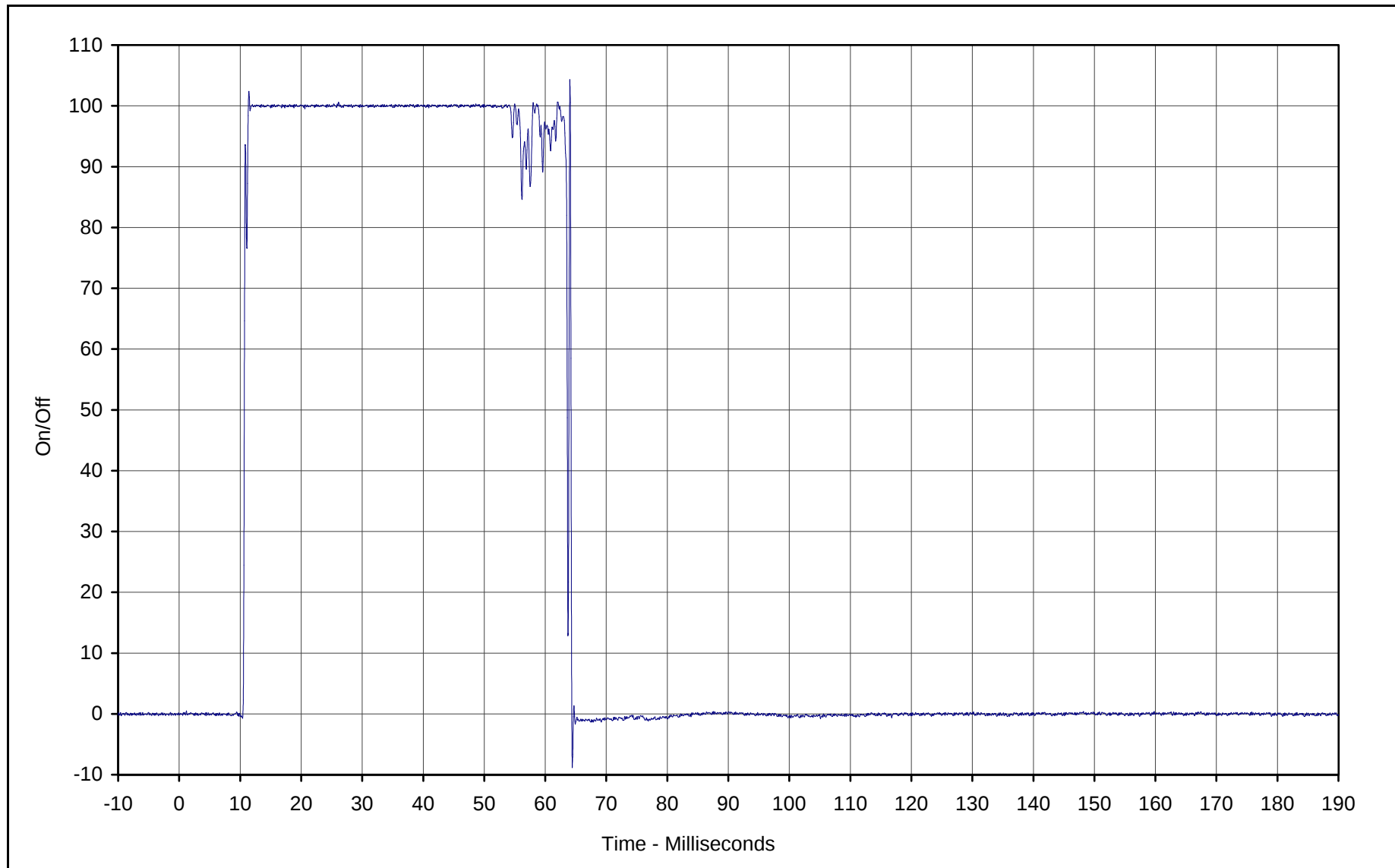




Curve Description: Driver Thorax Contact
Maximum Value: 108.4 at 9.6 Milliseconds
Crossing Point: 50% at 9.4 Milliseconds
SAE Filter Class: 1000
Date of Test: 02/26/01
Curve Number: FIL-012

Test Program: 55/28 km/h Side Impact NCAP No.: M15402
Test Vehicle: 2001 Mazda Miata 2 Door Convertible

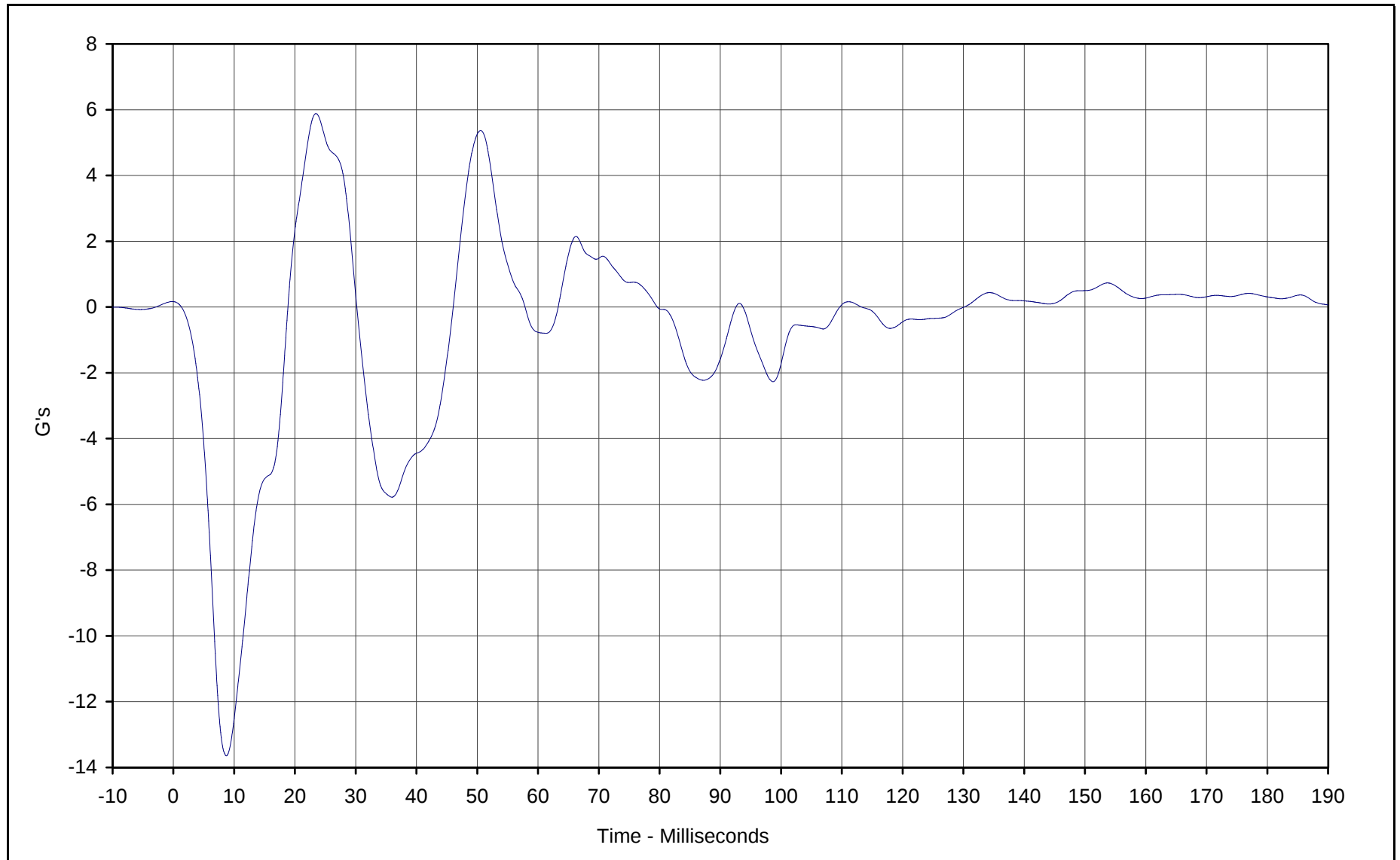




Curve Description: Driver Pelvis Contact
Maximum Value: 104.0 at 64.0 Milliseconds
Crossing Point: 50% at 10.7 Milliseconds
SAE Filter Class: 1000
Date of Test: 02/26/01
Curve Number: FIL-013

Test Program: 55/28 km/h Side Impact NCAP No.: M15402
Test Vehicle: 2001 Mazda Miata 2 Door Convertible

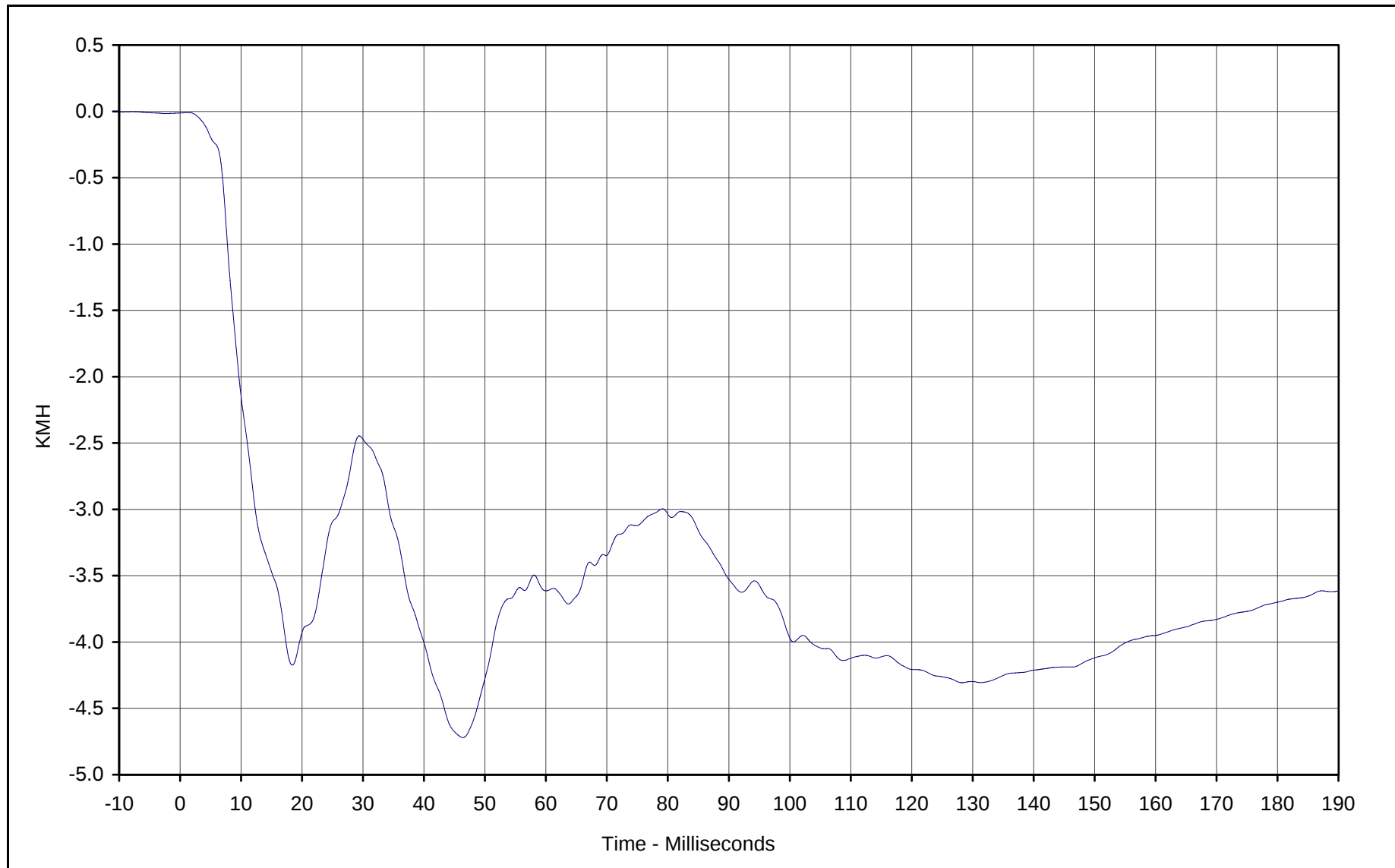




Curve Description: Right Sill at Front Seat X
Maximum Value: 5.9 at 23.5 Milliseconds
Minimum Value: -13.6 at 8.7 Milliseconds
SAE Filter Class: 60
Date of Test: 02/26/01
Curve Number: FIL-014

Test Program: 55/28 km/h Side Impact NCAP No.: M15402
Test Vehicle: 2001 Mazda Miata 2 Door Convertible

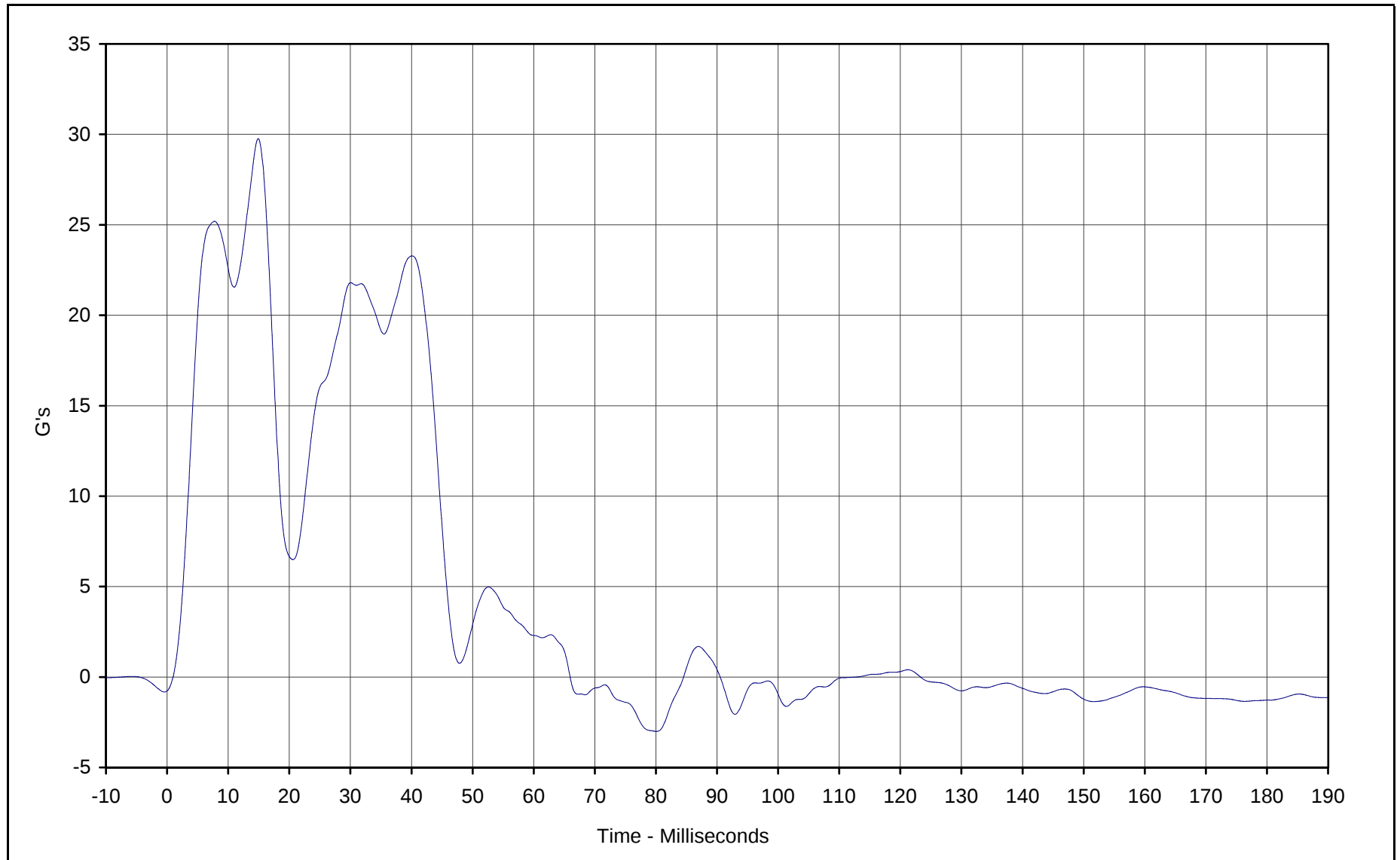




Curve Description: Right Sill at Front Seat X Velocity
Maximum Value: 0.0 at 1.3 Milliseconds
Minimum Value: -4.7 at 46.4 Milliseconds
SAE Filter Class: 180
Date of Test: 02/26/01
Curve Number: IN1-014

Test Program: 55/28 km/h Side Impact NCAP No.: M15402
Test Vehicle: 2001 Mazda Miata 2 Door Convertible

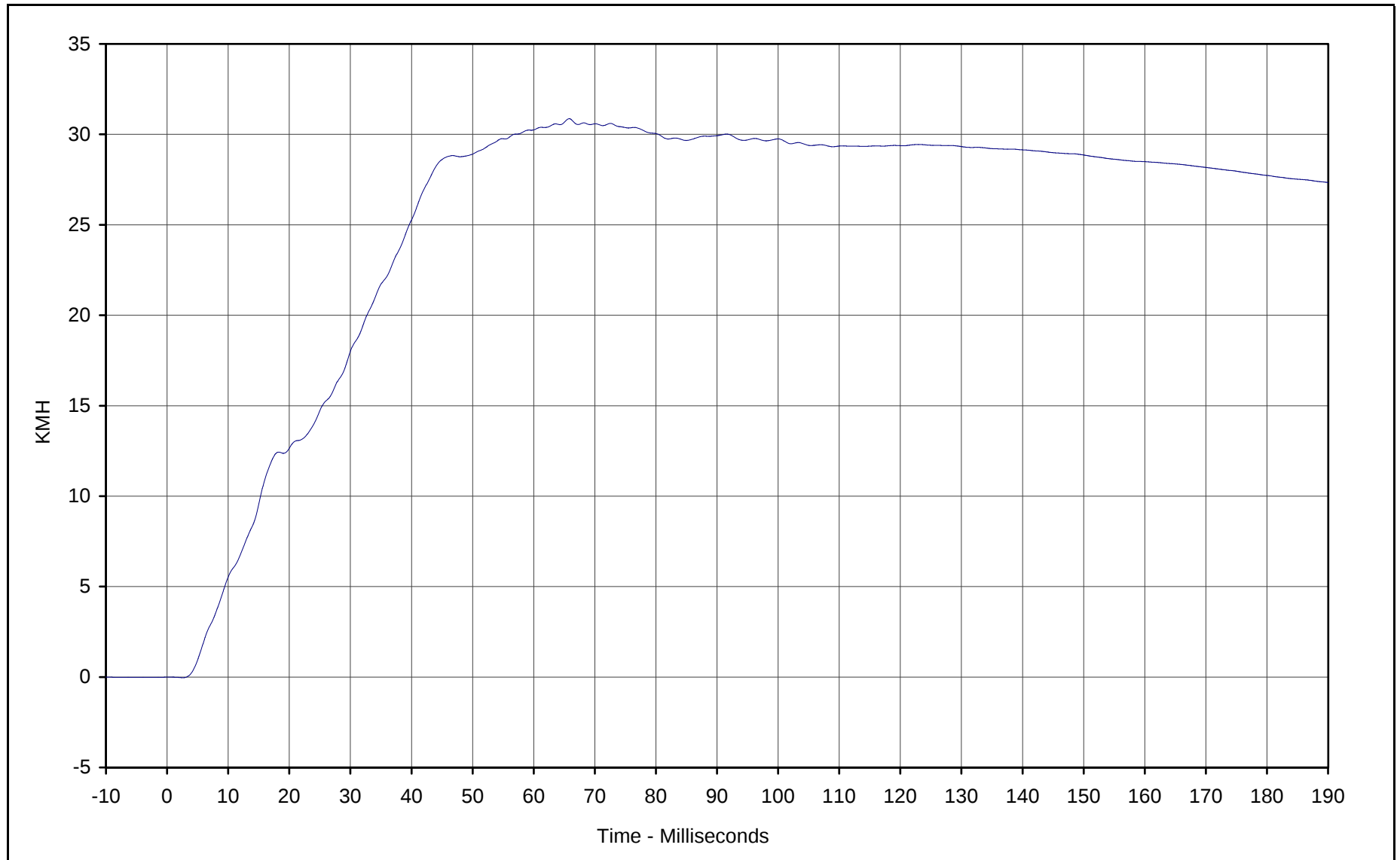




Curve Description: Right Sill at Front Seat Y
Maximum Value: 29.8 at 14.9 Milliseconds
Minimum Value: -3.0 at 80.1 Milliseconds
SAE Filter Class: 60
Date of Test: 02/26/01
Curve Number: FIL-015

Test Program: 55/28 km/h Side Impact NCAP No.: M15402
Test Vehicle: 2001 Mazda Miata 2 Door Convertible

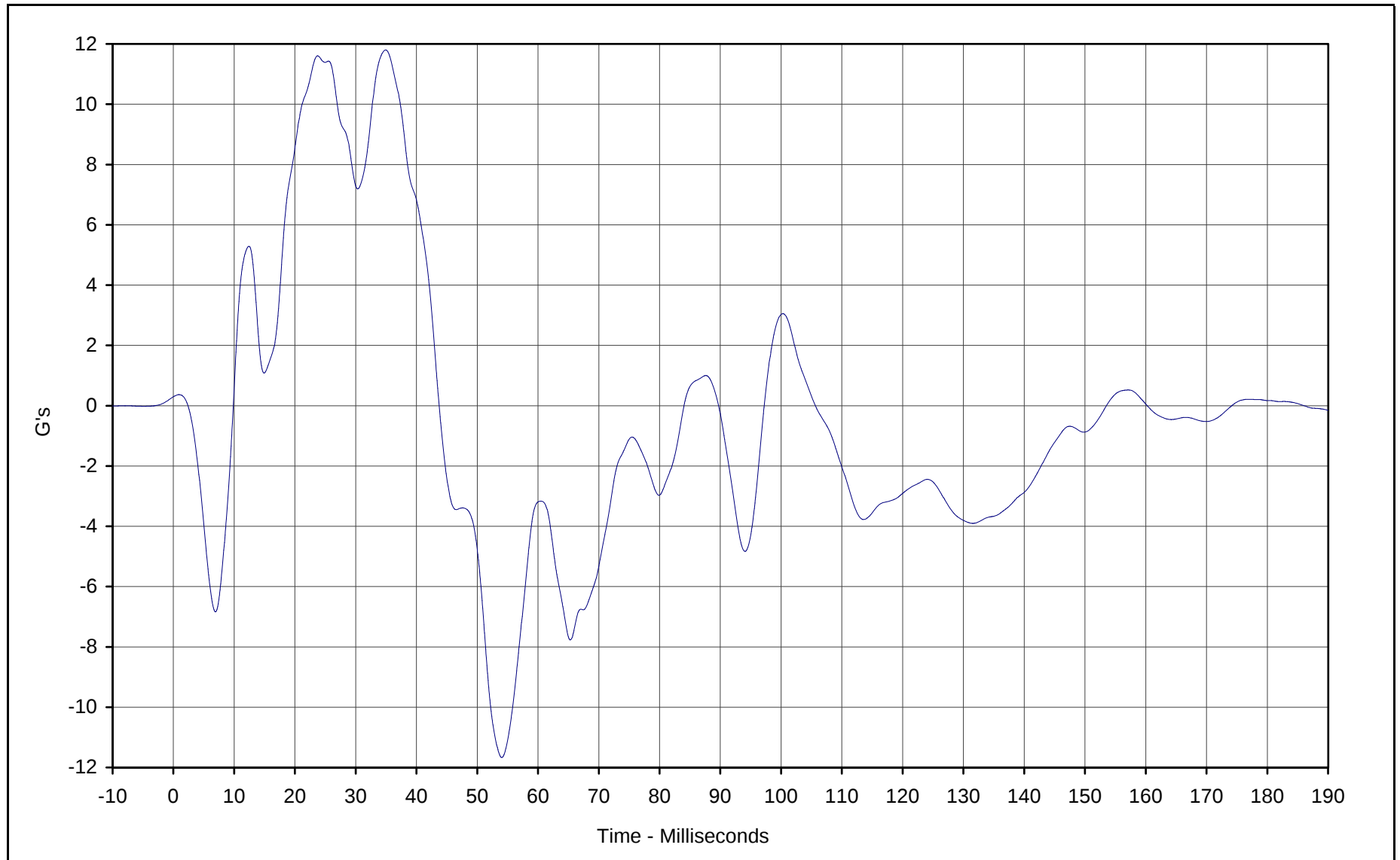




Curve Description: Right Sill at Front Seat Y Velocity
Maximum Value: 30.9 at 65.8 Milliseconds
Minimum Value: 0.0 at 2.6 Milliseconds
SAE Filter Class: 180
Date of Test: 02/26/01
Curve Number: IN1-015

Test Program: 55/28 km/h Side Impact NCAP No.: M15402
Test Vehicle: 2001 Mazda Miata 2 Door Convertible

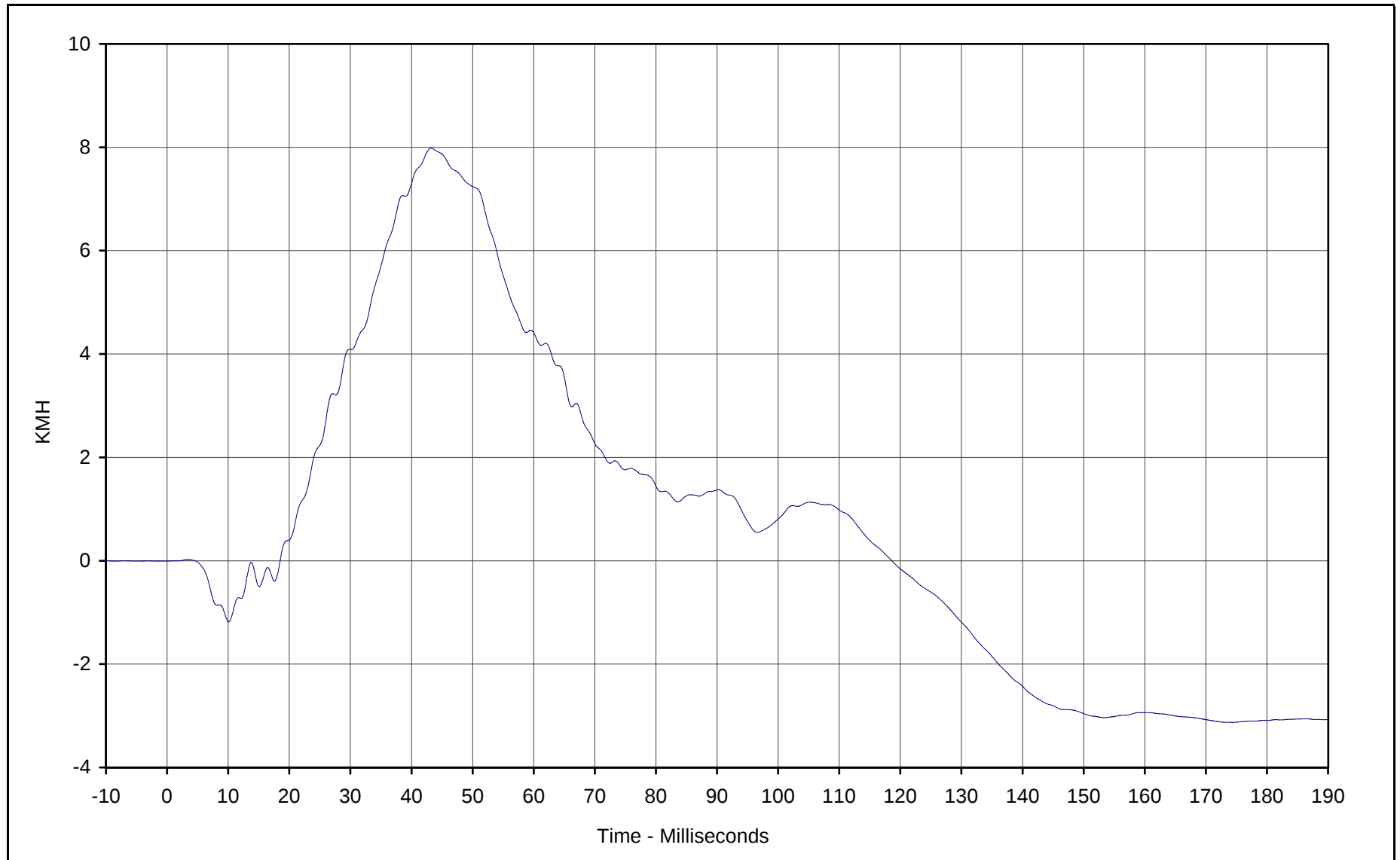




Curve Description: Right Sill at Front Seat Z
Maximum Value: 11.8 at 34.9 Milliseconds
Minimum Value: -11.7 at 54.0 Milliseconds
SAE Filter Class: 60
Date of Test: 02/26/01
Curve Number: FIL-016

Test Program: 55/28 km/h Side Impact NCAP No.: M15402
Test Vehicle: 2001 Mazda Miata 2 Door Convertible

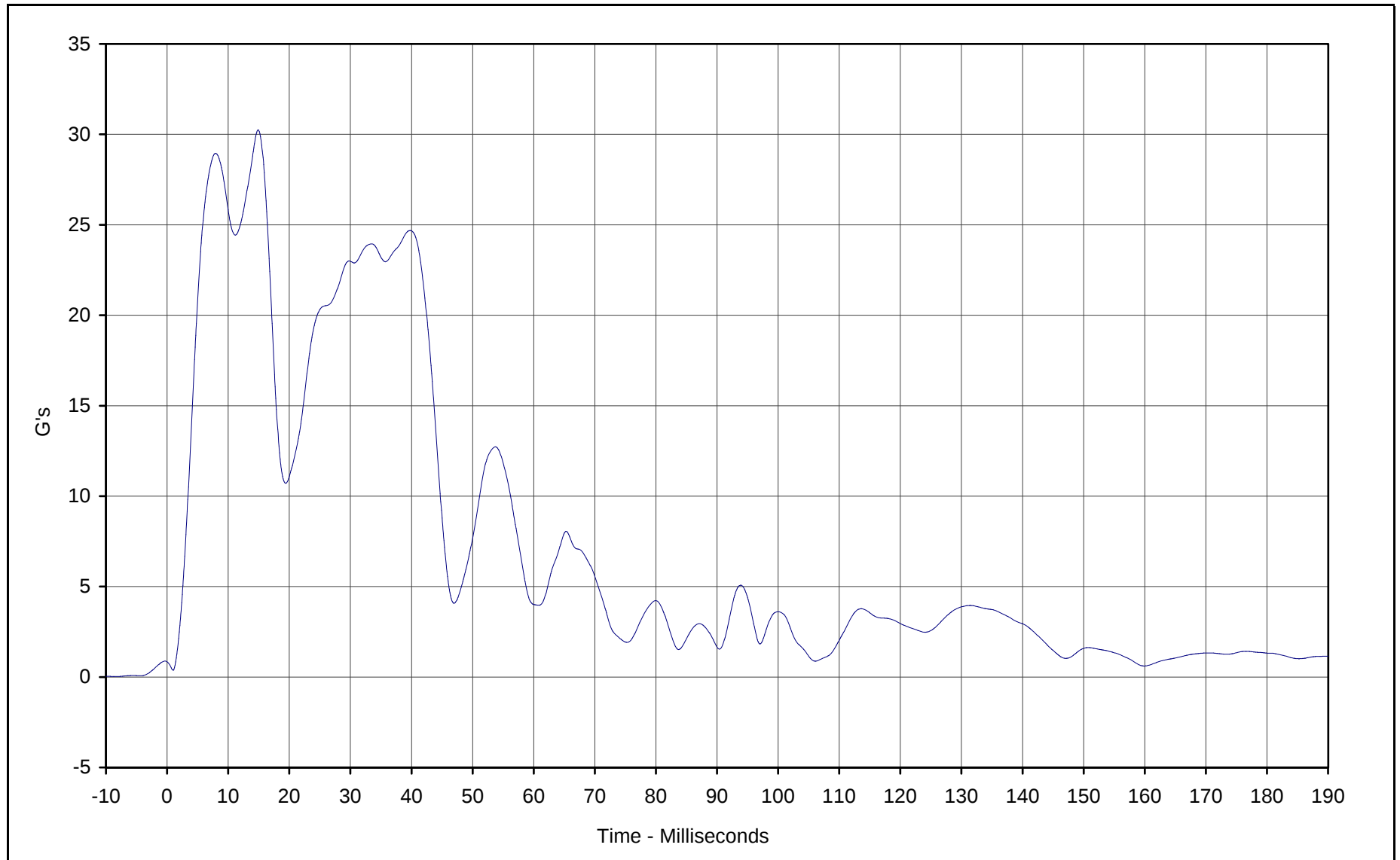




Curve Description: Right Sill at Front Seat Z Velocity
Maximum Value: 8.0 at 43.2 Milliseconds
Minimum Value: -3.1 at 174.3 Milliseconds
SAE Filter Class: 180
Date of Test: 02/26/01
Curve Number: IN1-016

Test Program: 55/28 km/h Side Impact NCAP No.: M15402
Test Vehicle: 2001 Mazda Miata 2 Door Convertible

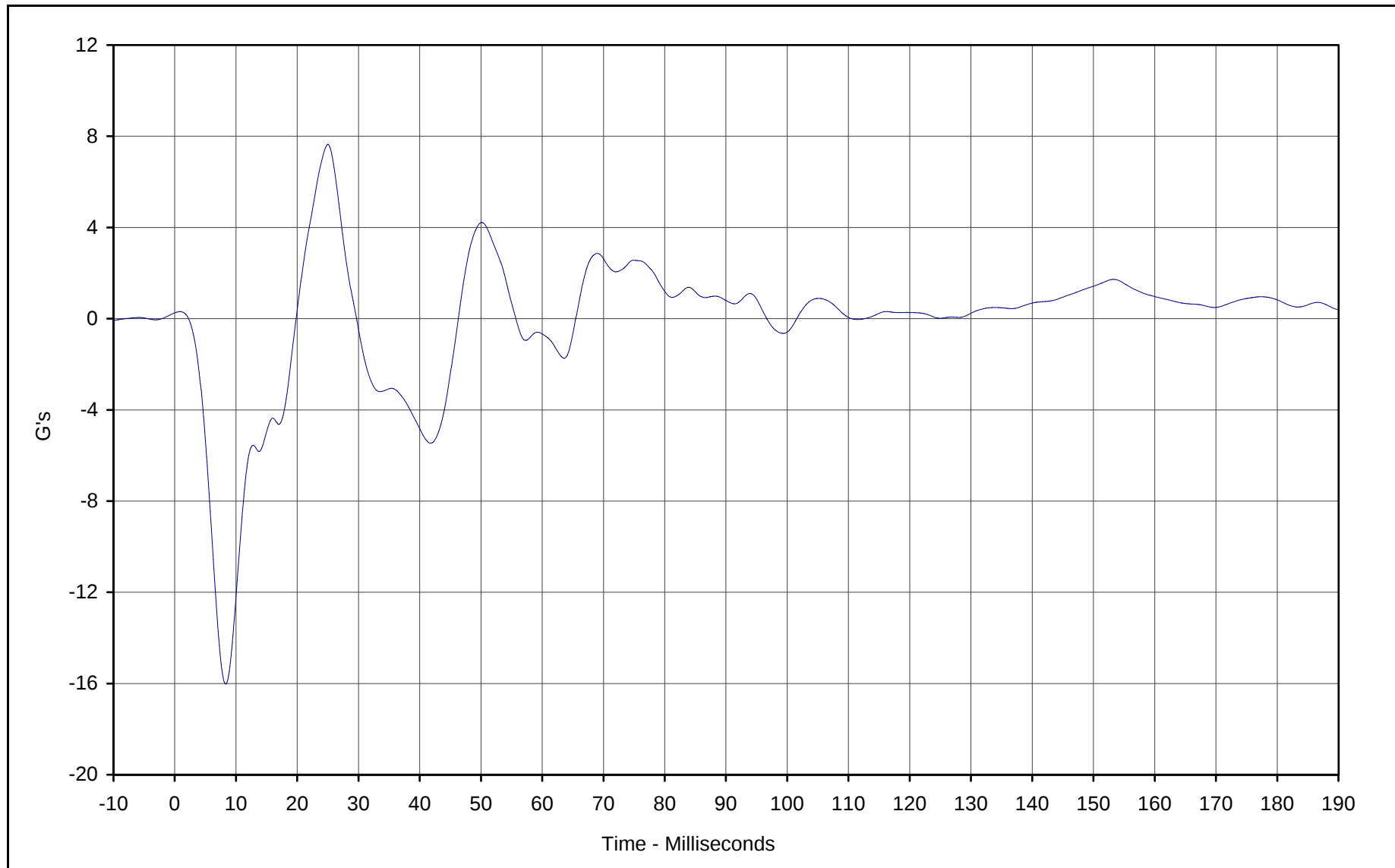




Curve Description: Right Sill at Front Seat Resultant
Maximum Value: 30.2 at 14.9 Milliseconds
Minimum Value: 0.4 at 1.0 Milliseconds
SAE Filter Class: 60
Date of Test: 02/26/01
Curve Number: RES-014

Test Program: 55/28 km/h Side Impact NCAP No.: M15402
Test Vehicle: 2001 Mazda Miata 2 Door Convertible

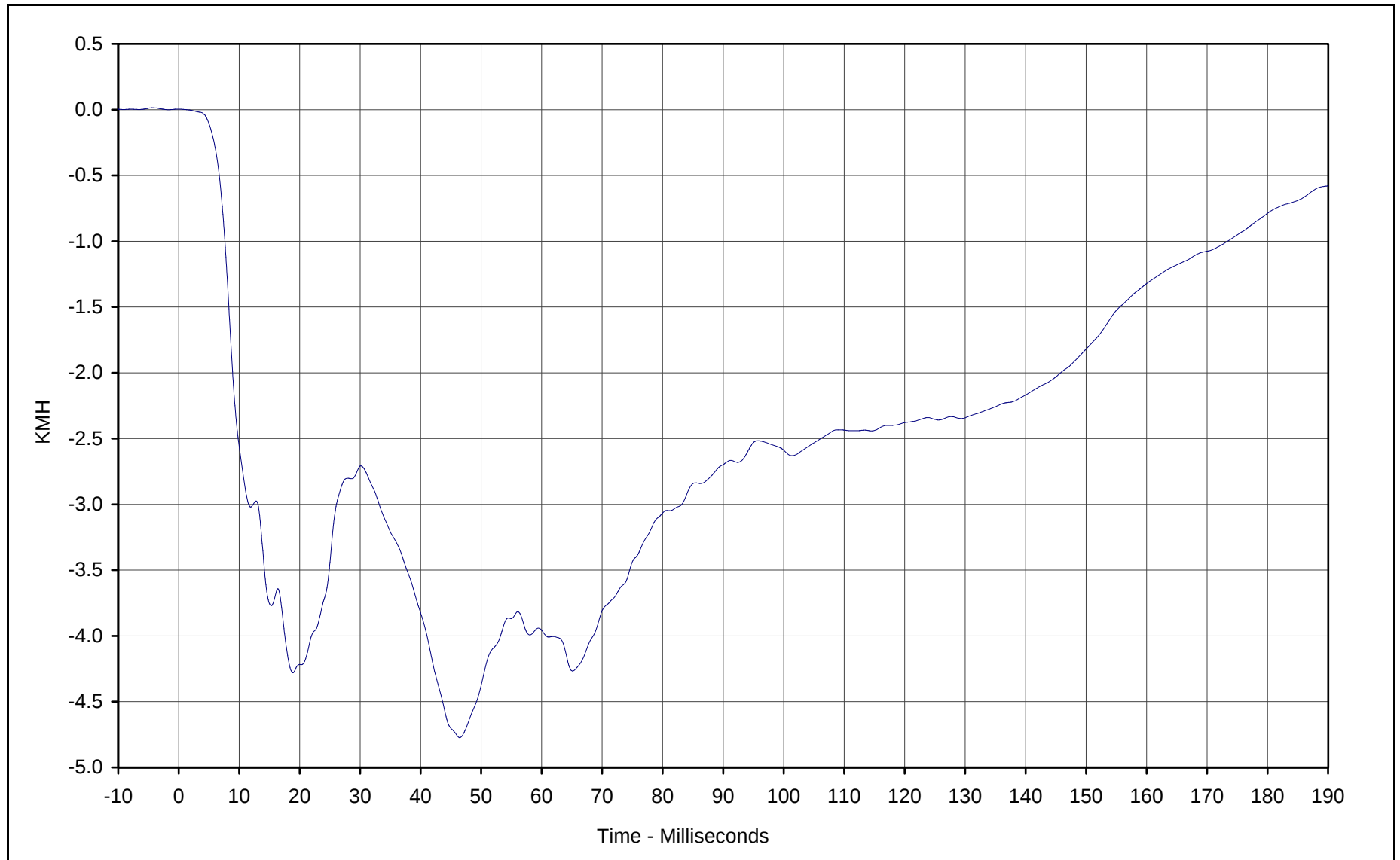




Curve Description: Rear Floor Above Axle X
Maximum Value: 7.6 at 25.0 Milliseconds
Minimum Value: -16.0 at 8.3 Milliseconds
SAE Filter Class: 60
Date of Test: 02/26/01
Curve Number: FIL-017

Test Program: 55/28 km/h Side Impact NCAP No.: M15402
Test Vehicle: 2001 Mazda Miata 2 Door Convertible

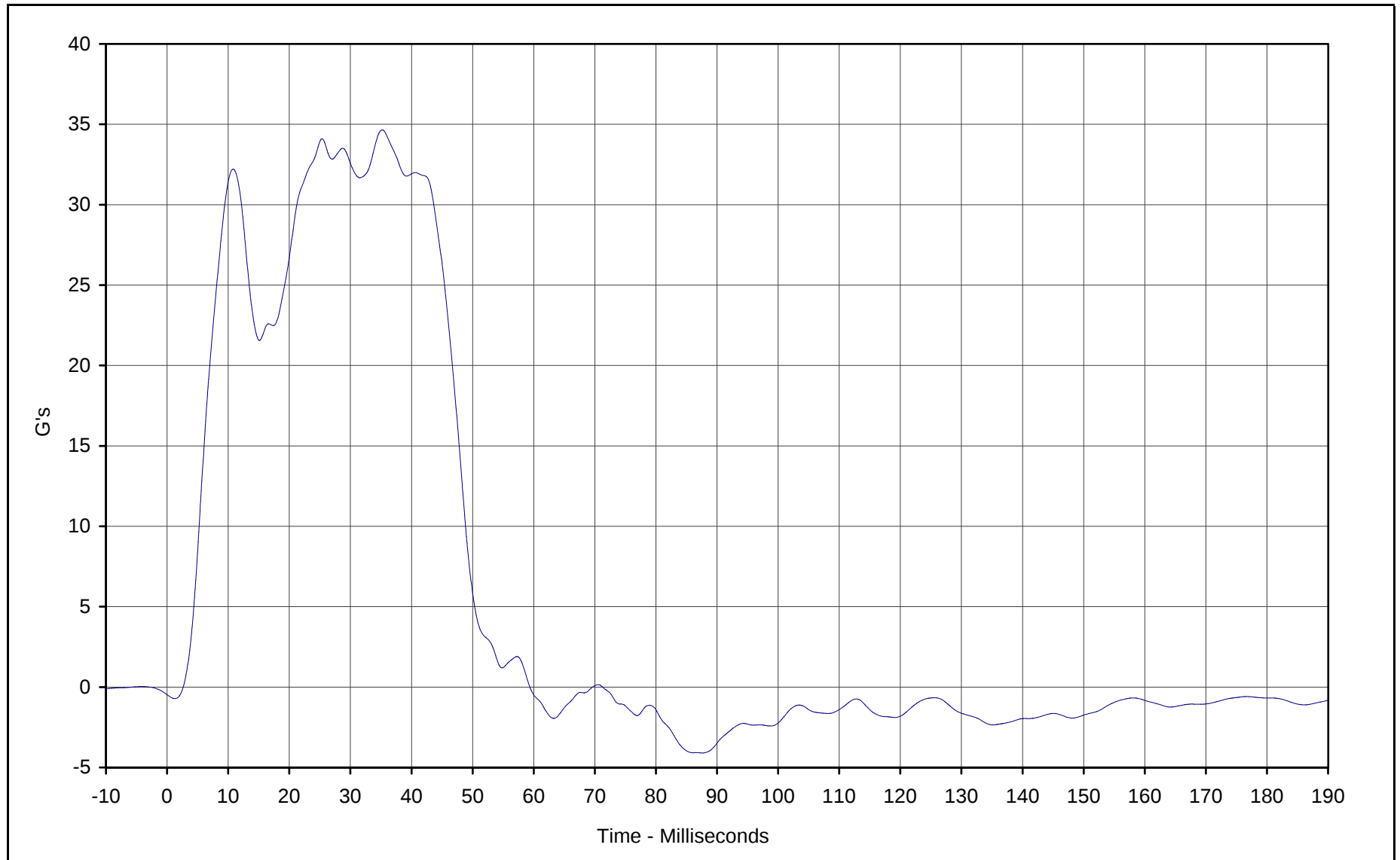




Curve Description: Rear Floor Above Axle X Velocity
Maximum Value: 0.0 at 0.0 Milliseconds
Minimum Value: -4.8 at 46.4 Milliseconds
SAE Filter Class: 180
Date of Test: 02/26/01
Curve Number: IN1-017

Test Program: 55/28 km/h Side Impact NCAP No.: M15402
Test Vehicle: 2001 Mazda Miata 2 Door Convertible

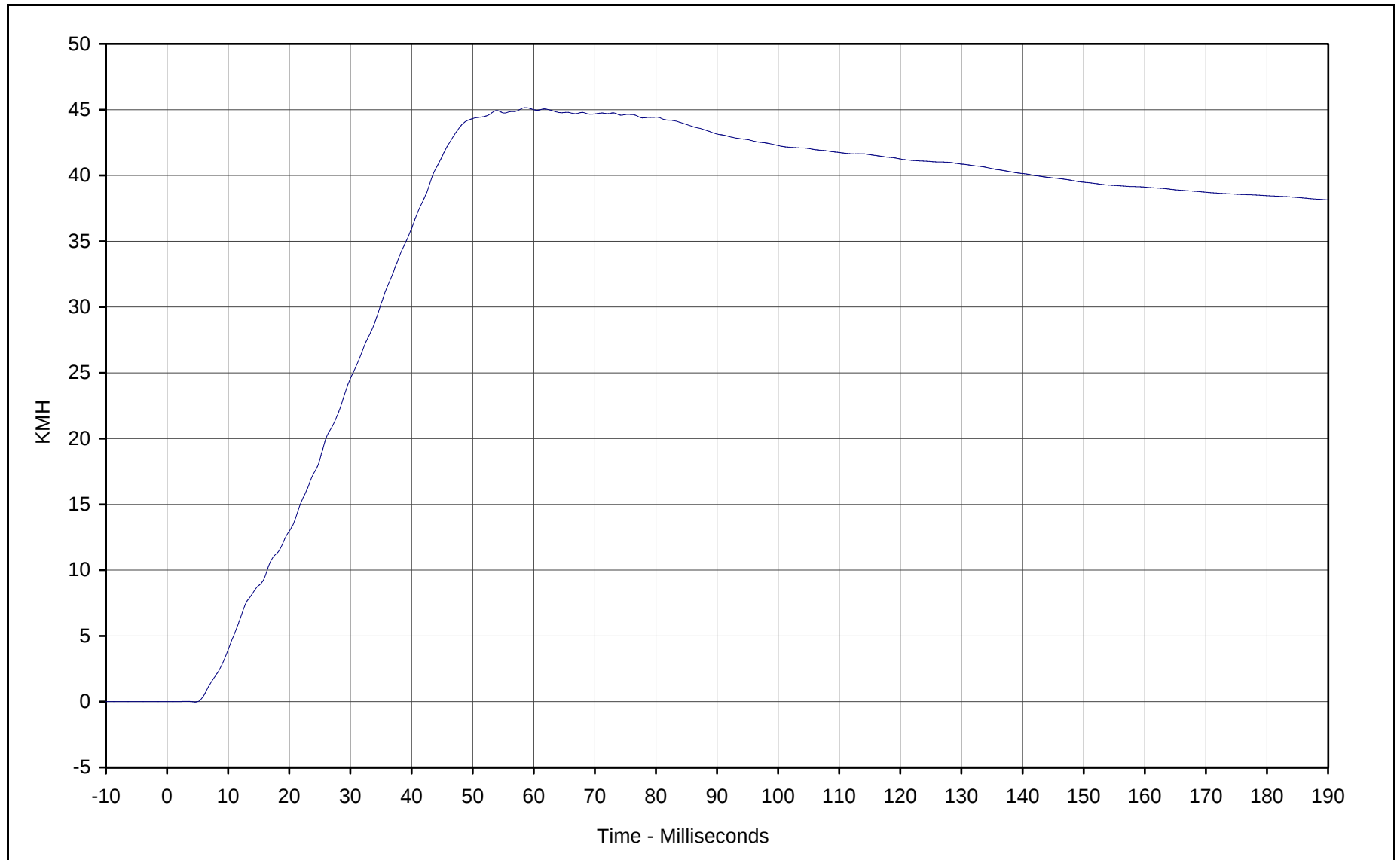




Curve Description: Rear Floor Above Axle Y
Maximum Value: 34.7 at 35.2 Milliseconds
Minimum Value: -4.1 at 87.6 Milliseconds
SAE Filter Class: 60
Date of Test: 02/26/01
Curve Number: FIL-018

Test Program: 55/28 km/h Side Impact NCAP No.: M15402
Test Vehicle: 2001 Mazda Miata 2 Door Convertible

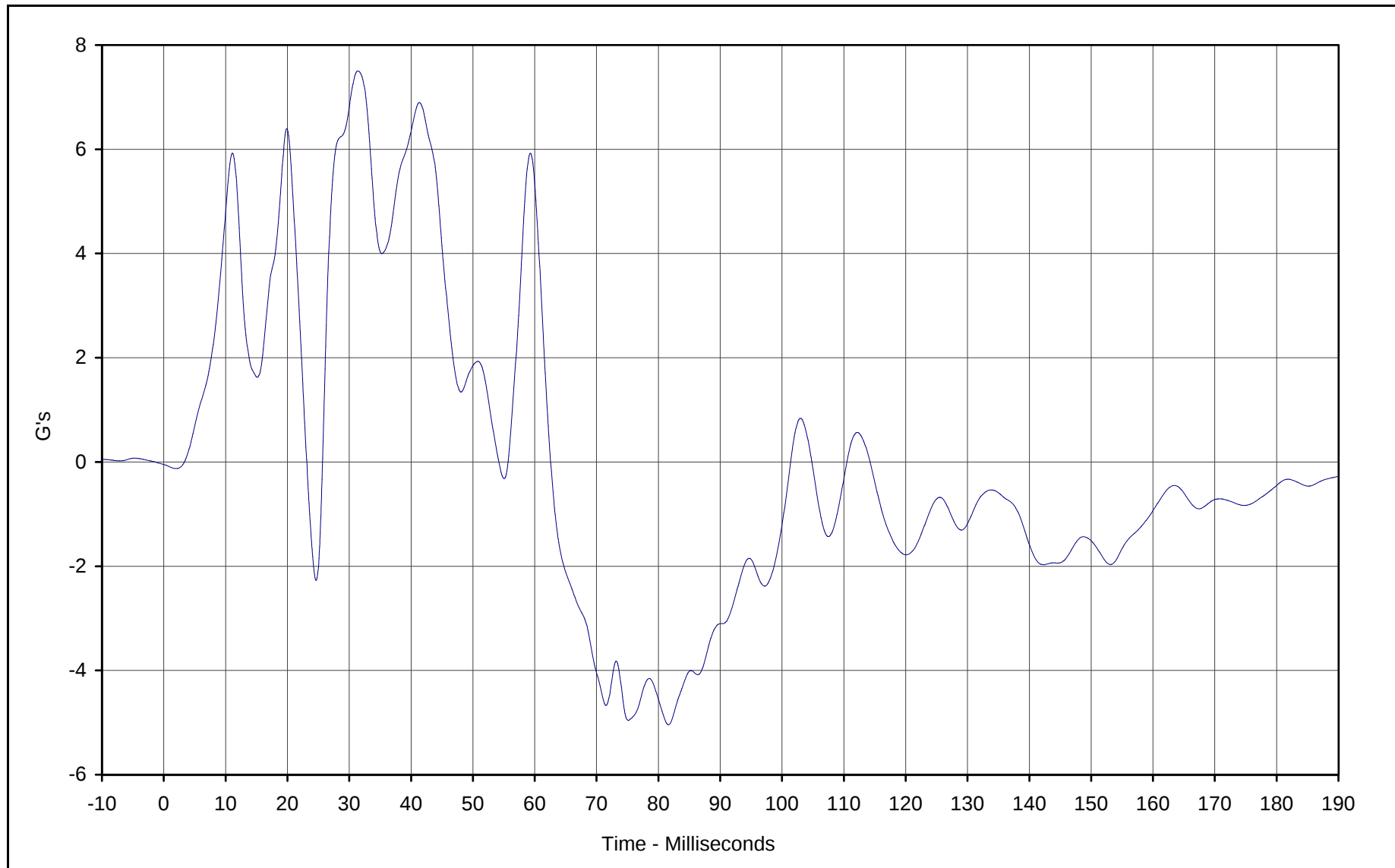




Curve Description: Rear Floor Above Axle Y Velocity
Maximum Value: 45.2 at 58.7 Milliseconds
Minimum Value: 0.0 at 4.6 Milliseconds
SAE Filter Class: 180
Date of Test: 02/26/01
Curve Number: IN1-018

Test Program: 55/28 km/h Side Impact NCAP No.: M15402
Test Vehicle: 2001 Mazda Miata 2 Door Convertible

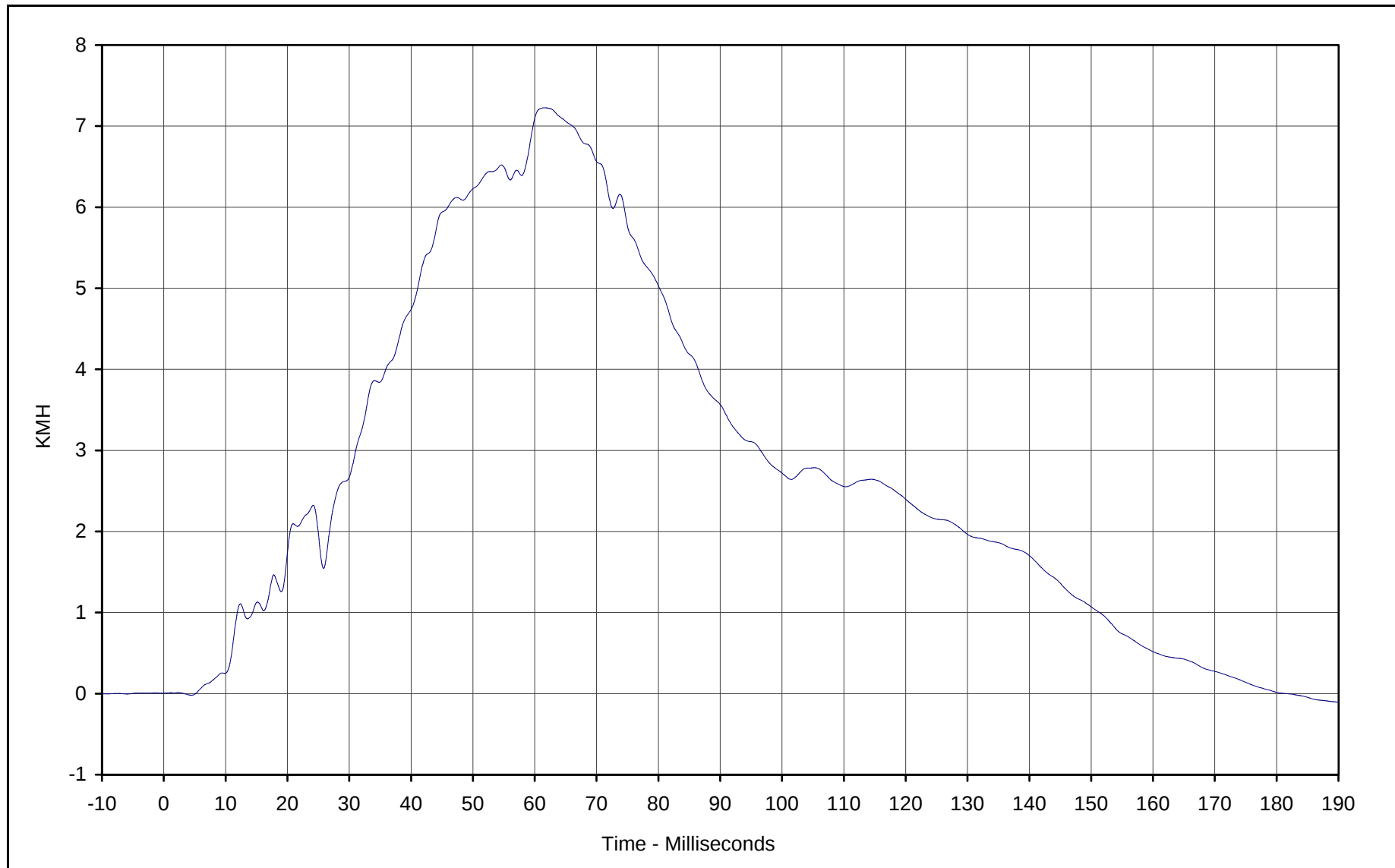




Curve Description: Rear Floor Above Axle Z
Maximum Value: 7.5 at 31.4 Milliseconds
Minimum Value: -5.0 at 81.6 Milliseconds
SAE Filter Class: 60
Date of Test: 02/26/01
Curve Number: FIL-019

Test Program: 55/28 km/h Side Impact NCAP No.: M15402
Test Vehicle: 2001 Mazda Miata 2 Door Convertible

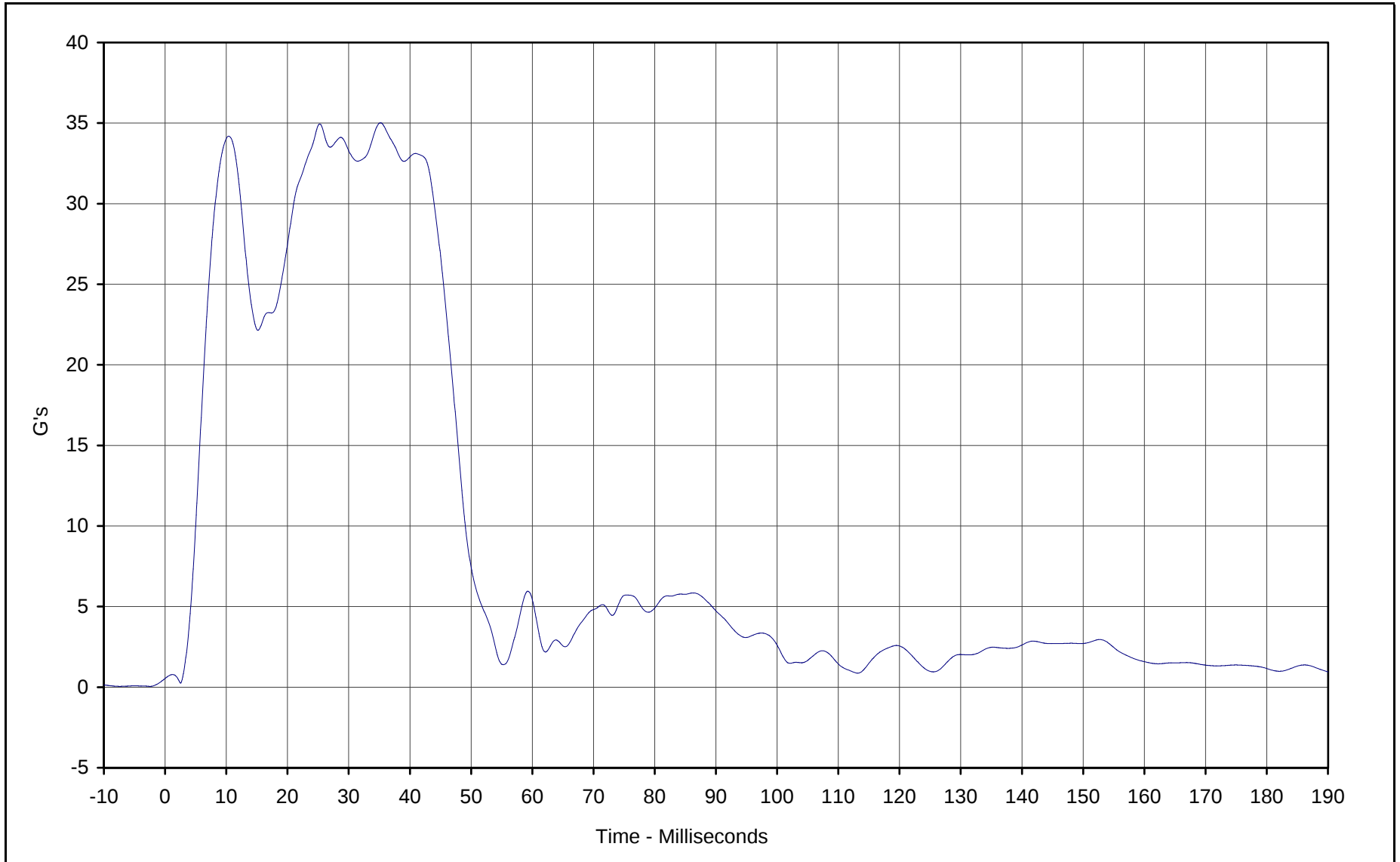




Curve Description: Rear Floor Above Axle Z Velocity
Maximum Value: 7.2 at 61.6 Milliseconds
Minimum Value: -0.1 at 189.9 Milliseconds
SAE Filter Class: 180
Date of Test: 02/26/01
Curve Number: IN1-019

Test Program: 55/28 km/h Side Impact NCAP No.: M15402
Test Vehicle: 2001 Mazda Miata 2 Door Convertible

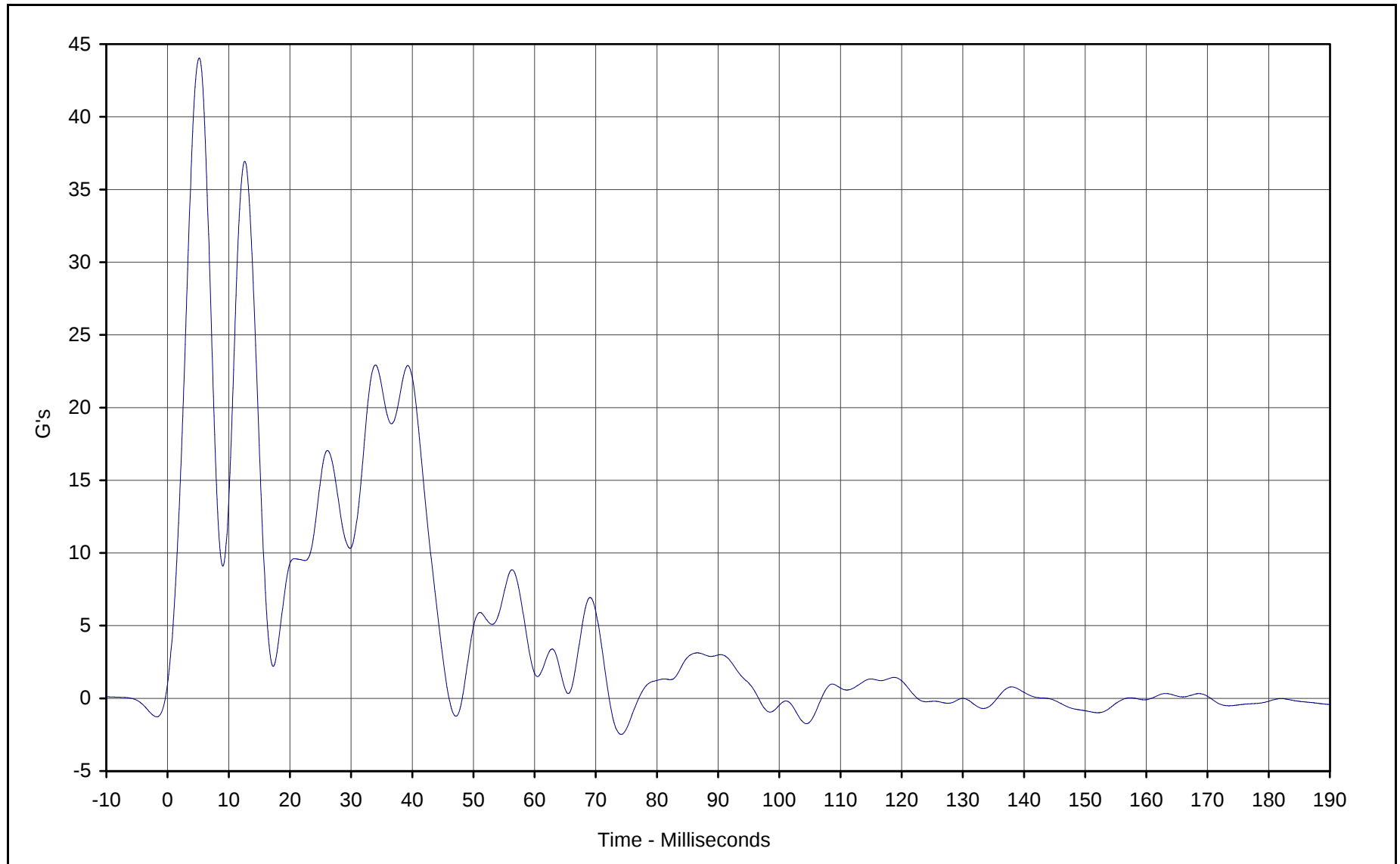




Curve Description: Rear Floor Above Axle Resultant
Maximum Value: 35.0 at 35.2 Milliseconds
Minimum Value: 0.3 at 2.5 Milliseconds
SAE Filter Class: 60
Date of Test: 02/26/01
Curve Number: RES-017

Test Program: 55/28 km/h Side Impact NCAP No.: M15402
Test Vehicle: 2001 Mazda Miata 2 Door Convertible

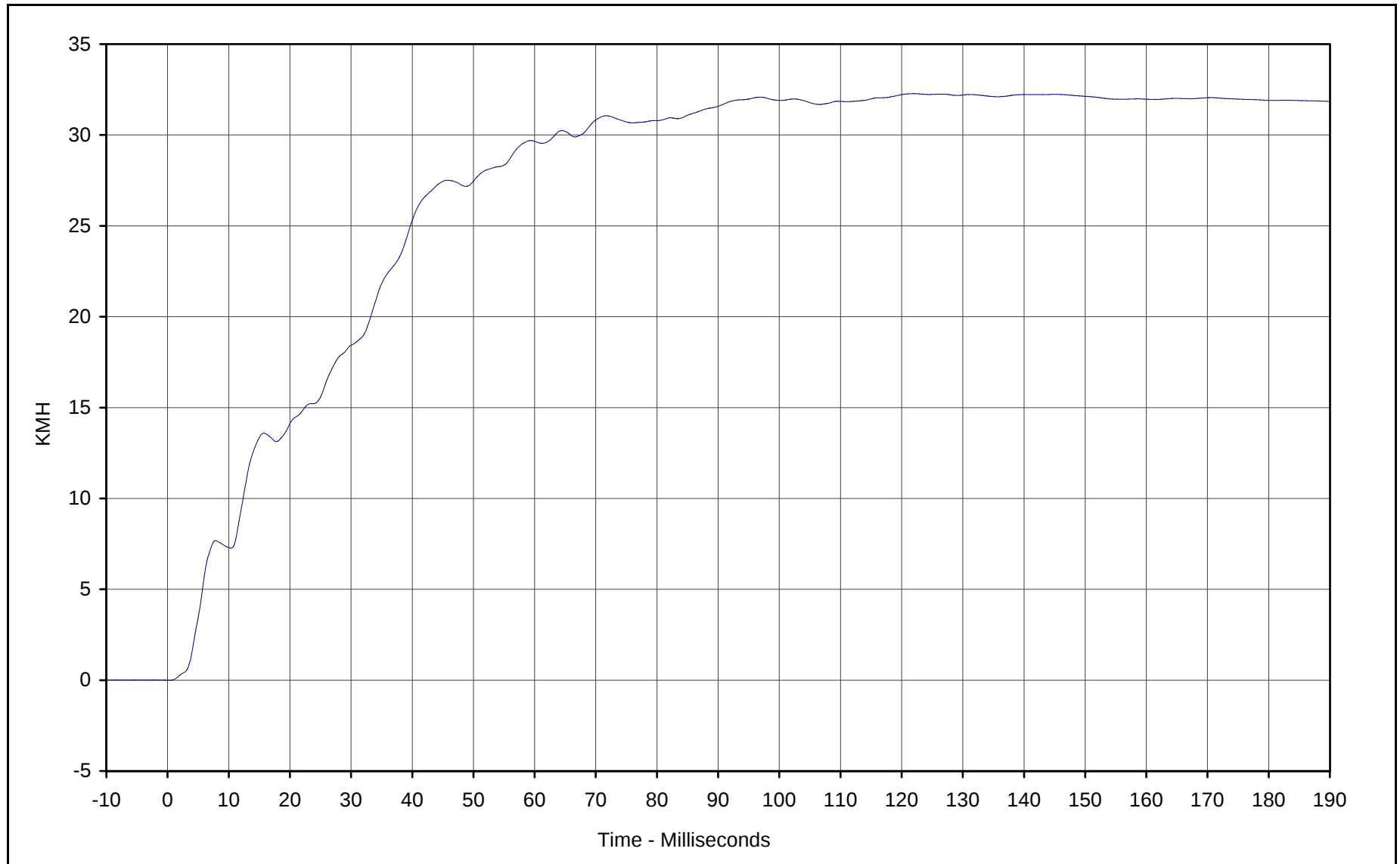




Curve Description: Left Sill at Front Door Y
Maximum Value: 44.0 at 5.2 Milliseconds
Minimum Value: -2.5 at 74.1 Milliseconds
SAE Filter Class: 60
Date of Test: 02/26/01
Curve Number: FIL-020

Test Program: 55/28 km/h Side Impact NCAP No.: M15402
Test Vehicle: 2001 Mazda Miata 2 Door Convertible

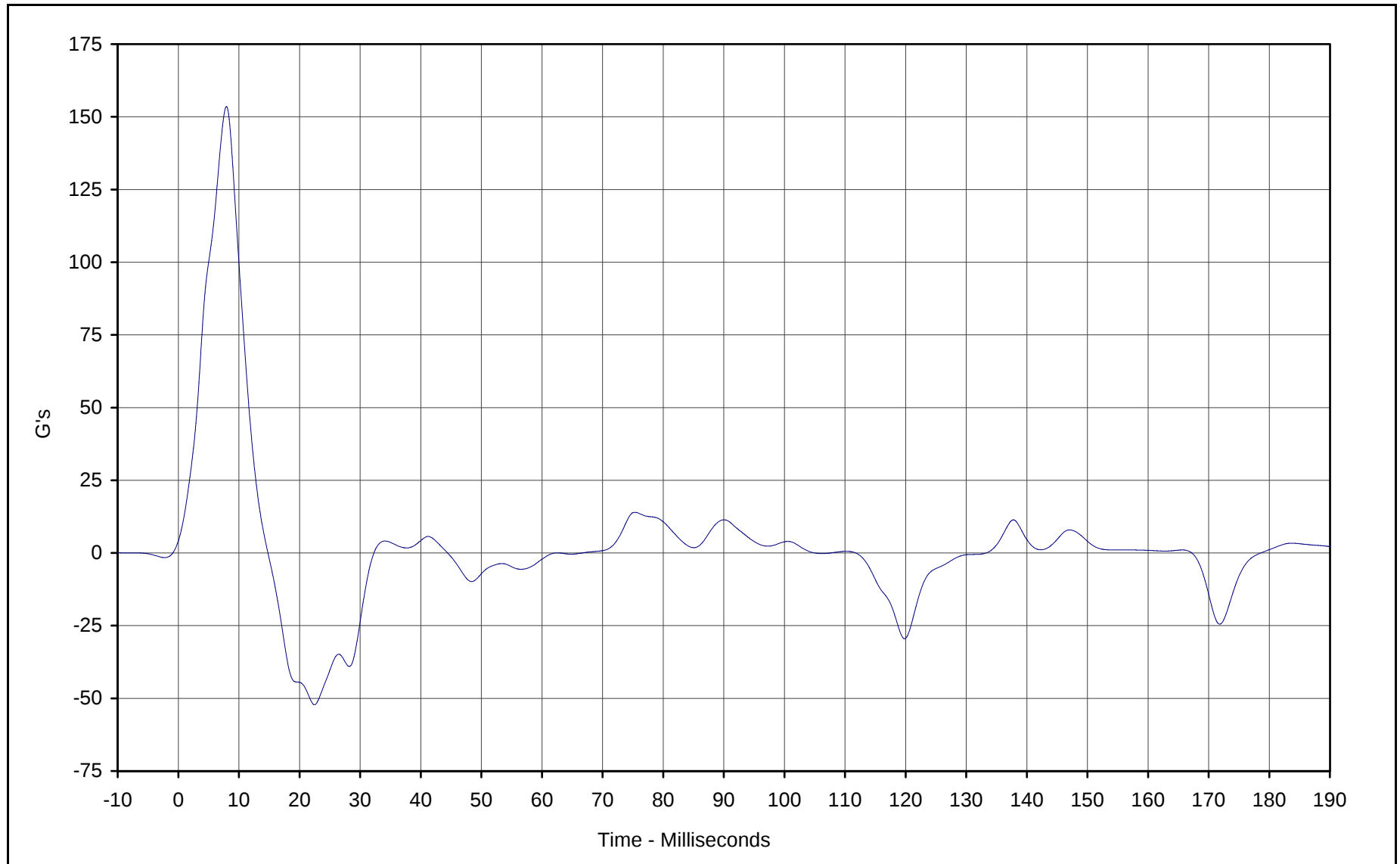




Curve Description: Left Sill at Front Door Y Velocity
Maximum Value: 32.3 at 122.0 Milliseconds
Minimum Value: 0.0 at 0.3 Milliseconds
SAE Filter Class: 180
Date of Test: 02/26/01
Curve Number: IN1-020

Test Program: 55/28 km/h Side Impact NCAP No.: M15402
Test Vehicle: 2001 Mazda Miata 2 Door Convertible

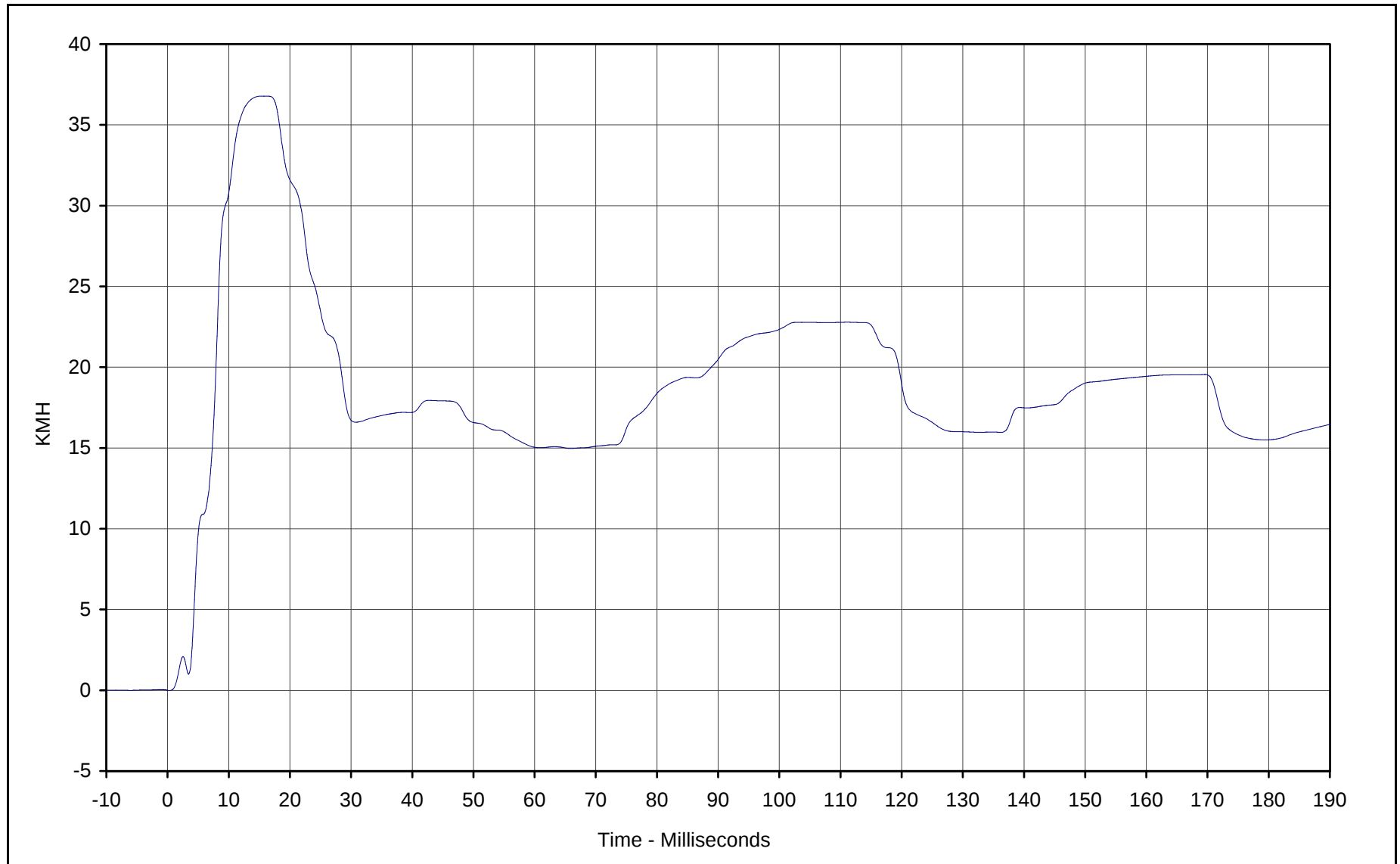




Curve Description: Left Front Door CL Y
Maximum Value: 153.5 at 8.0 Milliseconds
Minimum Value: -52.2 at 22.5 Milliseconds
SAE Filter Class: 60
Date of Test: 02/26/01
Curve Number: FIL-021

Test Program: 55/28 km/h Side Impact NCAP No.: M15402
Test Vehicle: 2001 Mazda Miata 2 Door Convertible

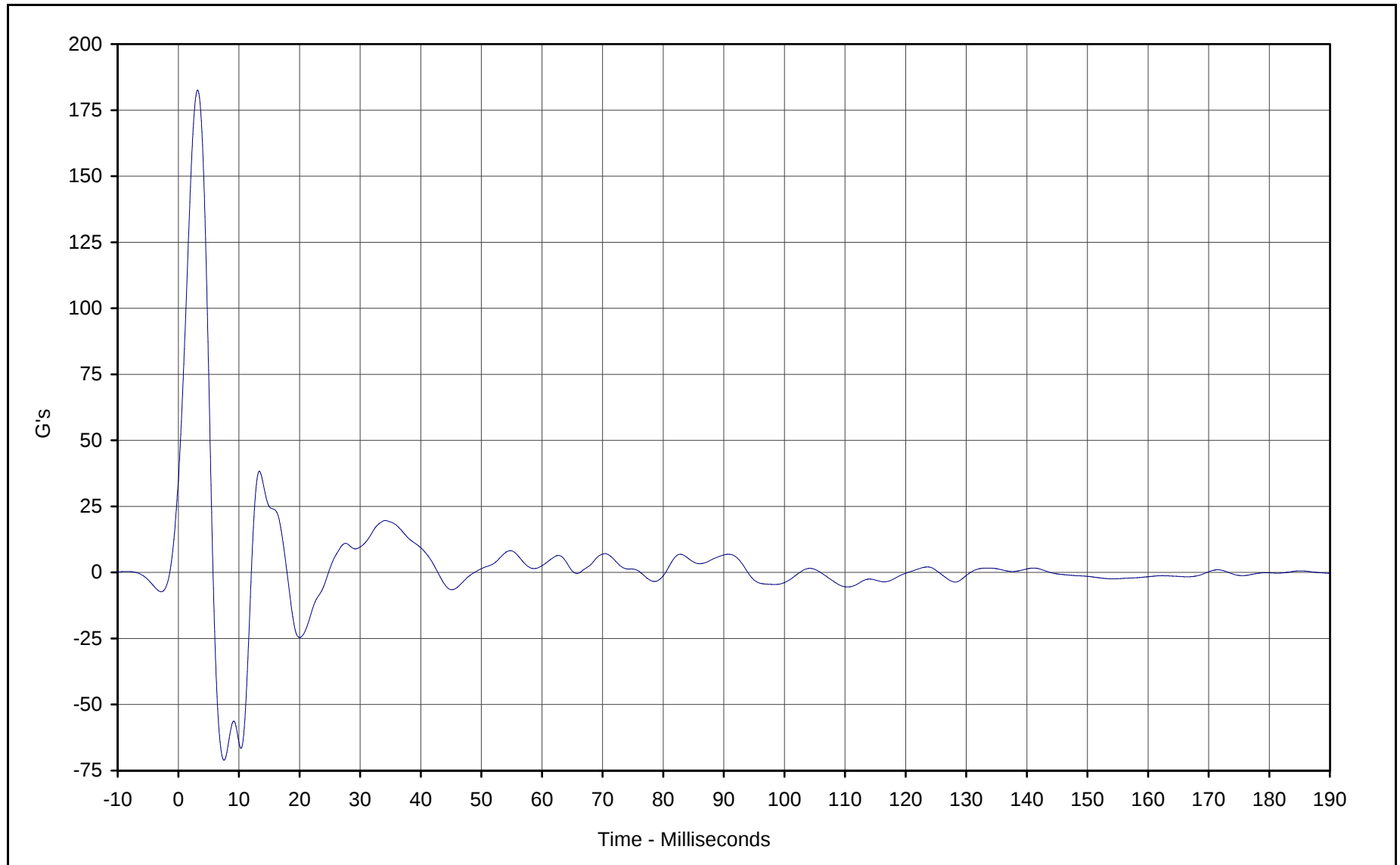




Curve Description: Left Front Door CL Y Velocity
Maximum Value: 36.8 at 15.4 Milliseconds
Minimum Value: 0.0 at 0.4 Milliseconds
SAE Filter Class: 180
Date of Test: 02/26/01
Curve Number: IN1-021

Test Program: 55/28 km/h Side Impact NCAP No.: M15402
Test Vehicle: 2001 Mazda Miata 2 Door Convertible

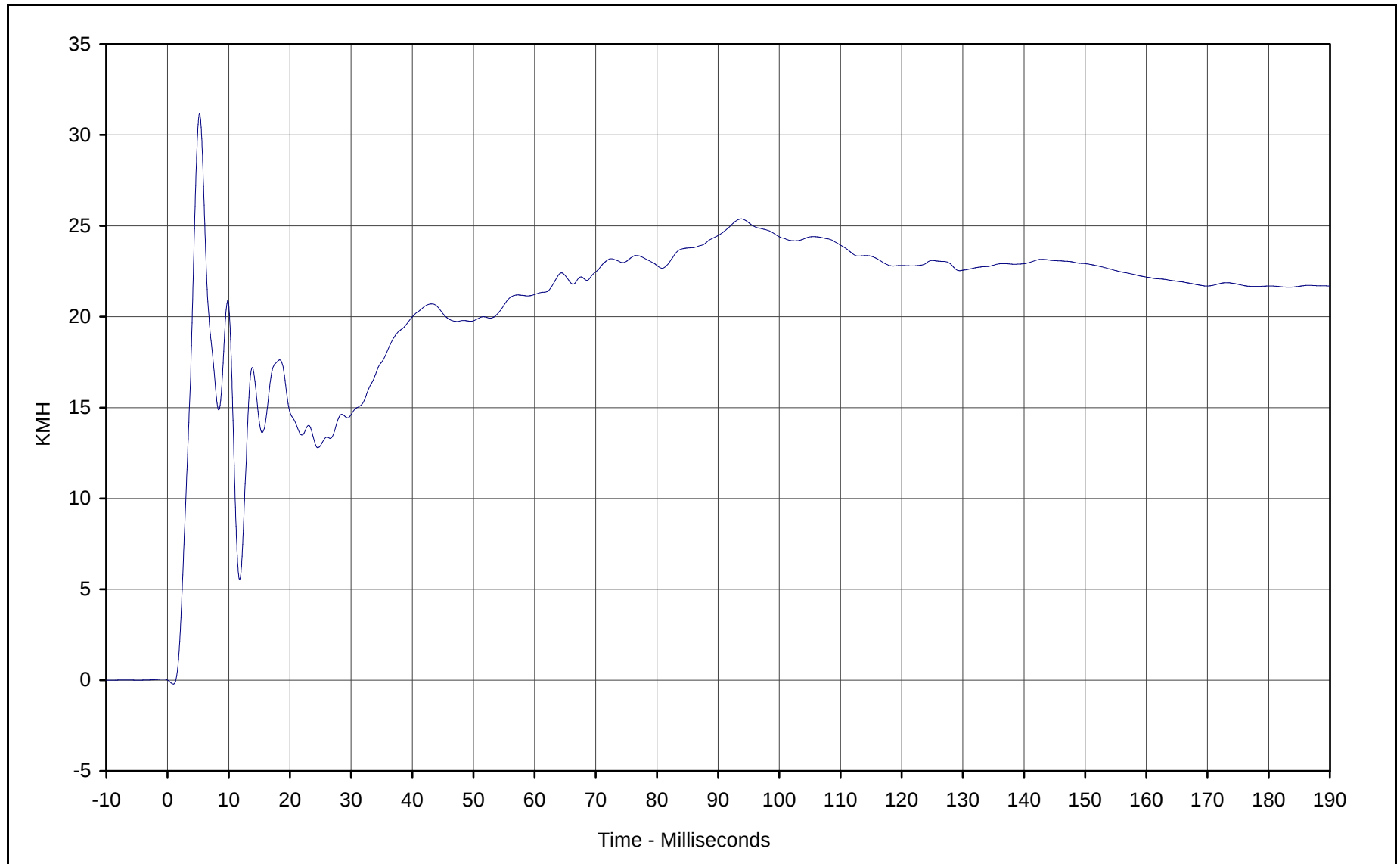




Curve Description: Left Front Door Mid Rear Y
Maximum Value: 182.6 at 3.2 Milliseconds
Minimum Value: -71.1 at 7.5 Milliseconds
SAE Filter Class: 60
Date of Test: 02/26/01
Curve Number: FIL-022

Test Program: 55/28 km/h Side Impact NCAP No.: M15402
Test Vehicle: 2001 Mazda Miata 2 Door Convertible

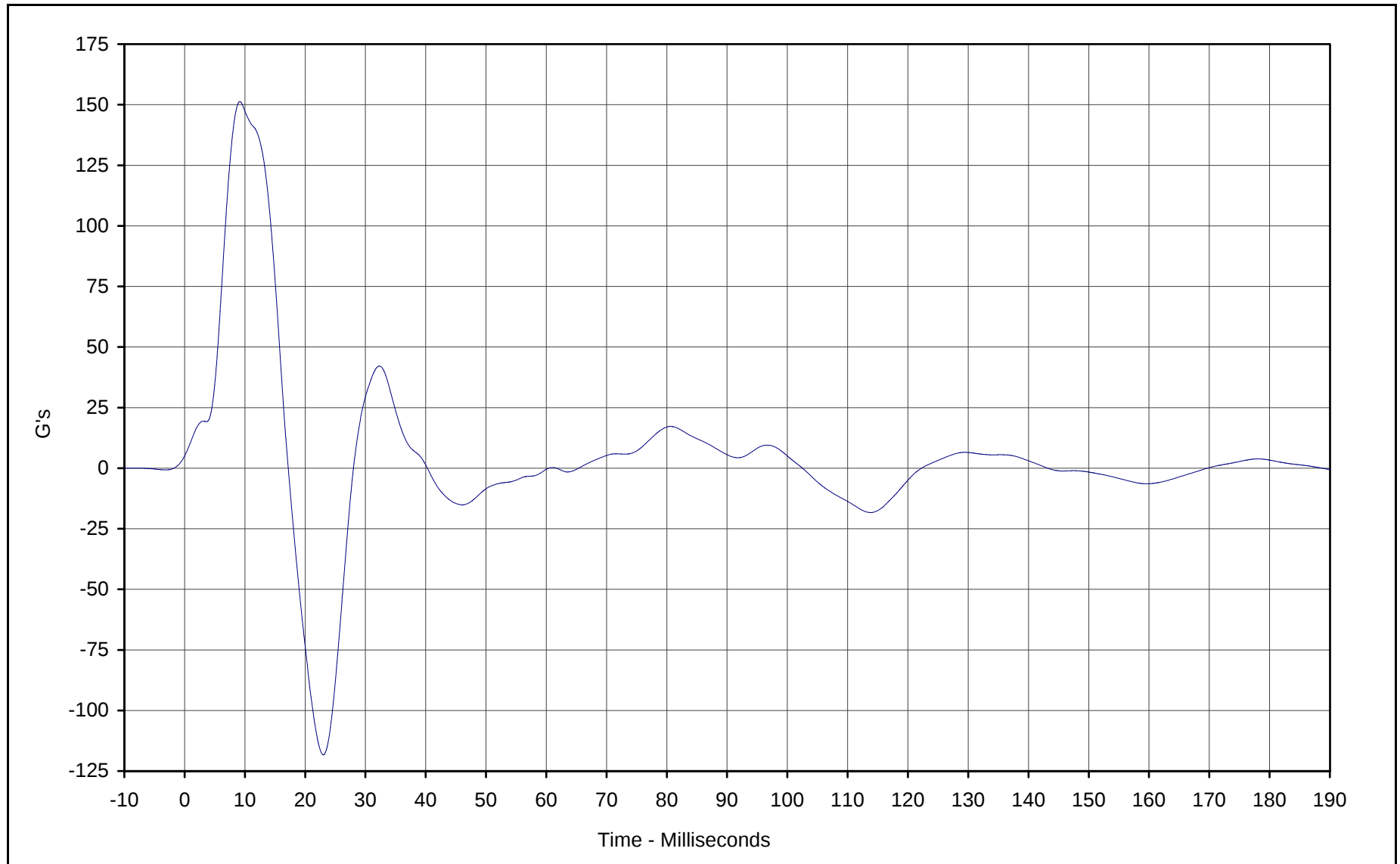




Curve Description: Left Front Door Mid Rear Y Velocity
Maximum Value: 31.2 at 5.2 Milliseconds
Minimum Value: -0.2 at 0.9 Milliseconds
SAE Filter Class: 180
Date of Test: 02/26/01
Curve Number: IN1-022

Test Program: 55/28 km/h Side Impact NCAP No.: M15402
Test Vehicle: 2001 Mazda Miata 2 Door Convertible

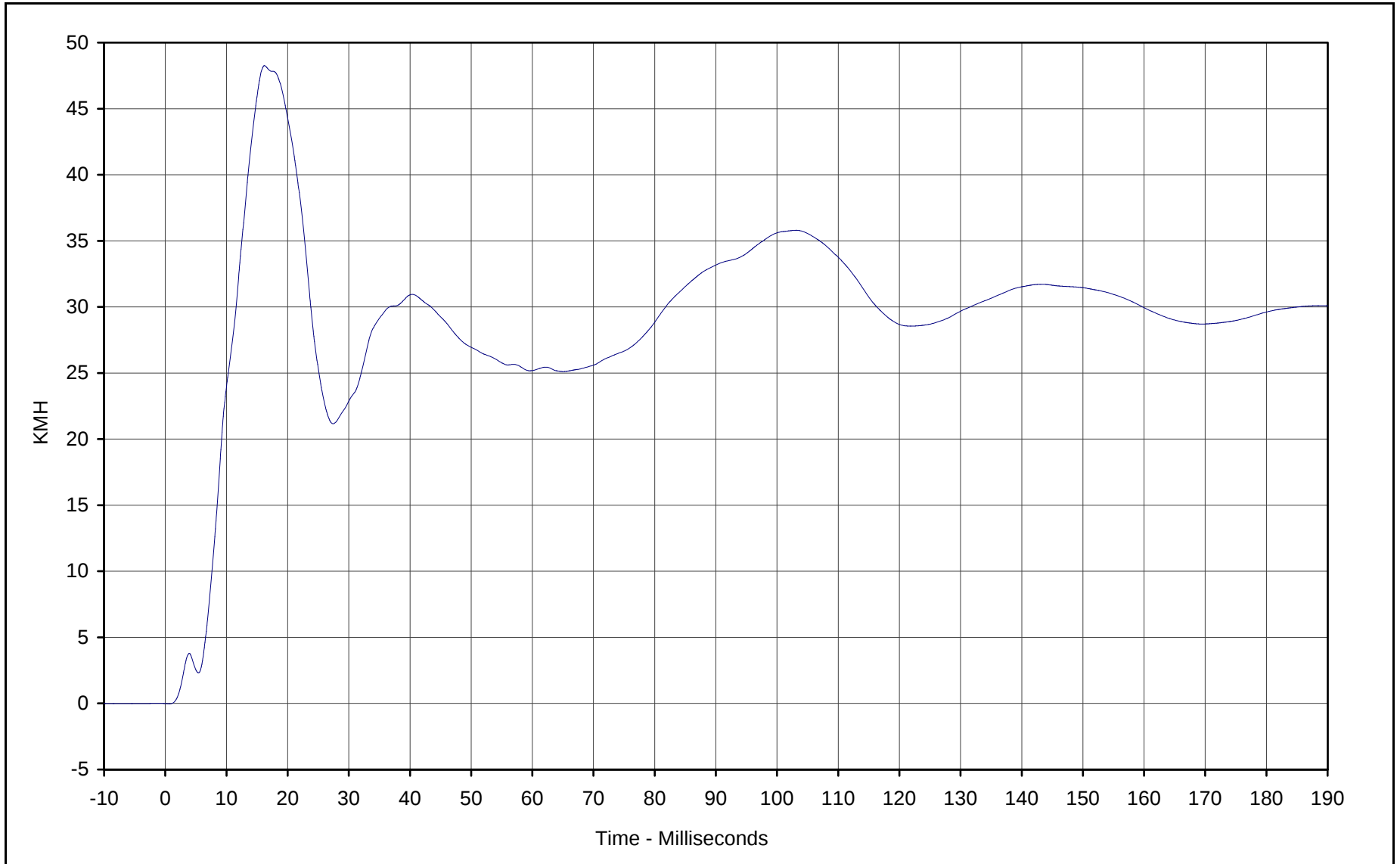




Curve Description: Left Front Door Upper CL Y
Maximum Value: 151.3 at 9.2 Milliseconds
Minimum Value: -118.3 at 23.0 Milliseconds
SAE Filter Class: 60
Date of Test: 02/26/01
Curve Number: FIL-023

Test Program: 55/28 km/h Side Impact NCAP No.: M15402
Test Vehicle: 2001 Mazda Miata 2 Door Convertible

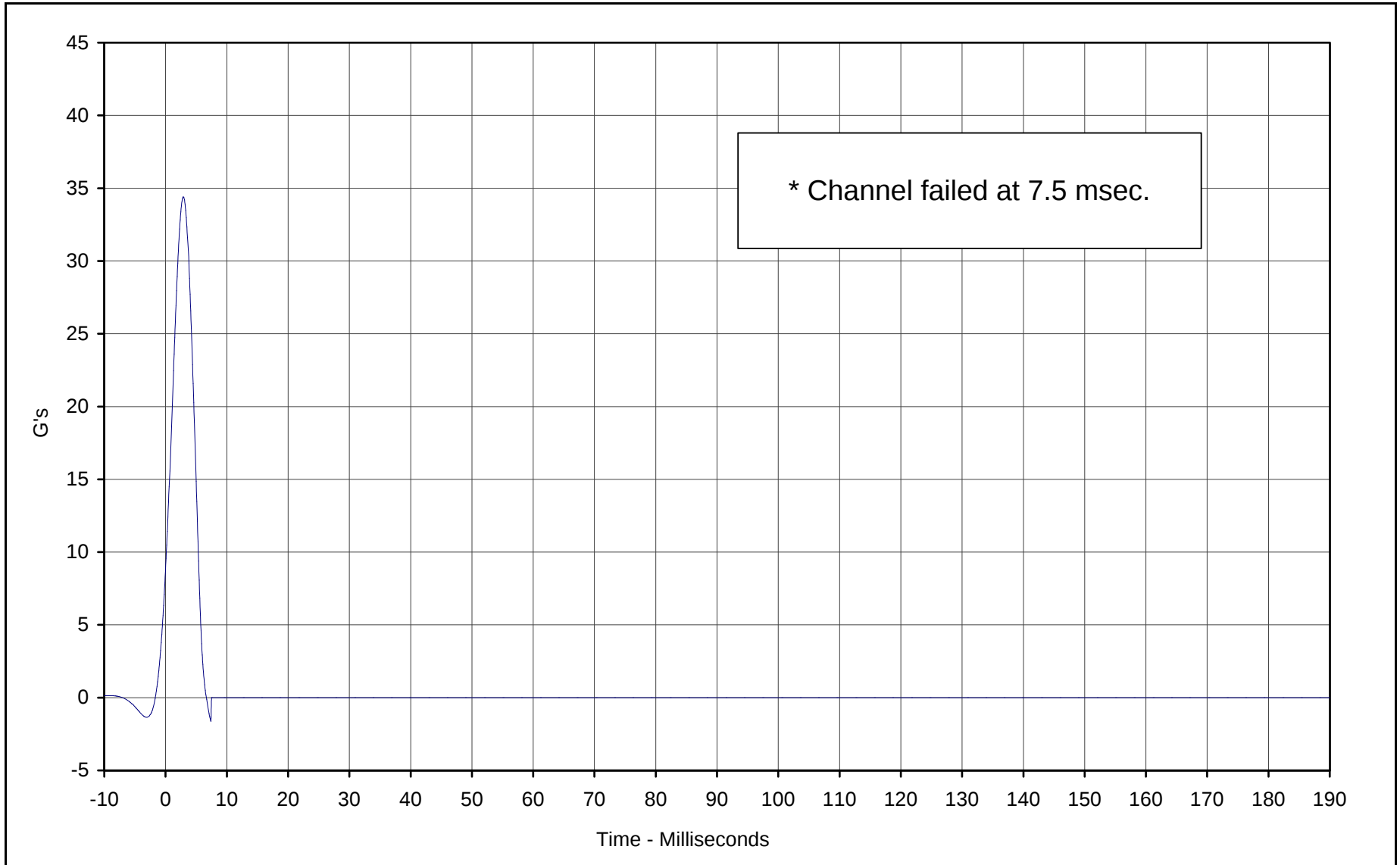




Curve Description: Left Front Door Upper CL Y Velocity
Maximum Value: 48.3 at 16.2 Milliseconds
Minimum Value: 0.0 at 0.6 Milliseconds
SAE Filter Class: 180
Date of Test: 02/26/01
Curve Number: IN1-023

Test Program: 55/28 km/h Side Impact NCAP No.: M15402
Test Vehicle: 2001 Mazda Miata 2 Door Convertible





Curve Description: A-Post Lower Y *

Maximum Value: 34.4 at 2.9 Milliseconds

Minimum Value: -1.6 at 7.4 Milliseconds

SAE Filter Class: 60

Date of Test: 02/26/01

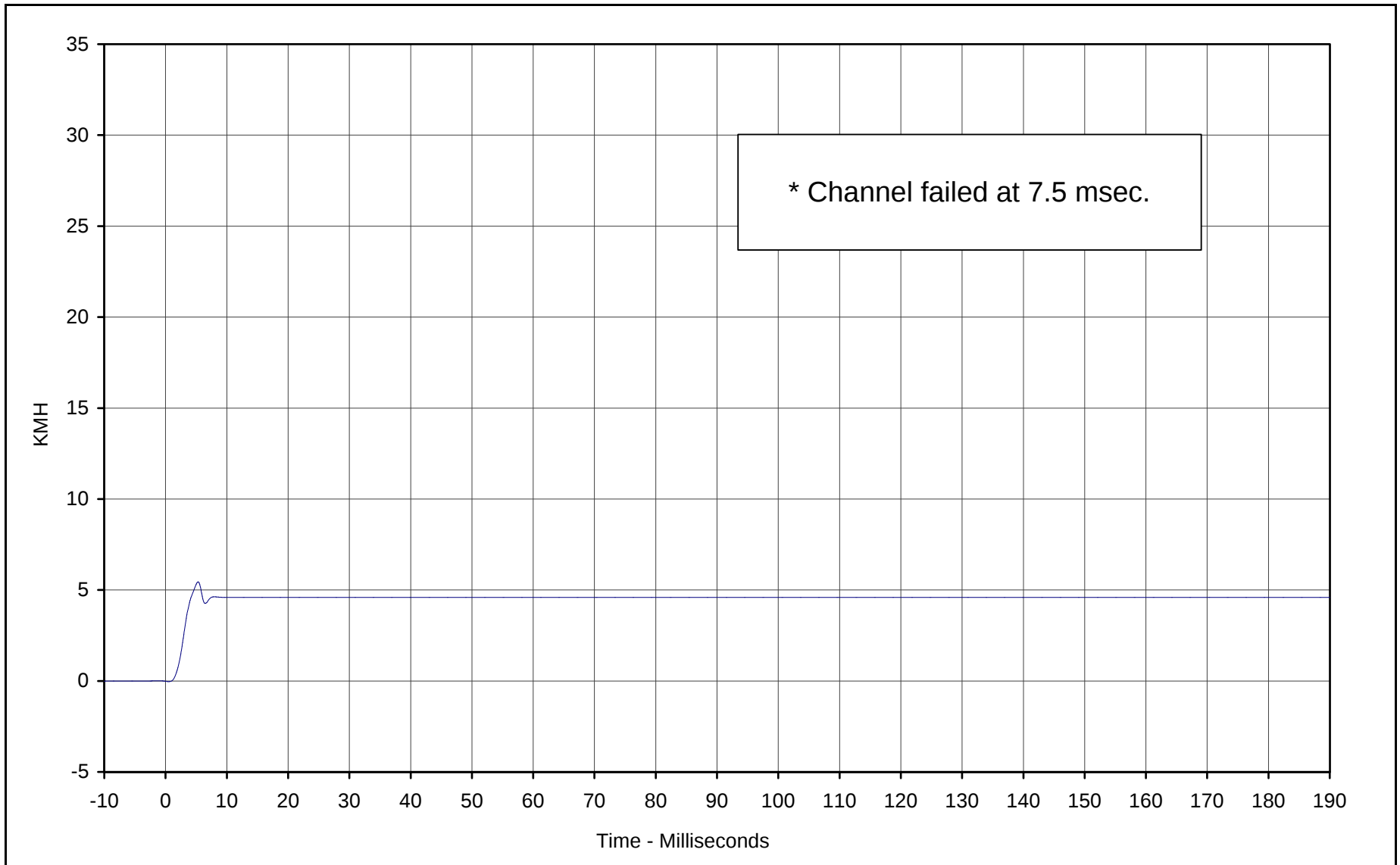
Curve Number: FIL-024

Test Program: 55/28 km/h Side Impact NCAP No.: M15402

Test Vehicle: 2001 Mazda Miata 2 Door Convertible

* Channel failed at 7.5 msec.





Curve Description: A-Post Lower Y Velocity *

Maximum Value: 5.4 at 5.3 Milliseconds

Minimum Value: 0.0 at 0.6 Milliseconds

SAE Filter Class: 180

Date of Test: 02/26/01

Curve Number: IN1-024

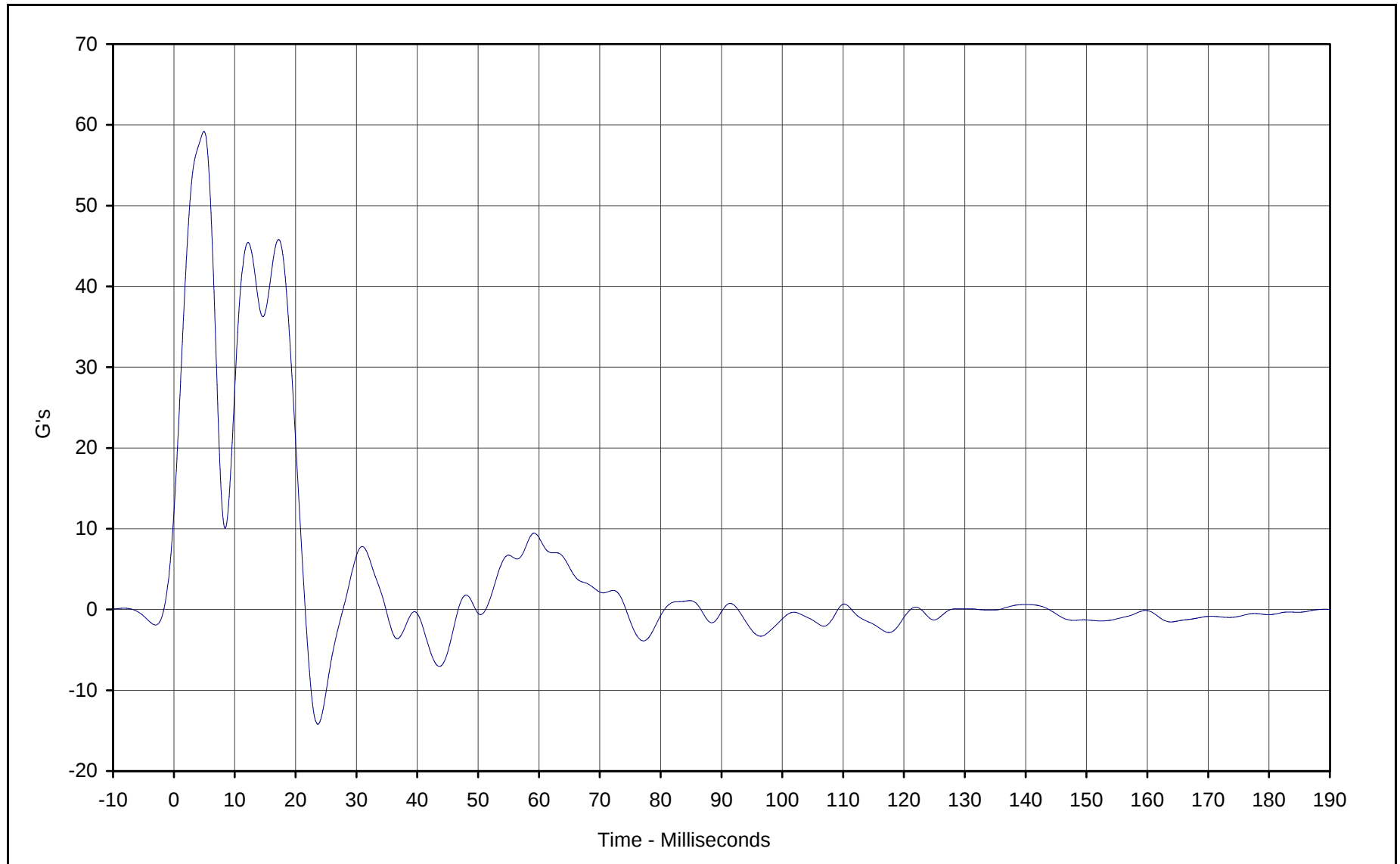
Test Program: 55/28 km/h Side Impact NCAP No.: M15402

Test Vehicle: 2001 Mazda Miata 2 Door Convertible

* Channel failed at 7.5 msec.



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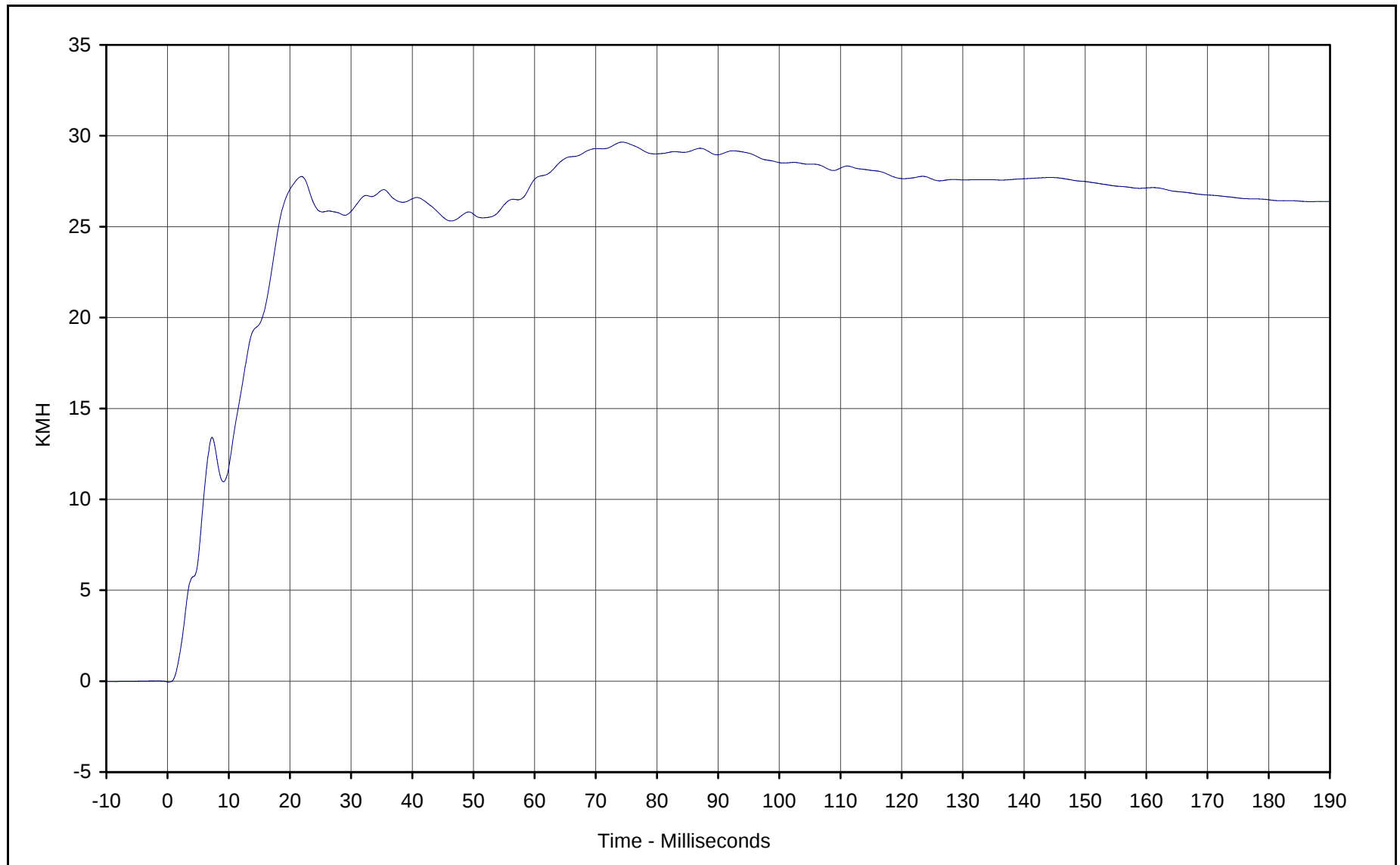


Curve Description: A-Post Middle Y
Maximum Value: 59.2 at 4.9 Milliseconds
Minimum Value: -14.2 at 23.7 Milliseconds
SAE Filter Class: 60
Date of Test: 02/26/01
Curve Number: FIL-025

Test Program: 55/28 km/h Side Impact NCAP No.: M15402
Test Vehicle: 2001 Mazda Miata 2 Door Convertible



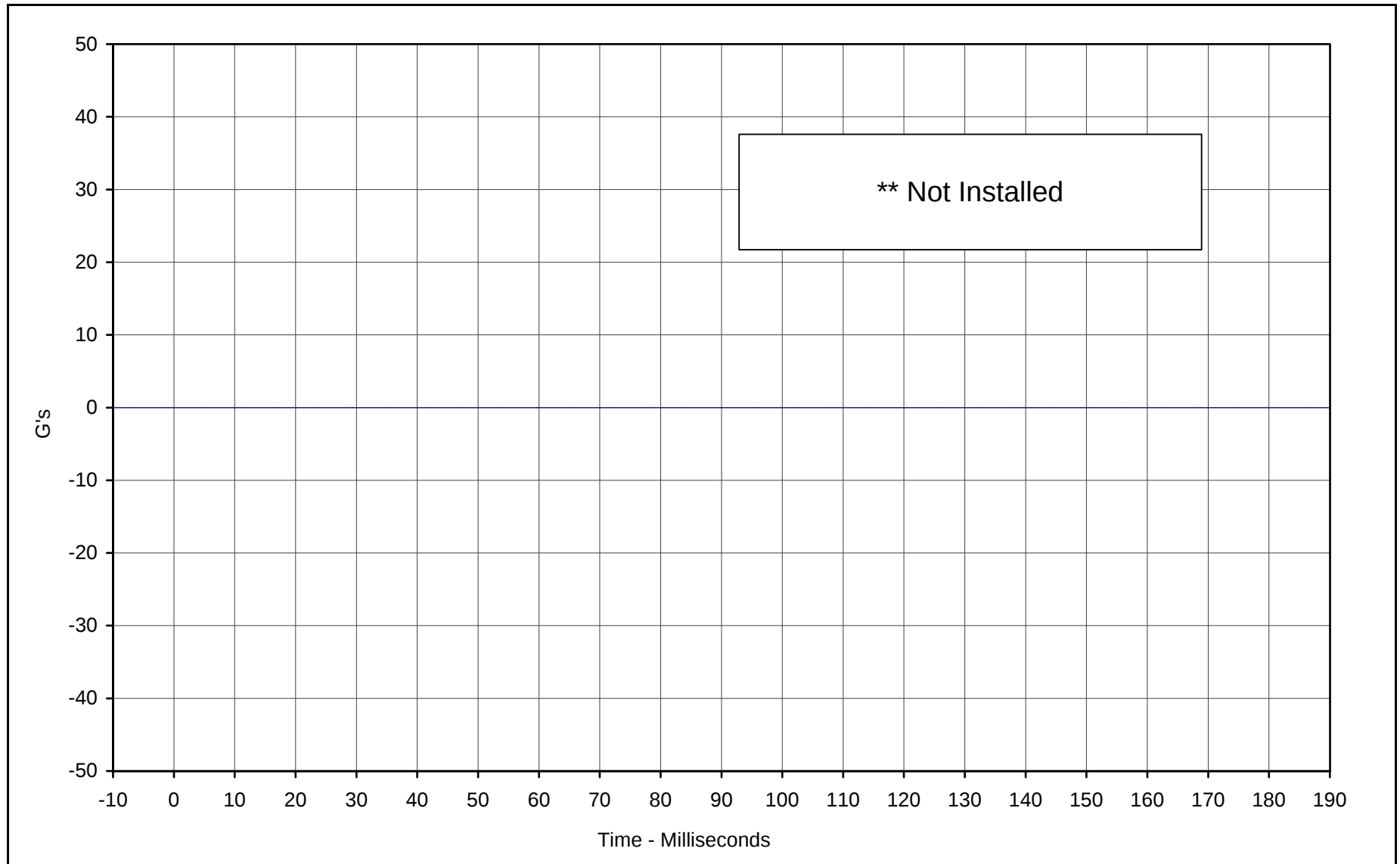
KAR21003-11



Curve Description: A-Post Middle Y Velocity
Maximum Value: 29.7 at 74.3 Milliseconds
Minimum Value: -0.1 at 0.3 Milliseconds
SAE Filter Class: 180
Date of Test: 02/26/01
Curve Number: IN1-025

Test Program: 55/28 km/h Side Impact NCAP No.: M15402
Test Vehicle: 2001 Mazda Miata 2 Door Convertible





Curve Description: Left Front Seat Track Y **

Maximum Value: 0.0 at 0.0 Milliseconds

Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 60

Date of Test: 02/26/01

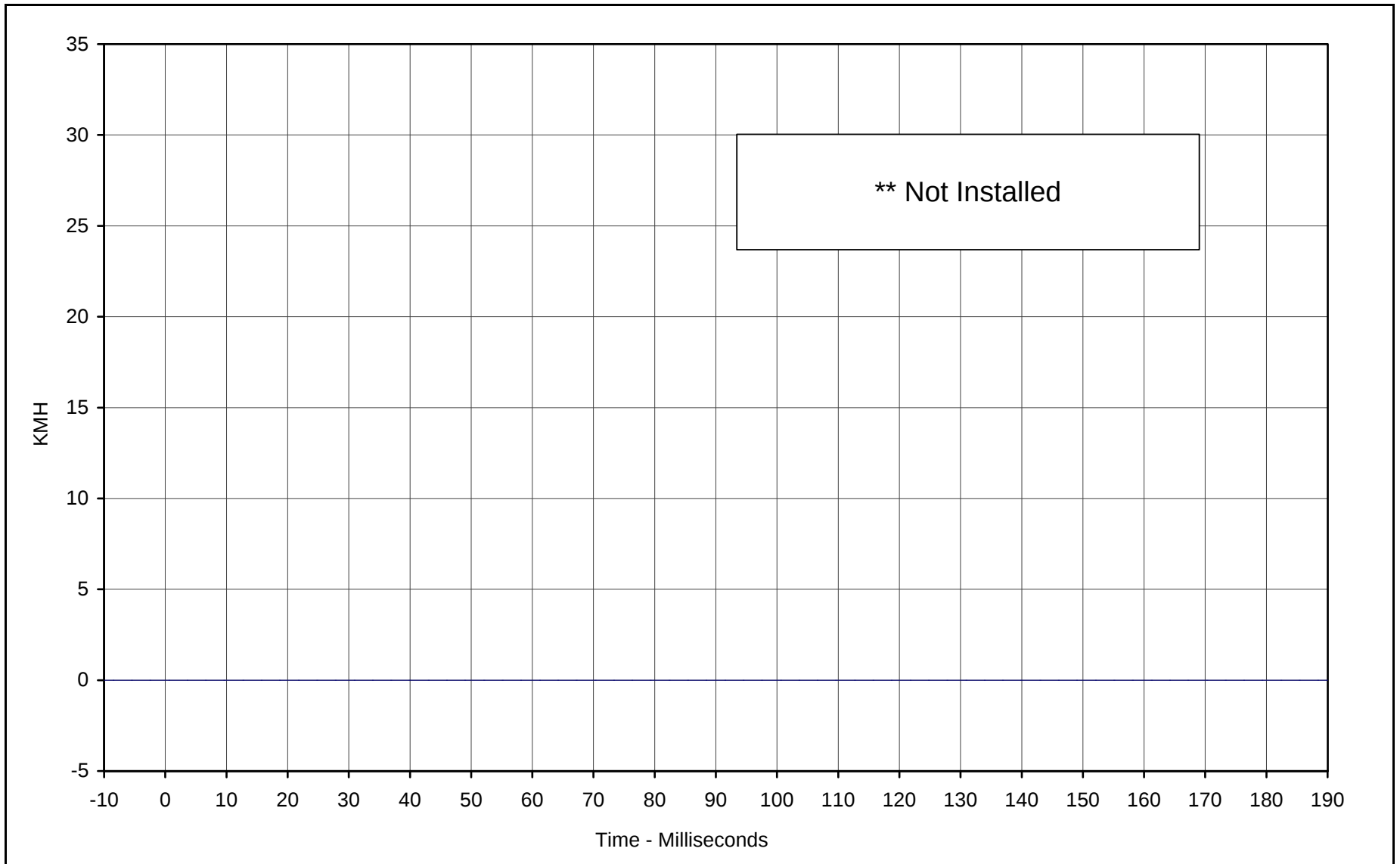
Curve Number: FIL-026

Test Program: 55/28 km/h Side Impact NCAP No.: M15402

Test Vehicle: 2001 Mazda Miata 2 Door Convertible

** Not installed





Curve Description: Left Front Seat Track Y Velocity **

Maximum Value: 0.0 at 0.0 Milliseconds

Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 180

Date of Test: 02/26/01

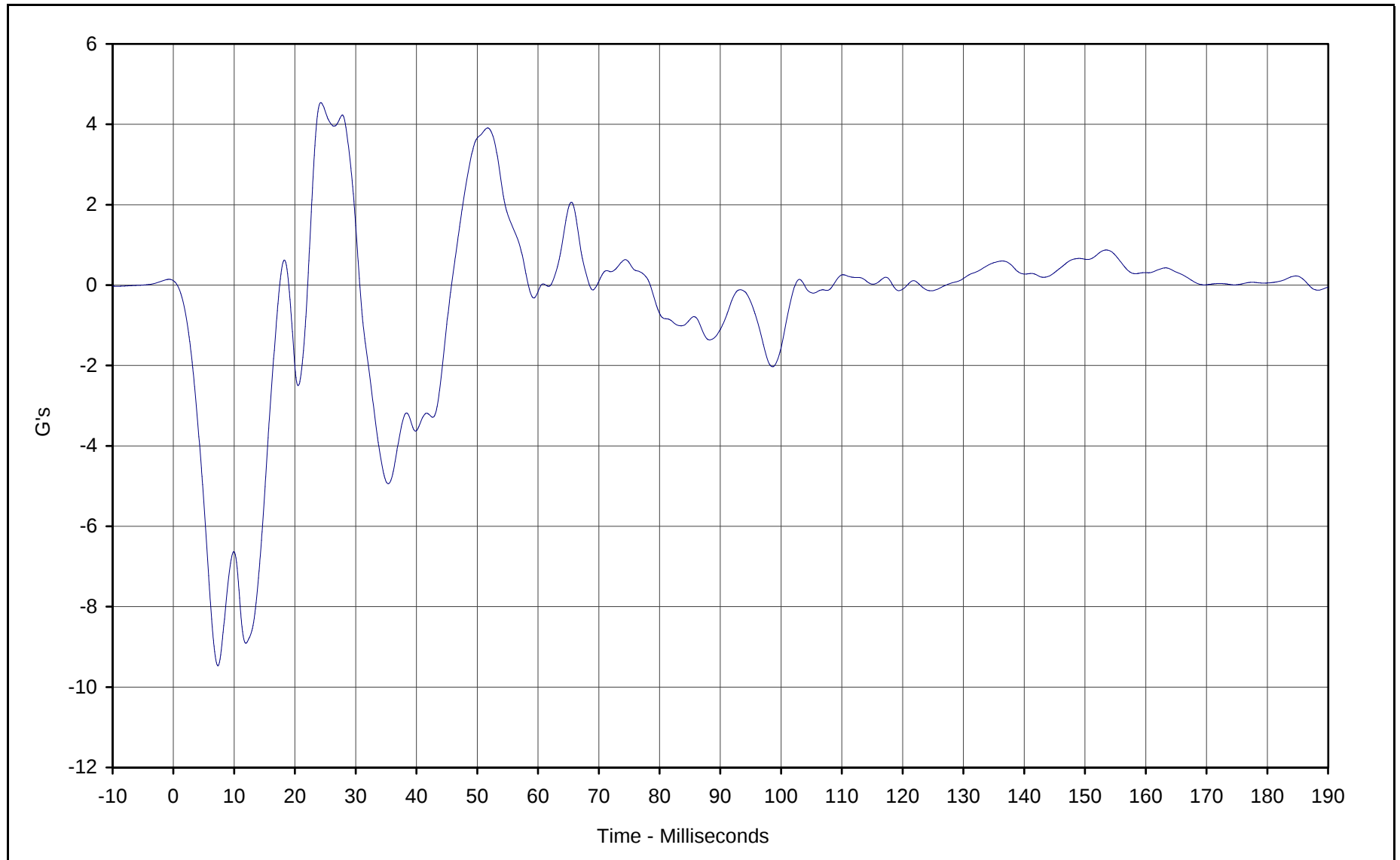
Curve Number: IN1-026

Test Program: 55/28 km/h Side Impact NCAP No.: M15402

Test Vehicle: 2001 Mazda Miata 2 Door Convertible

** Not installed

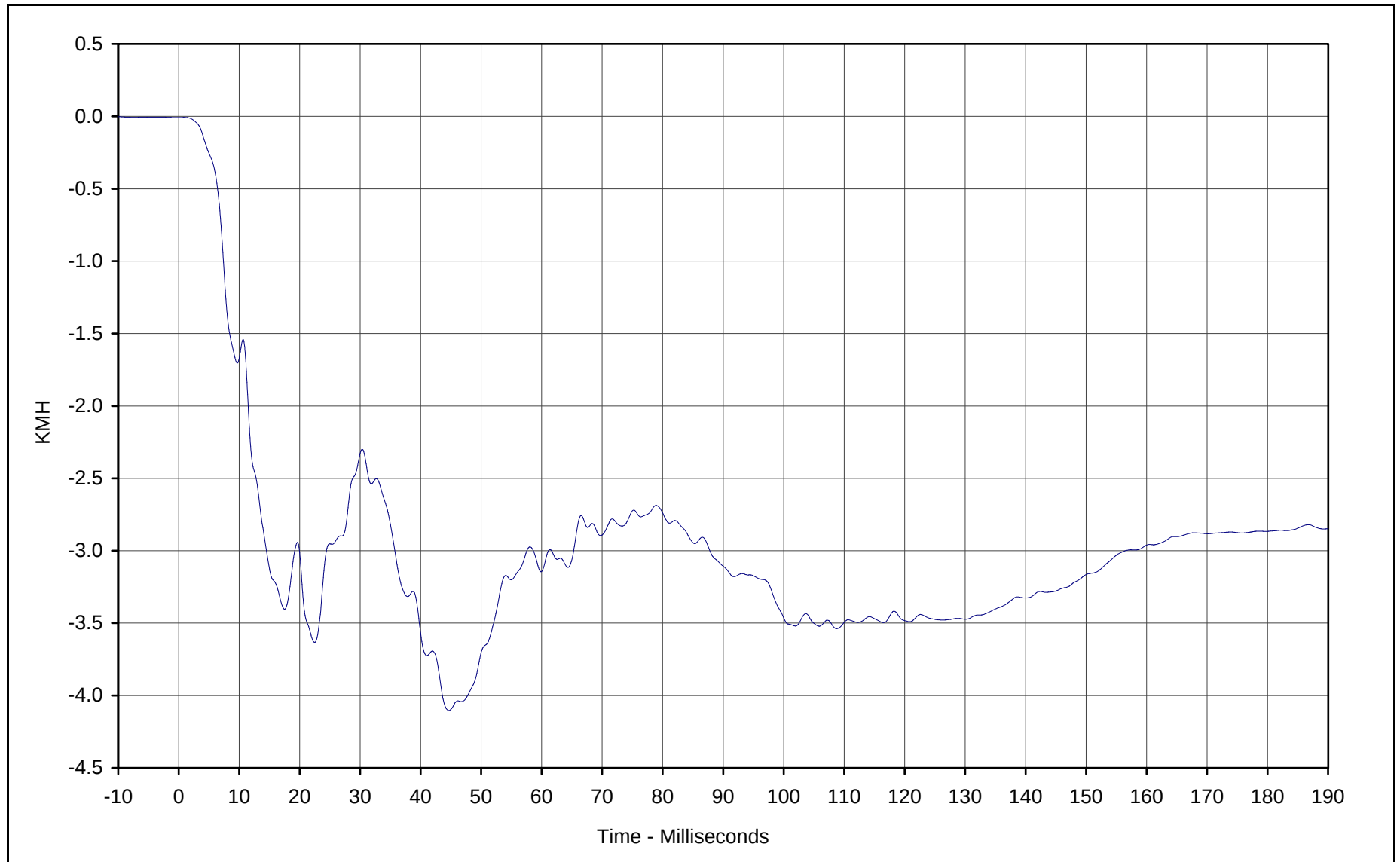




Curve Description: Vehicle CG X
Maximum Value: 4.5 at 24.3 Milliseconds
Minimum Value: -9.5 at 7.3 Milliseconds
SAE Filter Class: 60
Date of Test: 02/26/01
Curve Number: FIL-027

Test Program: 55/28 km/h Side Impact NCAP No.: M15402
Test Vehicle: 2001 Mazda Miata 2 Door Convertible

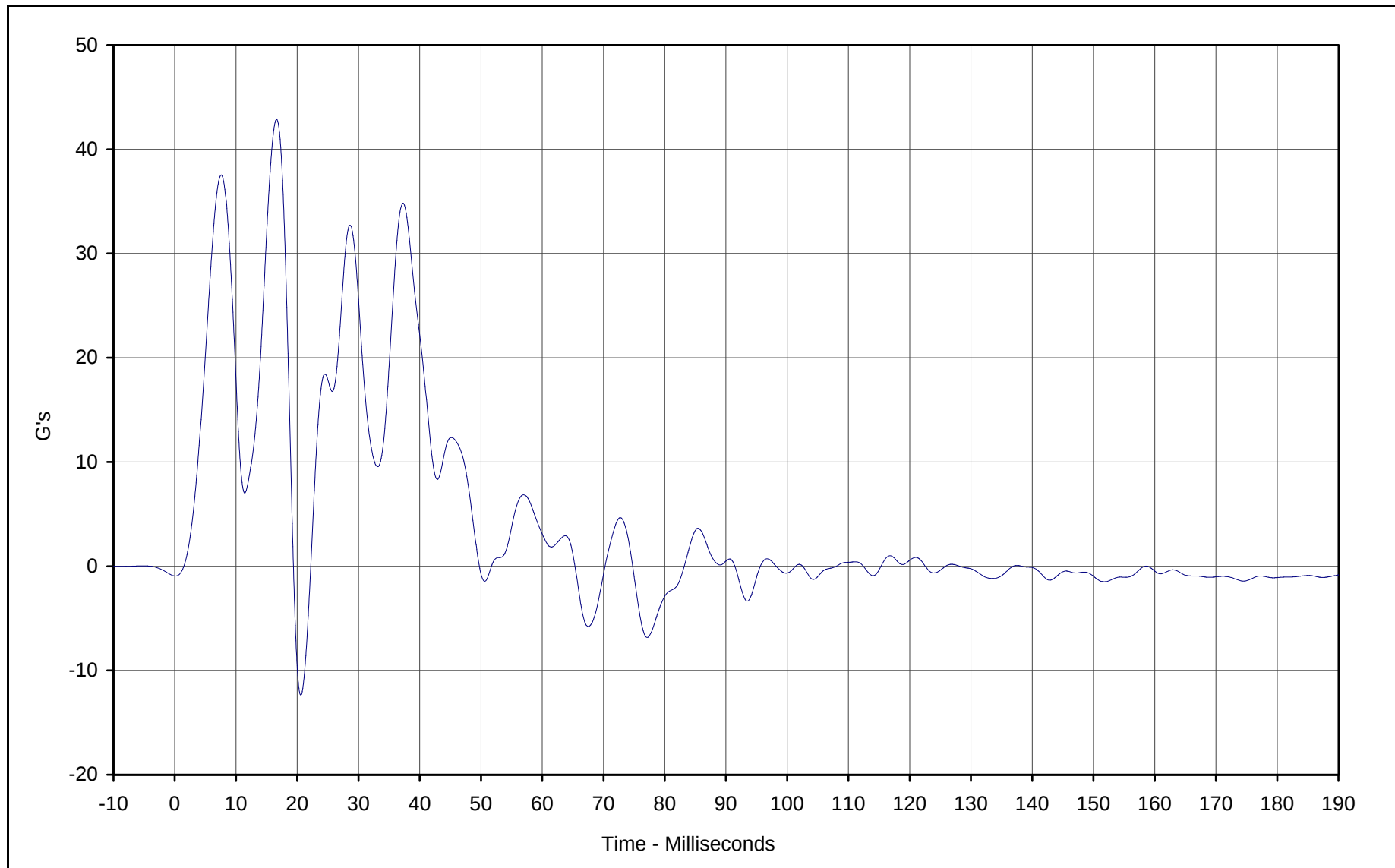




Curve Description: Vehicle CG X Velocity
Maximum Value: 0.0 at 0.9 Milliseconds
Minimum Value: -4.1 at 44.7 Milliseconds
SAE Filter Class: 180
Date of Test: 02/26/01
Curve Number: IN1-027

Test Program: 55/28 km/h Side Impact NCAP No.: M15402
Test Vehicle: 2001 Mazda Miata 2 Door Convertible

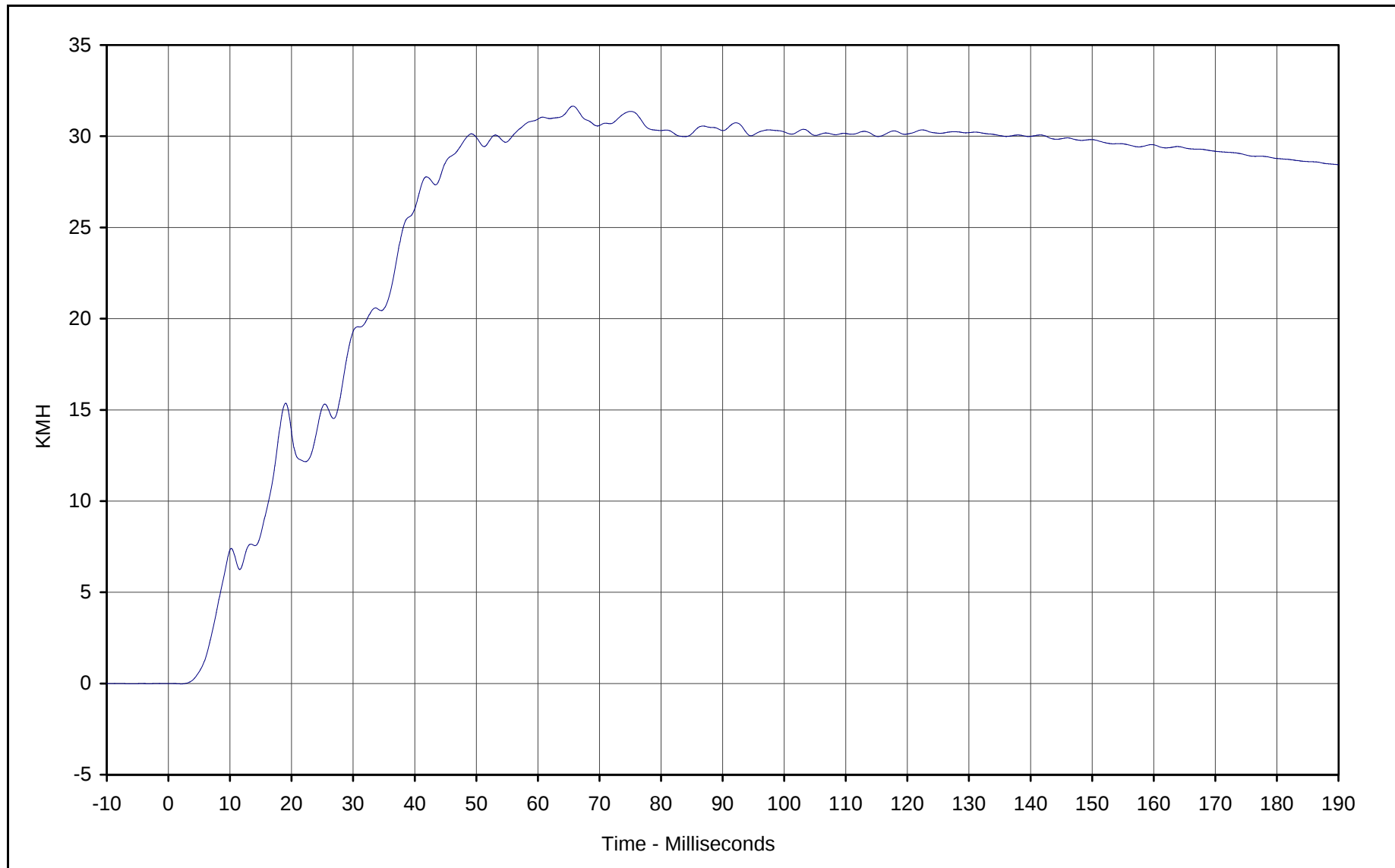




Curve Description: Vehicle CG Y
Maximum Value: 42.9 at 16.6 Milliseconds
Minimum Value: -12.4 at 20.6 Milliseconds
SAE Filter Class: 60
Date of Test: 02/26/01
Curve Number: FIL-028

Test Program: 55/28 km/h Side Impact NCAP No.: M15402
Test Vehicle: 2001 Mazda Miata 2 Door Convertible

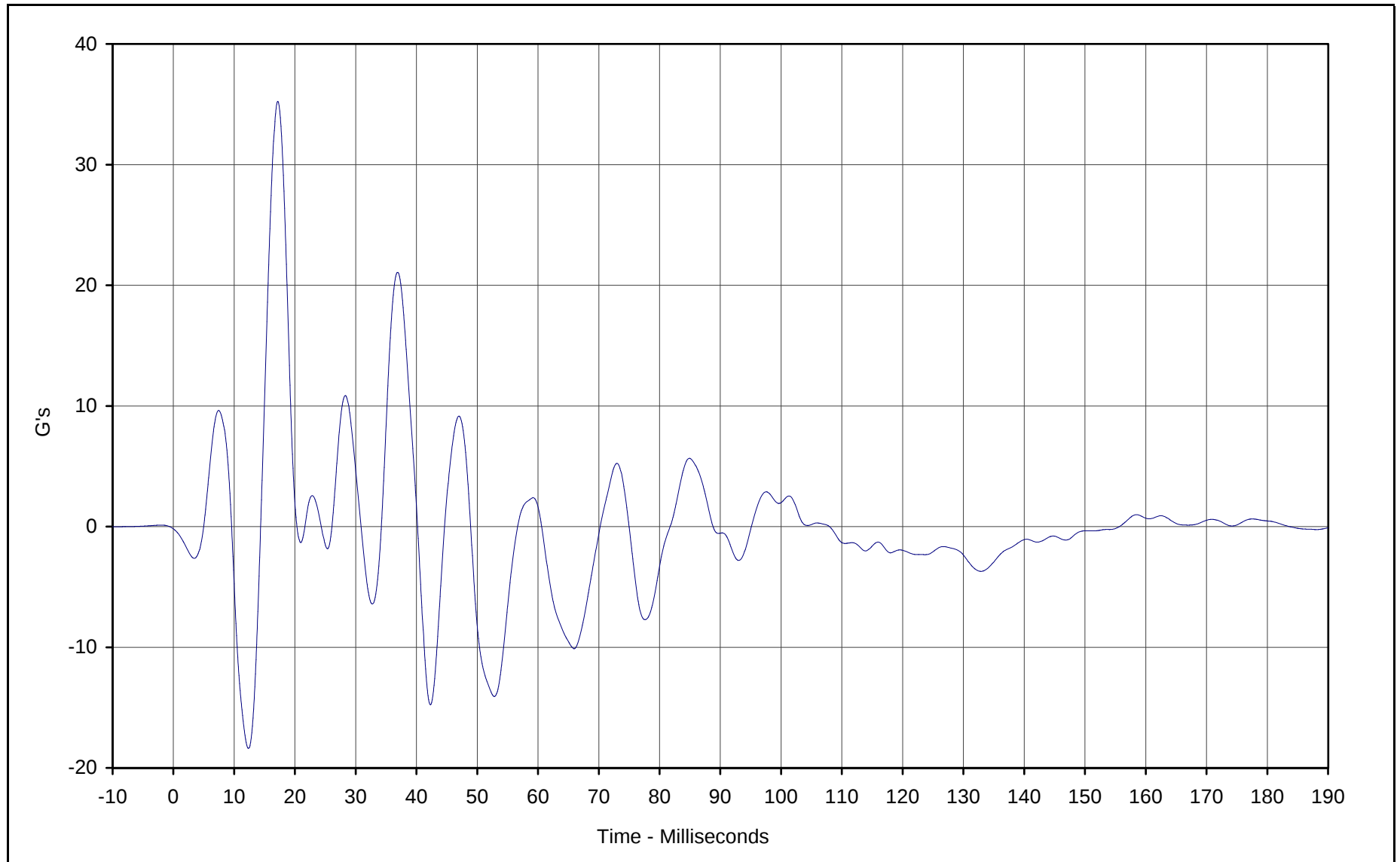




Curve Description: Vehicle CG Y Velocity
Maximum Value: 31.7 at 65.7 Milliseconds
Minimum Value: 0.0 at 2.1 Milliseconds
SAE Filter Class: 180
Date of Test: 02/26/01
Curve Number: IN1-028

Test Program: 55/28 km/h Side Impact NCAP No.: M15402
Test Vehicle: 2001 Mazda Miata 2 Door Convertible

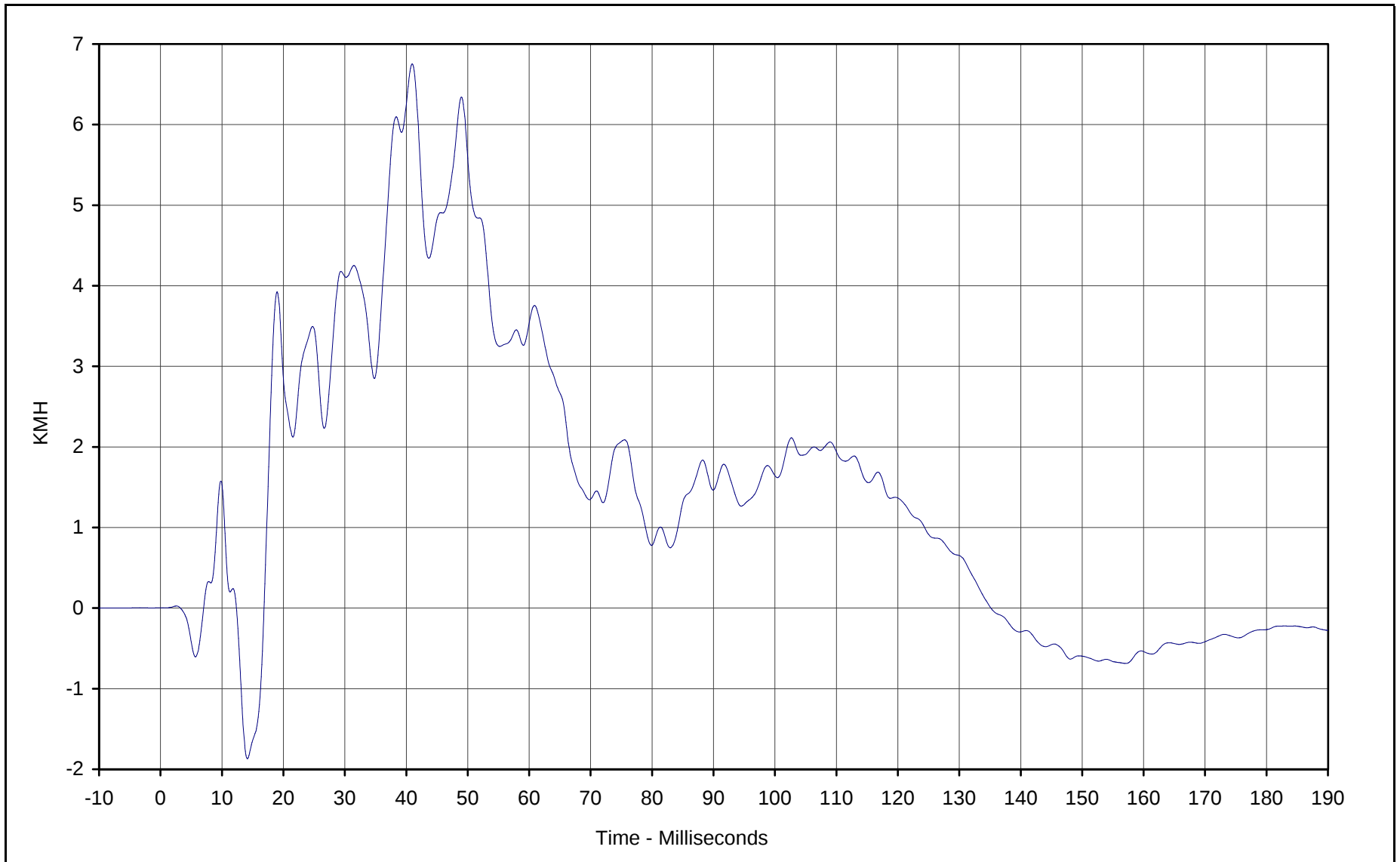




Curve Description: Vehicle CG Z
Maximum Value: 35.2 at 17.2 Milliseconds
Minimum Value: -18.4 at 12.4 Milliseconds
SAE Filter Class: 60
Date of Test: 02/26/01
Curve Number: FIL-029

Test Program: 55/28 km/h Side Impact NCAP No.: M15402
Test Vehicle: 2001 Mazda Miata 2 Door Convertible



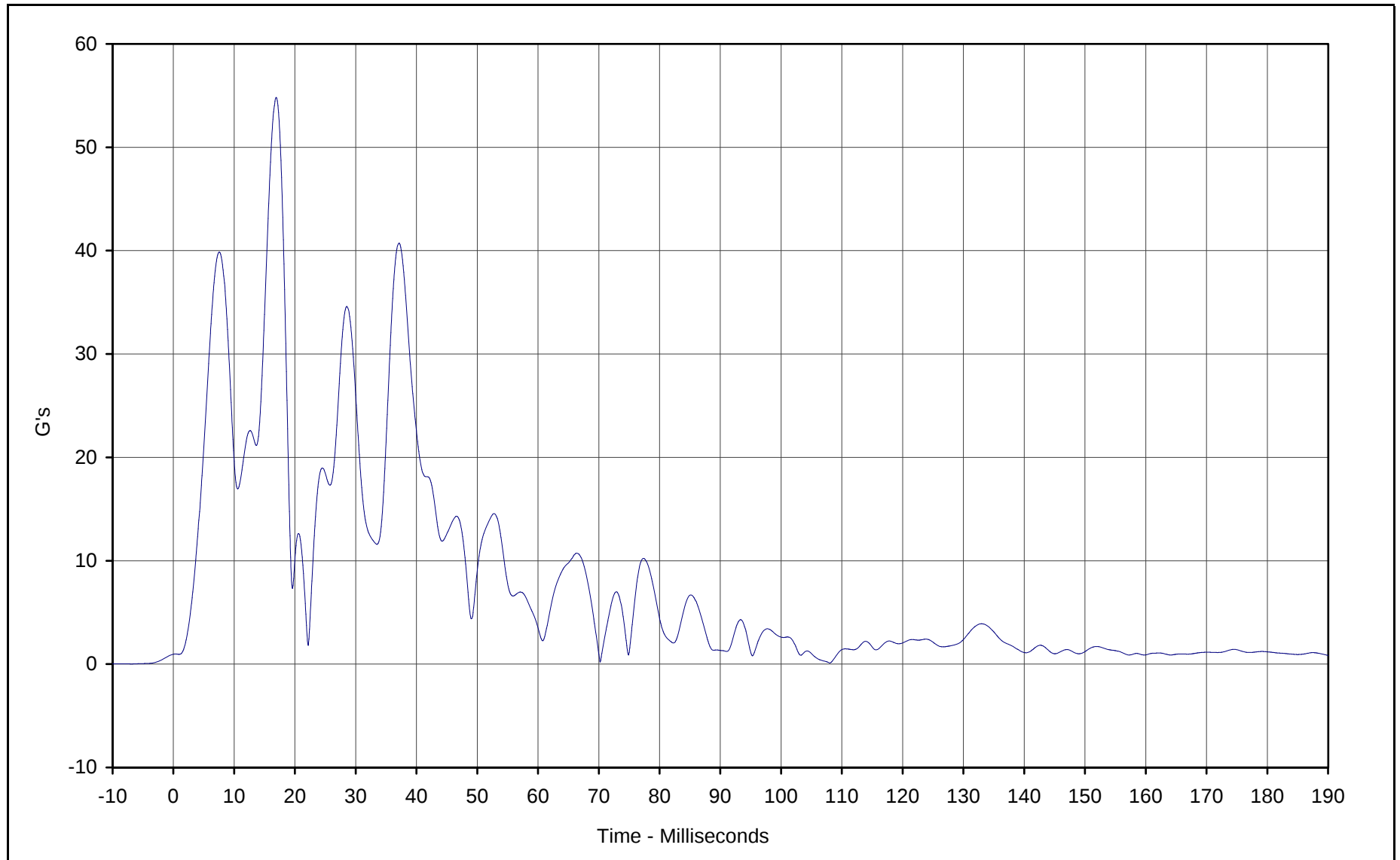


Curve Description: Vehicle CG Z Velocity
Maximum Value: 6.8 at 41.0 Milliseconds
Minimum Value: -1.9 at 14.1 Milliseconds
SAE Filter Class: 180
Date of Test: 02/26/01
Curve Number: IN1-029

Test Program: 55/28 km/h Side Impact NCAP No.: M15402
Test Vehicle: 2001 Mazda Miata 2 Door Convertible



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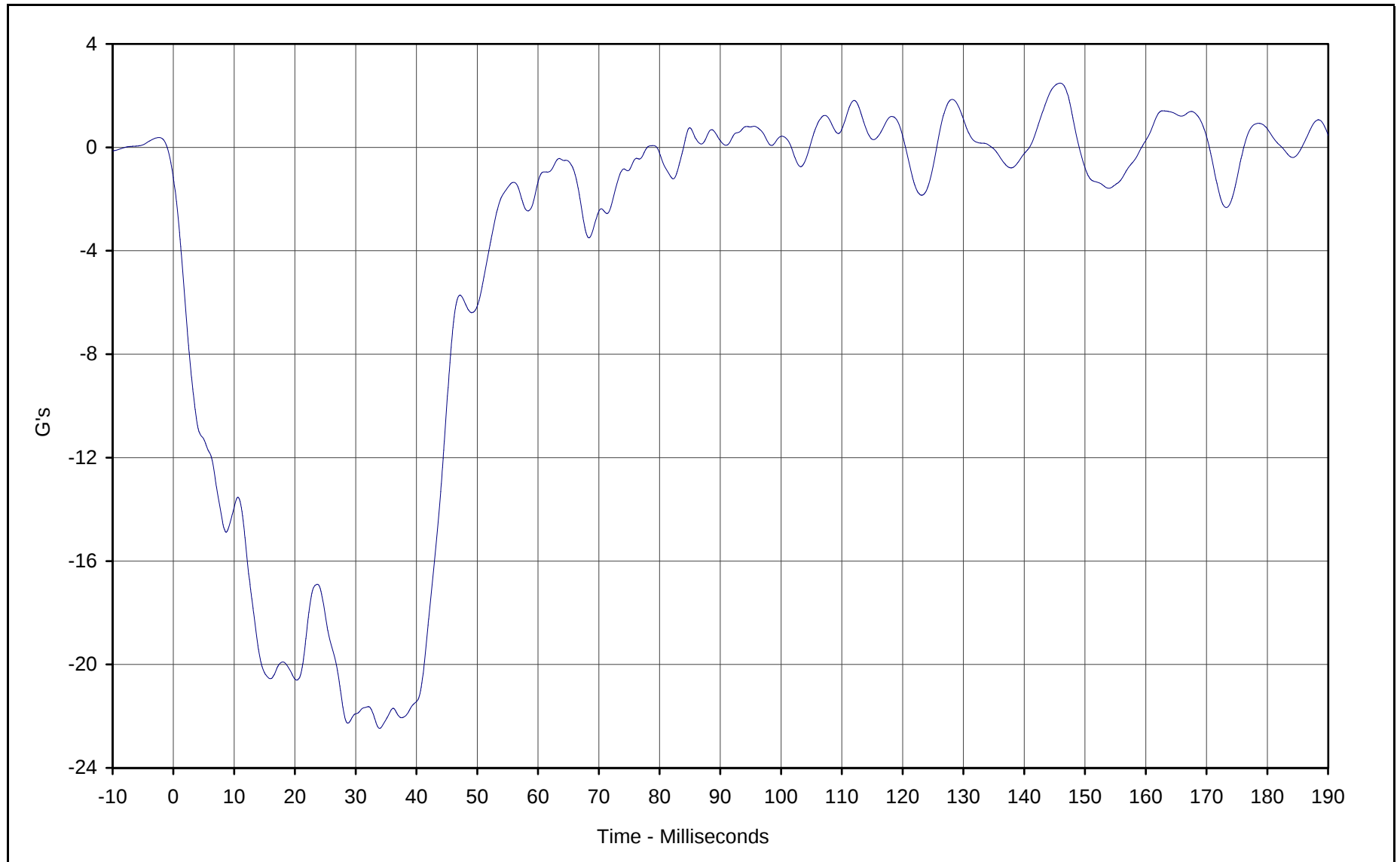
Curve Description: Vehicle CG Resultant
Maximum Value: 54.8 at 16.9 Milliseconds
Minimum Value: 0.1 at 108.0 Milliseconds
SAE Filter Class: 60
Date of Test: 02/26/01
Curve Number: RES-027

Test Program: 55/28 km/h Side Impact NCAP No.: M15402
Test Vehicle: 2001 Mazda Miata 2 Door Convertible



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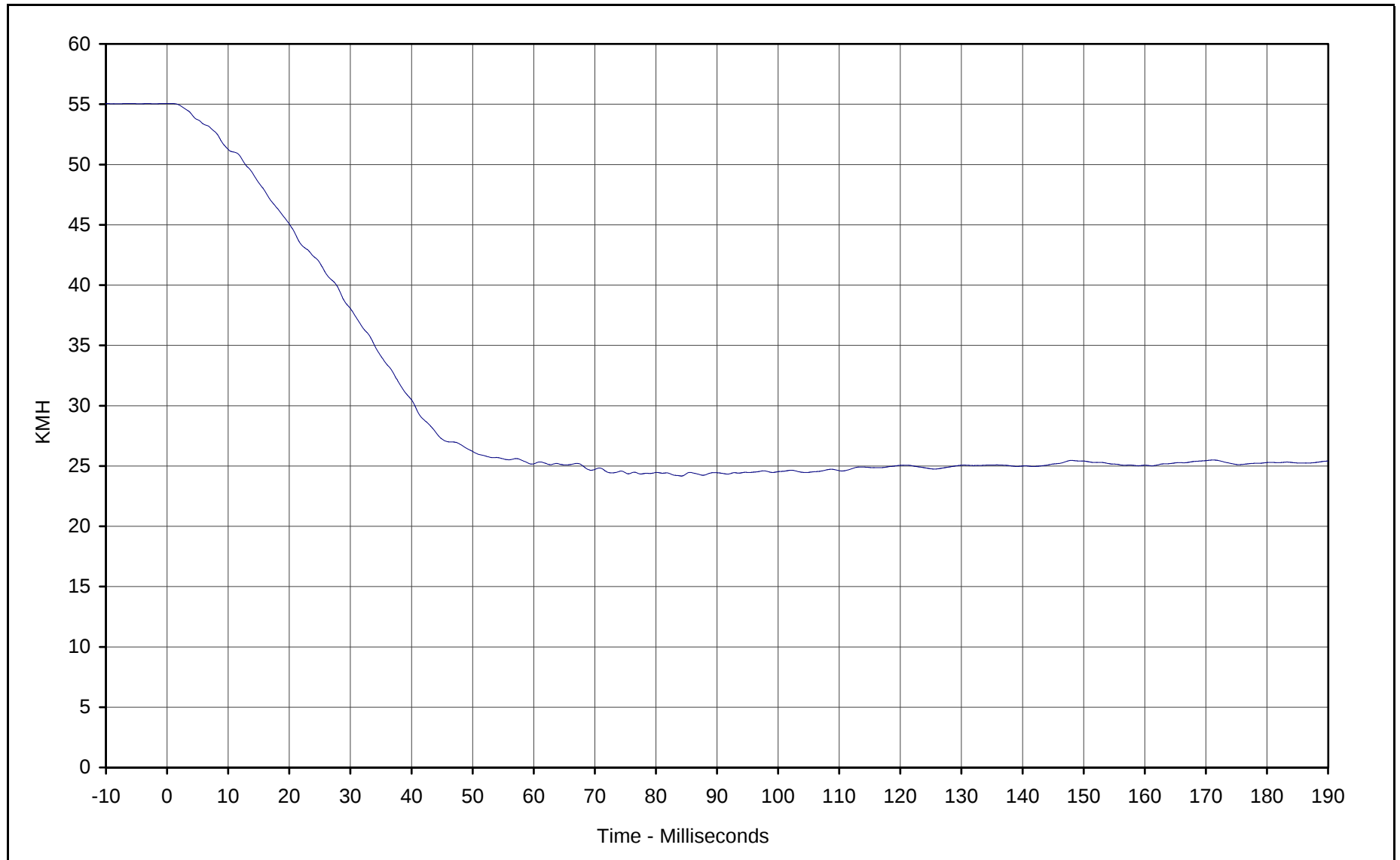


Curve Description: MDB CG X
Maximum Value: 2.5 at 145.9 Milliseconds
Minimum Value: -22.5 at 33.9 Milliseconds
SAE Filter Class: 60
Date of Test: 02/26/01
Curve Number: FIL-030

Test Program: 55/28 km/h Side Impact NCAP No.: M15402
Test Vehicle: 2001 Mazda Miata 2 Door Convertible



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Curve Description: MDB CG X Velocity

Maximum Value: 55.1 at 0.0 Milliseconds

Minimum Value: 24.2 at 84.1 Milliseconds

SAE Filter Class: 180

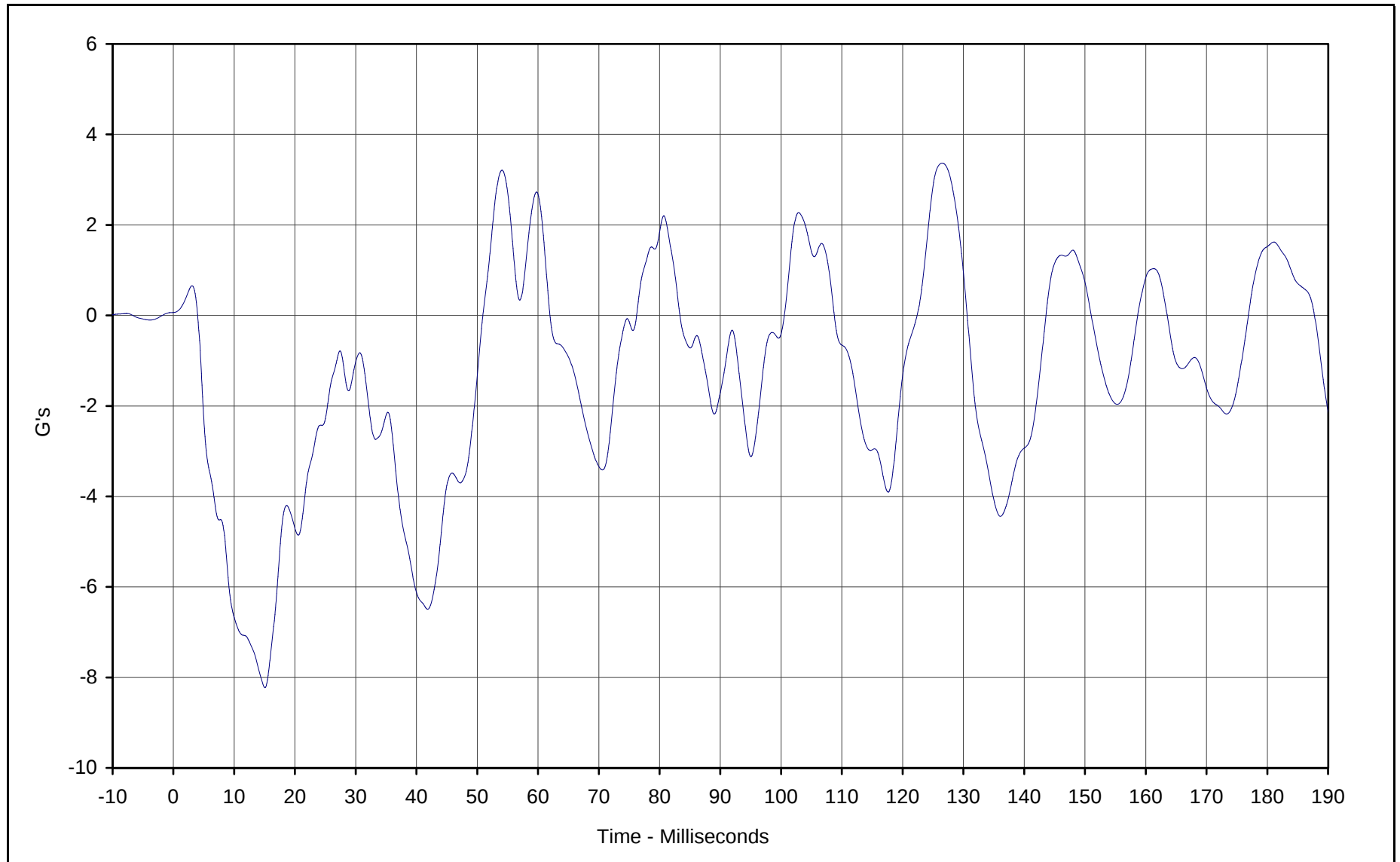
Date of Test: 02/26/01

Curve Number: IN1-030

Test Program: 55/28 km/h Side Impact NCAP No.: M15402

Test Vehicle: 2001 Mazda Miata 2 Door Convertible

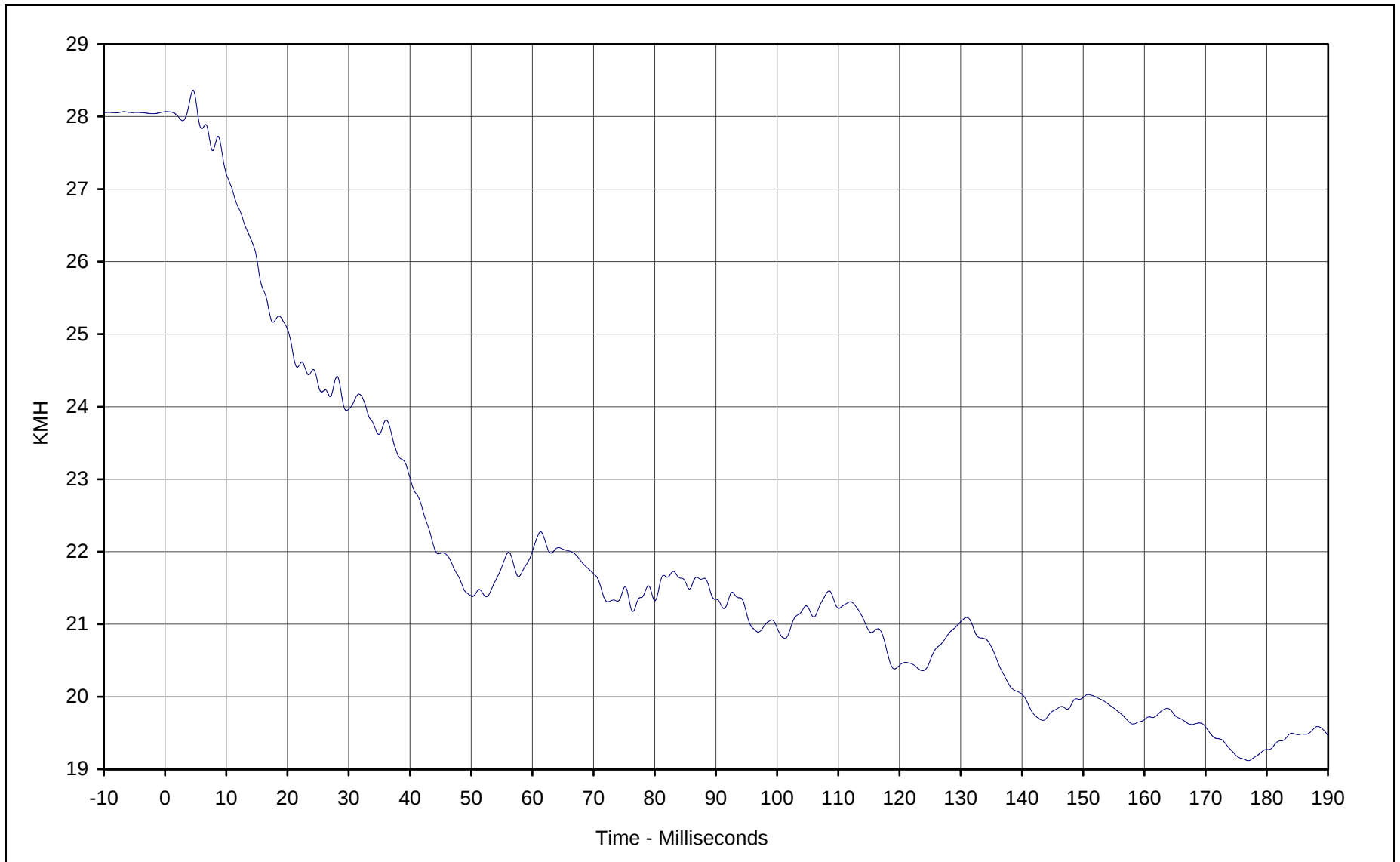




Curve Description: MDB CG Y
Maximum Value: 3.4 at 126.5 Milliseconds
Minimum Value: -8.2 at 15.1 Milliseconds
SAE Filter Class: 60
Date of Test: 02/26/01
Curve Number: FIL-031

Test Program: 55/28 km/h Side Impact NCAP No.: M15402
Test Vehicle: 2001 Mazda Miata 2 Door Convertible

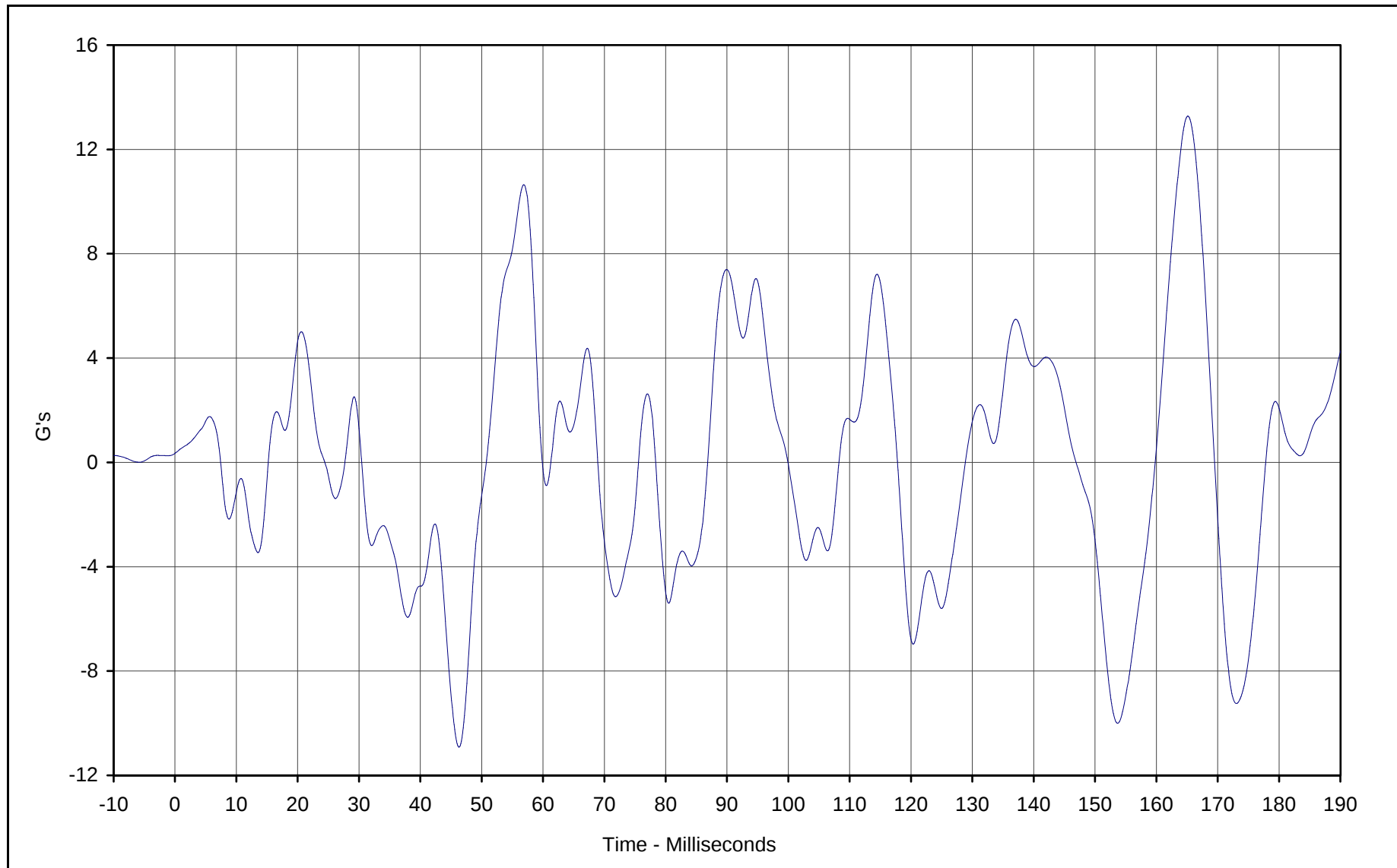




Curve Description: MDB CG Y Velocity
Maximum Value: 28.4 at 4.6 Milliseconds
Minimum Value: 19.1 at 177.0 Milliseconds
SAE Filter Class: 180
Date of Test: 02/26/01
Curve Number: IN1-031

Test Program: 55/28 km/h Side Impact NCAP No.: M15402
Test Vehicle: 2001 Mazda Miata 2 Door Convertible

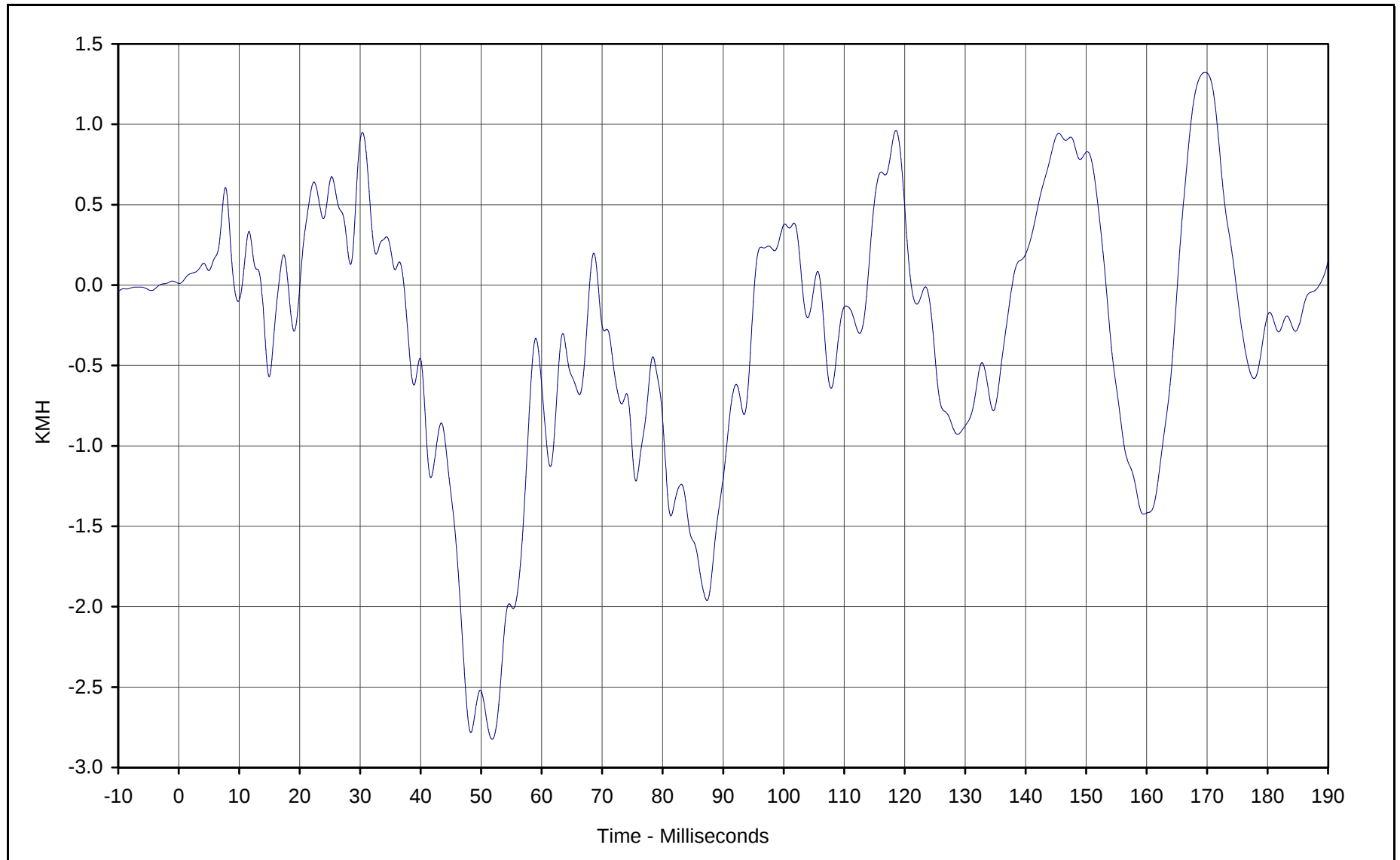




Curve Description: MDB CG Z
Maximum Value: 13.3 at 165.1 Milliseconds
Minimum Value: -10.9 at 46.3 Milliseconds
SAE Filter Class: 60
Date of Test: 02/26/01
Curve Number: FIL-032

Test Program: 55/28 km/h Side Impact NCAP No.: M15402
Test Vehicle: 2001 Mazda Miata 2 Door Convertible

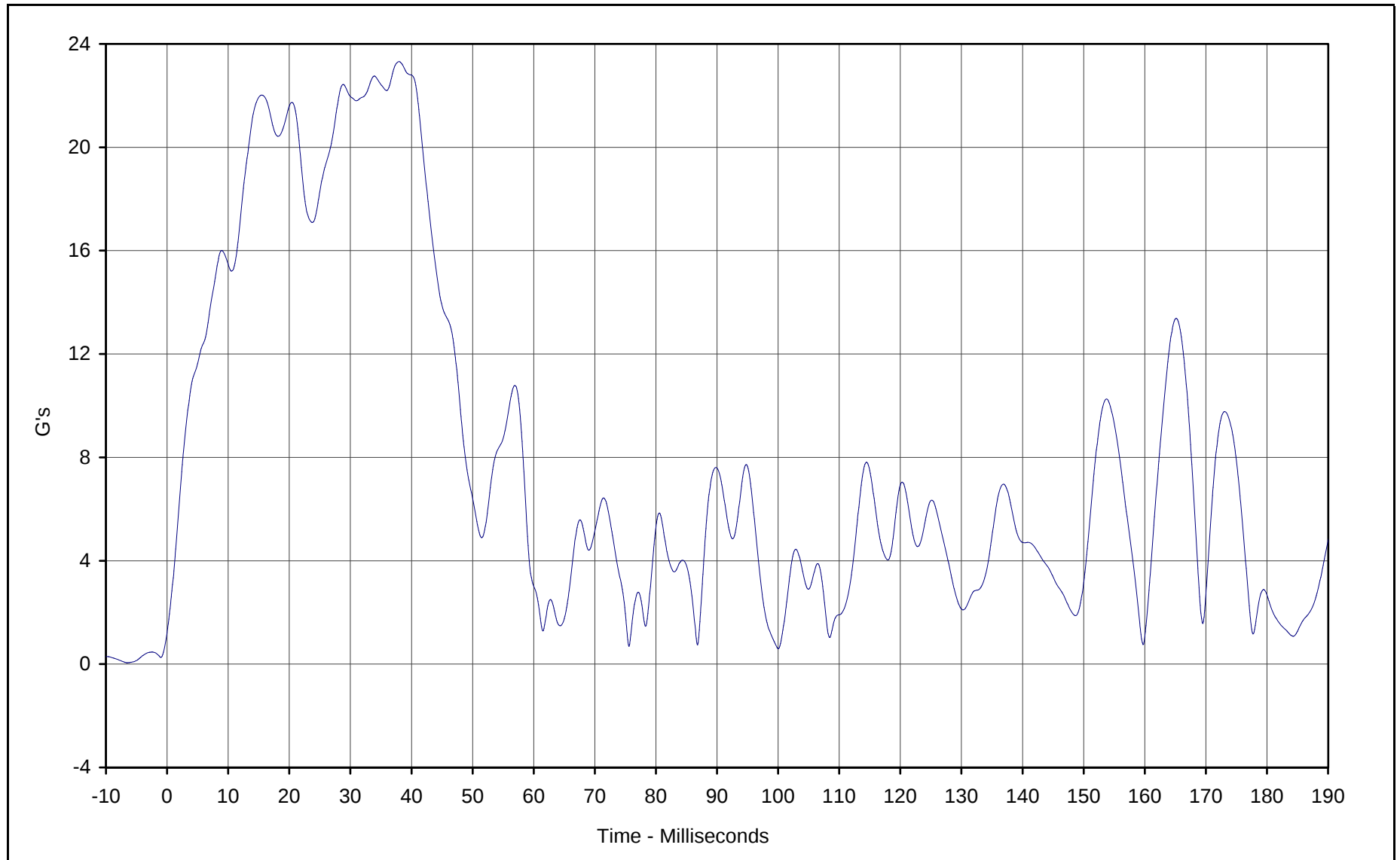




Curve Description: MDB CG Z Velocity
Maximum Value: 1.3 at 169.7 Milliseconds
Minimum Value: -2.8 at 51.8 Milliseconds
SAE Filter Class: 180
Date of Test: 02/26/01
Curve Number: IN1-032

Test Program: 55/28 km/h Side Impact NCAP No.: M15402
Test Vehicle: 2001 Mazda Miata 2 Door Convertible

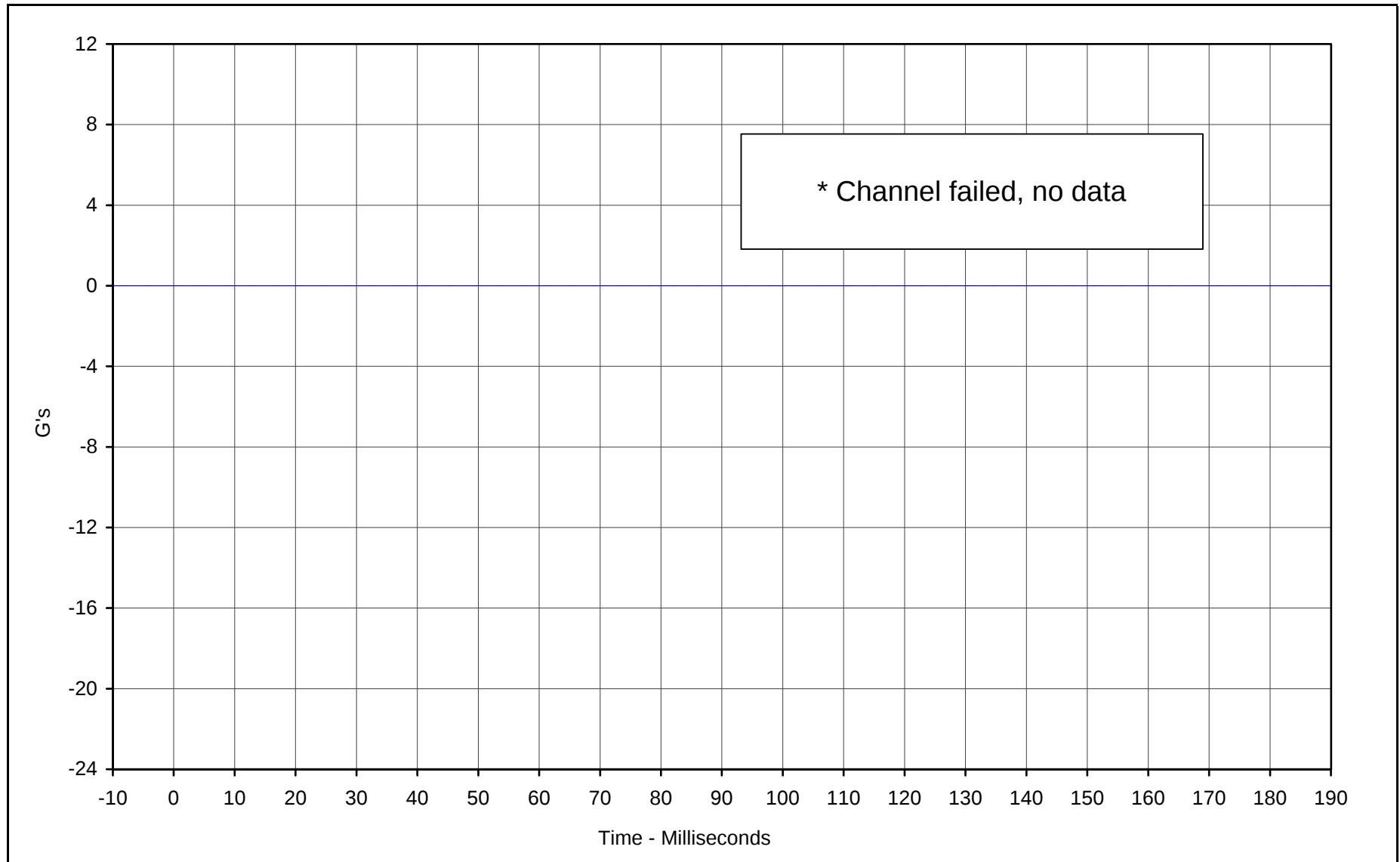




Curve Description: MDB CG Resultant
Maximum Value: 23.3 at 37.9 Milliseconds
Minimum Value: 0.6 at 100.0 Milliseconds
SAE Filter Class: 60
Date of Test: 02/26/01
Curve Number: RES-030

Test Program: 55/28 km/h Side Impact NCAP No.: M15402
Test Vehicle: 2001 Mazda Miata 2 Door Convertible





Curve Description: MDB Rear X *

Maximum Value: 0.0 at 0.0 Milliseconds

Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 60

Date of Test: 02/26/01

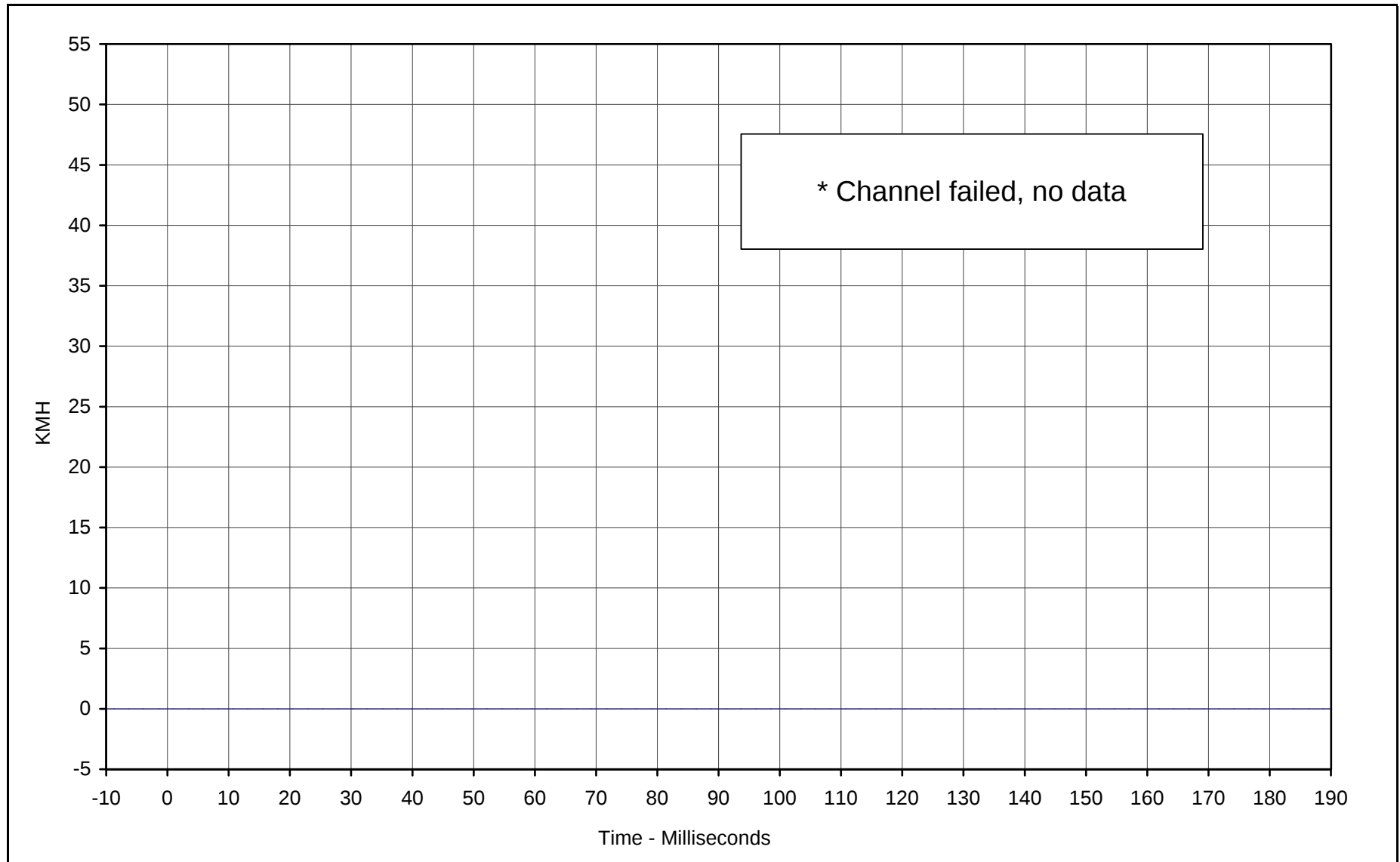
Curve Number: FIL-033

Test Program: 55/28 km/h Side Impact NCAP No.: M15402

Test Vehicle: 2001 Mazda Miata 2 Door Convertible

* Channel failed, no data





Curve Description: MDB Rear X Velocity *

Maximum Value: 0.0 at 0.0 Milliseconds

Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 180

Date of Test: 02/26/01

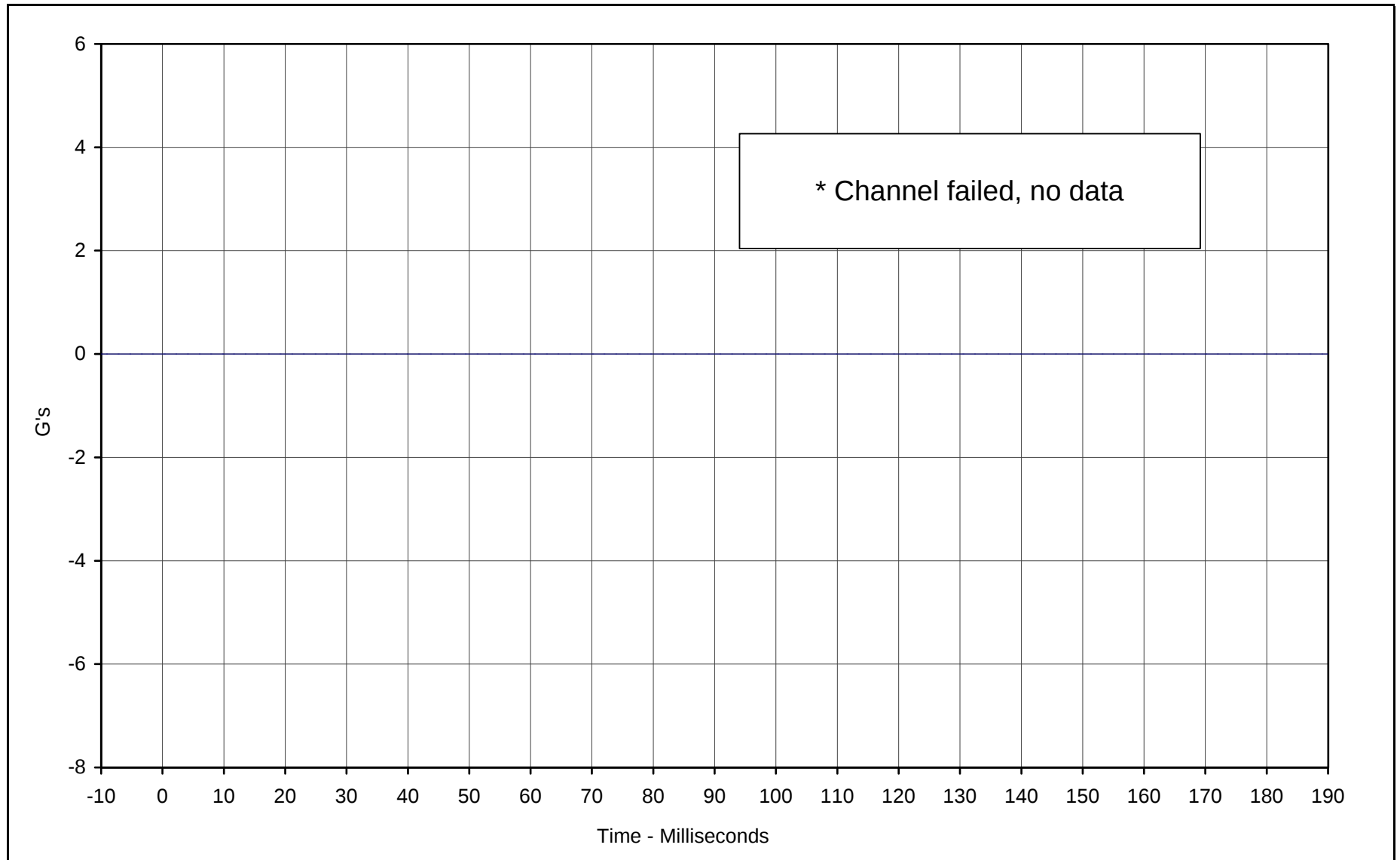
Curve Number: IN1-033

Test Program: 55/28 km/h Side Impact NCAP No.: M15402

Test Vehicle: 2001 Mazda Miata 2 Door Convertible

* Channel failed, no data





Curve Description: MDB Rear Y *

Maximum Value: 0.0 at 0.0 Milliseconds

Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 60

Date of Test: 02/26/01

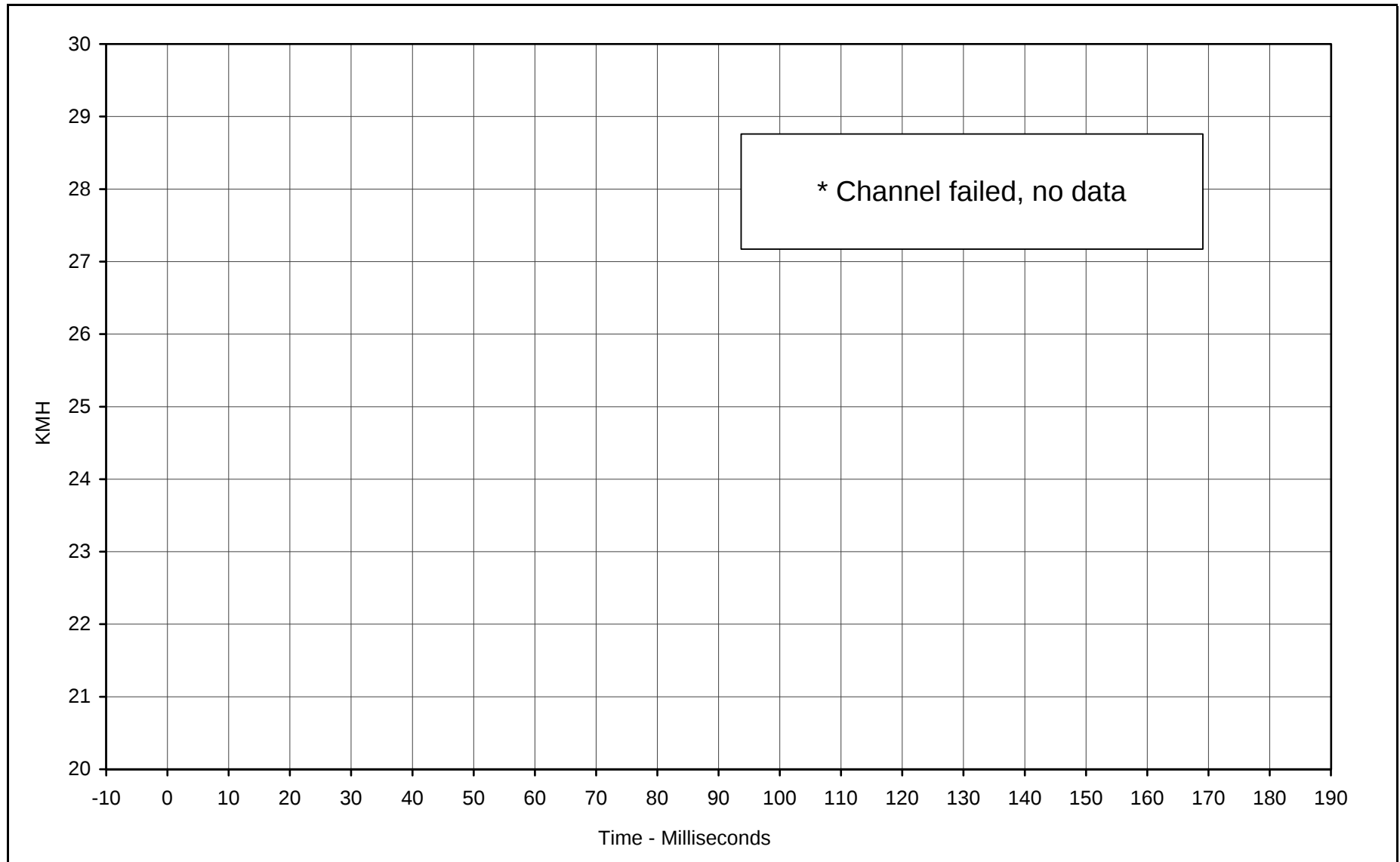
Curve Number: FIL-034

Test Program: 55/28 km/h Side Impact NCAP No.: M15402

Test Vehicle: 2001 Mazda Miata 2 Door Convertible

* Channel failed, no data





Curve Description: MDB Rear Y Velocity *

Maximum Value: 0.0 at 0.0 Milliseconds

Minimum Value: 0.0 at 0.0 Milliseconds

SAE Filter Class: 180

Date of Test: 02/26/01

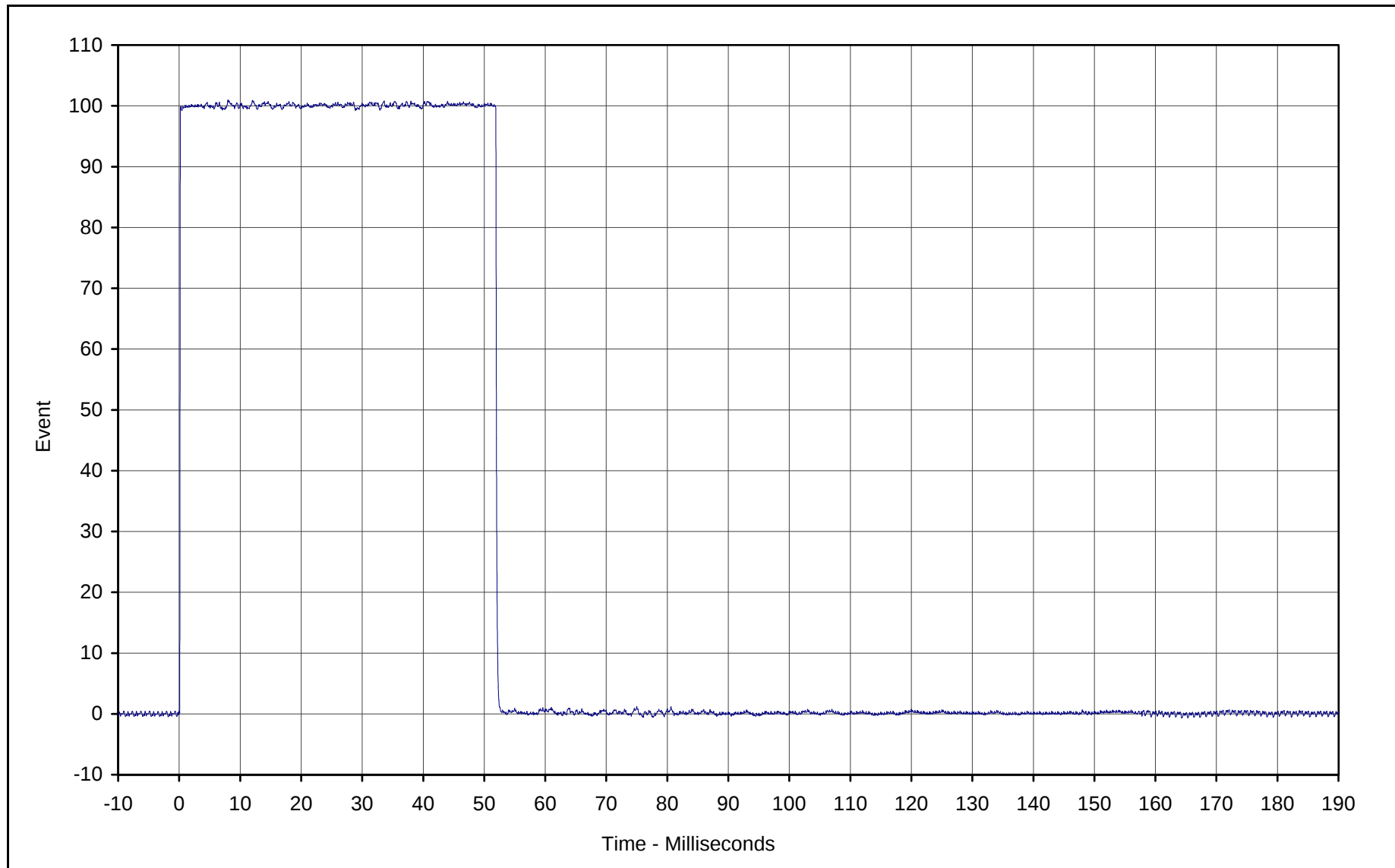
Curve Number: IN1-034

Test Program: 55/28 km/h Side Impact NCAP No.: M15402

Test Vehicle: 2001 Mazda Miata 2 Door Convertible

* Channel failed, no data

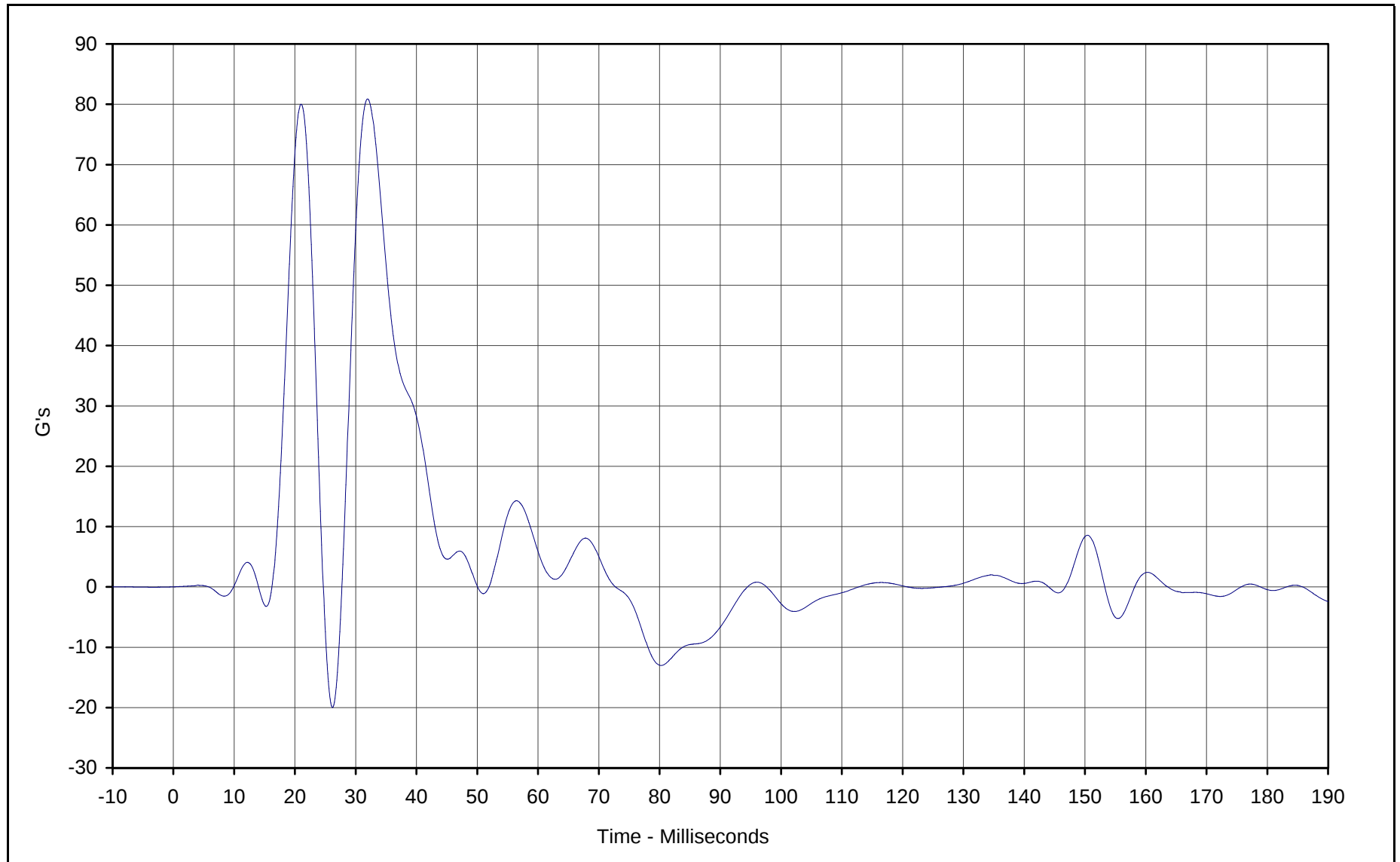




Curve Description: MDB Right Bumper Contact
Maximum Value: 101.0 at 8.0 Milliseconds
Crossing Point: 50% at 0.2 Milliseconds
SAE Filter Class: 1000
Date of Test: 02/26/01
Curve Number: FIL-035

Test Program: 55/28 km/h Side Impact NCAP No.: M15402
Test Vehicle: 2001 Mazda Miata 2 Door Convertible

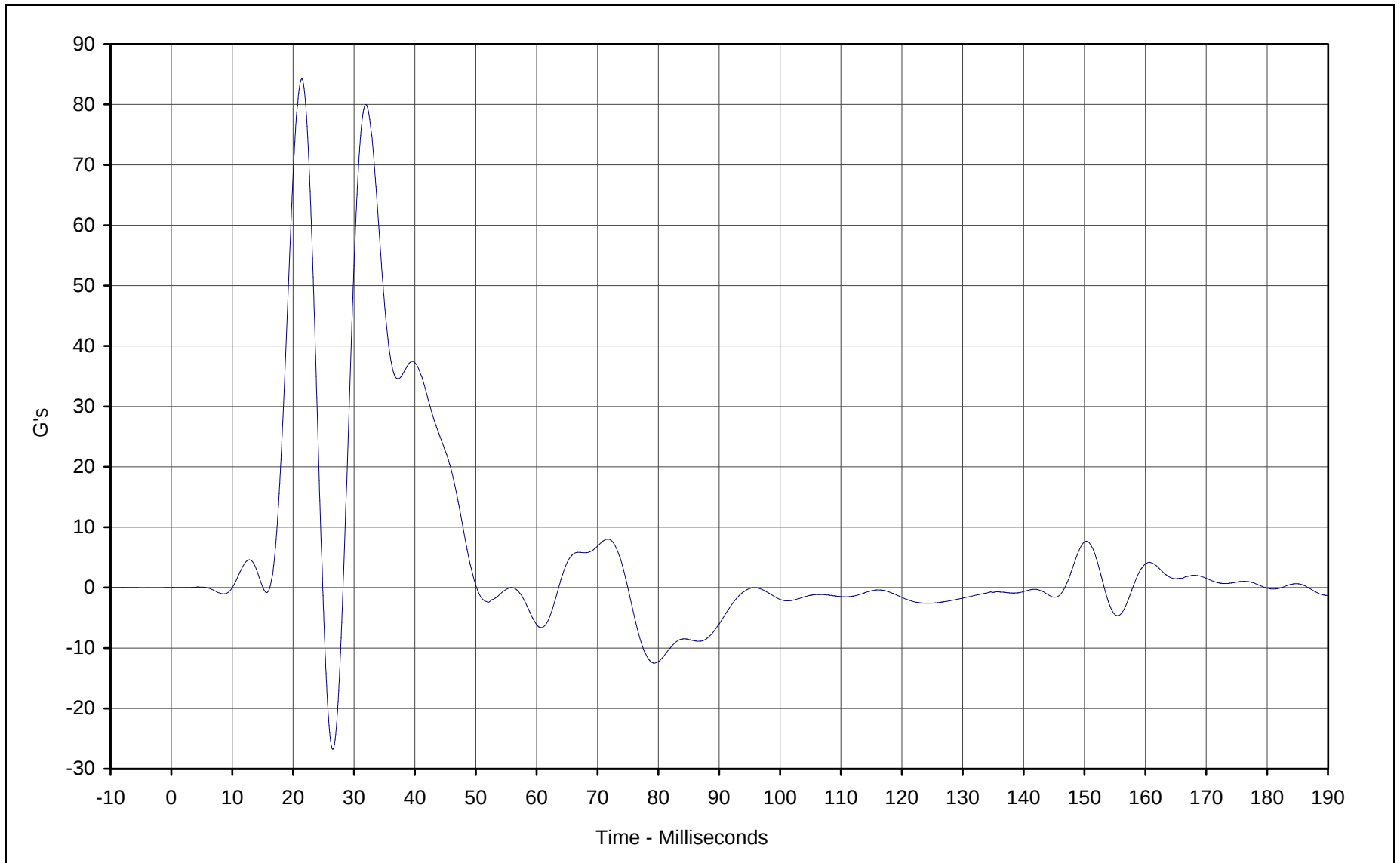




Curve Description: Driver Upper Rib Primary Y
Maximum Value: 80.9 at 32.0 Milliseconds
Minimum Value: -20.0 at 26.2 Milliseconds
SAE Filter Class: FIR 100
Date of Test: 02/26/01
Curve Number: FIR-004

Test Program: 55/28 km/h Side Impact NCAP No.: M15402
Test Vehicle: 2001 Mazda Miata 2 Door Convertible

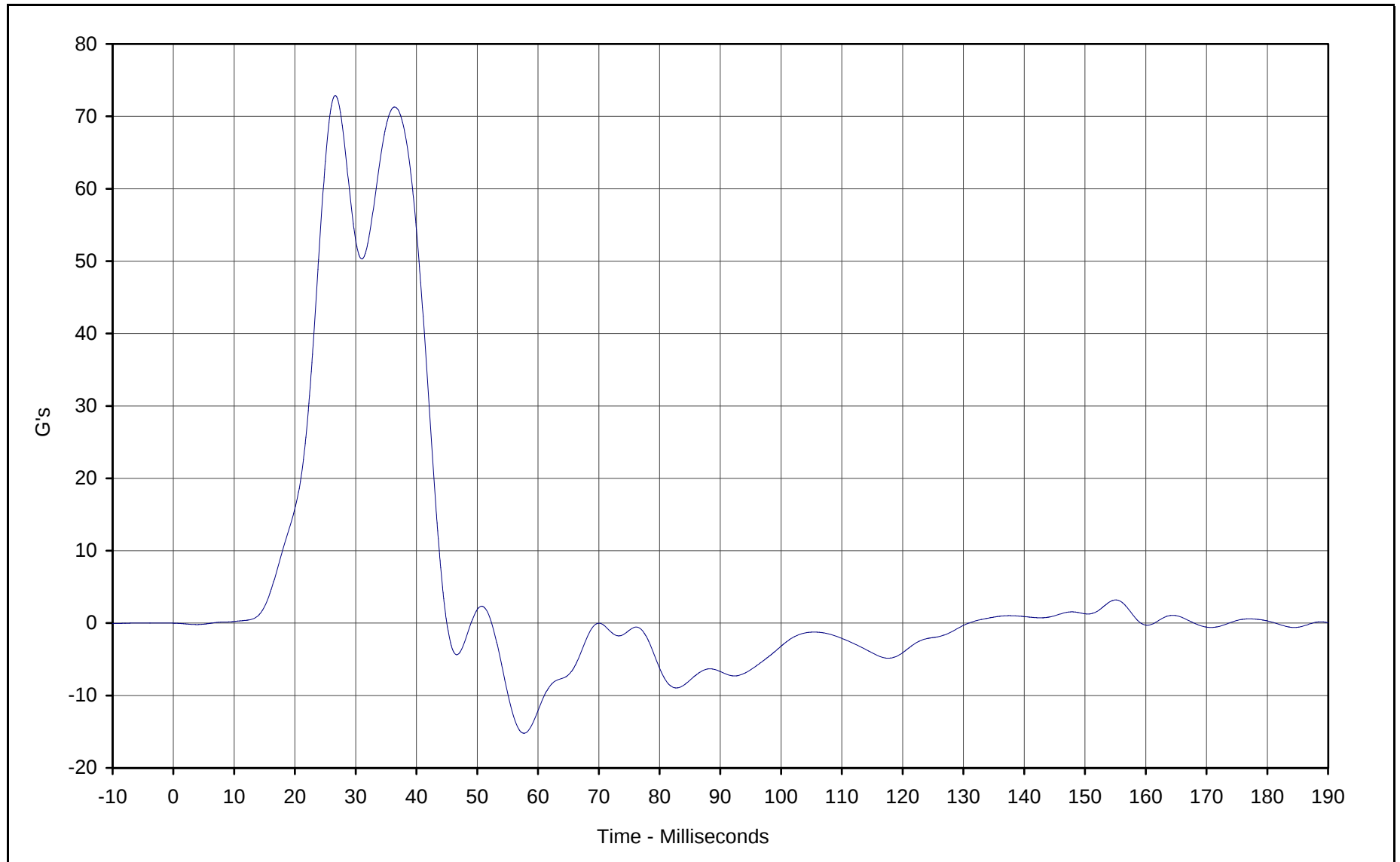




Curve Description: Driver Lower Rib Primary Y
Maximum Value: 84.2 at 21.4 Milliseconds
Minimum Value: -26.8 at 26.5 Milliseconds
SAE Filter Class: FIR 100
Date of Test: 02/26/01
Curve Number: FIR-005

Test Program: 55/28 km/h Side Impact NCAP No.: M15402
Test Vehicle: 2001 Mazda Miata 2 Door Convertible

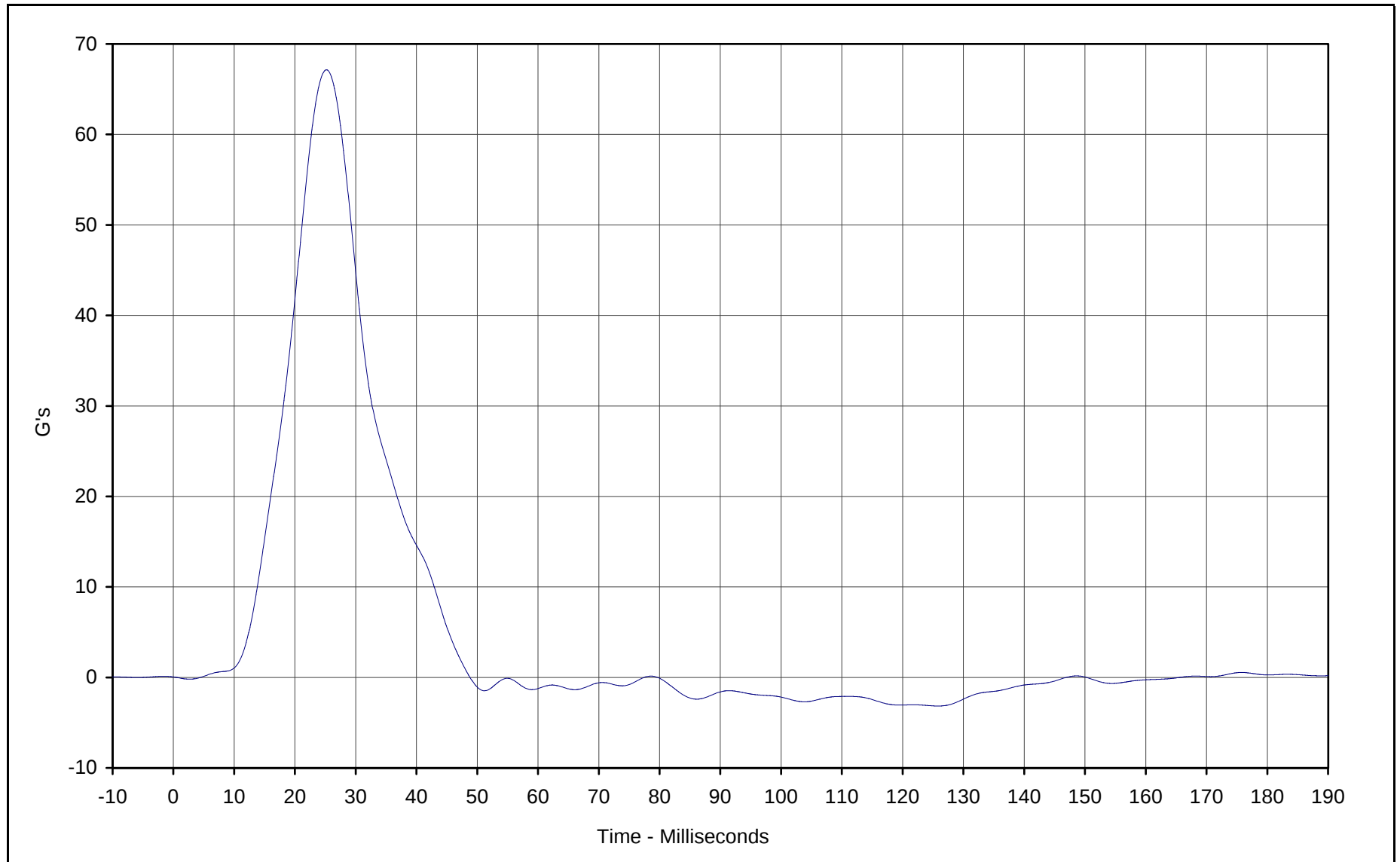




Curve Description: Driver Lower Spine Primary Y
Maximum Value: 72.9 at 26.6 Milliseconds
Minimum Value: -15.2 at 57.7 Milliseconds
SAE Filter Class: FIR 100
Date of Test: 02/26/01
Curve Number: FIR-006

Test Program: 55/28 km/h Side Impact NCAP No.: M15402
Test Vehicle: 2001 Mazda Miata 2 Door Convertible

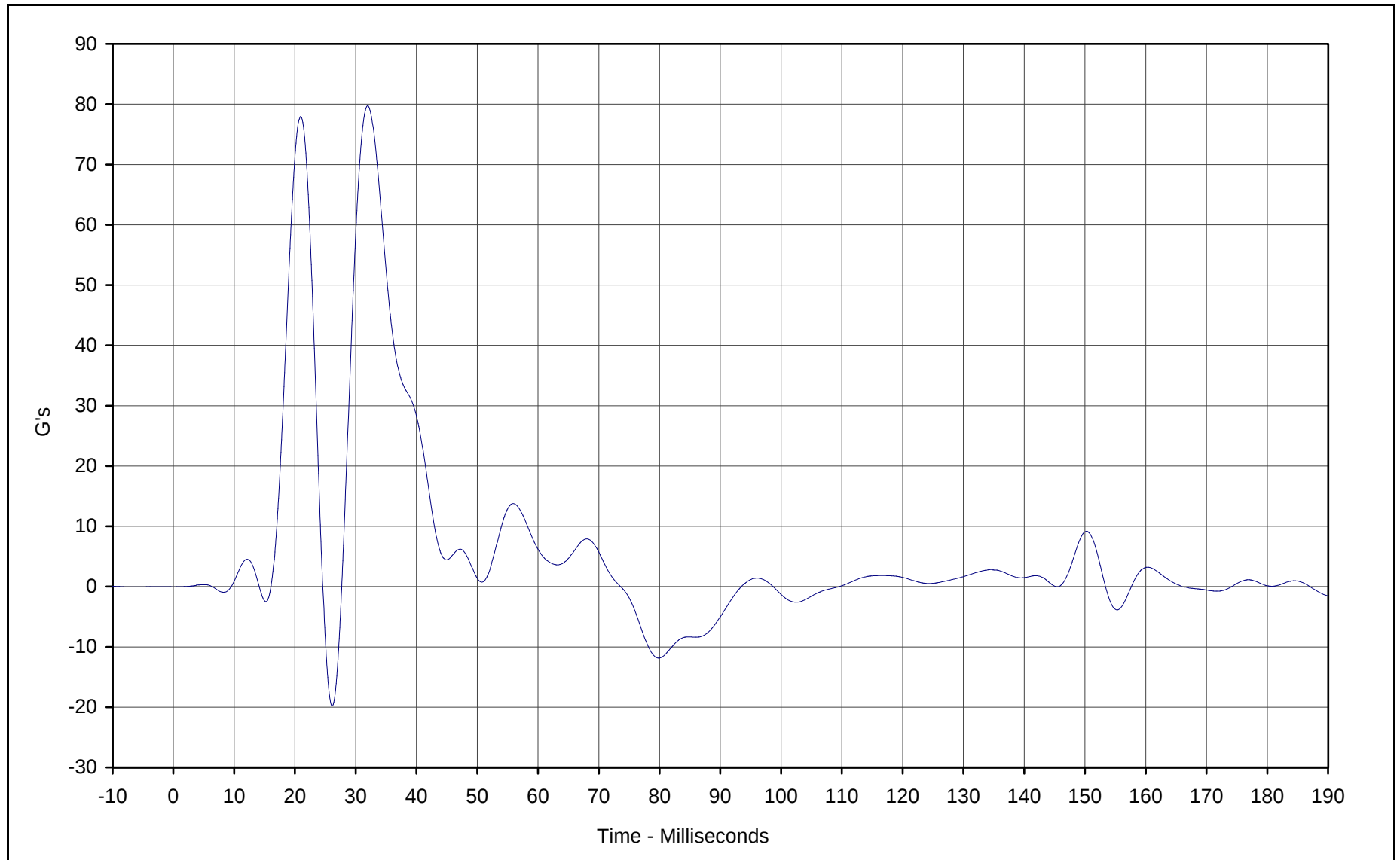




Curve Description: Driver Pelvis Primary Y
Maximum Value: 67.1 at 25.2 Milliseconds
Minimum Value: -3.2 at 126.0 Milliseconds
SAE Filter Class: FIR 100
Date of Test: 02/26/01
Curve Number: FIR-007

Test Program: 55/28 km/h Side Impact NCAP No.: M15402
Test Vehicle: 2001 Mazda Miata 2 Door Convertible

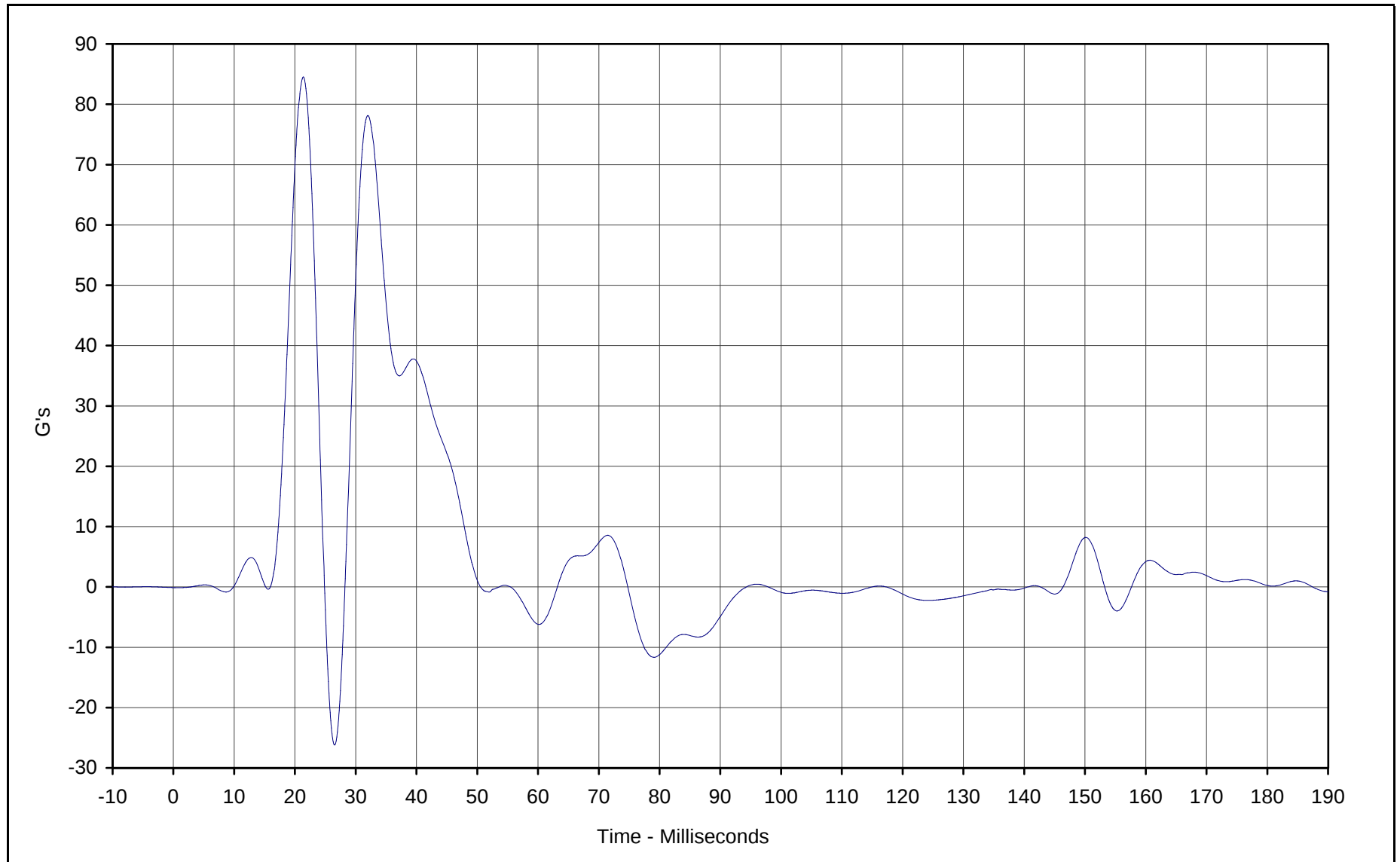




Curve Description: Driver Upper Rib Redundant Y
Maximum Value: 79.7 at 32.0 Milliseconds
Minimum Value: -19.8 at 26.1 Milliseconds
SAE Filter Class: FIR 100
Date of Test: 02/26/01
Curve Number: FIR-008

Test Program: 55/28 km/h Side Impact NCAP No.: M15402
Test Vehicle: 2001 Mazda Miata 2 Door Convertible

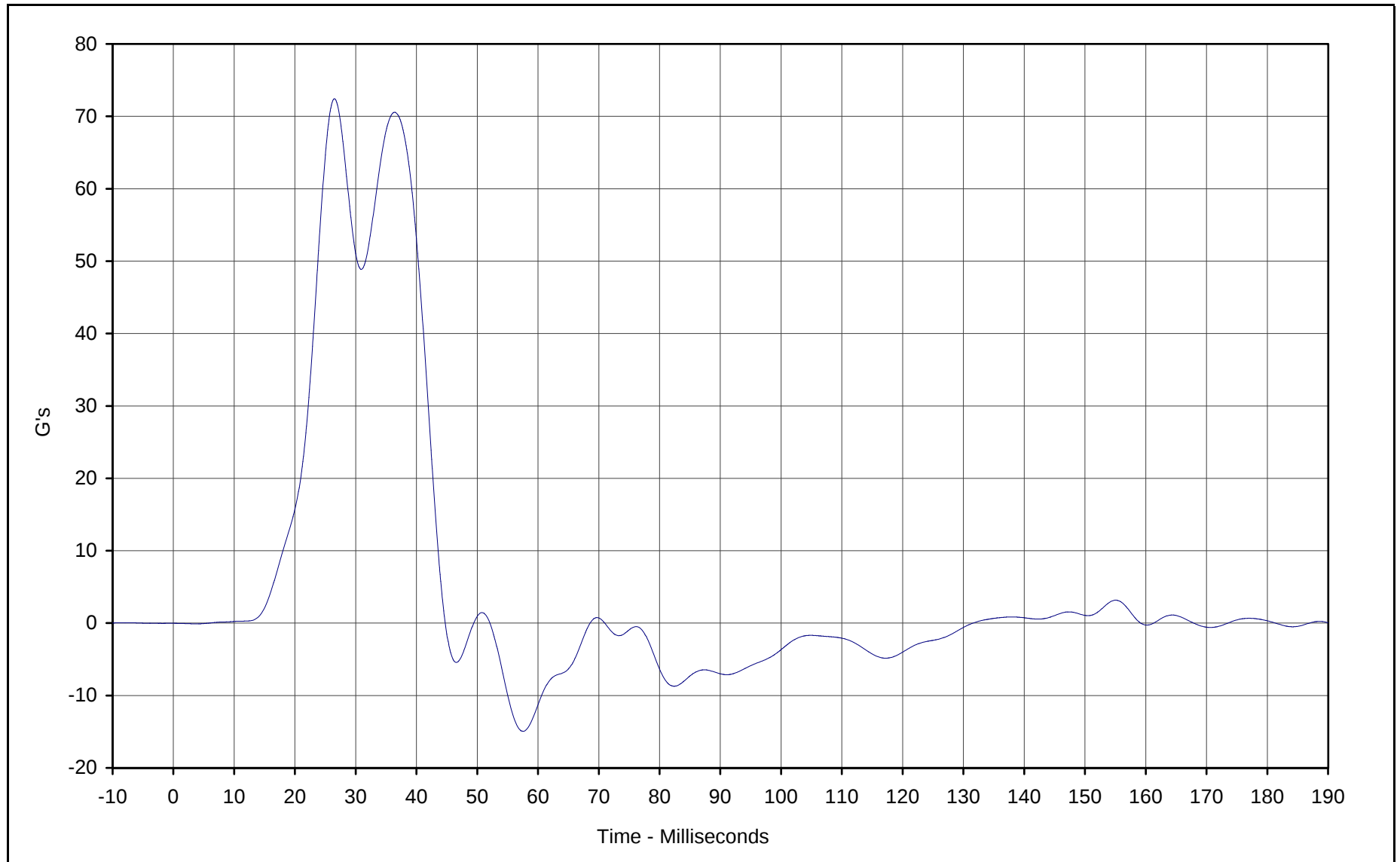




Curve Description: Driver Lower Rib Redundant Y
Maximum Value: 84.5 at 21.4 Milliseconds
Minimum Value: -26.2 at 26.5 Milliseconds
SAE Filter Class: FIR 100
Date of Test: 02/26/01
Curve Number: FIR-009

Test Program: 55/28 km/h Side Impact NCAP No.: M15402
Test Vehicle: 2001 Mazda Miata 2 Door Convertible

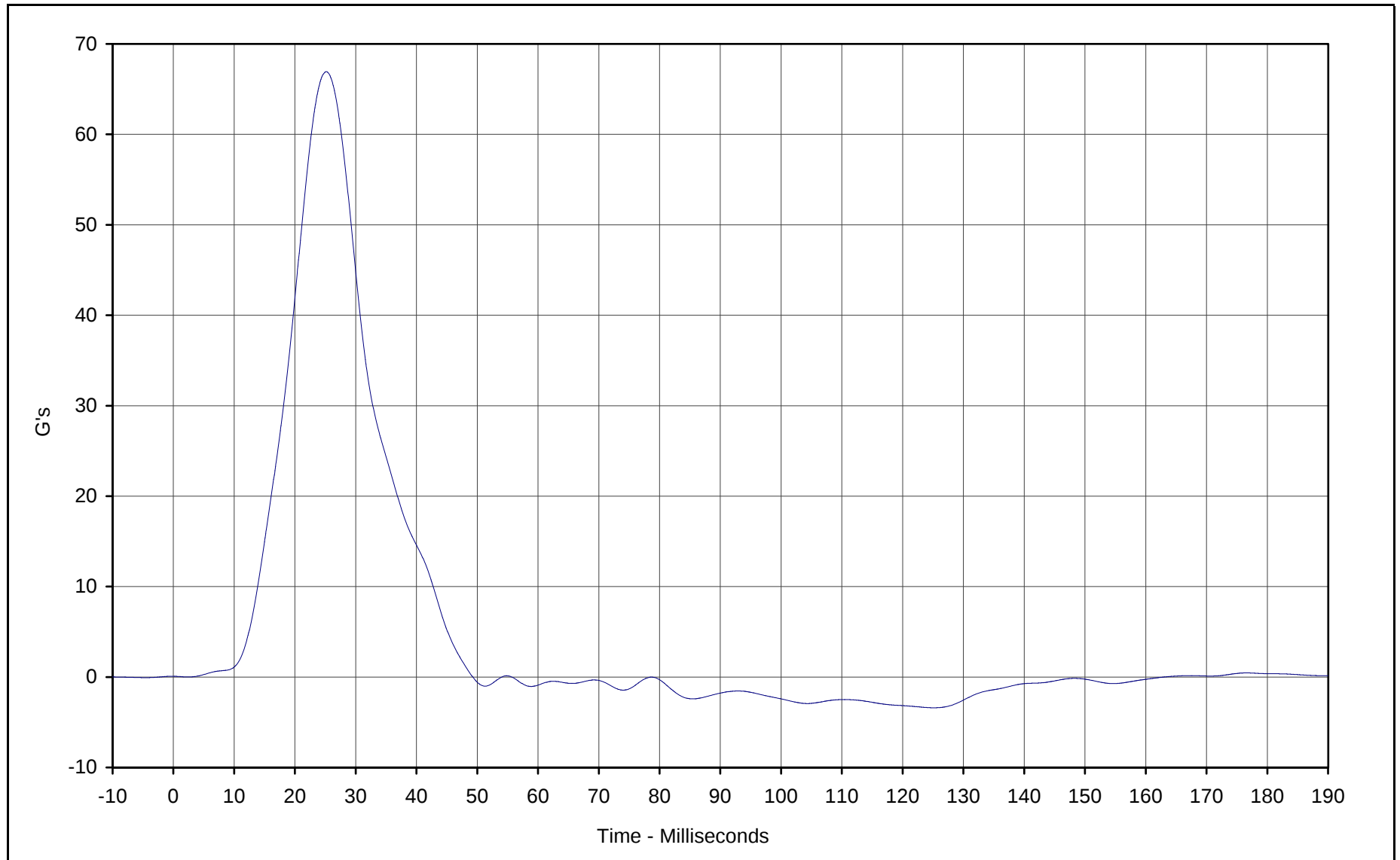




Curve Description: Driver Lower Spine Redundant Y
Maximum Value: 72.4 at 26.5 Milliseconds
Minimum Value: -14.9 at 57.5 Milliseconds
SAE Filter Class: FIR 100
Date of Test: 02/26/01
Curve Number: FIR-010

Test Program: 55/28 km/h Side Impact NCAP No.: M15402
Test Vehicle: 2001 Mazda Miata 2 Door Convertible





Curve Description: Driver Pelvis Redundant Y
Maximum Value: 66.9 at 25.2 Milliseconds
Minimum Value: -3.4 at 125.3 Milliseconds
SAE Filter Class: FIR 100
Date of Test: 02/26/01
Curve Number: FIR-011

Test Program: 55/28 km/h Side Impact NCAP No.: M15402
Test Vehicle: 2001 Mazda Miata 2 Door Convertible



APPENDIX C
SID CONFIGURATION AND PERFORMANCE VERIFICATION DATA

APPENDIX C
PRE-TEST SID CONFIGURATION AND PERFORMANCE VERIFICATION DATA



Performance Verification Data Side Impact Dummy (SID) External Dimensions

ATD Serial No.: 274

Part Serial No.: N/A

Test I.D.: N/A

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory temperature	°C	20.4 to 22.1	21.1	Pass
Laboratory relative humidity	%	10 to 70	30	Pass
SH- Seated Height	mm	889 to 909	890	Pass
HP- Hip Point Height	mm	99 (reference)	99	Pass
RH- Rib Height	mm	502 to 520	510	Pass
KH- Knee Pivot From Back Line	mm	511 to 526	515	Pass
KV- Knee Pivot From Floor	mm	490 to 505	495	Pass
HW- Hip Width	mm	356 to 391	370	Pass
Overall Test Results				Pass

Laboratory Technician

February 20, 2001

Test Date

Approved By

Date



Performance Verification Data Side Impact Dummy (SID) Thorax Lateral Impact

ATD Serial No.: 274

Part Serial No.: N/A

Test I.D.: TI02A

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.5	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	4.21 to 4.33	4.27	Pass
Left Upper Rib Acceleration	G's	37.0 to 46.0	44.4	Pass
Left Lower Rib Acceleration	G's	37.0 to 46.0	42.3	Pass
Thoracic Spine Acceleration	G's	15.0 to 22.0	18.7	Pass
Overall Test Results				Pass

Laboratory Technician

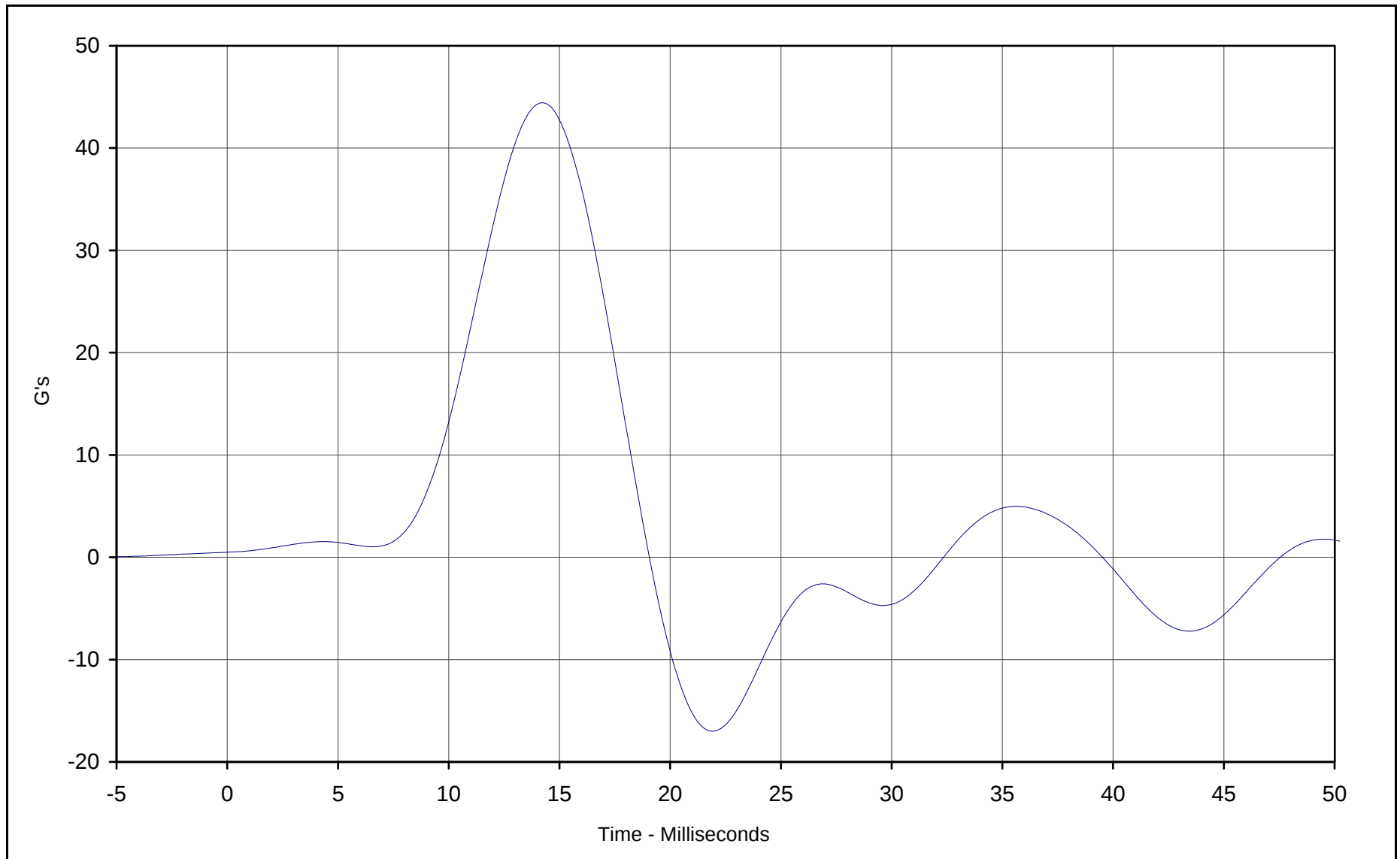
February 16, 2001

Test Date

Approved By

Date

C-3



Curve Description: Left Upper Rib Y Acceleration

Maximum Value: 44.4 at 14.2 Milliseconds

Minimum Value: -17.0 at 21.9 Milliseconds

SAE Filter Class: FIR 100

Date of Test: 2/16/01

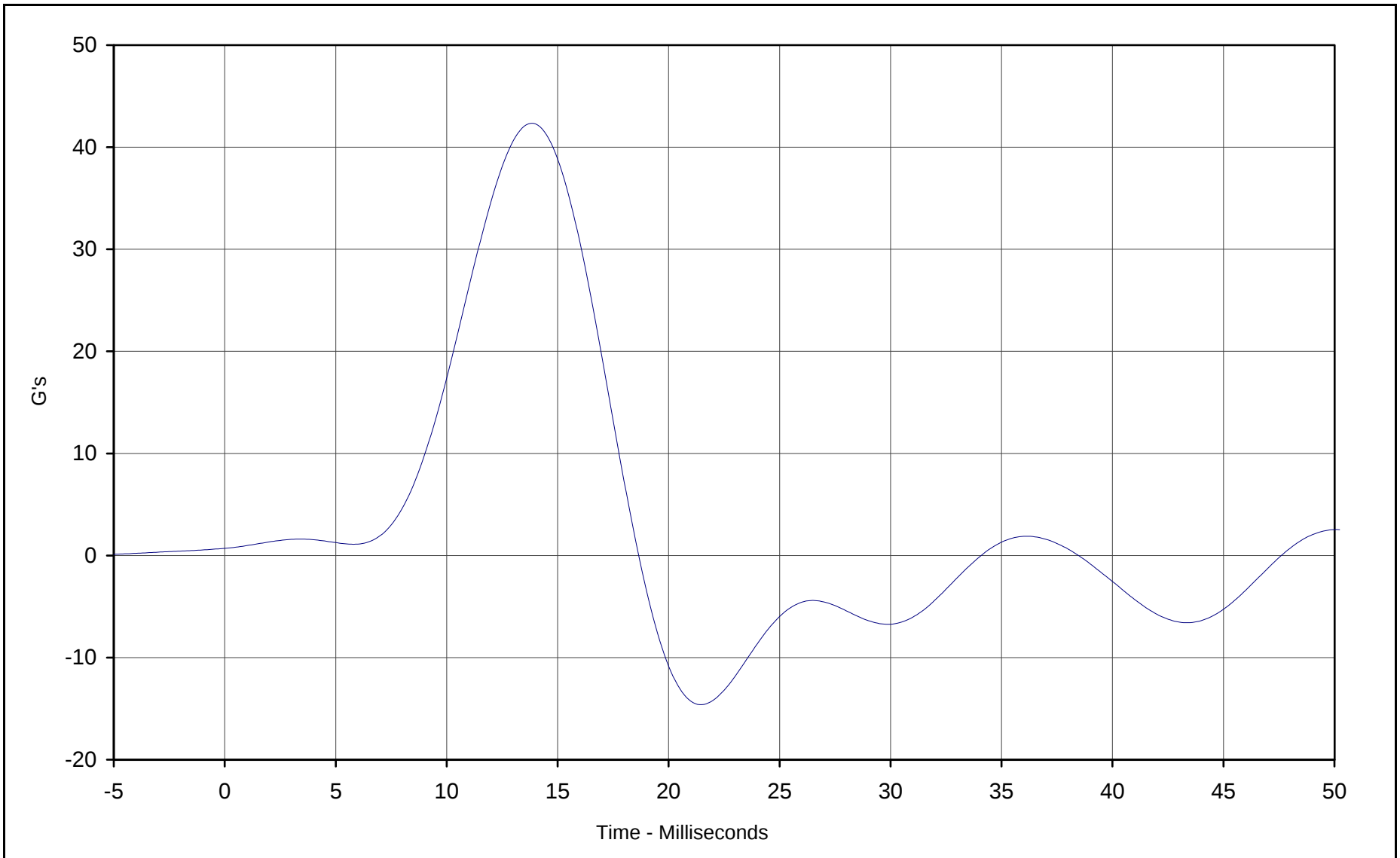
Test Program: SID Thorax Lateral Impact Test

Test Information: SID S/N: 274 Test I.D.: TI02A



KAR21003-11

C-4



Curve Description: Left Lower Rib Y Acceleration

Maximum Value: 42.3 at 13.8 Milliseconds

Minimum Value: -14.6 at 21.5 Milliseconds

SAE Filter Class: FIR 100

Date of Test: 2/16/01

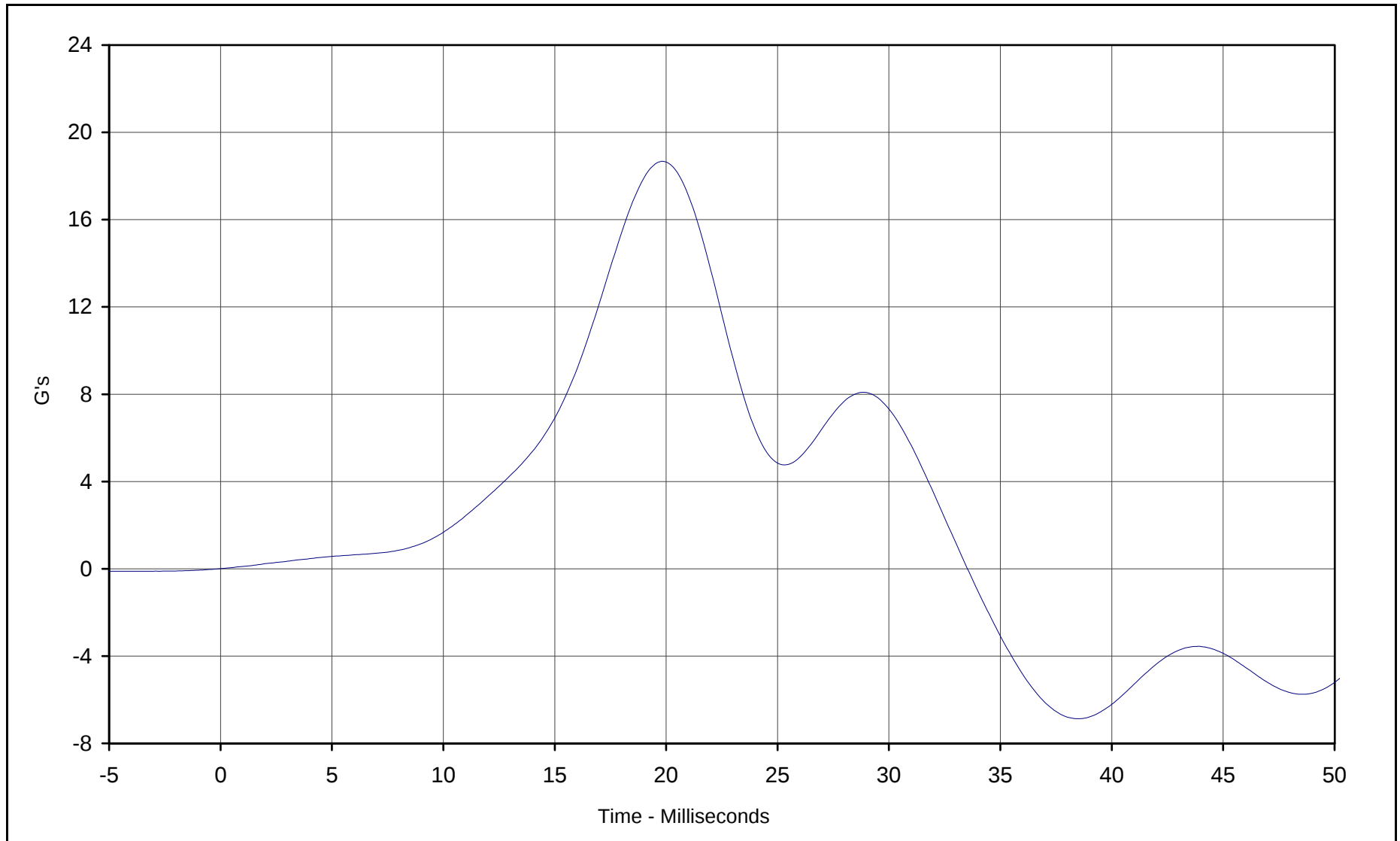
Test Program: SID Thorax Lateral Impact Test

Test Information: SID S/N: 274 Test I.D.: TI02A



KAR21003-11

C-5



Curve Description: Lower Spine Y Acceleration
Maximum Value: 18.7 at 19.8 Milliseconds
Minimum Value: -6.9 at 38.5 Milliseconds
SAE Filter Class: FIR 100
Date of Test: 2/16/01

Test Program: SID Thorax Lateral Impact Test
Test Information: SID S/N: 274 Test I.D.: TI02A



KAR21003-11



Performance Verification Data Side Impact Dummy (SID) Left Side Pelvis Lateral Impact

ATD Serial No.: 274

Part Serial No.: N/A

Test I.D.: PI02B

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.5	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	4.21 to 4.33	4.33	Pass
Pelvis Acceleration	G's	40.0 to 60.0	42.2	Pass
Acceleration Time Above 20 G's	Msec.	3.0 to 7.0 Msec.	6.8	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Overall Test Results				Pass

Laboratory Technician

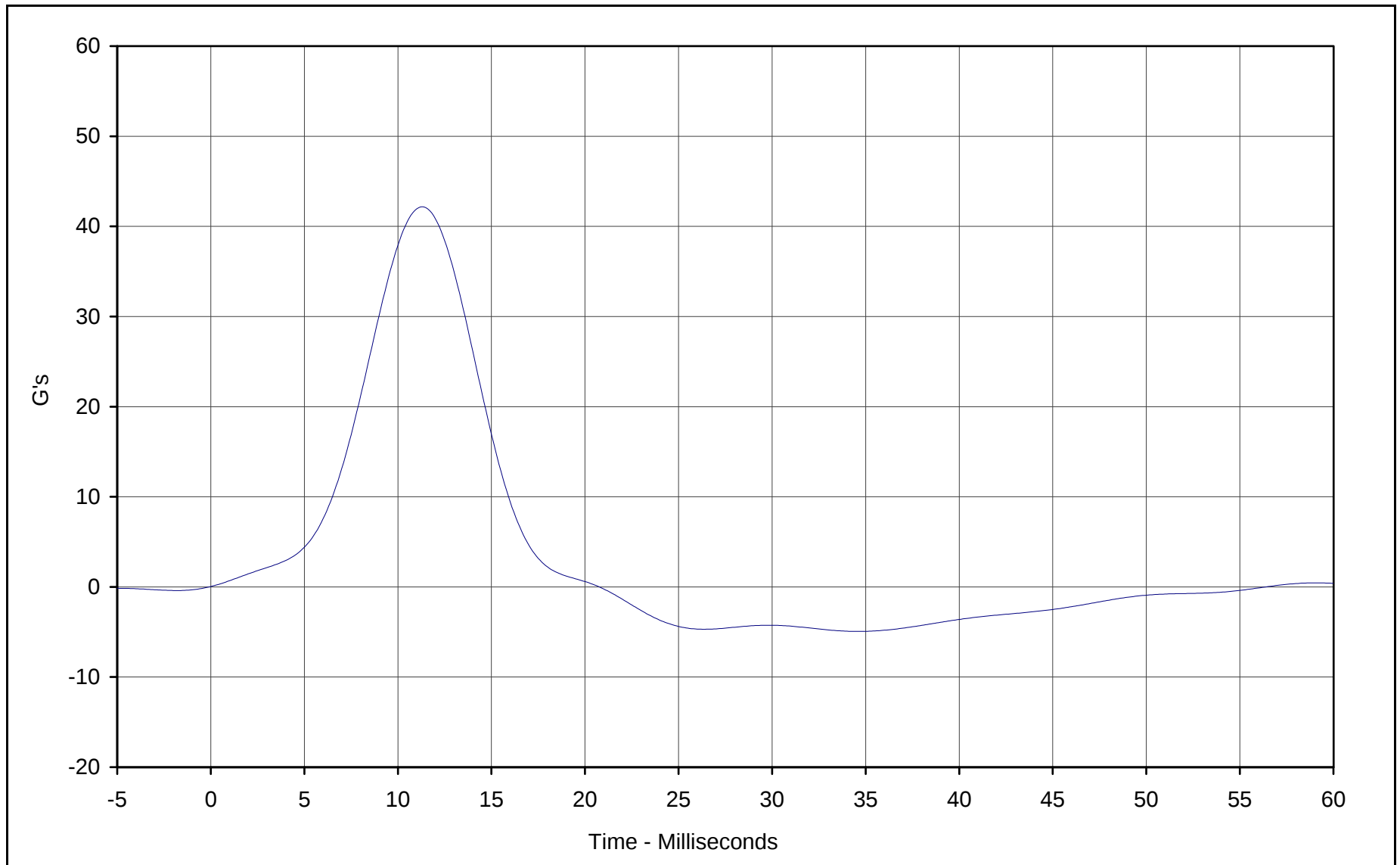
February 16, 2001

Test Date

Approved By

Date

C-7



Curve Description: Pelvis Y Axis Acceleration
Maximum Value: 42.2 at 11.3 Milliseconds
Minimum Value: -4.9 at 34.6 Milliseconds
SAE Filter Class: FIR 100
Date of Test: 2/16/01

Test Program: SID Left Side Pelvis Lateral Impact
Test Information: SID S/N: 274 Test I.D.: PI02B



KAR21003-11



Performance Verification Data Side Impact Dummy (SID) Abdominal Compression Test

ATD Serial No.: 274

Part Serial No.: N/A

Test I.D.: AB02A

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°F	66 to 78	70	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Force at 0.5 Inches of Displacement	Pounds	23.0 to 36.0	26.4	Pass
Force at 0.75 Inches of Displacement	Pounds	36.0 to 50.0	39.0	Pass
Force at 1.0 Inches of Displacement	Pounds	50.0 to 63.0	54.1	Pass
Force at 1.3 Inches of Displacement	Pounds	73.0 to 88.0	74.8	Pass
Overall Test Results				Pass

Laboratory Technician

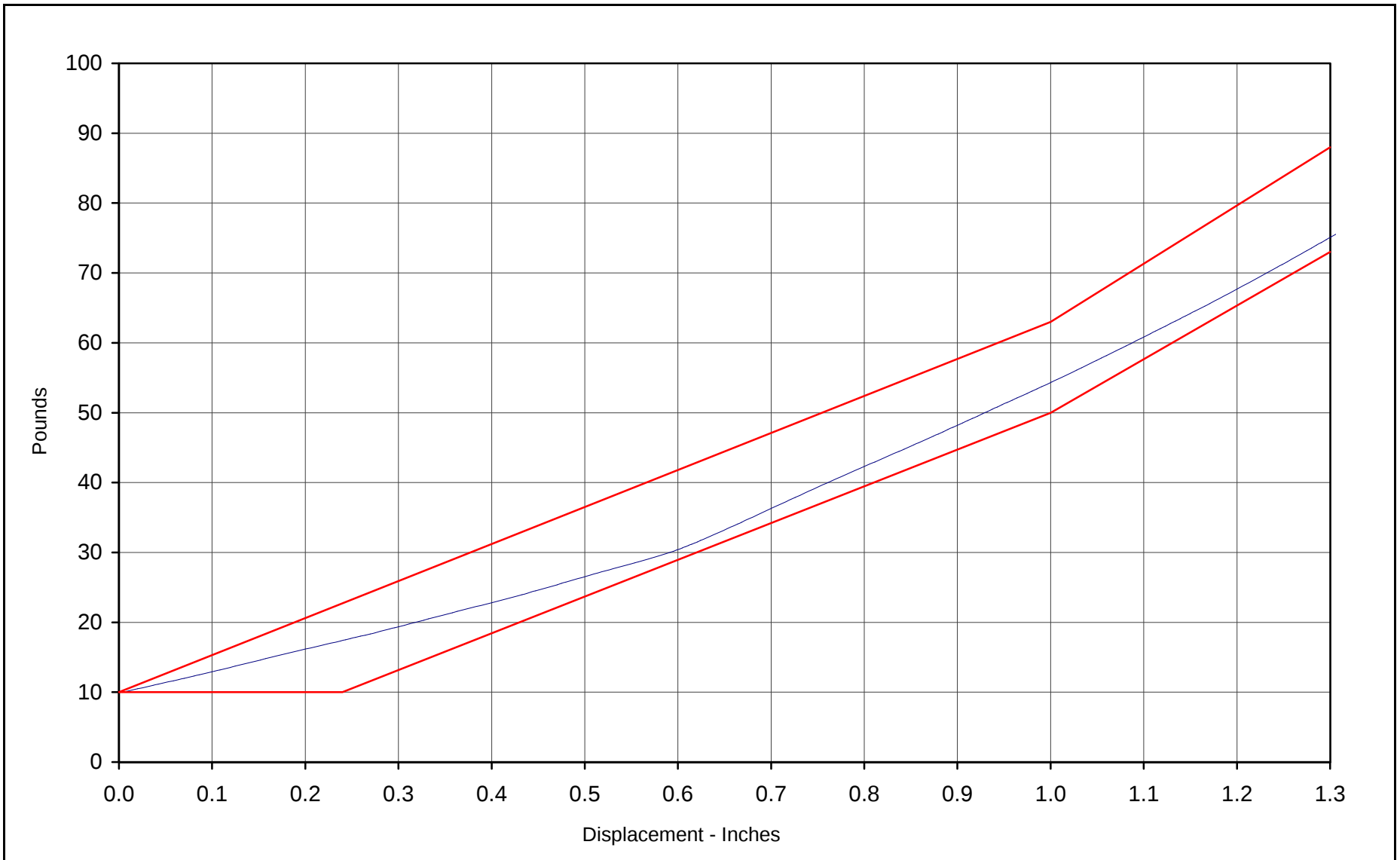
February 19, 2001

Test Date

Approved By

Date

C-9

Curve Description: Abdomen Force vs. DisplacementForce at 0.5 In.: 26.4 PoundsForce at 0.75 In.: 39.0 PoundsForce at 1.0 In.: 54.1 PoundsForce at 1.3 In.: 74.8 PoundsDate of Test: 2/19/01Test Program: SID Abdominal CompressionTest Information: SID S/N: 274 Test I.D.: AB02A

KAR21003-11



Performance Verification Data Side Impact Dummy (SID) Head Drop Calibration

ATD Serial No.: 274

Part Serial No.: N/A

Test I.D.: HD02A

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°F	66 to 78	70	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Peak Resultant Acceleration	G's	210.0 to 260.0	255.3	Pass
Peak Lateral Acceleration	G's	≤10.0	4.2	Pass
Time Above 100 G's	Msec.	0.9 to 1.5	1.1	Pass
Is Resultant Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Overall Test Results				Pass

Laboratory Technician

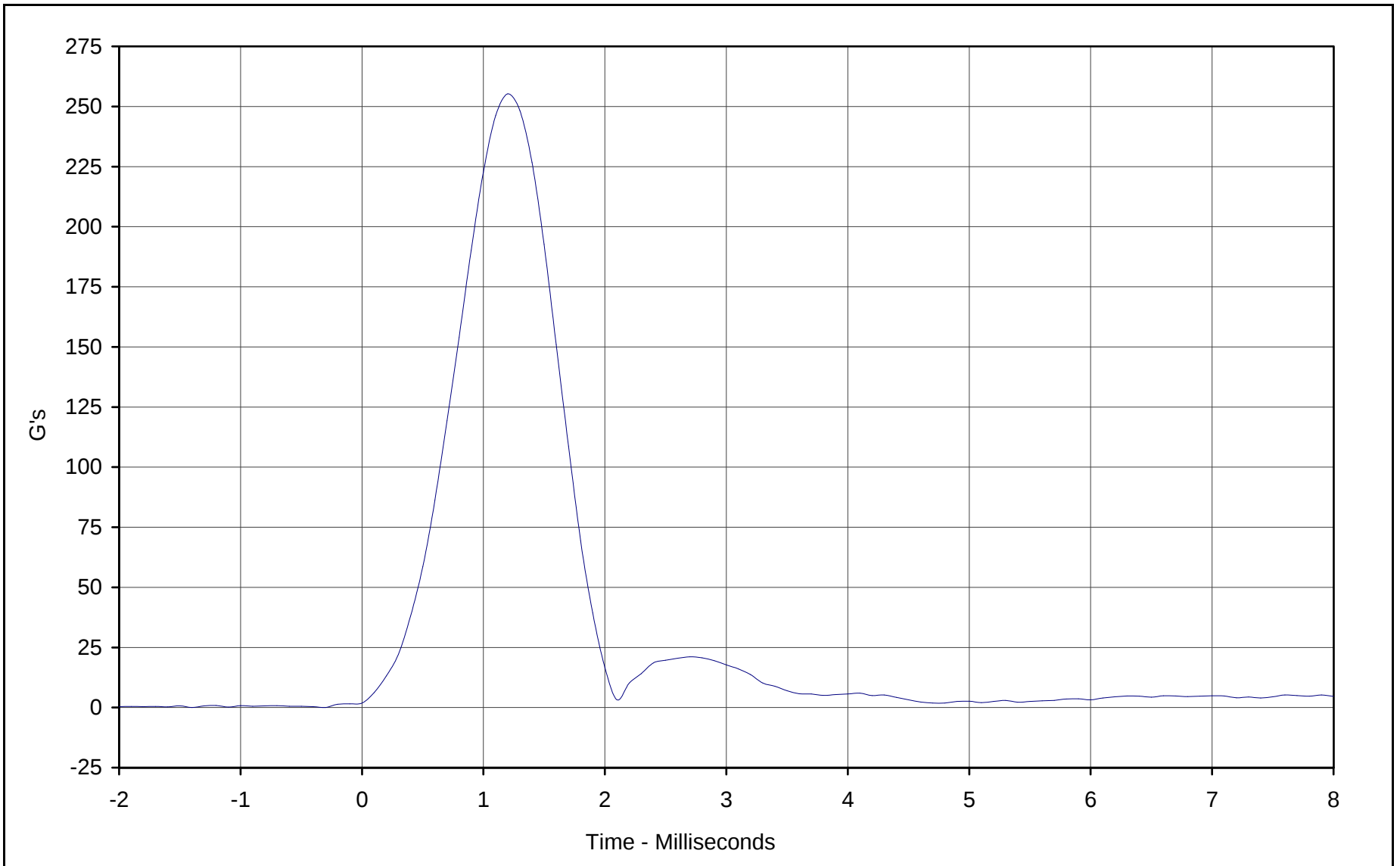
February 18, 2001

Test Date

Approved By

Date

C-11



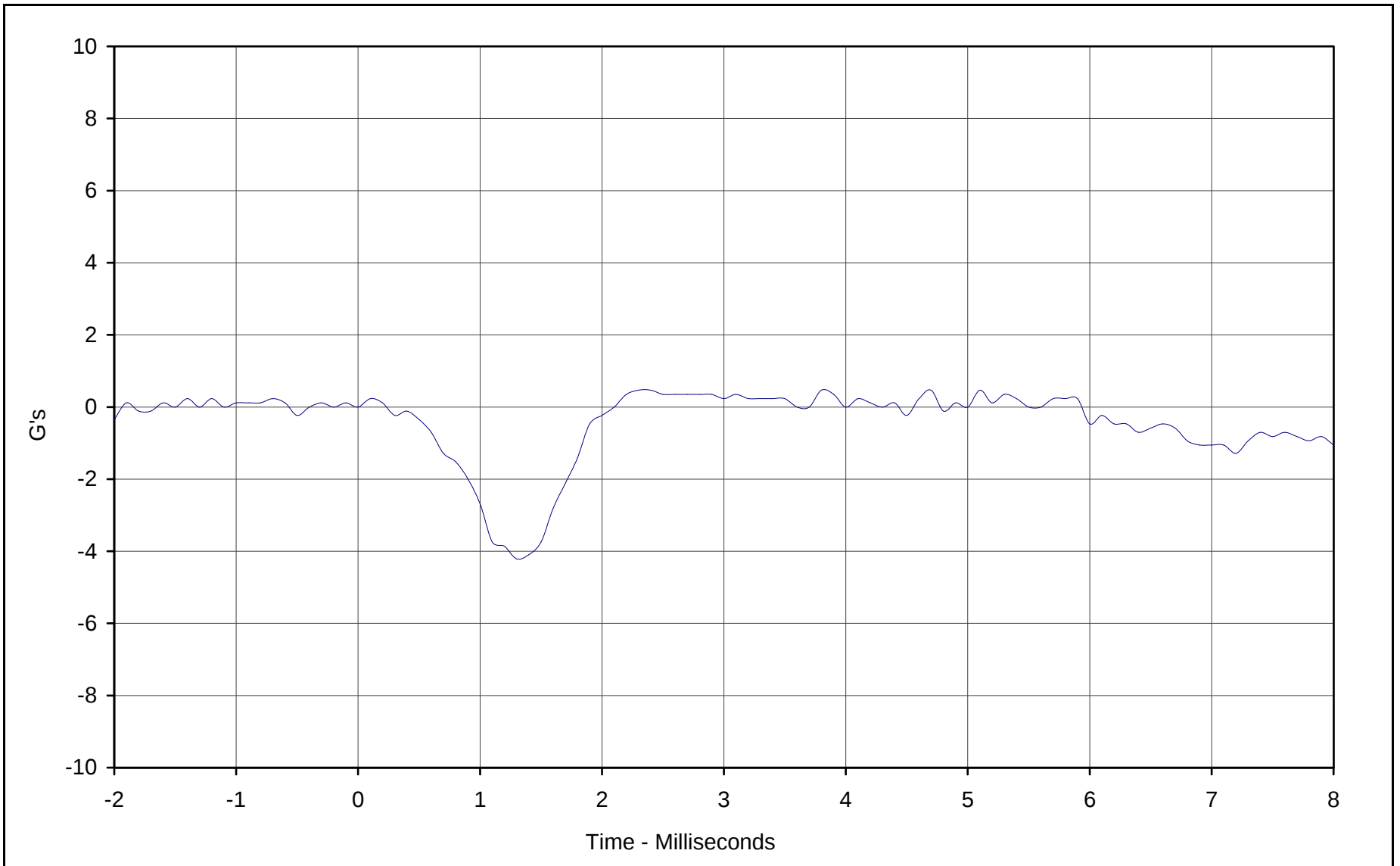
Curve Description: Head Resultant Acceleration
Maximum Value: 255.3 at 1.2 Milliseconds
Minimum Value: 1.9 at 0.0 Milliseconds
SAE Filter Class: 1000
Date of Test: 2/18/01

Test Program: SID Head Drop Calibration
Test Information: SID S/N: 274 Test I.D.: HD02A



KAR21003-11

C-12



Curve Description: Head Y Axis Acceleration
Maximum Value: 0.5 at 2.3 Milliseconds
Minimum Value: -4.2 at 1.3 Milliseconds
SAE Filter Class: 1000
Date of Test: 2/18/01

Test Program: SID Head Drop Calibration
Test Information: SID S/N: 274 Test I.D.: HD02A



KAR21003-11

APPENDIX C
POST-TEST SID CONFIGURATION AND PERFORMANCE VERIFICATION DATA



Performance Verification Data Side Impact Dummy (SID) External Dimensions

ATD Serial No.: 274

Part Serial No.: N/A

Test I.D.: N/A

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory temperature	°C	20.4 to 22.1	21.1	Pass
Laboratory relative humidity	%	10 to 70	30	Pass
SH- Seated Height	mm	889 to 909	990	Pass
HP- Hip Point Height	mm	99 (reference)	99	Pass
RH- Rib Height	mm	502 to 520	515	Pass
KH- Knee Pivot From Back Line	mm	511 to 526	515	Pass
KV- Knee Pivot From Floor	mm	490 to 505	500	Pass
HW- Hip Width	mm	356 to 391	365	Pass
Overall Test Results				Pass

Laboratory Technician

February 28, 2001

Test Date

Approved By

Date



Performance Verification Data Side Impact Dummy (SID) Thorax Lateral Impact

ATD Serial No.: 274

Part Serial No.: N/A

Test I.D.: TI02C

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.5	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	4.21 to 4.33	4.27	Pass
Left Upper Rib Acceleration	G's	37.0 to 46.0	42.7	Pass
Left Lower Rib Acceleration	G's	37.0 to 46.0	42.3	Pass
Thoracic Spine Acceleration	G's	15.0 to 22.0	21.0	Pass
Overall Test Results				Pass

Laboratory Technician

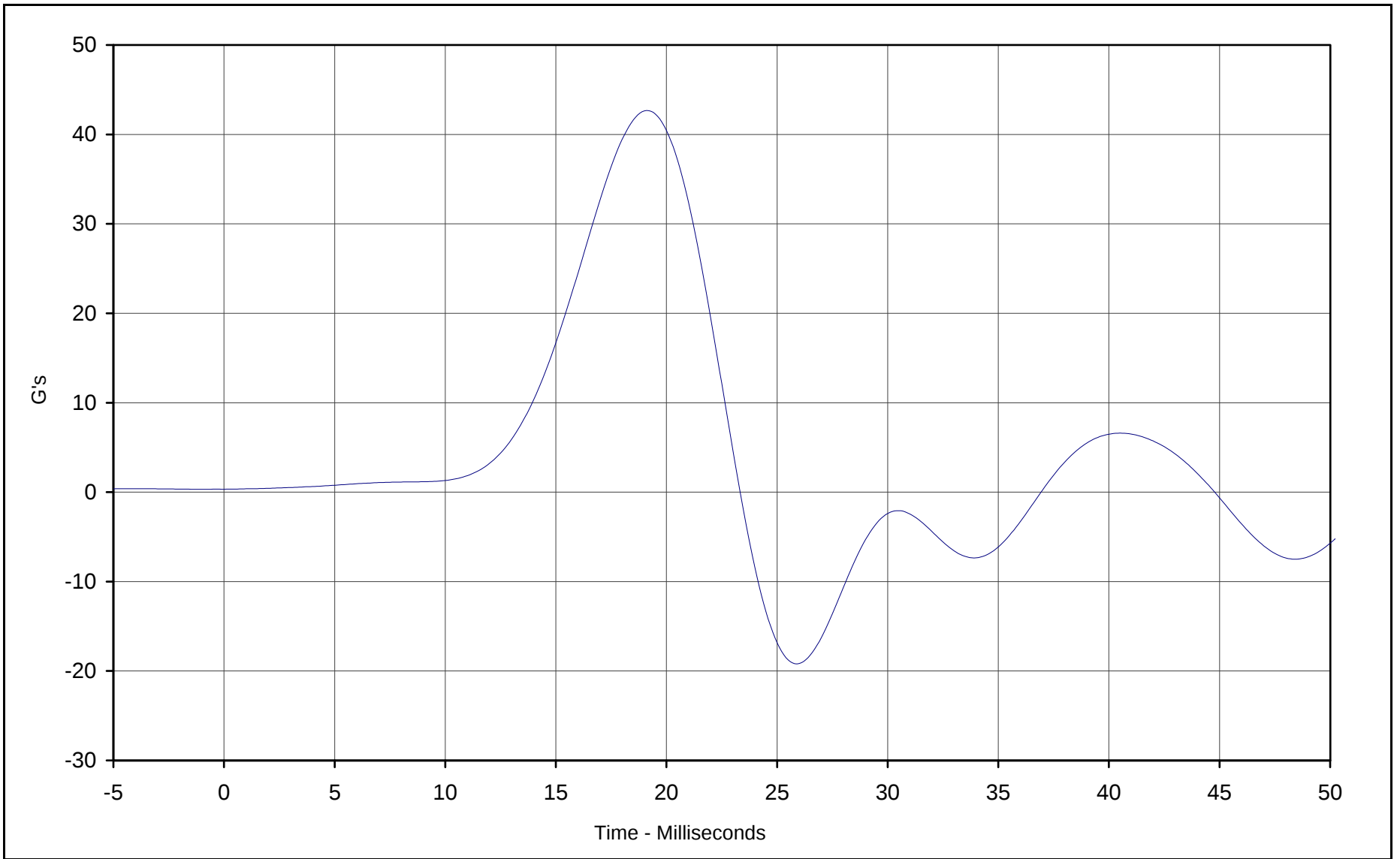
February 27, 2001

Test Date

Approved By

Date

C-15



Curve Description: Left Upper Rib Y Acceleration

Maximum Value: 42.7 at 19.1 Milliseconds

Minimum Value: -19.2 at 25.9 Milliseconds

SAE Filter Class: FIR 100

Date of Test: 2/27/01

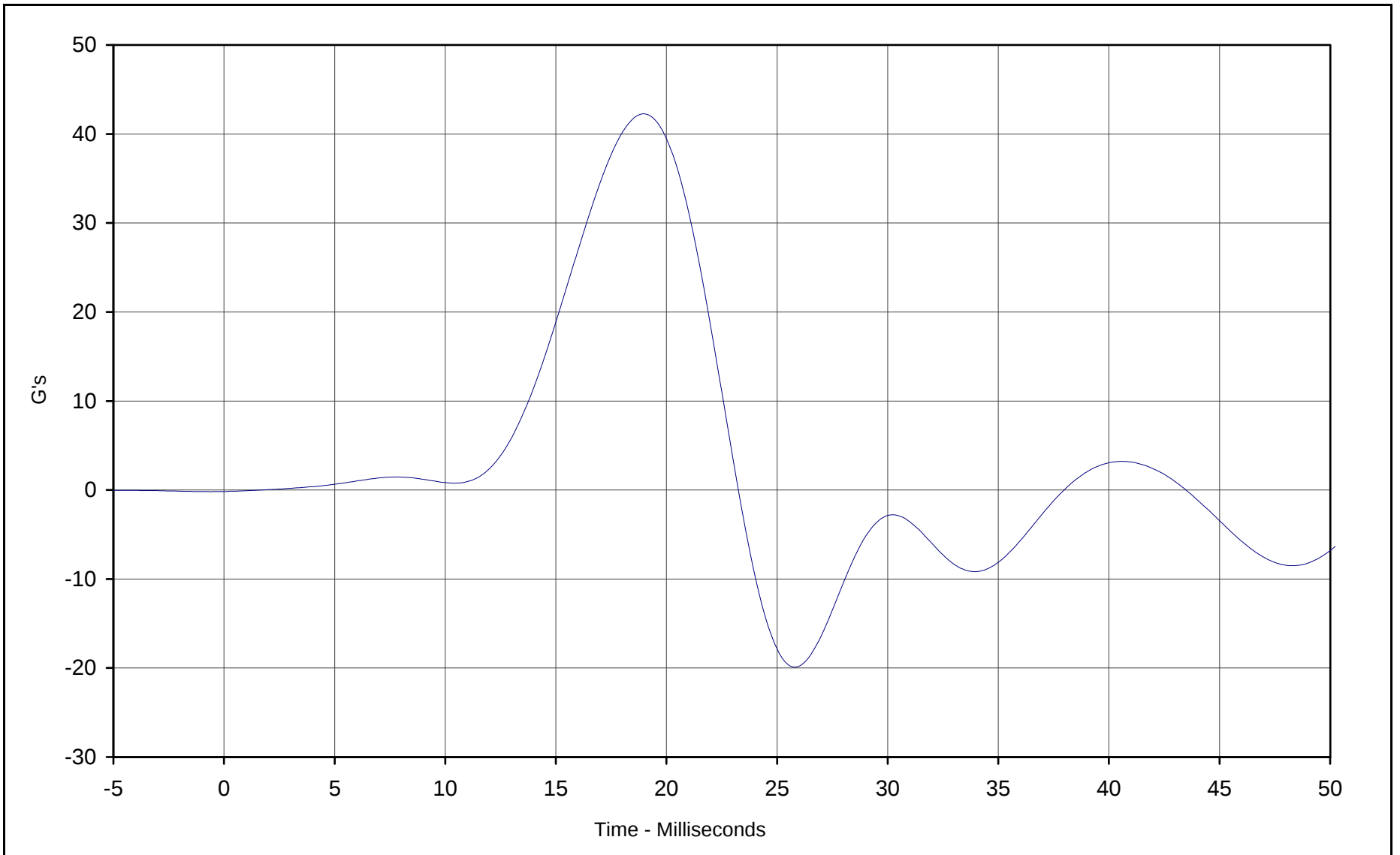
Test Program: SID Thorax Lateral Impact Test

Test Information: SID S/N: 274 Test I.D.: TI02C



KAR21003-11

C-16



Curve Description: Left Lower Rib Y Acceleration

Maximum Value: 42.3 at 19.0 Milliseconds

Minimum Value: -19.9 at 25.8 Milliseconds

SAE Filter Class: FIR 100

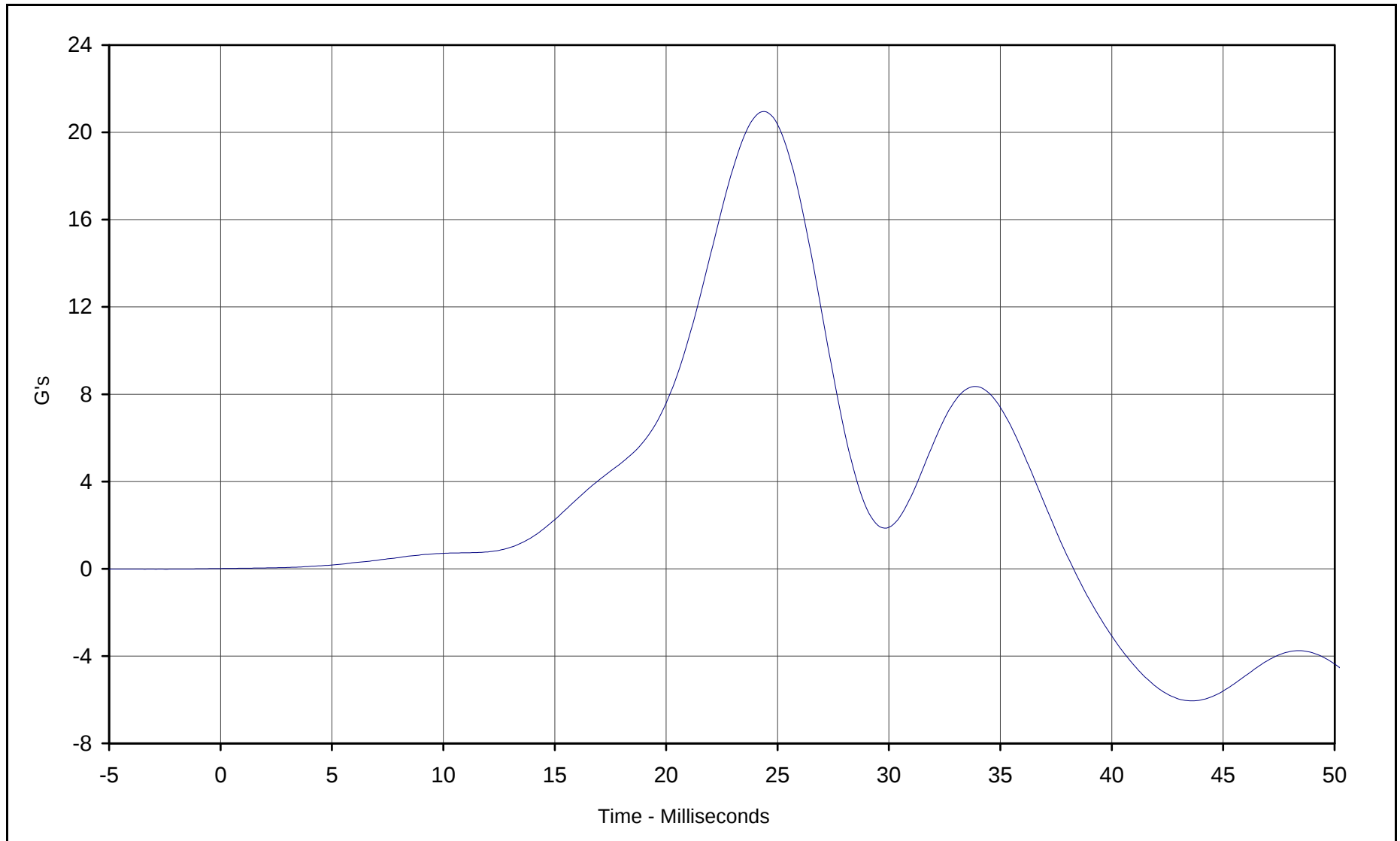
Date of Test: 2/27/01

Test Program: SID Thorax Lateral Impact Test

Test Information: SID S/N: 274 Test I.D.: TI02C



KAR21003-11



Curve Description: Lower Spine Y Acceleration
Maximum Value: 21.0 at 24.4 Milliseconds
Minimum Value: -6.4 at 53.4 Milliseconds
SAE Filter Class: FIR 100
Date of Test: 2/27/01

Test Program: SID Thorax Lateral Impact Test
Test Information: SID S/N: 274 Test I.D.: TI02C





Performance Verification Data

Side Impact Dummy (SID)

Left Side Pelvis Lateral Impact

ATD Serial No.: 274

Part Serial No.: N/A

Test I.D.: PI02D

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.5	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	4.21 to 4.33	4.33	Pass
Pelvis Acceleration	G's	40.0 to 60.0	42.6	Pass
Acceleration Time Above 20 G's	Msec.	3.0 to 7.0 Msec.	6.5	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Overall Test Results				Pass

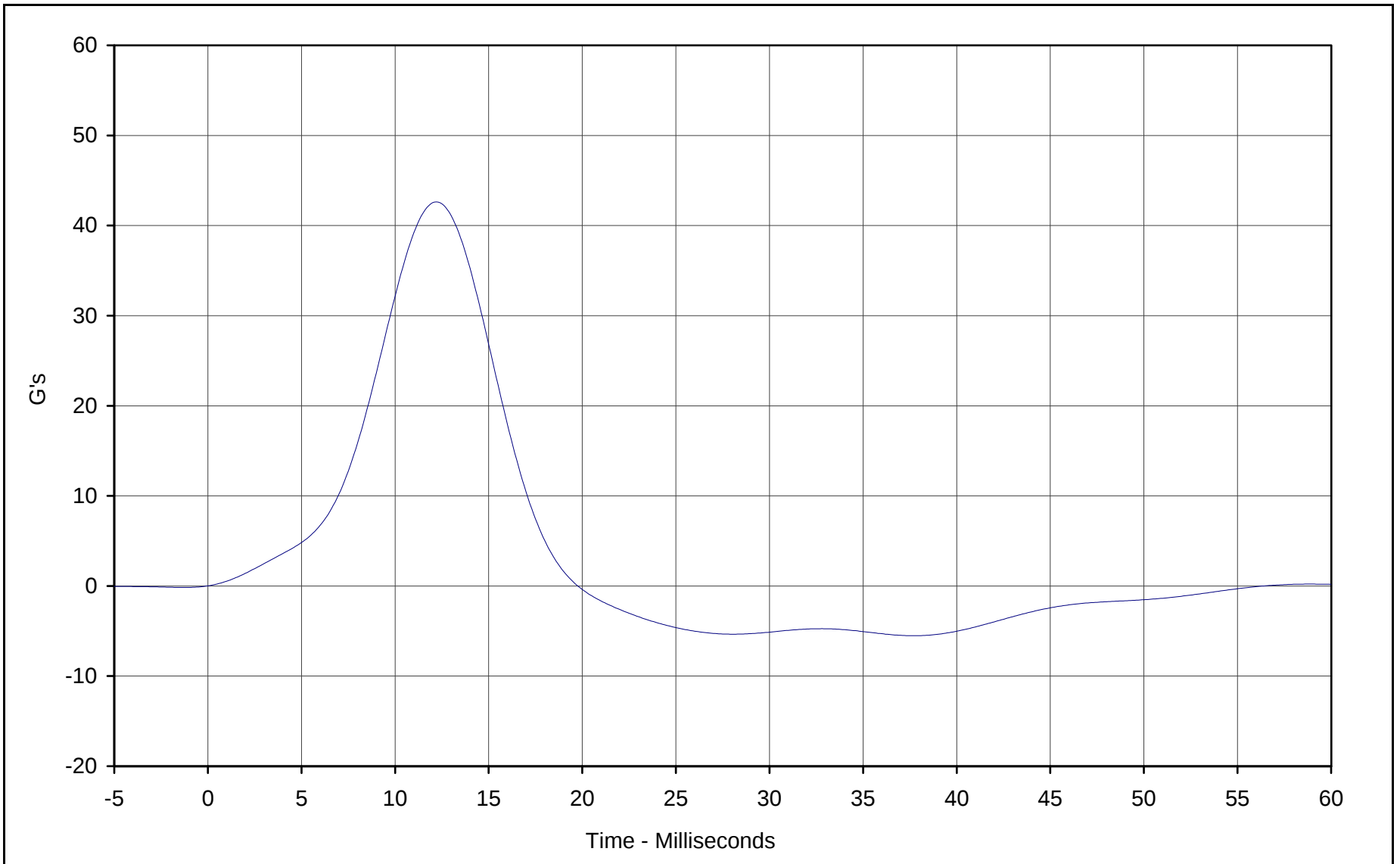
Laboratory Technician

February 27, 2001

Test Date

Approved By

Date



Curve Description: Pelvis Y Axis Acceleration
Maximum Value: 42.6 at 12.2 Milliseconds
Minimum Value: -5.5 at 37.6 Milliseconds
SAE Filter Class: FIR 100
Date of Test: 2/27/01

Test Program: SID Left Side Pelvis Lateral Impact
Test Information: SID S/N: 274 Test I.D.: PI02D





Performance Verification Data Side Impact Dummy (SID) Abdominal Compression Test

ATD Serial No.: 274

Part Serial No.: N/A

Test I.D.: AB02C

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°F	66 to 78	70	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Force at 0.5 Inches of Displacement	Pounds	23.0 to 36.0	29.2	Pass
Force at 0.75 Inches of Displacement	Pounds	36.0 to 50.0	43.1	Pass
Force at 1.0 Inches of Displacement	Pounds	50.0 to 63.0	59.3	Pass
Force at 1.3 Inches of Displacement	Pounds	73.0 to 88.0	82.2	Pass
Overall Test Results				Pass

Laboratory Technician

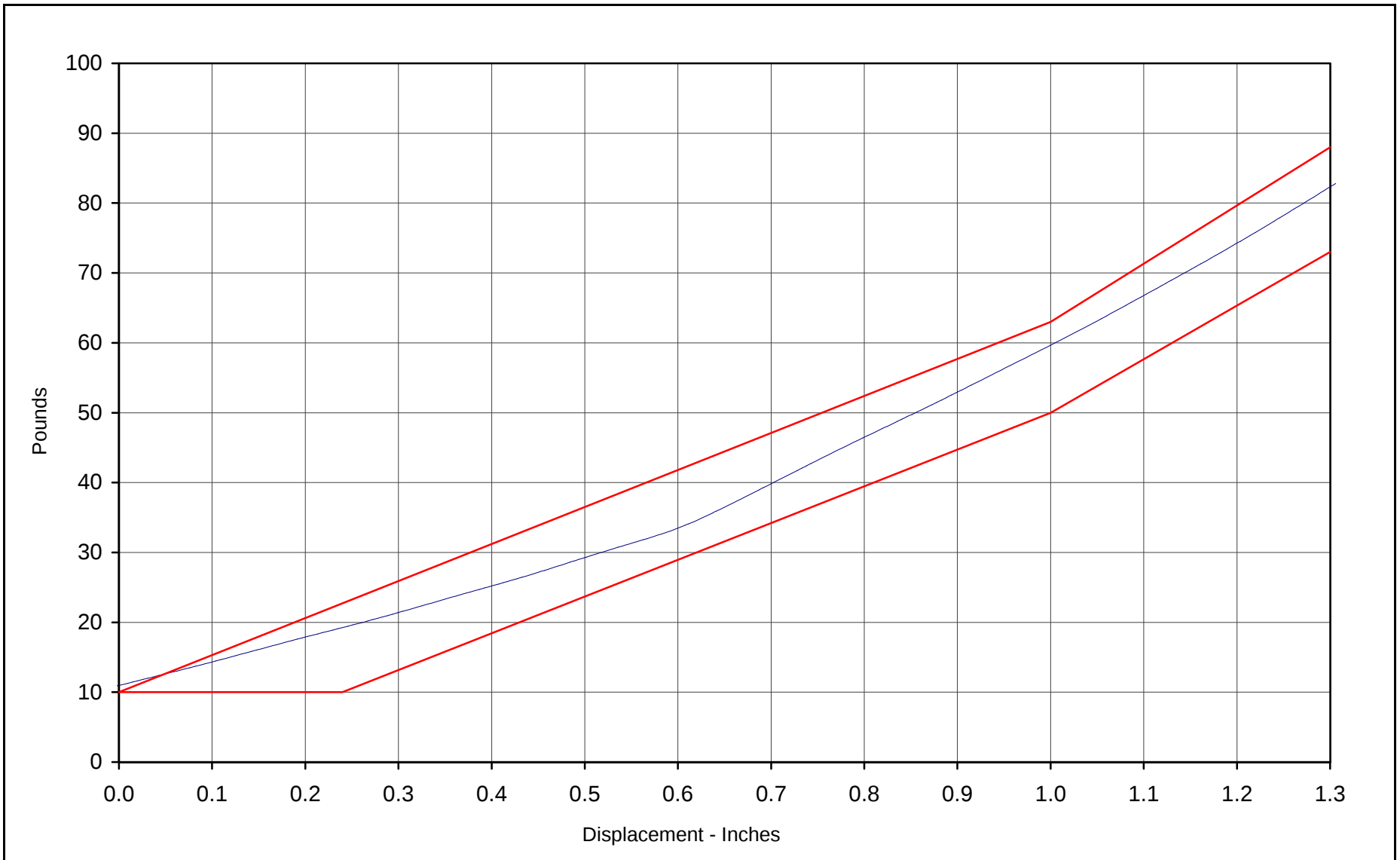
February 27, 2001

Test Date

Approved By

Date

C-21



Curve Description: Abdomen Force vs. Displacement

Force at 0.5 In.: 29.2 Pounds

Force at 0.75 In.: 43.1 Pounds

Force at 1.0 In.: 59.3 Pounds

Force at 1.3 In.: 82.2 Pounds

Date of Test: 2/27/01

Test Program: SID Abdominal Compression

Test Information: SID S/N: 274 Test I.D.: AB02C



KAR21003-11



Performance Verification Data Side Impact Dummy (SID) Head Drop Calibration

ATD Serial No.: 274

Part Serial No.: N/A

Test I.D.: HD02C

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°F	66 to 78	70	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Peak Resultant Acceleration	G's	210.0 to 260.0	222.5	Pass
Peak Lateral Acceleration	G's	≤10.0	6.1	Pass
Time Above 100 G's	Msec.	0.9 to 1.5	1.0	Pass
Is Resultant Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Overall Test Results				Pass

Laboratory Technician

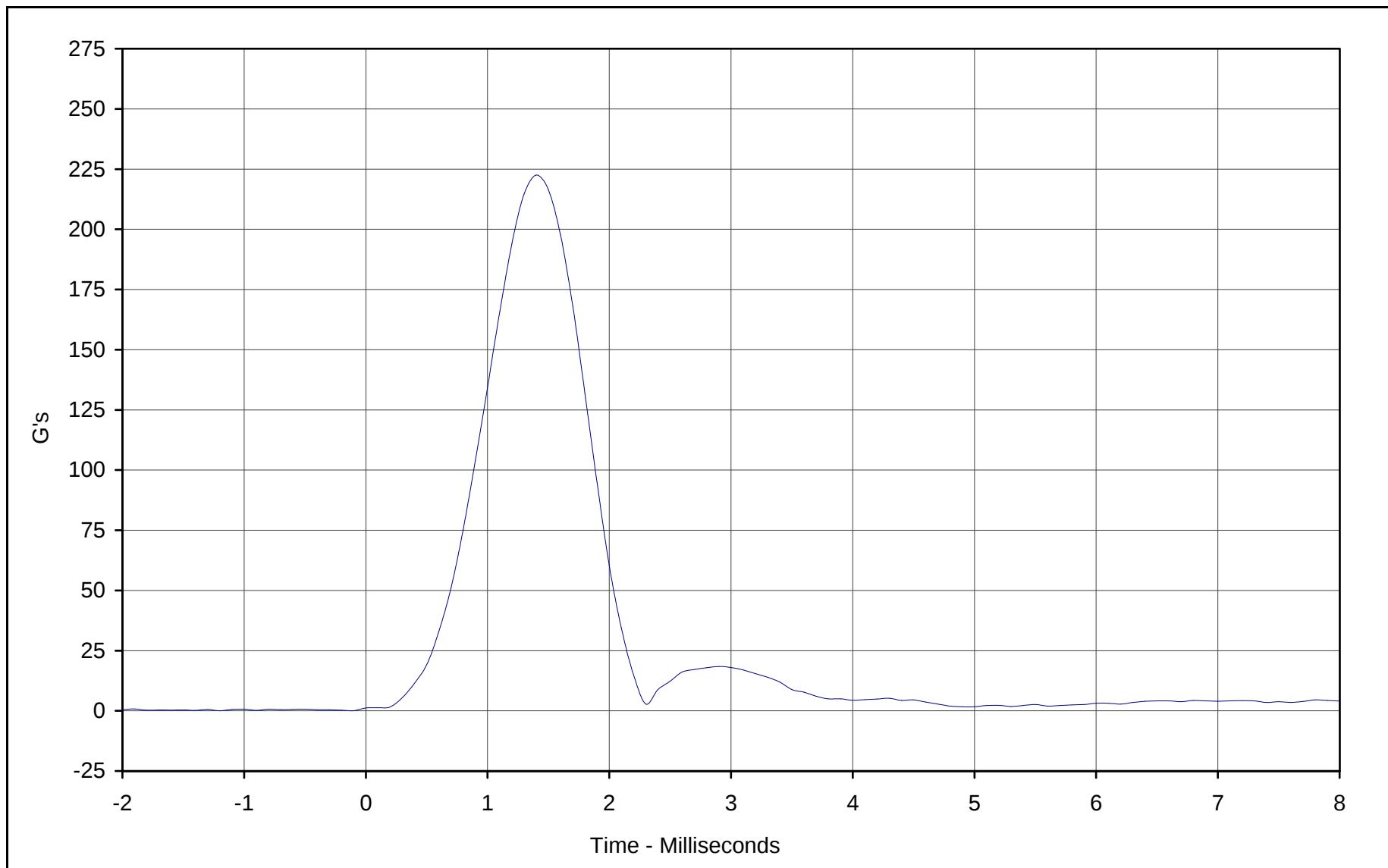
February 27, 2001

Test Date

Approved By

Date

C-23



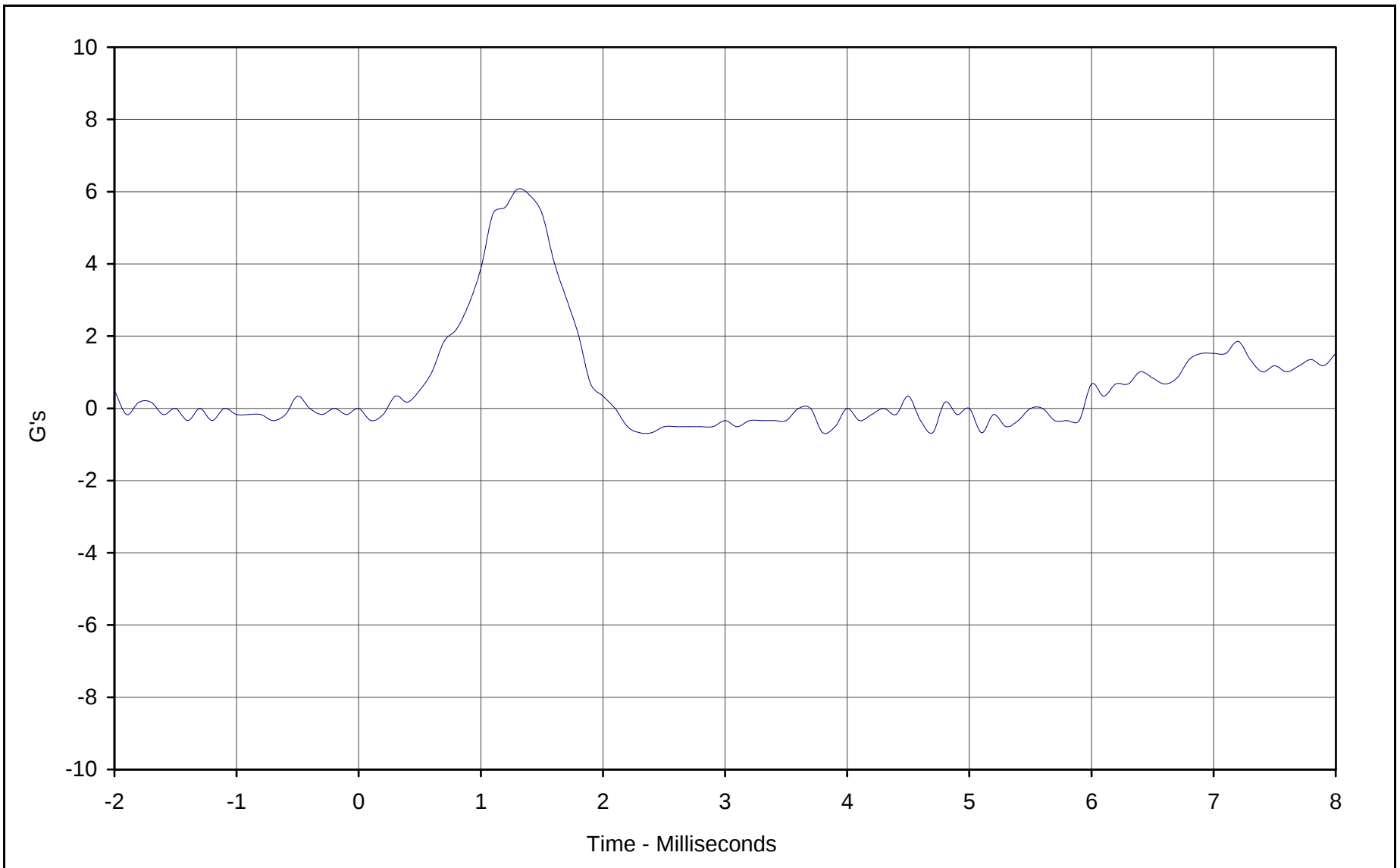
Curve Description: Head Resultant Acceleration
Maximum Value: 222.5 at 1.4 Milliseconds
Minimum Value: 1.2 at 0.0 Milliseconds
SAE Filter Class: 1000
Date of Test: 2/27/01

Test Program: SID Head Drop Calibration
Test Information: SID S/N: 274 Test I.D.: HD02C



KAR21003-11

C-24



Curve Description: Head Y Axis Acceleration
Maximum Value: 6.1 at 1.3 Milliseconds
Minimum Value: -0.7 at 2.3 Milliseconds
SAE Filter Class: 1000
Date of Test: 2/27/01

Test Program: SID Head Drop Calibration
Test Information: SID S/N: 274 Test I.D.: HD02C



KAR21003-11

APPENDIX D
TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

55/28 km/h Side Impact NCAP
Instrumentation Data Channel Assignments
Driver S.I.D. Serial Number 274
02/26/01
2001 Mazda Miata 2 Door Convertible

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
1	Head CG	X	KEAC069	Accel.,1/2 bridge	Endevco	7264-2000X	G
2	Head CG	Y	KEAC080	Accel.,1/2 bridge	Endevco	7264-2000Y	G
3	Head CG	Z	KEAC082	Accel.,1/2 bridge	Endevco	7264-2000Z	G
4	Upper Rib Primary	Y	KEAC066	Accel.,1/2 bridge	Endevco	7264-2000X	G
5	Lower Rib, Primary	Y	KEAC067	Accel.,1/2 bridge	Endevco	7264-2000Y	G
6	Lower Spine, Primary	Y	KEAC068	Accel.,1/2 bridge	Endevco	7264-2000Z	G
7	Pelvis, Primary	Y	KEAC079	Accel.,1/2 bridge	Endevco	7264-2000X	G
8	Upper Rib Redundant	Y	KEAC073	Accel.,1/2 bridge	Endevco	7264-2000X	G
9	Lower Rib, Redundant	Y	KEAC074	Accel.,1/2 bridge	Endevco	7264-2000Y	G
10	Lower Spine, Redundant	Y	KEAC075	Accel.,1/2 bridge	Endevco	7264-2000Z	G
11	Pelvis, Redundant	Y	KEAC081	Accel.,1/2 bridge	Endevco	7264-2000X	G
12	Thorax Contact	N/A	T0	Contact Switch	Tapeswitch	8 oz. Yellow	%
13	Pelvis Contact	N/A	T0	Contact Switch	Tapeswitch	8 oz. Yellow	%

55/28 km/h Side Impact NCAP
Instrumentation Data Channel Assignments
Vehicle Accelerometers
02/26/01
2001 Mazda Miata 2 Door Convertible

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
14	Right at Sill Front Seat	X	KETX2A	Accel., Triax	I.C. Sensor	3031-200	G
15	Right at Sill Front Seat	Y	KETX2B	Accel., Triax	I.C. Sensor	3031-200	G
16	Right at Sill Front Seat	Z	KETX2C	Accel., Triax	I.C. Sensor	3031-200	G
17	Rear Floorpan Above Axle	X	KETX4A	Accel., Triax	I.C. Sensor	3031-500	G
18	Rear Floorpan Above Axle	Y	KETX4B	Accel., Triax	I.C. Sensor	3031-500	G
19	Rear Floorpan Above Axle	Z	KETX4C	Accel., Triax	I.C. Sensor	3031-500	G
20	Left Sill at Front Door	Y	KEVA001	Accel., Vehicle block	I.C. Sensor	3031-500	G
21	Left Front Door Centerline	Y	ICST004X	Accel., Triax	I.C. Sensor	3031-500	G
22	Left Front Door Mid-Rear	Y	ICST004Y	Accel., Triax	I.C. Sensor	3031-500	G
23	Left Front Door Upper Centerline	Y	ICST004Z	Accel., Triax	I.C. Sensor	3031-500	G
24	A-Post Lower	Y	KEBX1A	Accel., Biax	I.C. Sensor	3031-200	G
25	A-Post Middle	Y	KEBX1B	Accel., Biax	I.C. Sensor	3031-500	G
26	Front Seat Track	Y	KEIC008Y	Single	I.C. Sensor	3031-500	G
27	Vehicle CG	X	KETX2A	Accel., Triax	I.C. Sensor	3031-200	G
28	Vehicle CG	Y	KETX2B	Accel., Triax	I.C. Sensor	3031-200	G
29	Vehicle CG	Z	KETX2C	Accel., Triax	I.C. Sensor	3031-200	G

55/28 km/h Side Impact NCAP
Instrumentation Data Channel Assignments
Moving Deformable Barrier
02/26/01
2001 Mazda Miata 2 Door Convertible

CH.	LOCATION	AXIS	IDENT. NO.	DESCRIPTION	MFR	MODEL	UNITS
30	MDB CG	X	ICST001X	Accel., Triax	I.C. Sensor	3031-100	G
31	MDB CG	Y	ICST001Y	Accel., Triax	I.C. Sensor	3031-100	G
32	MDB CG	Z	ICST001Z	Accel., Triax	I.C. Sensor	3031-100	G
33	MDB Rear Centerline	X	ICST002X	Accel., Biax	I.C. Sensor	3031-100	G
34	MDB Rear Centerline	Y	ICST002Y	Accel., Biax	I.C. Sensor	3031-100	G
35	Right Bumper Contact	N/A	T0	Contact Switch	Tapeswitch	40 oz. Grey	%