PE07-049

TOYOTA

1/11/2000

Final Response to IR PE07-049

New United Motor Manufacturing, Inc. (NUMMI) is the joint venture of General Motors Corporation and Toyota Motor Corporation. Established in Fremont, California, in 1984, NUMMI manufactures the Pontiac Vibe and sells it to GM and GM sells it to Pontiac dealers. Toyota, in consultation with GM and NUMMI, is responsible for responding to NHTSA inquiries relating to the subject vehicles. As such, this response has been collected by, and is being sent to your office by Toyota. Because GM, NUMMI and Toyota maintain different portions of the data responsive to this inquiry, this response includes data provided by each company, as is noted in the response to the individual inquiry number. For example, since GM provides the new vehicle warranty on the subject vehicles to retail purchasers, GM will provide the data responsive to requests in the inquiry regarding warranty claims, and this will be noted in the response to the appropriate inquiry number.

1. State, by model and model year, the number of the subject vehicles NUMMI has manufactured for sale or lease in the United States. Separately, for each subject vehicle manufactured to date by NUMMI, state the following:

   a. Vehicle identification number (VIN);
   b. Make;
   c. Model;
   d. Model Year;
   e. Date of manufacture;
   f. Date warranty coverage commenced; and
   g. The State in the United States where the vehicle was originally sold or leased (or delivered for sale or lease).

   Provide the table in Microsoft Access 2000, or a compatible format, entitled "PRODUCTION DATA."

Response 1

Based on GM's records and information, the number of subject vehicles produced for sale or lease in the United States by make, model and model year in Table 1 below:

Make/Model	2003 MY	2004 MY	Total
Pontiac Vibe	65,535	57,058	122,593

TABLE 1: VEHICLE PRODUCTION

The production information requested in 1a-1g is provided on the ATT_1 CD-ROM in the folder labeled Q_01; refer to the Microsoft Access 2000 file labeled, "Production Data." GM is providing the state where the vehicle was shipped in response to request 1g. For some of the subject vehicles, which have incomplete warranty files, the GM warranty system does not contain a warranty start date or state where the vehicle was shipped and, therefore, these fields are blank in Microsoft Access 2000 file. This information was collected on October 16, 2007.

2. State the number of each of the following, received by NUMMI, or of which NUMMI is otherwise aware, which relate to, or may relate to, the alleged defect in the subject vehicles:

    a. Consumer complaints, including those from fleet operators;
    b. Field reports, including dealer field reports;
    c. Reports involving a crash, injury, or fatality, based on claims against the manufacturer involving a death or injury, notices received by the manufacturer alleging or proving that a death or injury was caused by a possible defect in a subject vehicle, property damage claims, consumer complaints, or field reports;
    d. Reports involving a fire, based on claims against the manufacturer involving a death or injury, notices received by the manufacturer alleging or proving that a death or injury was caused by a possible defect in a subject vehicle, property damage claims, consumer complaints, or field reports;
    e. Property damage claims;
    f. Third-party arbitration proceedings where NUMMI is or was a party to the arbitration; and
    g. Lawsuits, both pending and closed, in which NUMMI is or was a defendant or codefendant.

    For subparts "a" through "e," state the total number of each item (e.g., consumer complaints, field reports, etc.) separately. Multiple incidents involving the same vehicle are to be counted separately. Multiple reports of the same incident are also to be counted separately (i.e., a consumer complaint and a field report involving the same incident in which a crash occurred are to be counted as a crash report, a field report and a consumer complaint).

    In addition, for items "c" through "g," provide a summary description of the alleged problem and causal and contributing factors and NUMMI's assessment of the problem, with a summary of the significant underlying facts and evidence. For items "d" through "g," identify the parties to the action, as well as the caption, court, docket number, and date on which the complaint or other document initiating the action was filed.

Response 2

General Motors searched the databases summarized in table 2-3 and provided cases related to front door window glass and its operation. Toyota has reviewed these cases and is including those that may be related to the alleged defect. The data has been separated into 2 tables. Table 2-1 lists those reports where there was a clear indication of broken glass and Table 2-2 lists those reports where there was no indication of broken glass.

TYPE OF REPORT	GM REPORTS	SUBCATEGORIES				
		CORRESPONDING TO NHTSA REPORTS	NUMBER WITH PROPETY DAMAGE	NUMBER WITH CRASH	NUMBER WITH INJURIES/ FATALITIES*	NUMBER WITH FIRES
Owner Report	96	3	0	0	10	0
Field Reports	16	0	0	0	0	0
Not-in-Suit Claims	1	0	0	0	1	0
Subrogation Claims	0	0	0	0	0	0
Third Party Arbitration proceedings	0	0	0	0	0	0
Product Liability Lawsuits	0	0	0	0	0	0
Total Reports (Including Duplicates)	113	3	0	0	11	0
Total Vehicles with Reports (Unique VIN)	107	3	0	0	11	0

TABLE 2-1: REPORTS THAT INDICATE BROKEN GLASS

TYPE OF REPORT	GM REPORTS	SUBCATEGORIES				
		CORRESPONDING TO NHTSA REPORTS	NUMBER WITH PROPETY DAMAGE	NUMBER WITH CRASH	NUMBER WITH INJURIES/ FATALITIES*	NUMBER WITH FIRES
Owner Report	0	0	0	0	0	0
Field Reports	100	0	0	0	0	0
Not-in-Suit Claims	0	0	0	0	0	0
Subrogation Claims	0	0	0	0	0	0
Third Party Arbitration proceedings	0	0	0	0	0	0
Product Liability Lawsuits	0	0	0	0	0	0
Total Reports (Including Duplicates)	100	0	0	0	0	0
Total Vehicles with Reports (Unique VIN)	100	0	0	0	0	0

TABLE 2-2: REPORTS THAT INDICATE NO BROKEN GLASS

*There are no reports of fatality

The data sources searched are shown in Table 2-3.

SOURCE SYSTEM	LAST DATE GATHERED ('03-'04 MY)	LAST DATE GATHERED ('05 MY)
GM Customer Assistance Center	October 24, 2007	November 12, 2007
GM Technical Assistance Center	October 30, 2007	November 13, 2007
GM Early Quality Feedback (EQF)	October 16, 2007	October 16, 2007
GM Field Information Network Database (FIND)	October 19, 2007	November 8, 2007
GM Field Product Report Database (FPRD)	October 19, 2007	November 8, 2007
GM Company Vehicle Evaluation Program (CVEP)	October 16, 2007	October 16, 2007
GM Captured Test Fleet (CTF)	October 16, 2007	October 16, 2007
GM--Legal/Employee Self Insured Services (ESIS)	October 24, 2007	October 24, 2007

TABLE 2-3: DATA SOURCES

3. Separately, for each item (complaint, report, claim, notice, or matter) within the scope of your response to Request No. 2, state the following information:

   a. NUMMI's file number or other identifier used;
   b. The category of the item, as identified in Request No. 2 (i.e., consumer complaint, field report, etc.);
   c. Vehicle owner or fleet name (and fleet contact person), address, and telephone number;
   d. Vehicle's VIN;
   e. Vehicle's make, model and model year;
   f. Vehicle's mileage at time of incident;
   g. Incident date;
   h. Report or claim date;
   i. Whether a crash is alleged;
   j. Whether a fire is alleged;
   k. Whether property damage is alleged;
   l. Number of alleged injuries, if any; and
   m. Type and/or location of the injury (i.e. cuts/abrasions to the arms, legs, etc.), if any; and
   n. Number of alleged fatalities, if any.

   Provide this information in Microsoft Access 2000, or a compatible format, entitled "REQUEST NUMBER TWO DATA."

Response 3

The requested information is provided on the ATT_1 disk in the folder labeled Q_03; please refer to the Microsoft Access 2000 file labeled, "COMPLAINT DATA." Some incident reports may not contain sufficient reliable information to accurately answer all parts of question3.

4. Produce copies of all documents related to each item within the scope of Request No. 2. Organize the documents separately by category (i.e., consumer complaints, field reports, etc.) and describe the method NUMMI used for organizing the documents.

Response 4

Copies of the records summarized in Table 2-1 and Table 2-2 are on the disk labeled ATT_1 embedded in the folder labeled Q_03; please refer to the Microsoft Access 2000 files labeled "COMPLAINT DATA." GM has organized the records by the GM file number within each attachment.

5. State, by model and model year, a total count for all of the following categories of claims, collectively, that have been paid by NUMMI to date that relate to, or may relate to, the alleged defect in the subject vehicles: warranty claims; extended warranty claims; claims for good will services that were provided; field, zone, or similar adjustments and reimbursements; and warranty claims or repairs made in accordance with a procedure specified in a technical service bulletin or customer satisfaction campaign.

   Separately, for each such claim, state the following information:

   a. NUMMI's claim number;
   b. Vehicle owner or fleet name (and fleet contact person) and telephone number;
   c. VIN;
   d. Repair date;
   e. Vehicle mileage at time of repair;
   f. Repairing dealer's or facility's name, telephone number, city and state or ZIP code;
   g. Labor operation number;
   h. Problem code;
   i. Replacement part number(s) and description(s);
   j. Concern stated by customer; and
   k. Comment, if any, by dealer/technician relating to claim and/or repair.

   Provide this information in Microsoft Access 2000, or a compatible format, entitled "WARRANTY DATA."

Response 5

Tables 5-1 through 5-4 summarize by model year the regular, goodwill and extended warranty claims for the subject vehicles that were collected by searching the labor codes that may be related to the alleged defect.

A list of the labor codes used is provided in response to item No. 6. A summary of the warranty claims, including the information requested in 5(a-k), is provided on the ATT_2 disk in the folder labeled "Q_05," refer to the Microsoft Access 2000 file labeled, "Q_05_WARRANTY DATA."

The warranty data that is summarized in tables 5-1 through 5-4 was reviewed and given the following codes in the column labeled "field 1" in each of the Access databases. The following includes a description of each of those codes and the information used to determine the code.

A1 - Broken Glass: Verbatim indicated that the glass was broken.

A2 - Br. Glass Check Link: Verbatim indicated that the glass was broken due to the check link.

A3 - Regulator: Verbatim indicated that the glass was binding, the regulator bolts were loose, the glass was noisy going up/down, the glass was rattling/popping, etc.

B1 - Replace Glass: Labor codes C0114/C0115

B2 - Check Link: Labor codes B4050/B4051

B2 - Check Link V: Verbatim indicates there was an issue with the check link

B3 - Regulator: Labor codes C0182/C0183

No Code: Codes left blank were only used in the Z claims - not enough information.

Make/Model	Coding	2003 MY	2004 MY	Total
Pontiac Vibe	A1	175	260	435
	A2	3	16	19
	A3	730	938	1,668
	B2-(V)	200	378	578
			Total	2,700

Table 5-1: Regular Warranty Claims: With Useful Verbatim

Make/Model	Coding	2003 MY	2004 MY	Total
Pontiac Vibe	B1	736	876	1,612
	B2	909	1796	2,705
	B3	3570	4457	8,027
			Total	12,344

Table 5-2:
Regular Warranty Claims: With No Verbatim or No Useful Verbatim

Make/Model	Coding	2003 MY	2004 MY	Total
Pontiac Vibe	A1	10	10	20
	A2	0	1	1
	A3	77	56	133
	B1	10	3	13
	B2/B2-(V)	95	89	184
	B3	372	277	649
			Total	1,000

Table 5-3: Extended Warranty Claims

Make/Model	Coding	2003 MY	2004 MY	Total
Pontiac Vibe	B2	0	1	1
	No Code	32	19	51
			Total	52

Table 5-4: Goodwill Claims

The sources of the requested information and the last date the searches were conducted are tabulated in Table 5-5 below.

Source System	Last Date Gathered
GM CARD --regular warranty	October 16, 2007
Motors Insurance Corporation (MIC) – extended warranty	September 21, 2007
Universal Warranty Corporation (UWC) – extended warranty	October 16, 2007

Table 5-5: Data Sources

The warranty data provided has limited analytical value in analyzing the field performance of a motor vehicle component. The warranty records do not contain sufficient information to establish the condition of the part at the time of the warranty correction, and service personnel may not consistently use the appropriate labor and trouble codes. Warranty numbers represent claims by our dealers for reimbursement for parts and labor costs incurred in performing warranty service for our customers. Consequently, some of these warranty claims are not related to the alleged defect.

GM's warranty database does not contain the following information: vehicle owner's name or telephone number, replacement part number description, or customer concern statement. A field labeled "Verbatim Text" is provided in response to request 5(k) (dealer/technician comment). The verbatim text is an optional field in the GM warranty system for the dealer to enter any additional comments that may be applicable to the warranty claim. The verbatim text field is not required to be completed for every warranty claim.

The MIC extended warranty system does not contain the vehicle owner information. The UWC extended warranty system does not use the GM labor code or labor code description and it does not contain the repairing dealer code, trouble code or trouble code description.

6. Describe in detail the search criteria used by NUMMI to identify the claims identified in response to Request No. 5, including the labor operations, problem codes, part numbers and any other pertinent parameters used. Provide a list of all labor operations, labor operation descriptions, problem codes, and problem code descriptions applicable to the alleged defect in the subject vehicles. State, by make and model year, the terms of the new vehicle warranty coverage offered by NUMMI on the subject vehicles (i.e., the number of months and mileage for which coverage is provided and the vehicle systems that are covered). Describe any extended warranty coverage option(s) that NUMMI offered for the subject vehicles and state by option, model, and model year, the number of vehicles that are covered under each such extended warranty.

Response 6

The following is a list of labor codes that were searched that may relate to the alleged defect:

Labor Code	Description:
C0114	FRONT SIDE DOOR WINDOW RPL-RT SIDE
C0114	FRONT SIDE DOOR WINDOW RPL-LT SIDE
B4050	LINK OR SPRING,FT DOOR HOLD OPEN-RT
B4051	LINK OR SPRING,FT DOOR HOLD OPEN-LT
C0182	FT SIDE DR WNDW REGULATOR RPL-RT SI
C0183	FT SIDE DR WNDW REGULATOR RPL-LT SI
Z1241	Personal Property Damage (Goodwill)
Z1242	Product Liability/Investigation REP PR (Goodwill)
Z1243	PAR – Repairs/Reimbursement (Goodwill)

Table 6-1: Labor Codes Searched

The subject vehicles are covered by a bumper-to-bumper new vehicle warranty for three years or 36,000 miles whichever occurs first. Many different extended warranty options are available through GM dealerships. They are offered at different prices and for varying lengths of time, based on customer's preference, up to 7 years from the date of purchase or up to a total of 100,000 vehicle miles. The General Motor's warranty system does not contain information on the number of vehicles that have extended warranty coverage. The number of extended warranty coverage contracts on the subject vehicles that have been sold by MIC regardless of status (in-force, expired, cancelled) as of October 19, 2007 is contained in Table 6-2.

Make/Model	2003 MY	2004MY	Total
Pontiac Vibe	17,066	12,053	29,119

Table 6-2: MIC Extended Warranty Coverage Contracts Sold

7. Produce copies of all service, warranty, and other documents that relate to, or may relate to, the alleged defect in the subject vehicles, that NUMMI has issued to any dealers, regional or zone offices, field offices, fleet purchasers, or other entities. This includes, but is not limited to, bulletins, advisories, informational documents, training documents, or other documents or communications, with the exception of standard shop manuals. Also include the latest draft copy of any communication that NUMMI is planning to issue within the next 120 days.

Response 7

GM has issued the following bulletins which may relate to the alleged defect on the subject vehicle:

- Preliminary Information (PI) #1583826 issued 1/20/2005. Dealers were instructed to inspect the door check strap if the customer notices a thump/pop noise when closing the doors. If the check strap is hitting the door glass/regulator assembly, should replace the check strap with a new design.
- Preliminary Information (PI) #1682913 issued 7/11/2005. Dealers were instructed to inspect and tighten (if necessary) the regulator to glass bolts if a customer notices a snap, pop, rattle or clunk noise when operating the front door window.

Please note that in the previous response, these documents were incorrectly identified as Service Bulletins. GM is not planning to issue in the next 120 days, any service, warranty or other technical documents or communications to its dealers, regional offices, zone offices or other entities regarding the subject condition in the subject vehicles.

The bulletins are included on the ATT_1 disk in the folder labeled Q_07. The preceding information was collected from GM Service Operations. The data collection was completed on 10/30/2007.

8. Describe all assessments, analyses, tests, test results, studies, surveys, simulations, investigations, inquiries and/or evaluations (collectively, "actions") that relate to, or may relate to, the alleged defect in the subject vehicles that have been conducted, are being conducted, are planned, or are being planned by, or for, NUMMI. For each such action, provide the following information:

   a. Action title or identifier;
   b. The actual or planned start date;
   c. The actual or expected end date;
   d. Brief summary of the subject and objective of the action;
   e. Engineering group(s)/supplier(s) responsible for designing and for conducting the action; and
   f. A brief summary of the findings and/or conclusions resulting from the action.

   For each action identified, provide copies of all documents related to the action, regardless of whether the documents are in interim, draft, or final form. Organize the documents chronologically by action.

Response 8

Toyota has summarized in a table the actions performed by Toyota and the supplier of the window glass. We are providing this information as "Attachment-Response 8." A copy of the confidential document related to the action is provided as "Attachment-Response 8-1." Please note that the documents "Attachment-Response 8" and "Attachment-Response 8-1" contain confidential information, and a request for confidential treatment has been submitted to the Office of Chief Counsel.

A public version of "Attachment-Response 8" and "Attachment-Response 8-1" are included with our response to your office; please see the Office of Chief Counsel for the confidential version of these documents.

Copies of non-confidential documents related to each action are provided on the ATT_2 CD-ROM, in a PDF file stored in the folder "Q_08" on CD-ROM. Copies of the confidential documents will be available electronically on CD-ROM in the submission to the Office of Chief Counsel.

The data collection was completed on 12/7/2007.

9. Describe all modifications or changes made by, or on behalf of, NUMMI in the design, material composition, manufacture, quality control, supply, or installation of the subject components, from the start of production to date, which relate to, or may relate to, the alleged defect in the subject vehicles. For each such modification or change, provide the following information:

    a. The date or approximate date on which the modification or change was incorporated into vehicle production;
    b. A detailed description of the modification or change;
    c. The reason(s) for the modification or change;
    d. The part number(s) (service and engineering) of the original component;
    e. The part number(s) (service and engineering) of the modified component;
    f. Whether the original unmodified component was withdrawn from production and/or sale, and if so, when;
    g. When the modified component was made available as a service component; and
    h. Whether the modified component can be interchanged with earlier production components.

    Also, provide the above information for any modification or change that NUMMI is aware of which may be incorporated into vehicle production within the next 120 days.

Response 9

Toyota has summarized, in a table, all modifications or changes made by Toyota, or on behalf of Toyota in the design, material composition, manufacture, quality control or installation, which may relate to the alleged defect in the subject vehicles. We are providing this information as "Attachment-Response 9". Please note that some of the information included in "Attachment-Response 9" is confidential, and a request for confidential treatment has been submitted to the Office of Chief Counsel. A public version of "Attachment-Response 9" is included with our response to your office, provided on the ATT_2 CD-ROM, in a PDF file stored in the folder "Q_09." Please see the Office of Chief Counsel for the confidential version of this document.

The data collection was completed on 12/7/2007.

10. Produce one of each of the following:

    a. Exemplar drawings of each design version of the subject component; and,
    b. Half/quarter sections drawings of the latest design version of the subject component.

Response 10

Toyota provides engineering drawings for subject component (e.g. front side window glass, power window regulator assembly, power window switch) in this response as Attachment-Response 10-1 through 10-9. Please note that the engineering drawings submitted in this response are confidential, and a request for confidential treatment has been submitted to the Office of Chief Counsel.

11. State the number of each of the following that NUMMI has sold that may be used in the subject vehicles by component name, part number (both service and engineering/production), model and model year of the vehicle in which it is used and month/year of sale:

    a. Subject component; and,
    b. Any kits that have been released, or developed, by NUMMI for use in service repairs to the subject component/assembly.

    For each component part number, provide the supplier's name, address, and appropriate point of contact (name, title, and telephone number).

Response 11

The number of subject components that GM has sold that may be used in the subject vehicles by component name, part number, and month/year of sale is provided electronically on CD-ROM, in Microsoft Excel 2000 format entitled "Number of components sold in the US.xls", stored in the folder "Q_11". This table contains service part numbers, part description, part usage information, including other GM vehicles that contain the identical component, part sales figures. Please note that description of each code used in the table is provided in the separate spread sheet in the same file.

The information on the supplier for each component is provided electronically on CD-ROM, in Microsoft Excel 2000 format entitled "Supplier Information.xls", stored in the folder "Q_11".

12. State the number similar or substantially similar vehicles NUMMI has sold that use the subject component. For each similar or substantially similar vehicle, identify:

    a. Vehicle's VIN;
    b. Vehicle's date of manufacture;
    c. Vehicle's make, model and model year;
    d. Mileage at time of incident;
    e. Date of incident;
    f. Whether a crash is alleged;
    g. Whether a fire is alleged;
    h. Whether property damage is alleged;
    i. Number of alleged injuries, if any;
    j. Type and/or location of the injury (i.e. cuts/abrasions to the arms, leg, etc.), if any;
    k. Number of alleged fatalities, if any; and,
    l. The State in the United States where the vehicle was originally sold or leased (or Delivered for sale or lease).

    Provide the table in Microsoft Access 2000, or a compatible format, entitled "PEER VEHICLES."

    Also identify any other vehicles of which NUMMI is aware that contain the identical component, whether installed in production or in service, and within the scope of Response No.12, provide a response to subparts "a" through "g".

Response 12

The substantially similar vehicles sold in the United States that use the subject component are Toyota Corolla vehicles. The vehicles sold in the United States that contain the identical component, whether installed in production or in service, are Toyota Corolla Matrix.
The number of those vehicles equipped with the power window system that Toyota has sold by make, model and model year is listed in Table 12 below:

Make/Model	2003 MY	2004 MY	Total
Toyota Corolla	225,952	197,844	423,796
Toyota Corolla Matrix	74,486	55,872	130,358

TABLE 12: VEHICLE PRODUCTION

For MY 2003-2004 Toyota Corolla, the data has been separated into 2 tables. Reports in Table 12-1 are those where there was a clear indication of broken glass and Table 12-2 where there was no indication of broken glass.

TYPE OF REPORT	TOYOTA REPORTS	SUBCATEGORIES			
		NUMBER WITH PROPETY DAMAGE	NUMBER WITH CRASH	NUMBER WITH INJURIES/ FATALITIES*	NUMBER WITH FIRES
Consumer Complaints	81	0	0	9	0
Field Reports	1	0	0	0	0
Total Reports (Including Duplicates)	82	0	0	9	0
Total Vehicles with Reports (Unique VIN)	80	0	0	9	0

TABLE 12-1: REPORTS THAT INDICATE BROKEN GLASS

TYPE OF REPORT	TOYOTA REPORTS	SUBCATEGORIES			
		NUMBER WITH PROPETY DAMAGE	NUMBER WITH CRASH	NUMBER WITH INJURIES/ FATALITIES*	NUMBER WITH FIRES
Consumer Complaints	65	0	0	0	0
Field Reports	0	0	0	0	0
Total Reports (Including Duplicates)	65	0	0	0	0
Total Vehicles with Reports (Unique VIN)	62	0	0	0	0

TABLE 12-2: REPORTS THAT INDICATE NO BROKEN GLASS

*There are no reports of fatality

For MY 2003-2004 Toyota Corolla Matrix, reports in Table 12-3 are those where there was a clear indication of broken glass and Table 12-4 where there was no indication of broken glass.

TYPE OF REPORT	TOYOTA REPORTS	SUBCATEGORIES			
		NUMBER WITH PROPETY DAMAGE	NUMBER WITH CRASH	NUMBER WITH INJURIES/ FATALITIES*	NUMBER WITH FIRES
Consumer Complaints	68	0	3	6	0
Field Reports	0	0	0	0	0
Total Reports (Including Duplicates)	68	0	3	6	0
Total Vehicles with Reports (Unique VIN)	63	0	1	6	0

TABLE 12-3: REPORTS THAT INDICATE BROKEN GLASS

TYPE OF REPORT	TOYOTA REPORTS	SUBCATEGORIES			
		NUMBER WITH PROPETY DAMAGE	NUMBER WITH CRASH	NUMBER WITH INJURIES/ FATALITIES*	NUMBER WITH FIRES
Consumer Complaints	50	0	0	0	0
Field Reports	0	0	0	0	0
Total Reports (Including Duplicates)	50	0	0	0	0
Total Vehicles with Reports (Unique VIN)	49	0	0	0	0

TABLE 12-4: REPORTS THAT INDICATE NO BROKEN GLASS

*There are no reports of fatality

In addition, the requested information is provided on the ATT_2 disk in the folder labeled Q_12; please refer to the Microsoft Access 2000 file labeled, “PEER VEHICLES.” Some incident reports may not contain sufficient reliable information to accurately answer all parts of question 12.
The data collection was completed on 10/22/2007.

13. State the number of each of the following, received by NUMMI, or of which NUMMI is otherwise aware, which relate to, or may relate to, the alleged defect in MY 2002 and MY 2005 Pontiac Vibe vehicles;

    a. Consumer complaints, including those from fleet operators;
    b. Field reports, including dealer field reports;

Response 13

The Pontiac Vibe was not produced for MY 2002. For MY 2005, the data has been separated into 2 tables. Reports in Table 13-1 are those where there was a clear indication of broken glass and Table 13-2 where there was no indication of broken glass.

TYPE OF REPORT	GM REPORTS	SUBCATEGORIES			
		NUMBER WITH PROPETY DAMAGE	NUMBER WITH CRASH	NUMBER WITH INJURIES/ FATALITIES	NUMBER WITH FIRES
Owner Reports	10	0	0	0	0
Field Reports	2	0	0	0	0
Total Reports (Including Duplicates)	12	0	0	0	0
Total Vehicles with Reports (Unique VIN)	11	0	0	0	0

TABLE 13-1: REPORTS THAT INDICATE BROKEN GLASS

TYPE OF REPORT	GM REPORTS	SUBCATEGORIES			
		NUMBER WITH PROPETY DAMAGE	NUMBER WITH CRASH	NUMBER WITH INJURIES/ FATALITIES	NUMBER WITH FIRES
Owner Reports	10	0	0	0	0
Field Reports	24	0	0	0	0
Total Reports (Including Duplicates)	34	0	0	0	0
Total Vehicles with Reports (Unique VIN)	32	0	0	0	0

TABLE 13-2: REPORTS THAT INDICATE NO BROKEN GLASS

14. Separately for each item within the scope of your response to Request No. 13, state the following information;

    a. The category of the item, as identified in Request No. 13 (i.e.,consumer complaint or field report);
    b. Vehicle's VIN
    c. Vehicle's manufacture;
    d. Vehicle's make, model and model year;
    e. Mileage at time of incident;
    f. Date of incident;
    g. Whether a crash is alleged;
    h. Whether a fire is alleged;
    i. Whether a property damage is alleged;
    j. Number of alleged injuries, if any;
    k. Type and/or location of the injury (i.e. cuts/abrasions to the arms, leg, etc.), if any;
    l. Number of alleged fatalities, if any; and,
    m. The State in the United States where the vehicle was originally sold or leased (or Delivered for sale or lease).

    Provide this information in Microsoft Access 2000, or a compatible format, entitled "MY02/MY05 COMPLAINT DATA."

Response 14

Copies of the records summarized in Table 13-1 and Table 13-2 are on the disk labeled ATT_2; refer to the folder labeled Q_14 in the file labeled "MY02_MY05 COMPLAINT DATA". GM has organized the records by the GM file number within each attachment.

15. Furnish NUMMI's assessment of the alleged defect in the subject vehicles, including:

    a. The causal or contributory factor(s);
    b. The failure mechanism(s);
    c. The failure mode(s);
    d. The risk to motor vehicle safety that it poses;
    e. What warnings, if any, the operator and the other persons both inside and outside the vehicle would have that the alleged defect was occurring or subject component was malfunctioning; and
    f. The reports included with this inquiry.

Response 15

Overview

After receiving the opening resume from NHTSA, Toyota began an investigation into the allegations of side window glass shattering on the Pontiac Vibe vehicles. This began with review of applicable field information and an evaluation of the factors that could lead to side window glass shattering on these vehicles. In addition, the evaluation reviewed the risk to motor vehicle safety that the issue presents to operators. While this evaluation is incomplete at the time of the writing of this response, the following will summarize the analysis made by Toyota, and offer a preliminary assessment of the issue at hand. While Toyota is still monitoring and evaluating the issue, no defect determination has been made at this time. It is important to note that Toyota, as well as GM, take these and all other allegations of defect very seriously, and at this time, Toyota is still processing the results of the evaluation.

In order to assess the causal and contributory factors associated with the alleged defect, Toyota reviewed all of the applicable field information available at the time. Based on the preliminary results of the evaluation, Toyota believes that there are predominantly two issues that appear within the field information that can contribute to the side window glass shattering. However, only one of the two failure modes appears to be more related to the alleged defect than the other, which is explained in the following response.

Identification of Failure Modes

Upon reviewing the field information (consumer complaints, field reports, and warranty claims), two main failure modes accounted for the shattering of the side window glass. Most predominantly, the loosening of the window regulator bolts appears within the field information. Less predominantly, interference of the side window glass with the door check link appears in the field information. Both issues can result in the shattering of the side window glass of the subject vehicles.

A majority of the reports included in this response are most likely related to the loosening of the window regulator bolts. These bolts secure the side window glass to the regulator assembly. The regulator assembly is the mechanism that moves the window glass up or down, depending on the command from the operator via the power window switch. The power window motor drives the regulator assembly to actuate the window within the track of the door frame. Bonded to the side window glass are two brackets which are bolted directly to the window regulator assembly. When the forward bolt loosens and completely separates from the assembly, the side window glass can be shattered.

Less often reported in the field information is a potential for an interference condition to occur between the side window glass and the door check link. The door check link is a component that prevents the front door from opening too far. It is a metal link that connects to the body and protrudes into the door cavity when the door is closed. In normal conditions, if the window is opened (retracted into the door cavity), the check link sits next to the lowered glass. However, if the door panel where the check like is attached has been deformed due to being opened too far, with excessive force, when the door is closed again the check link could interfere with the side window glass. The side window glass can

shatter if the door is then slammed shut. Also, there is a possibility that the side window glass may shatter if the side window is lowered onto the door check link. It is important to note that this failure mode could only occur in the event that the door frame has already been deformed and the window is opened, which means the side window glass can shatter in the door cavity. If the window is completely down, the shattered glass will be contained in the door cavity. If the window glass contacts the door check link when being rolled down and shatters, approximately 2/3rds of the window glass is contained in the door cavity as well.

Regulator Bolts

The side window glass is captured within a track in the door frame. This track is curved, matching the contour of the side of the vehicle. The regulator assembly is bolted within the door cavity to the door. Its purpose is to push the window up through the track in the door frame to the closed position, or pull the window down to the open position. Due to a design tolerance issue, the nut used to secure the side window glass bracket to the regulator assembly may not be able to sustain adequate holding torque due to an interference with the flange radius on the retention bolt. Over time, these nuts and bolts may loosen, and after 8 complete rotations, separate completely. If the front side regulator bolt becomes completely separated, the front side of the side window glass will separate from the regulator assembly and become misaligned. In this condition, if the window is raised via the power control, the regulator can still move upwards and it can interfere with the glass, causing the glass to shatter.

Assessment on Noise/Warning

Included in the response to question 8, is a study regarding the loosening of the regulator bolts. Based on the design of the regulator assembly, if the bolts loosen, there is a significant noise generated when the window is raised. This is due to the curved design of the window/door frame track and the linear motion of the regulator assembly which pushes the side window glass up or down. Since the glass must move along a curved path, and because the regulator only actuates in a linear fashion, the regulator assembly is designed to flex throughout its range of travel. Along the course of travel of the window up or down, there are two points in which the regulator flexion is reversed. For example, when the window is fully retracted, the regulator is bent inward. As the window is raised, the amount of bending that the regulator is required to allow is reduced until it reaches a point where there is no bending. After that, as the window is raised, it will bend outward. It will continue bending outward, reaching a point of maximum outward bending. Then, as the window is continued to be raised, the amount of outward bending reduces until there is no bending once again. If the window continues upward, the regulator will bend inward again until the window reaches the fully closed position.

At each of these “inflection” points, i.e., the points where the regulator is forced to reverse its bend, if the regulator bolts are loose, the regulator will move to the opposite side of contact. Since the regulator is essentially a metal spring under load, it will unload forcefully and contact either the nut or the side window glass bracket, depending on its current orientation. When it does this, a loud popping or clicking noise is generated. So if the operator raises the glass to the fully closed position, they will hear the noise twice. During our evaluation, we found that we could only hear the popping noise when the window was raised. We did not hear the noise when the window is lowered. Many complaints received by Toyota, GM, and NHTSA indicate a popping or clicking noise; we believe that

loose regulator bolts are the most likely cause.

Our assessment notes that the noise comes on and increases as the bolts loosen. However, at a certain point the noise reduces, as the gap opens between the regulator assembly and the glass bracket. It is only when the bolts completely loosen that the glass has the potential to shatter. A significant portion of the warranty data indicates that the owners are recognizing the noise as a problem and taking the vehicle into the dealer for service. However, we do acknowledge that there are a number of complaints regarding the shattering of the window. As such, we are still evaluating the warning that owners experience and how it relates to motor vehicle safety.

Warranty Limitations/Reasons to replace glass other than shattered

As mentioned above, the warranty data provided in this response has limited analytical value in analyzing the field performance of a motor vehicle component. The warranty records do not contain sufficient information to establish the condition of the part at the time of the warranty correction, and service personnel may not consistently use the appropriate labor and trouble codes. Warranty numbers represent claims by our dealers for reimbursement for parts and labor costs incurred in performing warranty service for our customers. Consequently, some of these warranty claims are not related to the alleged defect. The verbatim text is an optional field in the GM warranty system for the dealer to enter any additional comments that may be applicable to the warranty claim. The verbatim text field is not required to be completed for every warranty claim. There are many warranty claims submitted for which the glass was replaced, but there is no descriptive text. It is important to note that, in particular, sometimes window glass is replaced due to other factors such as scratches, cracks, or chips. Sometimes, the bonded clips (side window glass bracket) separated from the side window glass. In other times, visibility or clarity is a reason to replace the glass. However, the data does seem to indicate that owners are having the noise issue addressed prior to the glass shattering.

Conclusion/Summary

Toyota has been evaluating all of the factors of side window glass shattering and at this time have not made the determination of the existence of a safety defect. We have been evaluating the issue and believe that improper attention to loosening regulator bolts is the most probable cause of side window glass shattering. We do believe that this type of failure event is progressive and noticeable to the operator, and we do adhere to applicable glazing regulations that are in place to mitigate injury due to broken glass fragments. However, all of these factors need careful consideration, and we are still monitoring and evaluating the issue. We will share with your office our ultimate conclusion in regards to this matter after all of the details have been carefully considered.

* * *

GM claims that certain information, in documents that are part of lawsuit and claims files maintained by the GM Legal Staff, is attorney work product and/or privileged. That information includes items such as notes, memos, reports, photographs, and evaluations by attorneys (and by consultants, claims analysts, investigators, and engineers working at the request of attorneys.) GM has provided

documents responsive to NHTSA's request from claims files that are neither attorney work product nor privileged, and withholding those that are attorney work product and/or privileged.

Searches of General Motor Corporation (GM) locations were made where documents determined to be responsive to your request would ordinarily be found. As a result, the scope of this search did not include, nor could it reasonably include, "all of its divisions, subsidiaries (whether or not incorporated) and affiliated enterprises and all of their headquarters, regional, zone and other offices and their employees, and all agents, contractors, consultants, attorneys and law firms and other persons engaged directly or indirectly (e.g., employee of a consultant) by or under the control of GM (including all business units and persons previously referred to), who are or, in or after 1998, were involved in any way with any of the following related to the alleged defect in the subject vehicles:

a. Design, engineering, analysis, modification or production (e.g. quality control);
b. Testing, assessment or evaluation;
c. Consideration, or recognition of potential or actual defects, reporting, record-keeping and information management, (e.g., complaints, field reports, warranty information, part sales), analysis, claims, or lawsuit; or
d. Communication to, from or intended for zone representatives, fleets, dealers, or other field locations, including but not limited to people who have the capacity to obtain information from dealers."

The results of GM's searches were compiled and prepared by GM upon review of the documents produced by various GM locations, and does not include documents generated or received at those GM locations subsequent to their searches.

* * *

Regarding privileged documents that may be responsive to this information request, Toyota understands that it is acceptable to the Agency at this stage for Toyota to identify categories of privileged documents rather than any specific document within those categories. These categories include (a) communications between outside counsel and employees of Toyota's Law Department, other Toyota employees, or employees of parties represented by Toyota in litigation or claims; (b) communications between employees of Toyota's Law Department and other Toyota employees or employees of parties represented by Toyota in litigation or claims; (c) notes and other work product of outside counsel or employees of Toyota's Law Department, including work product of employees or consultants done for or at the request of outside counsel or Toyota's Law Department. For any privileged documents that are not covered by these categories, if any, Toyota will provide a privilege log identifying any such documents under separate cover. Toyota is not claiming a legal privilege for any documents provided with this response; however, Toyota does not waive the legal privilege or work product protection with respect to other documents that may have been prepared in connection with a specific litigation or claim. In addition, Toyota may assert the attorney client privilege or claim protection under the work-product doctrine for analyses or other documents that may be prepared in connection with litigation or claims in the future.

Toyota understands that NHTSA will protect any private information about persons that is contained in the Attachments to this response, based on privacy policy considerations. Such private information includes data such as names, addresses, phone or fax numbers, email addresses, license plate numbers, driver's license numbers and last 4 digits of the vehicle's VIN.

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TOYOTA

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Enclosure 1

Contents of Attachments

Attachment#	Item		Type	Pages	Confidential Business Information
Attachment-Response 8	List of Investigations	-	PDF	1	Marked Portions
Attachment-Response 8-1	Investigation Report	Test Report	PDF, Video	1	Marked Portions
Attachment-Response 8-2	Investigation Report	FMVSS 205 test report	PDF	4	No
Attachment-Response 8-3	Investigation Report	FMVSS 205 test report	PDF	4	No
Attachment-Response 8-4	Investigation Report	FMVSS 205 test report	PDF	4	No
Attachment-Response 9	Modification & Change	-	PDF	1	Marked Portions
Attachment-Response 10-1	Engineering drawing	REGULATOR ASSY, FRONT DOOR POWER WINDOW,	Paper	1	Entire Page
Attachment-Response 10-2	Engineering drawing	GLASS SUB-ASSY, FRONT DOOR, RH / LH	Paper	1	Entire Page
Attachment-Response 10-3	Engineering drawing	CHECK ASSY, FRONT DOOR, RH / LH	Paper	1	Entire Page
Attachment-Response 10-4	Engineering drawing		Paper	1	Entire Page
Attachment-Response 10-5	Engineering drawing	BOLT, FLANGE	Paper	1	Entire Page
Attachment-Response 10-6	Engineering drawing	BOLT, W/ WASHER	Paper	1	Entire Page
Attachment-Response 10-7	Engineering drawing	MASTER SWITCH ASSY, POWER WINDOW REGULAT	Paper	1	Entire Page
Attachment-Response 10-8	Engineering drawing	SWITCH ASSY, POWER WINDOW REGULAT	Paper	1	Entire Page
Attachment-Response 10-9	Engineering drawing	BOLT	Paper	1	Entire Page
Number of components sold in the US	Number of components sold in the US.xls	-	Excel File	11	No
Supplier Information	Supplier Information.xls	-	Excel File	1	No
PEER VEHICLES	Field information for the peer vehicles	-	Access File	-	No
MY02_05COMPLAINT DATA	Field information for the 2002 & 2005MY Vibe	-	Access File	-	No

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Enclosure 2

Certificate in Support of Request for Confidenti

Enclosure 2:

CERTIFICATE IN SUPPORT OF
REQUEST FOR CONFIDENTIALITY

I, Chris Tinto, pursuant to the provisions of 49 CFR 512, state as follows:

(1) I am Chris Tinto, Vice President, Toyota Motor North America, Inc., and I am authorized by Toyota Motor Corporation (Japan) to execute this certificate on its behalf;

(2) I certify that the information contained in the identified attachments (see Enclosure 1) of the response to NHTSA's October 12, 2007 letter [NVS-212cag; PE07-049] is confidential and proprietary data and is being submitted with the claim that it is entitled to confidential treatment under 5 U.S.C. 552(b)(4) (as incorporated by reference in and modified by the statute under which the information is being submitted);

(3) I hereby request that the information contained in the identified attachments be protected permanently;

(4) This certification is based on the information provided by the responsible Toyota Motor Corporation and affiliate personnel who have authority in the normal course of business to release the information for which a claim of confidentiality has been made to ascertain whether such information has ever been released outside Toyota Motor Corporation;

(5) Based upon that information, to the best of my knowledge, information and belief, the information for which Toyota Motor Corporation and their affiliates have claimed confidential treatment has never been released or become available outside Toyota Motor Corporation or their affiliates, with the exception of NUMMI partner General Motors, which received the information with the understanding it be held in the strictest confidence;

(6) I make no representations beyond those contained in this certificate and, in particular, I make no representations as to whether this information may become available outside Toyota Motor Corporation and their affiliates because of unauthorized or inadvertent disclosure (except as stated in paragraph 5); and

(7) I certify under penalty of perjury that the foregoing is true and correct. Executed on this, the 11th day of January 2008.

Executed on this, the 11th day of January 2008.

_____

Chris Tinto
Vice President
TOYOTA MOTOR NORTH AMERICA, INC.

PE07-049

TOYOTA

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Attachment-Response 8

CONFIDENTIAL BUSINESS INFORMATION

Summary of Actions

a. Action title	b. Start date	c. End date	d. Brief summary of the objective	e. Engineering group	f. Summary of findings	Tile of Attachment
Study on predictability of front window regulator bolt loosening	NA	2007/12	CONFIDENTIAL BUSINESS INFORMATION REMOVED			Attachment-Response 8-1
FMVSS 205 Test Report		1999/2	To demonstrate compliance with the applicable requirements of the FMVSS 205	Glass supplier	The test item specified with ANSI was passed.	Attachment-Response 8-2
		2002/5				Attachment-Response 8-3
		2006/8				Attachment-Response 8-4

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Attachment-Response 8-1

CONFIDENTIAL BUSINESS INFORMATION

Confidential Business Information Removed

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Attachment-Response 8-2

AP Technoglass Testing Laboratory

Elizabethtown, Ky.

AMECA Accredited Testing Facility

DOT-376

Report Date: Feb-15-1999
Report Number: 990215-70

Customer: AP Technoglass
Elizabethtown, Ky.

M-Number:	2H3
Thickness:	3.5mm ± 0.3mm
Color:	Solar Batch

Introduction

This report contains the results of examination and test of the above automotive safety glass to demonstrate compliance with the applicable requirements of the Federal Motor Vehicle Safety Standard 205 of the National Motor Vehicle Safety Act of 1966 and C.S.A. Standard D-263.

Summary

The following is a summary of the results of testing performed in accordance with ANSI Standard Z26.1-1977, Z26.1a-1980 and Z26.1-1983.

Test	Result
1. Light Stability	Pass
2. Luminous Transmittance	Pass
6. Impact Ball (3.05 meters)	Pass
7. Fracture	Pass
8. Impact Shot Bag (2.44 meters)	Pass
18. Abrasion Resistance	Pass

Authorization

Authorization by and coordinated with Quality Manager at AP Technoglass in Elizabethtown, Ky.

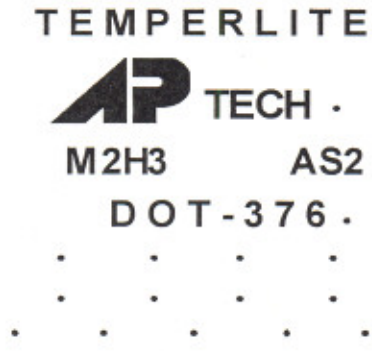
Material submitted;

3.5 mm Solar Green Tempered Float Safety Glass
DOT - 376 M-2H3 AS-2

Specimens submitted;

Twenty (20) - 12" x 12" (305mm x 305mm)
Three (3) - 4" x 4" (102mm x 102mm)
Three (3) - 3" x 12" (76mm x 305mm)

Approval Markings



Test No. 1 Light Stability Test No. 2 Luminous Transmittance

Three 3" x 12" flat specimens were tested for regular luminous transmittance at normal incidence using ICI Illuminant "A", before and after irradiation using a specified Suga test cabinet, under standard operation. Time of exposure was 100 hours.

Results

Percent Transmittance

Test Piece Number	Before Irradiation	After Irradiation	% Of Original Transmittance
1	72.80	72.70	99.86
2	72.80	72.70	99.86
3	72.80	72.70	99.86

Test Requirement: Test No. 1 requires a minimum of 70.0%
Test Requirement: Test No. 2 requires a minimum of 70.0%

Report Number: 990215-70

Test No. 6 Impact Ball 3.05 meters

Twelve 12" x 12" flat samples were separated and kept at a temperature of 21° C to 26° C for a minimum of 4 hours immediately preceding the test. The specimens were supported horizontally in a wooden frame made in accordance with Fig. 1 of the Standard. A 1/2 pound solid, smooth, steel sphere was dropped 3.05 meters once on each sample striking it within 25mm's of its center.

Test Requirements: Not more than two specimens (of the 12 tested) shall crack or break as a result of this test.

Results: Twelve specimens passed the test satisfactorily.

Test No. 7 Fracture

The specimens used in Test No. 6 shall be the same in Test No. 7 but the height from which the ball is dropped shall be increased by 12 inch increments, beginning at 11.0 ft, until all glass specimens are fractured.

Test Requirements: No individual fragment free from cracks shall weigh more than 4.25 grams.

Results: The levels at which fractures occurred are given below.

Fracture Height	Number of Specimens	Weight of Largest Fragment (Grams)
25'	1	0.59
26'	1	0.75
27'	1	0.45
28'	1	0.58
29'	2	0.57
30'	1	0.57
31'	1	0.26
32'	2	0.58
34'	1	0.50
35'	1	0.31

Test No. 8 Impact Shot Bag (2.44 meters)

Five 12" x 12" flat samples were separated and kept at a temperature of 21° C to 26° C for a minimum of 4 hours immediately preceding the test. The specimens were supported horizontally in a wooden frame made in accordance with Fig. 1 of the Standard.

An 11 pound shot bag was dropped 8 feet, freely and from rest, the bottom center of the shot bag striking the specimen within one inch of its center.

Test No. 8 Impact Shot Bag (Cont'd)

Testing Requirements: Not more than one specimen shall crack or break as a result of this test.

Results: Five specimens passed the test satisfactorily.

Test No. 18 Abrasion Resistance

Three 4" x 4" flat specimens were subjected to a test with the Taber Abraser. The Abraser was loaded with a weight of 500 grams per wheel and operated under standardized conditions for 1,000 cycles.

The light scattered by the abraded track was measured and the results computed in accordance with the requirements of the Standard.

Testing Requirements: The arithmetic mean of the percentage of light scattered by the 3 abraded specimens shall not exceed 2 percent.

Results: The arithmetic mean of the percentage of light scattered was less than 2 percent.

Test Piece Number	Haze Value Before	Haze Value After	Net Haze	Arithmetic Mean
1	0.1	0.3	0.2	
2	0.1	0.4	0.3	0.27
3	0.1	0.4	0.3	

Report Number: 990215-70

Report Prepared By:

Glenn Underwood

Title: QA Lab Team Leader

Report Approved By:

Title: Quality Assurance Manager

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Attachment-Response 8-3

AP Technoglass Testing Laboratory
Elizabethtown, Ky.
AMECA Accredited Testing Facility
DOT-376

Report Date: May-20-2002
Report Number: 020520-142

Customer: AP Technoglass

Testing Performed On	
M-Number:	2H3
Thickness:	3.5mm ± 0.3mm
Construction/Color:	Solar
Designation:	AS2

Introduction

This report contains the results of examination and test of the above automotive safety glass to demonstrate compliance with the applicable requirements of the Federal Motor Vehicle Safety Standard 205 of the National Motor Vehicle Safety Act of 1966 and C.S.A. Standard D-263.

Summary

The following is a summary of the results of testing performed in accordance with ANSI Standard Z26.1-1977, Z26.1a-1980 and Z26.1-1983.

Test	Result
1. Light Stability	Pass
2. Luminous Transmittance	Pass
6. Impact Ball (3.05 meters)	Pass
7. Fracture	Pass
8. Impact Shot Bag (2.44 meters)	Pass
18. Abrasion Resistance	Pass

Authorization

Authorization by and coordinated with Quality Manager at AP Technoglass in Elizabethtown, Ky.

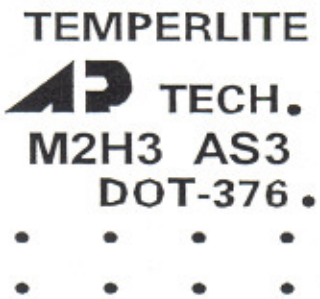
Material submitted;

3.5 mm Solar Tempered Safety Glass
DOT - 376 M-2H3 AS-2

Specimens submitted;

Forty (40) - 12" x 12" (305mm x 305mm) With and Without Ceramic & HP
Three (3) - 4" x 4" (102mm x 102mm)
Three (3) - 3" x 12" (76mm x 305mm)

Approval Markings



Test No. 1 Light Stability Test No. 2 Luminous Transmittance

Three 3" x 12" flat specimens were tested for regular luminous transmittance at normal incidence using ICI Illuminant "A", before and after irradiation using a specified Suga test cabinet, under standard operation. Time of exposure was 100 hours.

Results

	Percent Transmittance		
Test Piece Number	Before Irradiation	After Irradiation	% Of Original Transmittance
1	77.00	76.60	99.48
2	77.00	76.60	99.48
3	77.10	76.60	99.35

Test Requirement: Test No. 1 requires a minimum of 70.0%
Test Requirement: Test No. 2 requires a minimum of 70.0%

Test No. 6 Impact Ball 3.05 meters

Twelve 12" x 12" flat samples were separated and kept at a temperature of 21° C to 26° C for a minimum of 4 hours immediately preceding the test. The specimens were supported horizontally in a wooden frame made in accordance with Fig. 1 of the Standard. A 1/2 pound solid, smooth, steel sphere was dropped 3.05 meters once on each sample striking it within 25mm's of its center.

Test Requirements: Not more than two specimens (of the 12 tested) shall crack or break as a result of this test.

Results: Twelve specimens, with and without Ceramic & HP, passed the test satisfactorily.

Test No. 7 Fracture

The specimens used in Test No. 6 shall be the same in Test No. 7 but the height from which the ball is dropped shall be increased by 12 inch increments, beginning at 11.0 ft, until all glass specimens are fractured.

Test Requirements: No individual fragment free from cracks shall weigh more than 4.25 grams.

Results: The level at which fractures occurred are listed below.

Fracture Height	Number of Specimens	Weight of Largest Fragment (Grams)
21'	1	0.83
23'	1	0.77
24'	1	0.66
25'	3	0.74
26'	3	0.78
27'	2	0.64
29'	1	0.73

Test No. 8 Impact Shot Bag (2.44 meters)

Five 12" x 12" flat samples were separated and kept at a temperature of 21° C to 26° C for a minimum of 4 hours immediately preceding the test. The specimens were supported horizontally in a wooden frame made in accordance with Fig. 1 of the Standard.

Test No. 8 Impact Shot Bag (Cont'd)

An 11 pound shot bag was dropped 8 feet, freely and from rest, the bottom center of the shot bag striking the specimen within one inch of its center.

Testing Requirements: Not more than one specimen shall crack or break as a result of this test.

Results: Five specimens, with and without Ceramic & HP, passed the test satisfactorily.

Test No. 18 Abrasion Resistance

Three 4" x 4" flat specimens were subjected to a test with the Taber Abraser. The Abraser was loaded with a weight of 500 grams per wheel and operated under standardized conditions for 1,000 cycles.

The light scattered by the abraded track was measured and the results computed in accordance with the requirements of the Standard.

Testing Requirements: The arithmetic mean of the percentage of light scattered by the 3 abraded specimens shall not exceed 2 percent.

Results: (Not Applicable)

Test Piece Number	Haze Value Before	Haze Value After	Net Haze	Arithmetic Mean
1	0.17	0.73	0.56	
2	0.08	0.68	0.60	0.54
3	0.11	0.56	0.45	

Report Prepared By:

Glenn Underwood

Title: QA Technical Support

Report Approved By:

Title: Quality Assurance Manager

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Attachment-Response 8-4

FMVSS 205 Test Report
Testing Performed By AGC Automotive Americas - Ky
An AMECA Accredited Testing Facility
DOT-376

Test Completion Date: August 11, 2006
Report Number: 060811-218
Glass Manufacturer: AGC Automotive Americas - Kentucky

ANSI Z26.1-1996 Testing Performed On	
M-Number:	M-2H3
Thickness:	3.5mm ± 0.3
Color:	Solar Green
Designation:	AS2

Introduction

This report contains the results of examination and test of the above automotive safety glass to demonstrate compliance with the applicable requirements of the Federal Motor Vehicle Safety Standard 205 of the National Motor Vehicle Safety Act of 1966.

Summary

The following is a summary of the results of testing performed in accordance with ANSI Standard Z26.1-1996.

ANSI Z26.1-1996 Testing Specifications	Test Results
5.1 Light Stability	Complies
5.2 Luminous Transmittance	Complies
5.6 Impact, 227gram Ball (3.05m)	Complies
5.7 Fracture Test	Complies
5.8 Impact, Shot Bag (2.44m)	Complies
5.18 Abrasion Resistance	Complies

Authorized By The Quality Manager At AGC Automotive-Americas
Located In Elizabethtown, Ky.

FMVSS 205 Test Report
Testing Performed By AGC Automotive Americas - Ky
An AMECA Accredited Testing Facility
DOT-376

Material Tested;

Three 3" x 12" Flat Samples
Three 4" x 4" Flat Samples
Seventeen 12" x 12" Flat Samples (With Conductors and Obscuration Band)

Manufacturer Marking:

AGC AUTOMOTIVE
DOT-376 M2H3 AS2
30E
TEMPERLITE

Elizabethtown, KY Facility

AGC AUTOMOTIVE
DOT-376 M2H3 AS2
30B
TEMPERLITE

Bellefontaine, OH Facility

Test No. 1 Light Stability Test No. 2 Luminous Transmittance

Three 3" x 12" flat specimens were tested for regular luminous transmittance at normal incidence calculated to International Commission on Illumination "Illuminant A". After measuring regular luminous transmittance the same three specimens were subjected to ultraviolet radiation for 100 hours in an approved test cabinet. The irradiated specimens were then tested for regular luminous transmittance.

Results

	Visible Light Transmittance		
Sample	Before Irradiation	After Irradiation	Original Transmittance
1	74.20	74.00	99.73
2	74.20	74.00	99.73
3	74.20	74.00	99.73

Test Requirement: Test No. 1 requires a minimum of 95.0% of "Original Transmittance"
Test Requirement: Test No. 2 requires a minimum of 70.0% "Before & After Irradiation"

FMVSS 205 Test Report
Testing Performed By AGC Automotive Americas - Ky
An AMECA Accredited Testing Facility
DOT-376

Test No. 6 Impact Ball 3.05 meters

Twelve 12" x 12" flat samples were separated and kept at a temperature of 21° C to 29° C for a minimum of 4 hours immediately preceding the test. The specimens were supported horizontally in a steel frame made in accordance with Fig. 1 of the Standard. A 0.5 pound solid, smooth, steel sphere was dropped 3.05 meters once on each sample striking it within 25mm's of its center.

Test Requirements: Not more than two specimens (of the 12 tested) shall crack or break as a result of this test.

Results: Twelve specimens, with conductors and obscuration band, were tested and all of the samples passed.

Test No. 7 Fracture

The number of specimens selected from each model number of glazing shall be six (6) and shall be of the most difficult part or pattern designation within the model number.

Test Requirements: No individual fragment free from cracks and obtained withing 3 minutes subsequent to test shall weigh more than 4.25 grams (0.15 ounces).

Results:

Sample Number	Thickness	Weight of Largest Fragment (Grams)
	(mm)	Spec = ≤ 4.25 grams
1	3.4	1.02
2	3.4	0.42
3	3.4	1.07
4	3.4	0.38
5	3.4	0.83
6	3.4	1.17

Test No. 8 Impact Shot Bag

Five 12" x 12" flat samples were separated and kept at a temperature of 21° C to 29° C for a minimum of 4 hours immediately preceding the test. The specimens were supported horizontally in a steel frame made in accordance with Fig. 1 of the Standard.

(Test # 8 Continued On Next Page)

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DOT-376

Test No. 8 Impact Shot Bag (Cont'd)

An 11 pound shot bag was dropped 8 feet, freely and from rest, the bottom center of the shot bag striking the specimen within one inch of its center.

Testing Requirements: Not more than one specimen shall crack or break as a result

Results: Five specimens, with conductors and obscuration band, were tested and all of the samples passed.

Test No. 18 Abrasion Resistance

Three 4" x 4" flat specimens were subjected to a test with the Taber Abraser. The Abraser was loaded with a weight of 500 grams per wheel and operated under standardized conditions for 1,000 cycles.

The light scattered by the abraded track was measured and the results computed in accordance with the requirements of the Standard.

Testing Requirements: The arithmetic mean of the percentage of light scattered by the 3 abraded specimens shall not exceed 2 percent.

Results: The arithmetic mean of the percentage of light scattered was less than 2 percent.

Test Piece Number	Haze Value Before	Haze Value After	Net Haze	Arithmetic Mean
1	0.05	0.79	0.74	
2	0.05	0.88	0.83	0.78
3	0.05	0.82	0.77	

Report Prepared By:

Title: Quality Assurance

Report Approved By:

Title: QA Mgr

PE07-049

TOYOTA

1/11/2000

Q9

CONFIDENTIAL BUSINESS INFORMATION

Modifications/Changes

Check Assy, Front Door RH/LH

No	a	b	c	d	e	f	g	h
1	TBD	CONFIDENTIAL BUSINESS INFORMATION REMOVED		engineering 68610-02061 (RH) 68620-02061 (LH) service 88973009（RH） 88973010（LH）	No change No change	No	TBD	Possible

Bolts connecting the regulator arm to window glass channel

No	a	b	c	d	e	f	g	h
1	April, 2004	CONFIDENTIAL BUSINESS INFORMATION REMOVED		engineering 90084-10053 service 88973054	90080-11211 94859512	No	NA	Possible