



Kia Motors America, Inc.
Corporate Headquarters

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October 30, 2019

VIA FEDERAL EXPRESS

D. Scott Yon, Chief
Vehicle Defect Division-B
Office of Defects Investigation
U.S. Department of Transportation
National Highway Traffic Safety Administration
1200 New Jersey Avenue, S.E.
Washington D.C. 20590

Re: **Engineering Analysis (EA14-002)**
Panorama Sunroof Option (MY) 2011-2013 Kia Sorento

Dear Mr. Yon:

This letter is submitted in response to your email request dated October 8, 2019 wherein you requested that Kia Motors America, Inc. ("KMA") provide an update of certain field and analysis information for Requests 1-3 of EA14-002 IR letter sent to KMA on September 19, 2017 and Requests 7 and 12 (a)-(e) of EA14-002 IR letter sent to KMA on October 24, 2014. Your email also requested additional information which is provided in this submission.

REQUEST NO. 1:

State the number of each of the following, received by Kia, or of which Kia 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;
- d. Property damage claims;
- e. Third-party arbitration proceedings where Kia is or was a party to the arbitration;
and
- f. Lawsuits, both pending and closed, in which Kia is or was a defendant or codefendant.

For subparts "a" through "f", 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).

RESPONSE TO REQUEST NO. 1:

The following is a summary of the requested information which relate or may related to sunroof breakage:

Consumer Complaints—54
Field Reports—1
Technical Assistance Case Center Reports—4
Reports involving crash, injury or fatality—6
Property Damage claims—0
Third Party Arbitrations—0
Lawsuits—0

REQUEST NO. 2:

Separately, for each item (complaint, report, claim, notice, or matter) within the scope of your response to Request No. 1, state the following information:

- a. Kia's file number or other identifier used;
- b. The category of the item, as identified in Request No. 1 (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 the vehicle was occupied when the incident occurred;
- j. Whether the vehicle was in motion when the incident occurred;
- k. Whether a crash is alleged;
- l. Whether property damage is alleged;
- m. Number of alleged injuries, if any;
- n. Number of alleged fatalities, if any; and
- o. Whether goodwill assistance provided (added per Scott Yon email request of 10/09/19)

Provide this information in Microsoft Access 2010, or a compatible format, entitled "REQUEST NUMBER ONE DATA."

RESPONSE TO REQUEST NO. 2:

A listing of the responsive communications identified in Request No. 1 is provided on a Data Collection disc under the category “REQUEST NUMBER ONE DATA” and submitted with the response.

REQUEST NO. 3:

Produce copies of all documents related to each item within the scope of Request No. 1 that allege a crash, injury, or fatality occurred. (Also include all documents related to any incident in which Kia conducted a field assessment of the incident vehicle, including all photographs.) Organize the documents separately by category (i.e., consumer complaints, field reports, etc.) and describe the method Kia used for organizing the documents. Describe in detail the search methods and search criteria used by Kia to identify the items in response to Request No. 1.

RESPONSE TO REQUEST NO. 3:

Copies of the documents responsive to Request No. 1 where a crash, injury or fatality is alleged and where a field assessment was done are submitted with this letter. They are organized by the following category:

- Consumer Affairs (CA) reports where an injury was alleged—6

Kia’s search has identified a total of 56 unique VINs related to the alleged vehicle complaints. For the 2011-2014MY Sorento, Kia conducted an incremental search from search date identified in its response to EA14-002 dated October 6, 2017. As a result, Kia searched for all files from September 20, 2017 through September 30, 2019 which included the words “roof” and “broke” or “break”; “roof” and “shatter”; and “roof” and “explode” or “explo”. The results were then reviewed to identify those items which relate, or may relate to the alleged defect as described in your letter.

REQUEST NO. 4:

Produce copies of all service, warranty, and other documents that relate to or may relate to, the alleged defect in the subject vehicles, that Kia has issued to any dealers, regional or zone offices, field offices, fleet purchasers, or other entities.¹ 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 Kia is planning to issue within the next 120 days.

¹ Pursuant to Scott Yon’s email of October 8, 2019, “other entities” includes KMA’s internal groups such as the Customer Affairs Department.

RESPONSE TO REQUEST NO. 4:

See Tab 1.

REQUEST NO. 5:

Provide a copy of the service repair procedure for the installation of the cross braces associated with the service campaign issued in Canada.

RESPONSE TO REQUEST NO. 5:

See Tab 2.

REQUEST NO. 6:

Furnish Kia's assessment of the alleged defect in the subject vehicle, 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; and
- e. What warnings, if any, the operator and other person both inside and outside the vehicle would have that the alleged defect was occurring or subject component was malfunctioning.

RESPONSE TO REQUEST NO. 6:

Beginning in May 2012, Kia became aware of reports of fractured panoramic sunroofs. As additional reports were received, the fractures were analyzed for potential quality and safety issues in relation to the Kia Sorento. During the following year, increasing efforts were made at KMA, KMC, the sunroof supplier, and the glass supplier to search for cause and defect issues. Without exception, the only causal factor identified by experienced field personnel and engineers for such breakage was road debris impacts.

Two fracture scenarios were identified out of that investigation and research: (i) instantaneous breakage caused immediately upon an external impact with large and/or sharp rocks or piece of debris with sufficient driving or environmental velocity, and (ii) an impact which results in damage to the sunroof glass but where breakage does not occur until additional forces or stresses are applied to the glass. A major finding from working with the sunroof and glass suppliers was that the majority of the industry uses heat tempered glass² in their sunroofs, which is lightweight and designed to fracture into small low mass nuggets without the sharp edges that accompany

² Tempered glass is heat treated to increase its strength. This tempering process creates a compression outer surface layer while the interior of the glass remains into tension. This dynamic causes the glass, when broken, to crumble into small granular nuggets instead of splintering into jagged shards.

annealed glass fractures. Initially, no injuries were identified by Kia, but it later became clear that tempered sunroof glass could cause nicks similar to a shaving razor cut, but which never exceeded an AIS-1 level on the Abbreviated Injury Scale.

Kia's research into a prior defect investigation involving Cadillac models with large sunroofs, also showed that both GM and NHTSA had reached similar conclusions in that investigation. Despite the identification of road debris impacts as being the only cause for the breakage in the Sorento sunroofs, the relatively small number of sunroof breakage incidents overall, and the absence of significant injury risk, Kia decided to contact NHTSA in May 2013 to ensure that it had not missed a defect issue of which NHTSA was aware. That initiated further years of investigation and research. Kia believes that all sunroof issues have been fully evaluated and in fact exhausted by now, and the correct course of action is to close the current Sorento investigation based on the absence of any unreasonable risk to highway safety.

More specifically, Kia, in cooperation with multiple sunroof and glass suppliers, has committed substantial resources to identify any defect in the panoramic sunroof system and glass used in the 2011-2014MY Sorento. This work has inevitably encompassed ongoing reviews of the sunroofs and field data from all other Kia vehicles with panoramic sunroofs. No evidence of a defect has been identified, and Kia's efforts have led to the following conclusions:

- Sunroof breakage events are a rare occurrence. Kia's most up-to-date evaluation of all its field data identifies a total of 383 sunroof breakage incidents in a vehicle population of 93,344. This translates to an unremarkable incident rate of 0.41% which is consistent with the sporadic external impacts of all vehicles with road debris.³ Even more telling is the fact that the 2011-13MY and 2014MY Sorento vehicles have different sunroof designs (two panels vs. three panels) and resulting different dimensions, as well as different glass and sunroof suppliers, and yet have similar low-levels of sunroof breakage events—both below 1%.⁴ Investigations of fracture incidents for both designs have consistently identified external impacts as the cause. The assertion of “spontaneous shattering” or “explosions” is understandable as an element of surprise to the driver – who has no realistic opportunity to intercept in his vision the high speed approach of the rock or debris. But such terminology has no support in the researched facts and engineering investigations performed by Kia and its suppliers.
- All vehicle glass will break when impacted with sufficient force. Thus, sunroof breakage can and does occur in all vehicles without the presence of a defect. This is reflected in the class action litigation filed against fundamentally all vehicle manufacturers with panoramic sunroofs (including but not limited to Ford, Toyota, Nissan, Volkswagen, and BMW) where plaintiff attorneys have consistently and repetitively alleged that each vehicle manufacturer's sunroof will spontaneously

³ These numbers reflect the number of unique VINs identifying a sunroof fracture incident divided by the vehicle population of the 2011-2014MY Sorento vehicles.

⁴ The 2011-13MY Kia Sorento vehicles have a failure rate of 0.47% while the 2014MY Sorento vehicles have a failure rate of 0.26%.

“explode.” These allegations are based on a similarly small number of sunroof fractures which allegedly evidence a much larger group of vehicles with the same repetitive range of supposed defects including glass curvature, external dimensions, unibody flexing, glass thickness, etc. These sunroof fractures are in every case occurring at a low rate similar to those experienced by Sorento owners due to external impact.

- Kia’s panoramic sunroofs are well designed by multiple suppliers and comparable to other sunroofs used within the industry. Like most vehicles equipped with sunroofs, the Sorento panoramic sunroof is manufactured with tempered glass. As part of Kia’s evaluation of sunroof breakage, it requested that its glass and sunroof suppliers evaluate their internal procedures to identify potential flaws which might contribute to fracture events. Kia also evaluated its sunroof installation process at its Georgia plant. These evaluations have confirmed that the sunroof glass fully complies with FMVSS 205 and that no manufacturing, installation, or assembly process errors are contributing to fracture events.
- Sunroof fractures do not create a significant injury risk to vehicle occupants. This is due to the fracturing properties of tempered glass. Tempered glass is designed to fracture into small, rounded, low mass particles which reduce laceration risks. Kia has received 57 reports of incidents in which vehicle occupants were alleged to have been injured by sunroof fracture. But those injuries commonly consist of minor flesh level nicks from the glass (AIS-1 level). Moreover, the limited nature of these injuries is highlighted by the number of customers who allege that their injury occurred during the clean-up process while sweeping or picking such nuggets from the vehicle. (See, e.g., CA # 12632739, K2574320, and 13304119, all indicating that the customer sustained injuries while cleaning up the glass). This suggests that the customer’s post-fracture actions greatly contribute to the injury risks.
- Much of NHTSA’s driver distraction concern stems from the loud noise which accompanies a sunroof fracture event. Many customers describe the sound as a “boom”, a “bang”, or a “shot gun” firing. This sound is created by tempered glass fracturing properties which cause the glass to fracture instantaneously when the compression layer is penetrated. This occurs at a speed faster than the speed of sound which creates the loud “boom” or “bang” sound experienced. But Kia believes that the speed at which the sound of a fracture is experienced by the driver provides little opportunity for a driver to react in a manner which would detract from the act of driving. Thus, while the fracture event is loud, the driver is able to manage the sound as they would any other information received from the driving environment (e.g., lane changing vehicle or a rock hitting the windshield). This is supported by the fact that there have been no reports of sunroof breakage impairing a driver’s ability to safely maneuver their vehicle. And ironically, the only potential field- fix proposed by NHTSA and evaluated by Kia (i.e., incorporating a glass-catching laminate film to the inside of Kia’s sunroof) actually increase the fracture sound to the vehicle occupants by as much as 25%. As such, based on the field data that has been evaluated, NHTSA’s driver distraction concern is

speculative.

Kia's findings are consistent with past NHTSA investigations into similar reports of panoramic sunroof breakage. In 2005, NHTSA investigated reports of sunroof shattering in the 2004-06MY Cadillac SRX vehicles with Ultraview sunroofs. PE05-052. During GM and NHTSA's evaluation, neither identifies any defective manufacturing, process, design, or quality control issue with the glass roof system, and noted that "the rate of incident for the subject vehicle is within the range of peer vehicles for glass roof breakage." EA06-001 Closing Resume Report. NHTSA concluded the fractures were "due to random impacts with stones or sharp objects" and closed the investigation. *Id.* In 2006, NHTSA investigated reports of moonroof shattering in Toyota Scion tC vehicles and concluded those vehicles "sustain[ed] . . . shattering and/or damage at rates comparable to those for most other similarly equipped vehicles." PE06-024 Closing Resume. The agency noted that "while tempered glass panels . . . are shatter-resistant, some catastrophic failures do in fact occur," and "[i]mpact with small stones or road debris may result in immediate or delayed shatter incidents" in rare instances. *Id.*

NHTSA's prior findings are also consistent with the findings of the United Nations Informal Working Group ("IWG") assembled to evaluate and potentially revise international glazing standards for panoramic sunroofs. At the conclusion of several IWG⁵ meetings, regulators and auto industry group participants reached the following consensus on "key findings": (1) "the risk of damage through glass breakage is rather small compared to delivered volumes of sunroofs," (2) sunroof breakage resulted in "a low number of minor injuries," and (3) the cause of sunroof breakage was likely "due to impact" from external road debris. Nothing Kia has identified over its 7-year sunroof evaluation has led to any different conclusions. Kia Sorento sunroof fracture incidents are occurring at a rate within the continuum of comparable vehicle manufacturers. Kia has verified the integrity of its supply chain and assembly process and finds no evidence to support a conclusion that Kia's Sorento panoramic sunroofs are in any way defective. As such, it believes that NHTSA should close the current investigation.

Sincerely,



J.S. (Jurassie) Park
Vice President, Product Liability &
Regulatory Compliance
Kia Motors America, Inc.

⁵ Public documents make clear that NHTSA was an active participant in the IWG and heavily involved in the process of the group reaching its conclusion.



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VIA FEDERAL EXPRESS

October 30, 2019

Jonathan Morrison, Chief Counsel
Office of the Chief Counsel (NCC-100)
National Highway Traffic Safety Administration
West Building, W41-326
1200 New Jersey Avenue, S.E.
Washington, D.C. 20590

Re: Engineering Analysis (EA14-002)
Panorama Sunroof Option (MY) 2011-2013 Kia Sorento

Dear Mr. Morrison:

On behalf of Kia Motors America, Inc. ("KMA") hereby requests that certain documents submitted in its response to EA14-002 dated October 30, 2019 be treated as confidential. Two (2) confidential copies are being submitted as KMA is seeking confidential treatment of the documents in their entirety. In accordance with 49 C.F.R. 512.3(c), confidential business information includes trade secrets or commercial or financial information that is privileged or confidential as described in the Freedom of Information Act. See 5 U.S.C. 522(b)(4). Commercial information is considered confidential if it has not been publicly disclosed and if its release is likely to cause substantial harm to Kia's competitive position. 49 C.F.R. 512.3.

KMA is seeking confidential treatment of settlement agreements that are being produced in response Request No. 3. The settlement agreements constitute confidential business information as the agreements have never been publicly disclosed and relate to litigation which KMA and/or Kia has been involved in. Furthermore, the settlement agreements contain financial information and settlement terms that, if disclosed, would encourage consumers and their attorneys to initiate litigation and/or attempt to reach settlement agreements that are more "lucrative" than the agreements submitted. As such, confidential treatment of the settlement agreements is necessary in order to prevent harm to KMA's competitive position. In addition, public disclosure of Kia's settlement agreements would discourage the disclosure of similar documents by automobile manufacturers and impair NHTSA's ability to ensure and promote motor vehicle safety.

Jonathan Morrison, Chief Counsel
Office of Chief Counsel
October 30, 2019
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In addition, KMA is also seeking confidentiality of its internal sunroof interview script which it developed for collecting and evaluating information from its customers.

If you have any questions or if you need anything further, please do not hesitate to contact me.

Sincerely,

A large black rectangular redaction box covering the signature of J.S. (Jurassic) Park.

J.S. (Jurassic) Park
Vice President, Product Litigation &
Regulatory Compliance

Cc: Scott Yon, Michael Lee

CERTIFICATE IN SUPPORT OF REQUEST FOR CONFIDENTIALITY

I, J.S. (Jurassic) Park, pursuant to the provisions of 49 C.F.R. Part 512, state as follows:

(1) I am the Vice President of Product Liability and Regulatory Compliance for Kia Motors America, Inc. ("KMA"), and I am authorized by KMA and Kia Motors Corporation ("KMC") to execute this certificate on their behalf;

(2) I certify that the information contained in documents being submitted by KMA, in response to Scott Yon's email request dated October 8, 2019 pursuant to EA14-002 is confidential and proprietary 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 statute under which the information is being submitted);

(3) I hereby request that the information contained in the following documents is to be protected on a permanent basis:

- The settlement agreement submitted in response to Request No. 3; and
- The sunroof interview script submitted in response to Request No. 4 of Kia's response to EA14-002, dated October 30, 2019 (Tab 1);

(4) This certification is based on the information provided by the responsible Kia 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 Kia;

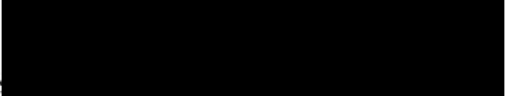
(5) Based upon that information, to the best of my knowledge, information and belief, the information for which Kia has claimed confidential treatment has never been released or become available outside Kia; except for disclosures to manufacturers, customers and suppliers of the companies, who were provided the information with the understanding that such information must be maintained in 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 Kia 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 30th day of October, 2019.

Kia Motors America, Inc.

By: 

J.S. (Jurassic) Park, Vice President,
Product Litigation & Regulatory Compliance