

Mercedes-Benz Part 573 Submission

Report Submitted to Portal November 19, 2024

Chronology-Only section

Chronology of Defect/Noncompliance Determination Supplement for ODI 24-00855-32103-10

In the beginning of December 2017, MBAG launched initial investigations based on isolated field reports from outside the US, claiming that the sliding roof panel detached from the vehicle. No damage or injuries were reported as a result of these events. The sliding roof assemblies of the affected vehicles were requested and returned by the individual markets.

The returned field parts were analyzed by the supplier as well as by an external laboratory. The analysis of the supplier and outside laboratory were inconclusive. Since these analyses did not indicate a potential root cause and this type of sliding roof was already out of production, MBAG began to look for vehicles from the global used car market to carry out further investigations. By November 2018, three sliding roofs were retrieved and analyzed. From these three sliding roofs, two did not indicate any issues. While one of the sliding roof panels exhibited indications of an impaired bonding, and the others did not, it was unclear why the bonding on this particular sliding roof was not as strong compared to the other field samples.

MBAG, along with the supplier, also undertook a thorough review of the supplier's production records to determine if there were any changes made during the course of production. That review concluded in May, 2019. MBAG found that the supplier had changed the process of the primer application several times over the course of the full production period, including having changed the drying time for the bonding agent.

MBAG then conducted testing, featuring various test methods to determine whether a reduced drying time may have affected the bonding performance over time. MBAG additionally undertook further investigations to correlate the testing results, suggesting that there could be a diminution in bonding performance depending on the production period of sliding roofs.

In November 2019, MBAG determined that during a specific production period, in which the supplier reduced the drying time of the primer to two minutes from greater than 5 minutes, the adhesion of the glass panel bonding might not have met specifications.

It was then found that potentially affected parts from this supplier production period were also supplied as spare parts. Since the document retention requirements of the workshop repair orders are limited to ten years, it was not possible to link the spare parts affected by this issue to customer vehicles. On December 13, 2019, MBAG decided, to conduct a safety recall for the complete production range of the potentially affected models with a two-minute primer drying time (NHTSA Recall ID#19V918).

In the course of 2020, additional examples of damaged parts which fell outside the original recall scope were returned from the field for examination. The supplier was asked to conduct further analyses of production processes for these parts. Its investigation revealed that the supplier did not utilize the proper bonding process for these additional parts and the production range originally indicated by the supplier needed to be expanded. It was also confirmed that in the extended population, there were no additional parts delivered as spare or service parts.

Further analyses were done to identify potentially affected vehicles. On March 12, 2021, MBAG determined that a potential safety risk could not be ruled out and extend the existing safety recall (NHTSA Recall ID#21V197).

While processing the expanded recall in 2021, MBAG inspected vehicles for potentially affected spare parts. This analysis identified partially loose sunroofs that were installed on vehicles during vehicle production that were outside of the scope of the prior recalls.

MBAG provided affected parts from these vehicles to the supplier for further analysis. This review found that the affected parts were produced during a period when the supplier had used a 5-minute primer drying time. At the time of their production, a 5-minute drying time was considered by the supplier as sufficient to ensure the specified strength of the bonded joint.

In addition to the inspections and analysis performed as part of the recall, throughout 2021, MBAG investigated isolated field cases from outside the U.S. that reported a similar issue with the vehicle sunroofs manufactured using a 5-minute primer drying time. Given the findings from the recall inspections and these field cases, MBAG concluded that, the deterioration of the bonding between the glass panel and the sliding roof frame could not be attributed solely to the primer drying time. Therefore, MBAG and the supplier launched further investigations to identify the root cause underlying these identified, rare cases.

In April 2022, the supplier provided MBAG with results from its market observation analysis that confirmed that sunroof detachments from the population of vehicles that had a sunroof installed using a 5-minute primer drying period were possible. As the primer drying time period did not explain the underlying cause in these rare cases, MBAG coordinated with the supplier to investigate other potential production factors that could lead to the observed issues with the affected vehicles' sunroof.

In September 2022, the supplier reported to MBAG that it had identified a combination of factors in production (temperatures and humidity in the production facilities during primer ventilation, equipping of trolleys in production) as the underlying cause of the sunroof issues in these rare cases. Subsequent analysis has determined the production period in which such factors may have been present and production records were used to determine the scope of additional affected vehicles.

On December 16, 2022, MBAG determined that a potential safety risk could not be ruled out and to conduct a recall.

On November 12, 2024 MBUSA identified 33,456 vehicles that had their recall statuses for 22V954 properly included in all Mercedes-Benz dealer systems, as well as the MBUSA recall website and the NHTSA recall website beginning on January 3, 2023 but whose owners did not receive a notification letter and have not yet been repaired by an authorized Mercedes-Benz dealer. On November 19, 2024 MBUSA decided to file a separate Part 573 report for these vehicles in accordance with NHTSA requirements.

There have been no reported crashes, injuries, fatalities, or property damage caused by this defect in the US.