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Government-private investigation team identifies cause of BMW fires

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Findings contradict BMW's claims and explanations



Kim Kyung-wook, head of the Ministry of Land, Infrastructure and Transport's and transport and logistics office, and Park Sam-soo and Ryu Do-jeong, heads of the joint government-private investigation team on the BMW fires, explain their findings and research on the cause behind the fires on Dec. 24. (Baek So-ah, staff reporter)

A joint government-private investigation team investigating a series of fires involving BMW vehicles this past summer identified design defects and the sticking of EGR valves in an open position as the cause.

The team's conclusion differs from that of BMW, which has blamed the fires on coolant deposits resulting from EGR cooler cracking. The Ministry of Land, Infrastructure and Transport (MOLIT) plans to report BMW to prosecutors and impose 11.2 billion won (US\$10.0 million) in penalties on the basis of the team's report.

Announcing final findings from its BMW fire investigation at the Central Government Complex in Seoul on the morning of Dec. 24, the team explained, "As cracks developed in the vehicles' EGR cooler, coolant escaped and mixed with engine oil and other substances and became stuck on valves, resulting in the valves being unable to close."

"As gas entered at temperatures of over 500°C, this resulted in flames erupting from the deposits inside the cooler," it said.



A demonstration of how flames from the EGR cooler spread in BMW vehicles. (provided by MOLIT)

According to the team's findings, the fires occurred as the flame spread to oil deposits attached to the intake manifold (a pipe supplying gas) inside the engine. The team explained that it had verified this through analysis of BMW data and through engine and vehicle testing.

BMW has previously claimed that the fires occurred on a limited basis under conditions in which numerous factors were all present, including the leaking of coolant due to EGR cooler cracking, sustained high-speed travel, and an open bypass valve.

The joint investigation team also identified design defects with the GR cooler and concluded that problems were present in the recall process. On July 25, BMW recalled 106,000 vehicles from 42 models, including the 520d, but excluded 65,000 other vehicles using the same type of engine and EGR. Those vehicles were eventually included in a second recall in October.



An image of how engine oil that got stuck in the EGR cooler combusted into flames. (provided by MOLIT)

Evidence suggesting BMW attempted to conceal defects

The team also encountered multiple pieces of evidence suggesting BMW was aware of the defects beforehand and made efforts to conceal or downplay them. As far back as Oct. 2015, the German head office was found to have discussed design changes through a task force formed to address the EGR cooler cracking issue. Specific references to EGR cooler cracking were also found in internal BMW documents dating to 2017.

In response to the team's findings, MOLIT plans to report the case to prosecutors and impose 11.2 billion won in penalties for the belated recall. The Automobile Management Act prescribes penalties of up to 10 years in prison or 100 million won (US\$89,000) in fines for covering up or minimizing automobile defects and deliberately delaying a recall. MOLIT also plans to carry out replacements after an intake manifold

inspection for all vehicles subject to the BMW recall, while reviewing the need for an additional EGR recall on other BMW vehicles not subject to the recall.

BMW Korea said MOLIT's investigation findings "once again showed that the root cause of the vehicle fires that have occurred at an exceedingly rare frequency lies in leakage in the exhaust gas recirculation cooler."

"The coolant leaking is the result of cooler cracking and does not represent a design defect," it argued.



An image of an EGR coolant being boiled. (provided by MOLIT)

It went on to say that the problem was a "hardware issue that can be resolved by replacing the defective EGR coolers."

"In the interest of customer service, we are already proceeding with the replacement of intake manifolds for vehicles with confirmed EGR cooler leakage," it said.

"We began the recall immediately upon confirming the cause of the fires," it added.

By Noh Hyun-woong and Choi Ha-yan, staff reporters

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