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## **REMOVING COSMETIC REPAIR PARTS HAS NO EFFECT ON COMPLIANCE, CRASH TEST SHOWS**

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*NOTE: This Advisory was published in November 1987, but the information about a 1987 crash test is relevant to the ongoing question about replacement hoods, fenders, quarter panels and other cosmetic parts — could cosmetic replacement parts from nonoriginal equipment manufacturers pose a safety hazard? All information in this 1987 Advisory still is accurate and relevant to the debate.*

*The cosmetic parts removed from the Escort for the test, as well as the replacement hood on the Escort during the test, are certified by the Certified Automotive Parts Association (CAPA), a nonprofit organization that independently tests and certifies the quality of parts used for auto body repairs. Part of the CAPA certification process insures that the same buckle points present in the car company hoods are present in the certified hoods. Otherwise, the parts that CAPA certifies are cosmetic body panels and are not safety-related parts. Parts that may come under (either directly or indirectly) the requirements of federal motor vehicle safety standards such as doors, lights, and bumpers currently are not certified by CAPA.*

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Car fenders, door panels, and other cosmetic repair parts used to be available only from automakers. Now they're being sold by other suppliers, and in this competitive market there's heated debate about the relative quality of parts from various sources. An important point of the debate involves safety — specifically, will using parts from suppliers other than original-equipment manufacturers affect compliance with federal motor vehicle safety standards?

It was on this question that the Insurance Institute for Highway Safety initially entered the debate, pointing out in an earlier Advisory (No. 1, January 1987) that there's no reason to believe — let alone assume — that cosmetic body parts significantly affect car crashworthiness. Parts like fenders, door panels, and grilles serve no structural or safety functions. They simply cover the car like a skin.

Still, the debate continues with a few auto manufacturers insisting that using competitive body parts may affect a car's compliance with federal crash test safety standards. With the possible exception of hoods, General Motors doesn't subscribe to this viewpoint. But other manufacturers including Nissan and Toyota do.

### **Crash test makes case — again**

One way to address this issue, besides carefully explaining why cosmetic parts aren't safety-related, is to demonstrate the point. On August 26, 1987, the Insurance Institute for Highway Safety conducted a 30 mph front-into-barrier crash test of a 1987 Ford Escort to measure compliance with the federal motor vehicle safety standards (FMVSSs) that specify crash test requirements. The key to the test was this: The Escort was crashed without its front fenders, door panels, or grille. If compliance could be achieved without such parts, we reasoned, it would convincingly demonstrate that cosmetic parts — whether original-equipment or competitive — are irrelevant to meeting federal safety requirements.

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The Insurance Institute for Highway Safety and the Highway Loss Data Institute are independent, nonprofit public service organizations that identify, develop, and evaluate ways to reduce the losses — deaths, injuries, and property damage — resulting from crashes on the nation's highways. Their work is wholly supported by the American Insurance Highway Safety Association, the American Insurers Highway Safety Alliance, the National Association of Independent Insurers Safety Association, and a number of individual insurance companies.

The Escort's original-equipment hood was replaced with a competitive part to measure compliance with FMVSS 219, according to which the hood must not intrude into the windshield or a defined zone around it in a 30 mph crash.

In the Institute's test, the hood buckled and did not intrude into the protected zone. It easily met the requirements of FMVSS 219.

### Standard-by-standard results

The Institute's demonstration was conducted in accordance with federal procedures for compliance testing. And the result? The Escort complied with the front-into-barrier crash test performance requirements of the relevant safety standards. It met these requirements with room to spare, even without its cosmetic body parts:

**FMVSS 204** limits the amount of rearward movement of the steering column into the passenger compartment to reduce the likelihood of chest, neck, and head injury. In the Institute's test, there was no appreciable movement of the steering column. Measurements in relation to reference points were essentially the same before and after the crash test.

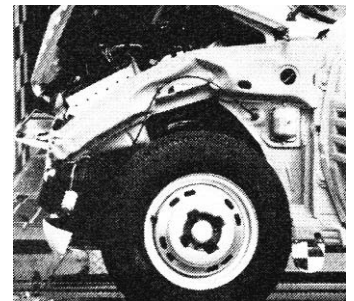
**FMVSS 208** specifies requirements for both active and passive occupant protection systems. The Escort used in the Institute's test was equipped with two-point automatic shoulder belts plus fastened manual lap belts in the front seat. Measurements from the two anthropomorphic test dummies were impressive — the driver's Head Injury Criterion was 296 and the passenger's was 339, both far below the federal maximum of 1,000 for cars with automatic restraints. Femur loads and chest g forces also were well within allowable limits.

**FMVSS 212** requires that the windshield mounting remain anchored in place and retain at least 75 percent of its periphery. (For cars with automatic restraints, this requirement is reduced to 50 percent.) In the Institute's crash test, windshield retention was 100 percent.

**FMVSS 219** regulates the intrusion of vehicle parts (usually the hood) from the outside of the occupant compartment into the windshield or a protected zone in front of it. As the Institute pointed out in a previous Advisory, this is the only standard where compliance could possibly be affected by cosmetic parts. The key question is whether competitive hoods will buckle, as new-car hoods are designed to do. Are the sections of competitive hoods welded together strongly enough to prevent separation while buckling? Or might a competitive hood be pushed back through a car's windshield and endanger front-seat occupants in crashes? In the Institute's test, the hood buckled and didn't intrude into the protected zone. It easily met the requirements of FMVSS 219. Other competitive hoods examined by Institute engineers have built-in buckle points, too, indicating they will buckle in frontal crashes, just like they are supposed to.

**FMVSS 301** limits fuel spillage in front, side, and rear crash tests. In the Institute's 30 mph crash test, fuel spillage was zero.

Findings from the August 1987 crash test thus demonstrate convincingly that, with the exception of hoods, the cosmetic parts used to repair cars are irrelevant to safety. In fact, cars without any of these parts at all easily comply with the front-into-barrier crash test requirements set by the federal government.



*In the Institute's test, the hood buckled and did not intrude into the protected zone. It easily met the requirements of FMVSS 219.*