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INTERNATIONAL
400 Commonwealth Drive, Warrendale, PA 15096-0001

SURFACE VEHICLE RECOMMENDED PRACTICE

SAE J362

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Superseding J362 JUL82

Submitted for recognition as an American National Standard

Vehicle Hood Latch Systems

1. ***Scope***—This SAE Recommended Practice establishes uniform test procedures for evaluating vehicle hood latch systems. It specifically pertains to those latch systems on hoods, which when the hood is fully opened (assuming the absence of hood stops) extend at any point above a horizontal plane through the uppermost edge of the steering wheel in the straight ahead driving position with the vehicle in a horizontal position.

   The following optional tests are described.

   a. Vehicle Performance Tests—On-the-road evaluation under an established pattern of vehicle driving situations.
   b. Laboratory Dynamic Tests—Dynamic simulation in the laboratory of the loads and forces which the latch system encounters on the road.
   c. Laboratory Static Tests—Simplified test procedures intended to permit static simulation of the loads which road tests have indicated the latch system may encounter.

   The test procedures outlined in this recommended practice are based on current engineering test methods. It is intended that all portions of this report will be periodically reviewed and revised as additional knowledge regarding vehicle hood latch system performance under dynamic conditions is developed.

2. ***References***

2.1 **Applicable Publication**—The following publication forms a part of this specification to the extent specified herein. Unless otherwise specified, the latest issue of SAE publications shall apply.

2.1.1 SAE PUBLICATION—Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

SAE J977—Instrumentation for Laboratory Impact Tests

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3. *Terminology*

3.1 **Hood**—Hinged exterior panel or panels covering a compartment located at the forward part of the vehicle.

3.2 **Hood Latch System**—That system employed to position the hood in a closed position relative to the vehicle body with provisions for controlled release (or operation).

3.3 **Hood Latch Assembly**—That mechanism or combination of mechanisms which engages the striker assembly when the hood is closed.

3.4 **Hood Striker Assembly**—That portion of the hood latch system which is engaged by the hood latch assembly.

3.5 **Primary Latching Mechanism**—That portion of the hood latching system which is utilized to secure the hood in the fully closed position.

3.6 **Secondary Latching Mechanism**—That portion of the hood latching system which is utilized to secure the hood when less than fully closed. (The second latch of a dual independent system can be considered a secondary latching mechanism.)

3.7 **Seal Force**—That force which tends to open the hood when the hood is in the fully closed position and the vehicle is stationary.

3.8 **Type I Field Conditions**—Operating a vehicle at a minimum of 130 km/h (which shall include a safety factor as determined by the vehicle manufacturer), or at its maximum speed if less than 130 km/h.

3.9 **Type II Field Conditions**—Operating a vehicle at a minimum of 130 km/h (which shall include a safety factor as determined by the vehicle manufacturer), or at its maximum speed if less than 130 km/h, and the hood suddenly released from the primary to the secondary position.

4. *Vehicle Performance Testing*

4.1 **Type I Tests**—Primary Latched Position

4.1.1 PURPOSE—To determine the ability of the hood latch system to withstand Type I field conditions while in the primary latched position.

4.1.2 EQUIPMENT AND FACILITIES—Vehicle representative of the design, equipped with a calibrated speedometer.

4.1.3 OPERATION

a. Install the hood latch system on the vehicle and adjust to design locations within production tolerances. Adjust the seal force to maximum design specification with the latch in the primary position.
b. Operate vehicle to Type I field conditions for at least 0.8 km. Stop vehicle and operate hood latch system. If operable, repeat the test in the opposite direction of travel to balance out the effects of wind conditions.

4.2 **Type II**—Secondary Latched Position

4.2.1 PURPOSE—To determine the ability of the hood latch system to withstand Type II field conditions.

4.2.2 EQUIPMENT AND FACILITIES—Same as paragraph 4.1.2.

4.2.3 OPERATION

a. Install the hood latch system on the vehicle and adjust to within production tolerances. Seal force is to be adjusted to maximum design specification. Close hood so that hood latch is in the primary latch position.
b. Operative vehicle to Type II field conditions. Suddenly release hood latch system from the primary to the secondary position and continue driving vehicle at least 0.8 km. Stop vehicle and operate hood latch system. If operable, repeat the test with the system in the opposite direction of travel to balance out the effects of wind conditions.

5. Laboratory Dynamic Tests (Secondary Latched Position)

5.1 Purpose—To determine the ability of the hood latch system to withstand a dynamic test load in the direction of hood opening, when released from the primary to the secondary latched position.

5.2 Equipment and Facilities

a. Impact fixture (see Figure 1 for a typical test installation).
b. Time and force instrumentation (see SAE J977).

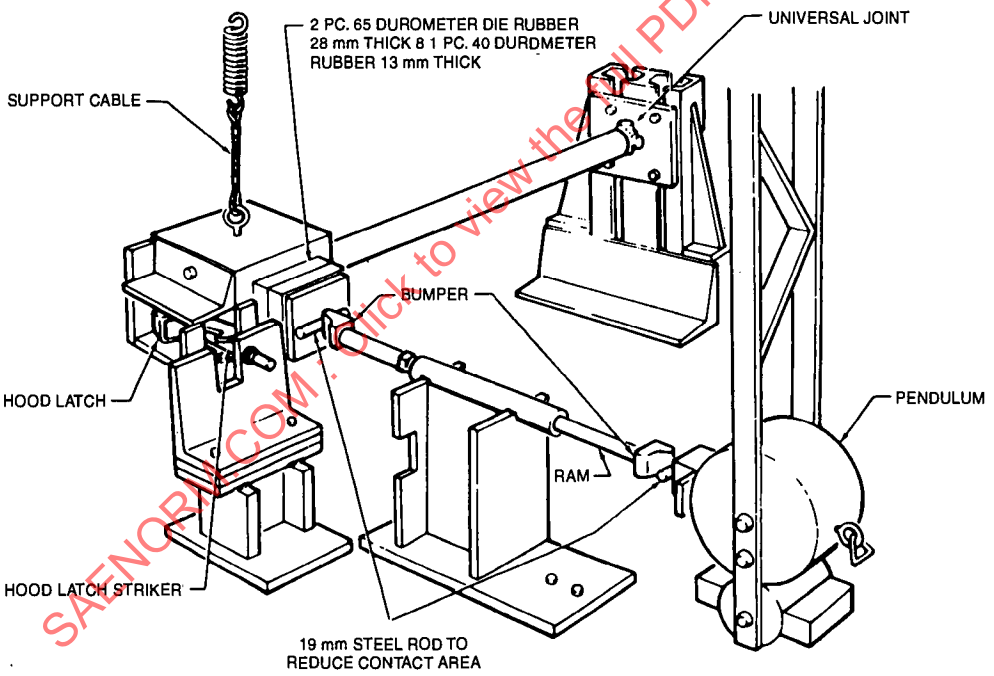

FIGURE 1—SUGGESTED HOOD LATCH IMPACT TEST SETUP

5.3 Operation

a. Mount the hood latch and striker on the test machine in the primary latched position so as to apply a hood opening load to the secondary latch and striker.
b. Apply five cycles of dynamic load starting at zero to specified maximum load and back to zero load. The time span to the peak load moment and the time duration for the time versus load curve should be representative of the road test group.

6. Laboratory Static Tests

6.1 **Static Test**—Primary Latched Position

6.1.1 PURPOSE—To determine the ability of the vehicle hood latch system to withstand a static test load in the direction of hood opening, when engaged in the primary latched position.

6.1.2 EQUIPMENT AND FACILITIES

a. Tensile testing machine.
b. Static test fixture (Figure 2).

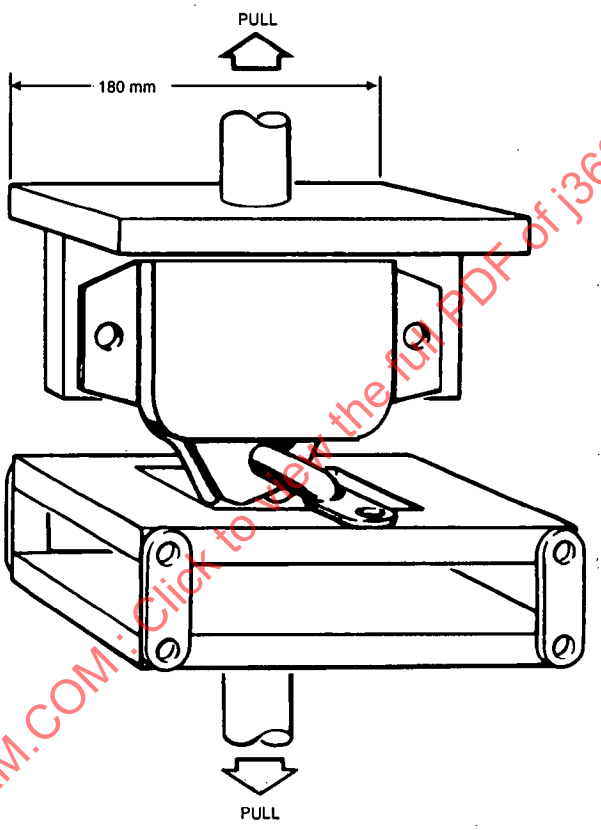

FIGURE 2—SUGGESTED HOOD LATCH STATIC TEST FIXTURE

6.1.3 OPERATION

a. Attach the test fixture to the mounting provisions of the latch and striker. Align the direction of engagement parallel to the linkage of the fixture. Mount fixture with latch and striker, in the primary position, in the test machine so as to apply a simulated hood opening load to the latch and striker.
b. Apply a test load at a rate not to exceed 50 mm/min until desired load is reached. Release load and check the operation of the latch and striker assembly.

6.2 **Static Test**—Secondary Latched Positions

6.2.1 PURPOSE—To determine the ability of the vehicle hood latch system to withstand a test load in the direction of hood opening, when engaged in the secondary latched position. (The second latch of a dual independent system can be considered a secondary latching mechanism.)