SAFETY COMPLIANCE TESTING FOR
FMVSS 401
Interior Trunk Release

2005 Hyundai Sonata
NHTSA No. C50514

Prepared by:
NHTSA
OFFICE OF VEHICLE SAFETY COMPLIANCE
400 7th Street, SW
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1/27/2005

FINAL REPORT
PREPARED FOR:
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NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
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Prepared By: ____________________________
Eduardo Maximo Aviles, Safety Compliance Engineer

Accepted By: __________________________
Eduardo Maximo Aviles

Report Date: 1/27/2005
A compliance test was conducted on the subject 2005 Hyundai Sonata, NHTSA No. C50514 in accordance with the U.S. Department of Transportation, National Highway Traffic Safety Administration's Laboratory Test Procedure TP-401-01. The test was conducted by NHTSA Office of Vehicle Safety Compliance test engineers on 1/27/2005.

Test Location:
Fitzgerald Hyundai in Rockville, MD

Test failures were as follows: NONE
<table>
<thead>
<tr>
<th>SECTION</th>
<th>DESCRIPTION</th>
<th>PAGE NO.</th>
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</thead>
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<td>12</td>
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</tbody>
</table>
1.0 PURPOSE OF COMPLIANCE TEST

The purpose of this compliance test was to determine whether the subject vehicle, a 2005 Hyundai Sonata, meets the performance requirements of FMVSS 401, Interior Trunk Release.

The test was conducted in accordance with the U. S. Department of Transportation, National Highway Traffic Safety Administration's Laboratory Test Procedure TP-401-01.

The test was conducted by NHTSA Office of Vehicle Safety Compliance test engineers on 1/27/2005.

Test Location:
Fitzgerald Hyundai in Rockville, MD
2.6 TEST PROCEDURE AND DISCUSSION OF RESULTS

Based on the test performed, the Vehicle: 2005 Hyundai Sonata, NHTSA No. C50514 appeared to meet the requirements of FMVSS 401.

The vehicle was tested by entering the trunk and closing the lid. The release slide lever was easily observed in the darkened, enclosed trunk. A force gauge was attached to the release handle and 3 separate attempts were made to exit the trunk by applying a load to the instrument. For each attempt, the trunk released from the single latching position at a force level of approximately 27.4 newtons (6.2 lbs.) or less.
3.0 COMPLIANCE TEST DATA

DATA SHEET 1

FMVSS 401 - VEHICLE DESCRIPTION

VEHICLE MAKE/MODEL/BODY STYLE: 2005 Hyundai Sonata
VEH. NHTSA NO.: C50514         VIN: KMHWF35H85A141550

DATE OF TEST: 1/27/2005        TEST LAB: BY OVS @ DEALER

GVWR: 1922 KG                MANUFACTURED DATE: AUG/25/04

TRUNK LOCATION: ☑ REAR ☐ FRONT
If Front, Front Opening?

NUMBER OF TRUNK LID LATCHING POSITIONS: 1

INTERIOR TRUNK RELEASE: ☑ MANUAL ☐ AUTOMATIC ☐ BOTH

POWER OPERATED CLOSURE: No

OWNER'S MANUAL DESCRIPTION OF TRUNK RELEASE: ☑ YES ☐ NO

REMOVABLE EQUIPMENT DELIVERED IN TRUNK:

SPARE TIRE: ☑ (SIZE) T125/70D15
TIRE JACK: ☑
LUG WRENCH: ☑
TOOL BOX: ☑ (SIZE) ______________________________
PARTITIONS: ______________________________
OTHER: ______________________________

REMARKS:

________________________________________

RECORDED BY: Eduardo Maximo Aviles    DATE: 1/27/2005

APPROVED BY: Eduardo Maximo Aviles
3.0 DATA SHEETS...Continued

DATA SHEET 2 (1 of 2)

FMVSS 401 - All trunks except for front trunk compartments with front opening hoods

MANUAL TRUNK RELEASE OPERATION

VEHICLE MAKE/MODEL/BODY STYLE: 2005 Hyundai Sonata
VEH. NHTSA No.: C50514 ; VIN: KNHWF35H8S5A141550
DATE OF TEST: 1/27/2005

Method used to actuate interior trunk release: Other
Other: Pull Handle

Can test personnel enter trunk and be closed within: ☐ Yes ☒ No
If Yes, size of occupant: At least 50th percentile male

Is there access to the trunk compartment by folding down rear seat or partition: ☐ Yes ☒ No

Does Release Mechanism require electric power: ☒ Yes ☐ No

Can release mechanism be easily seen inside the closed trunk: ☐ Yes ☒ No

Describe method used by vehicle manufacturer to ensure that release mechanism is visible in a closed trunk compartment: Phosphorescence (Phosphorescence, auxiliary lighting, etc)

Describe laboratory test method used to determine visibility of release mechanism:
Trunk entry (Trunk entry, darkened room, etc.)

<table>
<thead>
<tr>
<th>Vehicle Stationary (0 km/h)</th>
<th>Force Required to Release Trunk Lid (Newtons) [no requirement]</th>
<th>Trunk Released from All latching positions</th>
<th>Pass/Fail</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO KEY IN IGNITION</td>
<td></td>
<td>☑ Yes ☒ No</td>
<td>☑ Pass</td>
</tr>
<tr>
<td>Attempt 1</td>
<td>27.4</td>
<td>☑ Yes ☒ No</td>
<td>☑ Pass</td>
</tr>
<tr>
<td>Attempt 2</td>
<td>27.4</td>
<td>☑ Yes ☒ No</td>
<td>☑ Pass</td>
</tr>
<tr>
<td>Attempt 3</td>
<td>27.4</td>
<td>☑ Yes ☒ No</td>
<td>☑ Pass</td>
</tr>
<tr>
<td>Average -</td>
<td>27.4</td>
<td>☑ Yes ☒ No</td>
<td>☑ Pass</td>
</tr>
</tbody>
</table>
DATA SHEET 2 (2 of 2)

FMVSS 401 - MANUAL TRUNK RELEASE OPERATION (continued)

NOTE: Interior Trunk Release is a totally mechanical system with its operation and functioning not dependent upon engine operation or vehicle speed. The release mechanism will function identical to that of the stationary vehicle with the no key in the ignition (as previously tested) and thus the following tests were not required to be conducted.

<table>
<thead>
<tr>
<th>Vehicle Stationary (0 km/h)</th>
<th>Force Required to Release Trunk Lid (Newton) [no requirement]</th>
<th>Trunk Released from All latching positions</th>
<th>Pass/Fail</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGINE IDLING</td>
<td>☑ Not Applicable</td>
<td>☑ Yes ☑ No</td>
<td>☑ Pass</td>
</tr>
<tr>
<td>Attempt 1</td>
<td></td>
<td>☑ Yes ☑ No</td>
<td>☑ Fail</td>
</tr>
<tr>
<td>Attempt 2</td>
<td></td>
<td>☑ Yes ☑ No</td>
<td>☑ Pass</td>
</tr>
<tr>
<td>Attempt 3</td>
<td></td>
<td>☑ Yes ☑ No</td>
<td>☑ Fail</td>
</tr>
<tr>
<td>Average -</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Vehicle Speed (km/h)</th>
<th>Force Required to Release Trunk Lid (Newton) [no requirement]</th>
<th>Trunk Released from All latching positions</th>
<th>Pass/Fail</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td></td>
<td>☑ Yes ☑ No</td>
<td>☑ Fail</td>
</tr>
<tr>
<td>20</td>
<td></td>
<td>☑ Yes ☑ No</td>
<td>☑ Fail</td>
</tr>
<tr>
<td>30</td>
<td></td>
<td>☑ Yes ☑ No</td>
<td>☑ Fail</td>
</tr>
</tbody>
</table>

Describe method used to propel vehicle:

☑ Pass ☑ Fail

REMARKS:

RECORDED BY: Eduardo Maximo Aviles          DATE: 1/27/2005

APPROVED BY: Eduardo Maximo Aviles
### DATA SHEET 3
**FMVSS 401 - TEST SUMMARY**

<table>
<thead>
<tr>
<th>Requirement</th>
<th>PASS</th>
<th>FAIL</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automatic or Manual release mechanism inside the trunk compartment. S4.1</td>
<td>☐</td>
<td>☐</td>
<td>Manual release lever</td>
</tr>
<tr>
<td>If manual release, lighting feature is included. S4.2(a)</td>
<td>☐</td>
<td>☐</td>
<td>Self Lighting</td>
</tr>
<tr>
<td>If automatic release, unlatches trunk lid within 5 minutes. S4.2(b)</td>
<td>☐</td>
<td>☐</td>
<td>N/A</td>
</tr>
<tr>
<td>Except as provided by S4.3(b), actuation of release mechanism required by S4.1 completely releases trunk lid from all latching positions of the trunk lid latch. S4.3(a)</td>
<td>☐</td>
<td>☐</td>
<td>Single Latch Position</td>
</tr>
<tr>
<td>For front trunk compartments, front opening hoods, when vehicle is stationary latch releases trunk lid from all locking positions. When moving forward at a speed less than 5km/h, must release the primary latch and may release all latches. At speeds greater than 5km/h must release the primary latch only. S4.3(b)</td>
<td>☐</td>
<td>☐</td>
<td>N/A</td>
</tr>
</tbody>
</table>

- ☐ Pass  ☐ Fall

**RECORDED BY:** Eduardo Maximo Aviles  
**DATE:** 1/27/2005

**APPROVED BY:** Eduardo Maximo Aviles
### 4.0 - Test Equipment List and Calibration Information

<table>
<thead>
<tr>
<th>EQUIPMENT</th>
<th>DESCRIPTION</th>
<th>MODEL/serial no.</th>
<th>CALIBRATION DATE</th>
<th>NEXT CAL. DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Force Transducer</td>
<td>Shimpo Force Gauge</td>
<td>Model MF-50 KG</td>
<td>12/09/03</td>
<td>Manufacturer</td>
</tr>
</tbody>
</table>
5.0 - Photographs