



Vehicle Storage Assessment

1 Introduction

Note: Nothing in this standard supercedes applicable laws and regulations.

Note: In the event of conflict between the English and domestic language, the English language shall take precedence.

1.1 Purpose. To provide analysis of program and benchmarking vehicle storage features.

1.2 Applicability. All properties within a specific program and key competitive vehicles.

1.3 Remarks. This tool is a structured Vehicle Architecture (VA) Storage evaluation with consideration of the following attributes:

- Appropriate storage space (features, and volumes)
- Accommodation of customer items
- Accessible storage space
- Easy retrieval of individual items
- Storage features operate easily
- Storage features do not impede use of other components
- Retention of storage items
- Storage space versatility and flexibility

2 References

Note: Only the latest approved standards are applicable unless otherwise specified.

2.1 External Standards/Specifications.

None

2.2 GM Standards/Specifications.

None

2.3 Additional References.

Global Document Management (GDM); Vehicle Architecture, Six Pillars Storage folder

3 Resources

3.1 Facilities. Early program analysis can be conducted in Design Center studios on clay properties in conjunction with math files.

3.1.1 Calibration. The test facilities and equipment shall be in good working order and shall have a valid calibration label.

3.1.2 Alternatives. Alternative test facilities and equipment may also be used. However, all measuring variables as specified in this standard shall be determined correctly with respect to their physical definition.

3.2 Equipment. Basic package of typical items to be stored, with program specific additions.

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3.3 Test Vehicle/Test Piece. Prior to Integration Vehicle Engineering Release (IVER) build, evaluations are to be completed on math files and/or on studio clay properties. At and subsequent to IVER build, evaluations are to be completed on physical vehicles. Ideally, all storage option content should be evaluated.

Competitive evaluations will be done on production vehicles.

3.4 Test Time.

Calendar time: 1 days
Test time: 3 hours
Coordination time: 3 hours

3.5 Test Required Information. Refer to 4.3.1 thru 4.3.10.

3.6 Personnel/Skills. The evaluators should have training/experience in the evaluation process. Ideally, the same team evaluates the properties throughout the program. Training of a new individual can act as a substitute for one (1) of the team members.

Ideally, two (2) evaluators or one (1) trained evaluator leader is acceptable.

Skill level for Evaluator: Understands the basic principles of Vehicle Storage.

Skill level for Evaluation Leader: Sensitive to the subtle aspects of the storage questions.

4 Procedure

4.1 Preparation. Locate appropriate property. An evaluation form, tape measure, scale and storage item kit are required. Calipers and an inclinometer are preferred. Allow 3 h for evaluation.

4.2 Conditions.

4.2.1 Environmental Conditions. Conditions and environment should provide comfortable setting (temperature, ventilation, lighting, etc.)

4.2.2 Test Conditions. Deviations from the requirements of this standard shall have been agreed upon. Such requirements shall be specified on component drawings, test certificates, reports, etc.

4.3 Instructions. Sample evaluation forms covering 4.3.1 to 4.3.12 are shown in Appendix A, Figures A1 thru A3. Contact the GM responsible storage specialist for the appropriate form(s).

4.3.1 Document the vehicle name, model year, GM sticker number (if applicable), price and optional storage content.

4.3.2 Document all storage features. Include the feature name, location and a description of the feature, e.g., open versus closed bin, interior material, reconfigurability options, perceived quality, door operating method, method of operation, etc.

4.3.3 Document the dimensions of all storage features; length, width and height in millimeters. If a storage feature is a dedicated space and not a bin (e.g., slotted coin holder), note the type of dedicated feature. If a bin is adjustable, document the maximum storage dimensions, but note in the comments the smaller storage dimensions (e.g., cup holder minimum and maximum diameter). If the length or width of a bin varies from the top to the bottom of the bin, note both dimensions. If the height of a bin varies from back to front, note both dimensions.

4.3.4 Calculate storage volumes (in liters) for all storage features that are not identified as dedicated storage features. Indicate in the comments if the calculation is for a shape other than a rectangle, e.g., seat back pockets are calculated as triangular spaces; most cupholders are cylinders, many bins are trapezoidal; dimensions of each of the sides should be indicated in the notes column (see Appendix A, Figure A1).

4.3.5 Rating Scale and Description for steps 4.3.6 thru 4.3.12 is included in the standard vehicle evaluation and global storage metric form (see Appendix A, Figure A2).

4.3.6 Evaluate the vehicle for "Appropriate Storage Spaces" noting all comments. Include assessment of the following: Do the spaces accommodate all items required to be stored in the vehicle segment (use actual items in the storage tool kit)? Required items are identified in the Program Storage Allocation List Tracker (SALT), stored on the program notebook (see Appendix A, Figure A3); Are the storage spaces in expected locations? (e.g., expect to find the owner's manual in the glove box, expect to store sunglasses in a central, overhead bin).

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