



Resistance to Cold Crack of Folded Materials

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. This test procedure shall be used to determine the low temperature resistance to cracking of plastic films, vinyl, etc., used in automotive interior trim applications.

1.2 Applicability. Plastic films, vinyl, leather, etc., used in automotive interior trim applications.

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

3 Resources

3.1 Facilities.

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

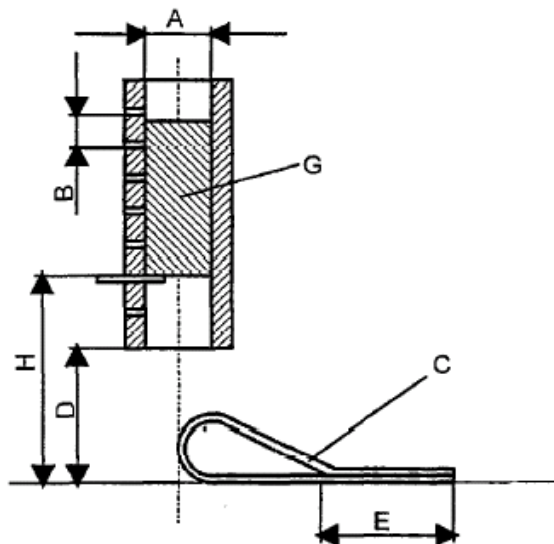
3.1.2 Alternatives. Alternative test facilities and equipment may also be used. However, all measuring variables as specified in this standard shall be determined correctly with respect to their physical definition.

3.2 Equipment.

3.2.1 Impact Tester (Figure 1). The test apparatus consists of a flat metal base to support the test piece and a vertical tube of circular cross section with an internal diameter of $32 \text{ mm} \pm 1 \text{ mm}$. A drop weight, (G), shall freely slide through the tube with minimum friction. The edges of the drop weight shall be rounded off to approximately 1 mm. The end of the tube shall be approximately 40 mm vertically above the support block. The tube shall have holes drilled along one (1) side at 10 mm center distance so that the height (H) of the drop weight above the block may be adjusted between 50 mm and 200 mm using a pin. Height is the vertical distance between the bottom surface of the drop weight and the metal base.

3.2.2 Low temperature cabinet capable of maintaining a temperature of $-30 \text{ }^{\circ}\text{C} \pm 2 \text{ }^{\circ}\text{C}$.

3.2.3 Cutting dies or shears for preparation of test specimens.

**Where:**

- A** Internal diameter of the tube 32 ± 1 mm (Isuzu: square cross section, 50 ± 1 mm X 50 ± 1 mm)
- B** Height adjustment (not used at Isuzu)
- C** Test piece
- D** Distance between tube and support block
- E** Clamping length
- G** Drop weight
- H** Drop height

Figure 1: Principle of the Test Assembly

3.3 Test Vehicle/Test Piece. From the available material, test pieces with a length of $250 \text{ mm} \pm 1 \text{ mm}$ and a width of $30 \text{ mm} \pm 1 \text{ mm}$.

Specimens shall, when applicable, be taken along a warp thread or wales mesh and along a weft thread or courses mesh, or in longitudinal and respectively in the traverse direction. Specimens shall be taken from various areas of the material but no closer than 100 mm to an edge.

3.3.1 Test Samples. For initial sample approval, arbitration purposes and routine quality control, at least six (6) test specimens, three (3) from each direction, shall be tested.

3.4 Test Time.

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

3.5 Test Required Information. Not applicable.

3.6 Personnel/Skills. Personnel trained in accordance with the laboratory accreditation and Standard Operating Procedure requirements.

4 Procedure

4.1 Preparation. The test shall be performed immediately after conditioning or in the as received condition.

4.2 Conditions. For initial sample approval and arbitration purposes, condition specimens according to the appropriate material specification. Routine quality control tests shall be carried out on test specimens in the as received condition (i.e., no special preconditioning).