



Grain Variation of Leather

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 is used to determine the grain variation of leather, i.e., loose grain. This standard is applicable to non-laminated leather $\leq$ of 2.0 mm thick, as well as laminated leather $\leq$ of 5 mm thick.

1.2 Applicability. Additionally, a root cause analysis procedure is described for test samples, where grain variation appears. This method contains two (2) procedures:

- **Method A:** For non-laminated leather.
- **Method B:** For laminated leather.

2 References

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

2.1 External Standards/Specifications.

ISO 2598

2.2 GM Standards/Specifications.

None

2.3 Additional References.

- Leather Surface Defects and Natural Markings Manual, available from available at Thierry Corporation - 4319 Normandy Court. Royal Oak, MI 48073 info@thierry-corp.com.
- GM Appearance Limit Sample Catalogue, available from GM Europe.

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 Standard Metal Half Pipe.

a. Dimensions are:

1. Length 300 mm.
2. Inner diameter 36 mm.
3. Outer diameter 40 mm.

b. Two (2) fixation rolls with dimensions:

1. Length 71 mm
2. Outer diameter 32 mm
3. Mass 210 g $\pm$ 5 g.

3.2.2 Large Metal Half Pipe.

a. Dimensions are:

1. Length 300 mm
2. Inner diameter 74 mm.
3. Outer diameter 77 mm.

b. Two (2) fixation rolls with dimensions:

1. Length 71 mm.
2. Outer diameter 64 mm

3.2.3 Standard Metal Ring with Dimensions:

- Inner diameter of 36 mm
- Height of 20 mm.

3.2.4 Large Metal Ring with Dimensions:

- Inner diameter of 74 mm
- Height of 20 mm.

3.2.5 Sharp scissors.

3.2.6 Razor blades.

3.2.7 Microscope.

3.3 Test Vehicle/Test Piece. Single sided adhesive tape with the following properties, e.g., Tesa 4172:

- 50 mm width.
- Carrier poly vinyl chloride (PVC), transparent.
- Total thickness, approximately 65 μ m.
- Adhesive strength to steel, approximately 3.0 N/cm to 3.5 N/cm.
- Tearing force, approximately 60 N/cm.
- Elongation at break, approximately 60%.

3.4 Test Time.

Calendar time: 1 day

Test hours: 2 hours

Coordination hours: 1 hour

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

Summary of Test Method. The leather under test is bent concave over a defined radius using a half pipe. The produced crinkling of the grain is compared with photos of standard leather of the grain under test.