



Water Jet Tests

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. The purpose of this test is to evaluate the adhesion of graphics or paint to the substrate after exposure to high pressure water spray, such as those used at a car wash.

1.2 Applicability. This test applies to exterior components such as painted plastic components and exterior graphics.

1.3 Remarks. This standard describes the test method to test the ability of exterior graphics (decals) or painted plastics to withstand high pressure wand car wash spray. The procedure can also be applied to other materials such as paint, ornamentation, etc. Unless indicated otherwise, use Method A.

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 Car wash unit of such design and construction as to maintain a minimum pressure (at gun tip) of 8247 kPa (1200 psi) for a minimum period of 5 s, with gun tip fan angle of 15 degrees and/or 25 degrees.

3.2.2 Rack or fixture that will support a test panel at a 75 mm to 200 mm distance from tip and film edge, and at 45 degree to 90 degree angle of film to water spray. Distance and angle should be adjustable.

3.2.3 Cutting jig that facilitates making 90 degree cuts into the film with a razor blade.

3.3 Test Vehicle/Test Piece. The test pieces wherever possible shall be the finished part. If size, shape, etc., of the finished part is not practical, tests shall be conducted on specially prepared coated test panels.

3.4 Test Time.

Calendar time: 1 day

Test time: <1 h

3.5 Test Required Information. Not applicable.

3.6 Personnel/Skills. Personnel performing this test shall have received training for this test procedure.

4 Procedure

4.1 Preparation. Not applicable.

4.2 Conditions.

4.2.1 Environmental Conditions. Not applicable.

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.

4.3.1 Test Procedure.

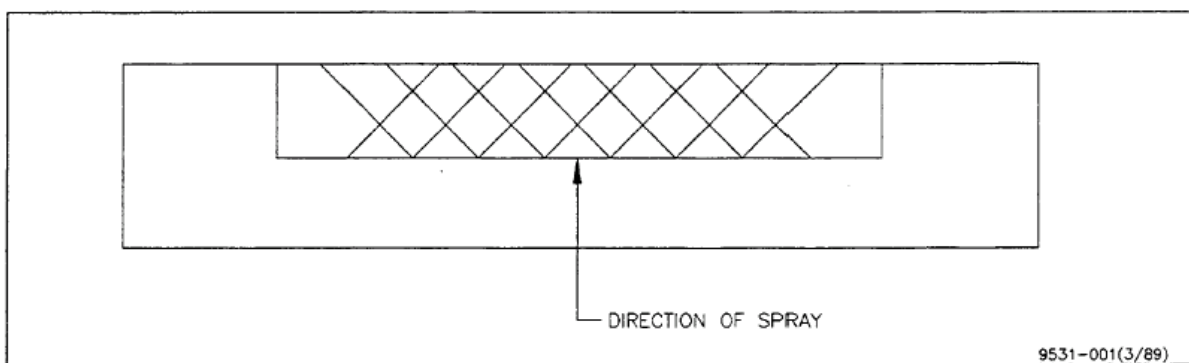
4.3.1.1 Method A - for External Graphics.

4.3.1.1.1 Clean a 51 mm × 305 mm painted test panel with VM and P Naphtha or 50/50 water-isopropyl alcohol.

4.3.1.1.2 Apply a 25 mm × 203 mm decal using a 2 kg roller; two (2) passes, once in each direction at a rate of 305 mm per minute.

4.3.1.1.3 Cut the decal with a razor blade in a series of cuts on a 45° angle spaced 12.7 mm apart. The cutting process is repeated with 45 degree angle cuts made in the opposite direction so that finished cuts form 12.7 mm squares and triangles (Figure 1). The cuts must be made straight down into the film (90 degree angle). A cutting jig will facilitate this cutting process.

Figure 1: Method A

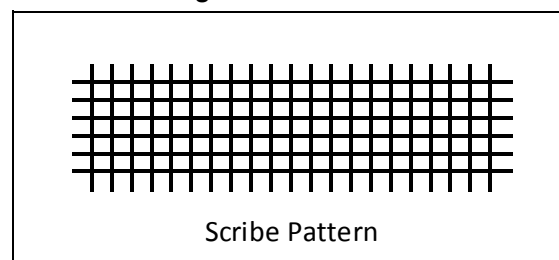


4.3.1.2 Method B - for Painted Plastics.

4.3.1.2.1 Clean a 51 mm × 102 mm (or larger) painted test panel or part with VM and P Naphtha or 50/50 water - isopropyl alcohol.

4.3.1.2.2 Cut two (2) intersecting sets of twenty-one (21) vertical and six (6) horizontal parallel cuts through the coating to the substrate. Parallel cuts are to have 3 mm spacing, intersection angles of 90 degrees, and are to be at 90 degrees to the specimen edge. See Figure 2.

Figure 2: Method B



4.3.1.3 Methods A and B.