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► Humidity

— TEST No. TP03 —

I. Scope

This test procedure is used to evaluate the ability of the paint/polymer system used for the Texture Panels system in resisting degradation when exposed to 100% relative humidity.

II. Materials and Equipment

- a. Texture Panels production coated parts with barrier coat and top coat.
- b. Humidity cabinet using distilled water with temperature control to maintain 100% humidity at 100 degrees Fahrenheit conforming to ASTM D2247.
- c. Scalpel or Sharp knife.

III. Procedure

- a. Age finished parts for 1 week at room temperature (77 degrees F)
- b. Place 4 parts in humidity cabinet set at 100 degrees Fahrenheit and 100% humidity and pull each part at the following rates:
 1. beginning at 48 hours, pull the first part
 2. at 72 hours, pull the second part
 3. at 96 hours, pull the third part
 4. check the fourth part every 24 hours until failure
- c. Inspect parts between 5 and 10 minutes after removal from humidity cabinet, rate and record blistering or paint deterioration per ASTM D714.
- d. Allow 12 hour recovery time and re-inspect the parts, rate and record per III. b.
- e. Check adhesion per Test No. TP05.
- f. Take the reading of CIE L*a*b* values before and after the test, record these values.

IV. Report

- a. Report the paint/polymer coating appearance at the 5-10 minute period after part removal and after 12 hour recovery period on both part substrates.
- b. Report the size and amount of blistering using ASTM D714 as the reference..
- c. The paint/polymer coating passes if the size and quantity of of blistering is #6 few and less, adhesion is 3b or less and there are no other visual film defects.
- d. Compare test results to Texture Panels standard parts.

V. Results

- a. The parts tested passed. There were no blisters or imperfections on the Texture Panels samples tested. No color shift noted.

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► Water Immersion

— TEST No. TP04 —

I. Scope

This test procedure is used to evaluate the ability of the paint/polymer system used for the Texture Panels system in resisting degradation when immersed in tap water.

II. Materials and Equipment

- a. Plastic container to hold parts and tap water.
- b. Plastic rack to separate parts such as a test tube rack which allows for spacing between test parts.
- c. Tap water.
- d. Texture Panels production coated parts with barrier coat and top coat.
- e. Scalpel or Sharp knife.
- f. Scotch cellophane tape #600, 1" wide.

III. Procedure

- a. Age finished parts for 1 week at room temperature (77 degrees F)
- b. Immerse at least one-half of the part in tap water at 77 degrees Fahrenheit for 24 hours. Randomly check parts at 1, 4 and 10 hours.
- c. Remove test specimens and dry with cloth or towel.
- d. Examine test parts for blisters between 5 and 15 minutes after removal and record observations.
- e. Twenty minutes after removal from tap water, cut through the coating with a sharp knife. The cut should be made the entire length of the test part over the areas that were and were not immersed in tap water.
- f. Apply test tape over the entire cut coating and press firmly to make sure tape is well adhered.
- g. Immediately remove the tape in a smooth quick pull at a ninety degree angle and record any loss of coating adhesion.
- h. Age the test part at room

IV. Report

- a. Report the paint/polymer coating appearance at the 5-10 minute period after part removal and after 12 hour recovery period on both part substrates.
- b. Report the size and amount of blistering using ASTM D714 as the reference..
- c. The paint/polymer coating passes if the size and quantity of of blistering is #6 few and less, adhesion is 3b or less and there are no other visual film defects.
- d. Compare test results to Texture Panels standard parts.

V. Results

- a. The parts tested passed. There were no blisters or imperfections on the Texture Panels samples tested. No color shift noted.

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► Adhesion (Room Temperature)

— TEST No. TP05 —

I. Scope

This test procedure evaluates the adhesion of the paint/polymer system to the substrate used for the Texture Panels system.

II. Materials and Equipment

- a. Cutting tool, (Gardner PA – 2000 or equal) with six teeth and 2.0mm blade.
- b. Texture Panels production coated parts with barrier coat and top coat.
- c. Scotch cellophane tape # 600 1" wide.
- d. Kleenex or equal.
- e. Rubber eraser on the end of a pencil.

III. Procedure

- a. Age finished parts for 1 week at room temperature (77 degrees F)
- b. Make two cuts with cutting tool at right angles to each other, approximately 1.5 inches long on each test part to be evaluated. The second cut should be made on top of the first cut forming 25 small squares. When cutting, cut through the film to the substrate in one steady motion.
- c. Brush the test area lightly with a Kleenex to remove any detached pieces or ribbons of coating.
- d. Press the center of about 3 inch long tape over the cross hatched area at about 45 degree angle.
- e. Rub the tape with the pencil eraser to make sure the tape to painted film has total contact.
- f. Within one minute, remove the tape with a rapid pull (not jerked) back upon itself as close to a 180 degree angle as possible.
- g. Visually inspect the test specimen without magnification and compare results to the adhesion guide, see Figure 1.

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► Adhesion (Room Temperature)

— TEST No. TP05 —
(Continued...)

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Classification of Adhesion Test Results

Classification	Surface of cross-cut area from which flaking has occurred. (Example for the greatest cut)
5	None
4	
3	
2	
1	

Figure 1 Classification of Adhesion Test Results

5. The edges of the cuts are completely smooth: none of the squares of the lattice is detached.

4. Small flakes of the coating are detached at intersections:
Less than 5% of the area is affected.

3. Small flakes of the coating are detached along the edges and at intersections of cuts. The area affected is 5 to 15% of the lattice.

2. The coating has flaked along the edges and on parts of the squares. The area affected is 15 to 35% of the lattice.

1. The coating has flaked along the edges of cuts in large ribbons and whole squares have detached. The area affected is 35 to 65% of the lattice.

0 Flaking and detachment are worse than Grade 1.

IV. Report

a. Report the rating that best matches the adhesion guide.

b. A rating of 3 or better is acceptable. Inter-coat adhesion loss or adhesion to substrate loss of 2 or worse is cause for rejection.

c. Compare test results to Texture Panels standard parts.

V. Results

a. The parts tested received a Grade 5. The edges of the cuts are completely smooth; none of the squares of the lattice is detached.

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► Solvent Resistance

— TEST No. TP06 —

I. Scope

This test procedure tests the solvent resistance of the paint/polymer system, particularly when overreduced solvent based top coats are used over the Texture Panels system.

II. Materials and Equipment

- a. VM&P Naphtha.
- b. Xylene.
- c. Texture Panels production coated parts with barrier coat and top coat.
- d. Kleenex or towel.

III. Procedure

- a. Age finished parts for 1 week at room temperature (77 degrees F)
- b. Using a Kleenex or towel, dip into either solvent type.
- c. Immediately after dipping into solvent, rub prepared test part with Kleenex or towel firmly. Rub in a 1" back and forth motion. Each back and forth motion counts as one double rub.
- d. Rub panel 25 times.

IV. Report

- a. Report any loss of coating on surface at number of rubs point.
- b. Compare test results to Texture Panels standard parts.

V. Results

- a. The parts tested passed. There was no loss of coating on the Texture Panels samples tested.

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I. Scope

This test procedure is used to determine the water resistance of the paint/polymer system, used in the Texture Panels system.

II. Materials and Equipment

- a.** Tap water.
- b.** Texture Panels production coated parts with barrier coat and top coat.
- c.** Kleenex or towel.

III. Procedure

- a.** Age finished parts for 1 week at room temperature (77 degrees F)
- b.** Immerse part in container with tap water for 5 minutes.
- c.** After 5 minute period, pull the part from the container and rub test part with Kleenex or towel firmly. Rub in a 1" back and forth motion. Each back and forth motions counts as one double rub.
- d.** Double rub panel 50 times.

IV. Report

- a.** Report any loss of coating on surface at number of rubs point.
- b.** Compare test results to Texture Panels standard parts.

V. Results

- a.** The parts tested passed. There was no loss of coating on the Texture Panels samples tested.

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► Weathering

TEST No. TP08

I. Scope

This test procedure is used to determine the weathering characteristics of the paint/ Polymer system, used in the Texture Panels system.

II. Materials and Equipment

- a. Q type UV Tester called QUV with an A340 light wave bulb. The test involves a cycle of 8 hours of UV at 70 degrees Celsius; 4 hours of darkness, humidity and at 50 degrees Celsius. This cycle is constantly repeated for the length of the test.
- b. Texture Panels production coated parts with barrier coat and top coat. The parts are cut 12" by 3" and 1/4" thick in order to properly fit the QUV equipment.
- c. Color Difference Tester (Hunter)
- d. Gloss meter.

III. Procedure

- a. Age finished parts for 1 week at room temperature (77 degrees F)
- b. Test one part for 240 hours of QUV.
- c. Test one part for 504 hours of QUV.

IV. Report

- a. Take the reading of CIE L*a*b* values before and after the test, record these values.
- b. Take reading of Gloss value before and after the test, record these values.
- c. Compare test results to Texture Panels standard parts.

V. Results

- a. The parts tested passed. There was no change in CIE*a*b* or Gloss values on the Texture Panels samples tested.

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Freeze - Thaw

TEST No. TP01

I. Scope

This test procedure is used to determine the resistance of the paint/polymer system used for the Texture Panels system against cold checking.

II. Materials and Equipment

a. A combination humidity cabinet, convection oven and cold box or individual components capable of maintaining the following:

Humidity: 100% at 100 degrees F +/- 3.

Oven: 155 degrees F +/- 5.

Cold Box: 20 degrees F +/-4.

b. Texture Panels production coated parts with barrier coat and top coat.

III. Procedure

a. Age finished parts for 1 week at room temperature (77 degrees F)

b. Place parts in a rack to allow air circulation between parts at the following cycles in individual test cabinets or a combination testing apparatus:

Humidity 16 hours Cold Box

4 hours Convection Oven 4

hours Room Temperature 2

hours Convection Oven 2

hours

c. Each 24 hours of exposure equals one cycle.

d. Examine the parts after each cycle for paint/polymer checking or cracking. Failure usually occurs as a series of irregular lines or fractures.

IV. Report

a. Report and record the condition of each test specimen following each cycle.

b. More than two checks or cracks of more than 1-2 inches constitute a failure.

c. A paint that passes 3 cycles is acceptable.

d. Compare the test results against Texture Panels standard part.

V. Results

a. The parts tested passed. There were no checks or cracks in the Texture Panels samples tested.

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