

MATERIALS / PAINTS

FNHA-2-J-001.35

WATER IMMERSION**1. SCOPE**

This procedure evaluates the ability of a paint system to resist degradation when immersed in distilled water.

7. REFERENCE STANDARDS

ASTM D870 Testing Water Resistance of Coatings Using Water Immersion.

86507636(FNHA-2-J-001.01) - Part or Panel Preparation

86507637(FNHA-2-J-001.02) - Color Measurement

86507638(FNHA-2-J-001.03) - Gloss

86513228(FNHA-2-M-095.20) -Pressure Sensitive Markings (Decals) Application Information and Instructions

3. MATERIALS & EQUIPMENT

3.1 Plastic container to hold panels and distilled water.

3.2 Plastic rack to separate panels such as a test tube rack which allows for spacing between test panels.

3.3 Distilled water.

3.4 Absorbent cloth or paper towel.

3.5 20° and 60° Glossmeter 86507638 (FNHA-2-J-001.03).

3.6 Spectrophotometer 86507637 (FNHA-2-J-001.02).

3.7 Razor or scalpel.

3.8 Scotch cellophane tape #600, 1" wide.

4. PROCEDURE - PAINT

4.1 Prepare duplicate test specimens according to 86507636 (FNHA-2-J-001.01). Include painted Bonderite 1000 panels as controls. Prime paint or cover any area which will not be spray painted to prevent rusting.

4.2 Paint panels with the appropriate paint or paint system using the proper curing schedule. Allow test specimens to age for one hour.

4.3 Record 20° & 60° gloss readings & color values.

4.4 Immerse at least one-half of the test specimen in distilled water at 25° ± 3°C (77° ± 5°F) for 96 hours.

4.5 Remove test specimens & dry with cloth or towel.

4.6 Examine test panels for blisters between 5 and 15 minutes after removal and record observations.

4.7 Fifteen minutes after removal from the distilled water, cut through the the paint film with a razor or scalpel. The cut should be made the entire length of the test panel over the areas that were and were not immersed in distilled water.

4.8 Apply test tape over the entire cut paint film & press firmly to make sure tape is well adhered.

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4.9 Immediately remove the tape in a smooth quick pull at a 90° angle and record any loss of paint adhesion.

4.10 Age the test panel at room temperature for 3 hours and scribe and test with tape per steps 4.7 through 4.9 using another area at least 2 inches from the first cut.

5. PROCEDURE - DECAL

5.1 Prepare duplicate test specimens according to 86507636 (FNHA-2-J-001.01). Prime paint or cover any area which will not be spray painted to prevent rusting.

5.2 Apply pressure sensitive marking (decal) to panel according to decal application instructions 86513228 (FNHA-2-M-095.20). Age for 72 hours at room temperature (not less than 60°F).

5.3 Record 60° gloss reading and color values.

5.4 Immerse one half of the test specimen in distilled water at $25^{\circ} \pm 3^{\circ}\text{C}$ ($77^{\circ} \pm 5^{\circ}\text{F}$) for 18 hours.

5.5 Remove test specimen and dry by blowing with air.

5.6 Examine decal after 5 minutes and 3 hours.

6. REPORT - PAINT

6.1 Report any blistering after 15 minutes and 3 hours, and any recovery if present.

6.2 Report any loss of paint adhesion after 15 minutes and 3 hours recovery time on areas that were and were not immersed.

6.3 Record gloss and color values including the ΔE of CIE lab values at 15 minutes and 3 hours recovery time on immersed area.

6.4 Test specimen will pass if all of the following conditions are met following a 3-hour recovery time after immersion:

- A. There is no blistering.
- B. The gloss is at least 95% of the initial reading.
- C. The ΔE is less than 1.
- D. There is no paint removal at the scribe on areas that were and were not immersed after tape pull.

7. REPORT - DECAL

Test specimen will pass if there is no blistering, peeling, or other defect in the decal after 5 minutes or 3 hours.

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	STD WATER IMMERSION			86507670	
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