

Overbake

1. SCOPE

This procedure evaluates the ability of a coating to maintain color and film integrity when subjected to conditions exceeding the normal temperature and or time exposure in a paint oven.

2. REFERENCE SPECIFICATIONS

ASTM D2454 - Determining the Effect of Overbaking on Organic Coatings.
86507636(FNHA-2-J-001.01) - Panel or Part Preparation
86507637 (FNHA-2-J-001.02) - Color Measurement
86507638 (FNHA-2-J-001.03) - Gloss

3. MATERIALS AND EQUIPMENT

3.1 Laboratory circulating oven capable of maintaining $260^{\circ} \pm 3^{\circ}\text{C}$ ($500^{\circ} \pm 5^{\circ}\text{F}$).

3.2 Painted panels prepared according to standard 86507636 (FNHA-2-J-001.01).

3.3 Gloss reading apparatus meeting standard 86507638 (FNHA-2-J-001.03).

3.4 Color measuring apparatus meeting standard 86507637 (FNHA-2-J-001.02).

4. PROCEDURE

4.1 LIQUID PAINT.

4.1.1 Prepare (3) three 7.6 X 15.2 cm (3 X 6 inch) test panels per standard 86507636 (FNHA-2-J-001.01). Label one panel "CONTROL PANEL" and the other two, "TEST PANEL".

4.1.2 Measure and record the L^* , a^* , b^* , color parameters per standard 86507637 (FNHA-2-J-001.02) and gloss per standard 8650738 (FNHA-2-J-001.03) on panels after force drying or baking at the prescribed 30 minutes at $82^{\circ} \pm 2^{\circ}\text{C}$ ($180^{\circ} \pm 5^{\circ}\text{F}$) or recommended temperature and time from supplier and record. This 82°C (180°F) shall be the typical liquid test temperature and the 30 minutes shall be the typical time when no exact recommendation is obtained.

NOTE: Panels must have gloss readings within 2% of each other and a ΔE of less than 0.4 between them. The "CONTROL PANEL" will be used only for visual comparison.

4.1.3 Place one panel (TEST PANEL) in the oven and force dry or bake for 30 additional minutes at $82^{\circ} \pm 2^{\circ}\text{C}$ ($180^{\circ} \pm 5^{\circ}\text{F}$) or the temperature and the additional time recommended from the supplier.

4.1.4 Remove the panel, measure and record color parameters and gloss after panel has cooled.

4.1.5 Place the other panel (TEST PANEL) into the oven at 1.2 times the force dry or bake temperature for a period of 30 minutes.

4.1.6 Remove panel, allow to cool, measure and record color parameters and gloss as in 3.4.

4.2 POWDER PAINT.

4.2.1 Prepare (3) three 7.6 X 15.2 cm (3 X 6 inch) test panels per test panel standard 86507636 (FNHA-2-J-001.01). Label one panel "CONTROL PANEL" and the other two, "TEST PANEL".

					NAME	STD OVERBAKE					
					 NEW HOLLAND			ENGINEERING SPECIFICATION			
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MATERIALS / PAINTS

FNHA-2-J-001.12

4.2.2 Measure and record the L^* , a^* , b^* , color parameters per standard 86507637 (FNHA-2-J-001.02) and gloss per standard 8650738 (FNHA-2-J-001.03) on both panels after curing at the prescribed 30 minutes at $190^\circ \pm 2^\circ\text{C}$ ($375^\circ \pm 5^\circ\text{F}$) or recommended temperature and time from supplier and record. This 190°C (375°F) shall be the typical powder paint test temperature and the 30 minutes shall be the typical time when no exact recommendation is obtained. It shall be required that the supplier furnishes a temperature, time cure curve for the particular powder paint being tested. From this curve the temperature required to cure powder paint at 20 minutes shall be taken and shall be used as the base cure temperature for the particular powder being tested.

NOTE: Panels must have gloss readings within 2% of each other and a ΔE of less than 0.4 between them. The "CONTROL PANEL" will be used only for visual comparison.

4.2.3 Place one panel (TEST PANEL) in the oven and cure for 30 additional minutes at $190^\circ \pm 2^\circ\text{C}$ ($375^\circ \pm 5^\circ\text{F}$) or the temperature and additional time which the supplier recommended.

4.2.4 Remove the panel, measure and record color parameters and gloss after panel has cooled.

4.2.5 Place the other panel (TEST PANEL) into the oven at 1.2 times the base temperature for a period of 30 minutes.

4.2.6 Remove panel, allow to cool, measure and record color parameters and gloss as in 3.4.

5. REPORT

5.1 Record the color values

5.2 Record the gloss values.

5.3 Compare and record the gloss readings and ΔE color shift of the panel subjected to overbaking tests.

5.4 Visually compare the film properties and color of the overbaked panel verses the "CONTROL PANEL".

 NEW HOLLAND	NAME				PART NUMBER	
	STD OVERBAKE				Documents	
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