Drying Analysis of Paints and Bases

SM004.0

**Parameters**

**Stage 1**

Power: 100%

Time: 4 minutes

Temperature: 50°C

**Recommended Systems**

SAM 255

**Stage 2**

Power: 0%

Time: 0.5 minutes

Temperature: 27°C

**Equipment**

SAM 255 with Workstation

Drawdown Charts

Drawdown Bar (ex: BYK 3 mil PA: 5273-408)

Spectrophotometer (ex: X-Rite SP 60 Series)

**Sample Preparation**

Mix sample well before sampling.

**Procedure**

1. Apply the paint and base to the drawdown chart in an even coat using a 3 mil drawdown bar.

2. Then transfer the chart to the SAM-255 and begin the method described above.

3. Press the START key to begin the drying of the chart. The instrument will maintain the programmed temperature during the dwell time.

4. When the program is complete, an audible beep will be heard, signaling the end

of the programmed time.

5. Remove drawdown chart and measure with Spectrophotometer

6. To process additional samples using the same method, repeat the applicable above

steps.

7. To end the method and return to the CEM Method Menu, press the HOME key twice.

Spectrophotometer: \*L- measurement of lightness of an object and ranges from 0 (black) to 100(white), a- measurement of redness (positive) or greenness (negative), b- measurement of yellowness (positive) or blueness (negative).

Data for Eggshell and Flat Paint Using 4.5 minute drying time

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | SAM-255 4.5 minute dry |  | SAM-255 4.5 minute dry |
| **Eggshell Base 1** |  |  | **Eggshell Base 2** |  |
| Avg |  | 3 charts | Avg | 3 charts |
|  | L | 93.63 | L | 93.06 |
|  | a | -1.03 | a | -0.95 |
|  | b | 4.89 | b | 4.08 |
|  |  |  |  |  |
| StDev |  |  | StDev |  |
|  | L | 0.08 | L | 0.10 |
|  | a | 0.02 | a | 0.01 |
|  | b | 0.03 | b | 0.06 |
| **Eggshell Red** |  |  | **Eggshell Yellow** |  |
| Avg |  | 3 charts | Avg. | 3 charts |
|  | L | 50.97 | L | 87.53 |
|  | a | 57.45 | a | 1.92 |
|  | b | 34.78 | b | 63.15 |
|  |  |  |  |  |
| StDev. |  |  | St.Dev |  |
|  | L | 0.03 | L | 0.09 |
|  | a | 0.06 | a | 0.06 |
|  | b | 0.07 | b | 0.15 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | SAM-255 4.5 minute dry |  | SAM-255 4.5 minute dry |
| **Flat Base 1** |  |  | **Flat Base 2** |  |
| Avg |  | 3 charts | Avg | 3 charts |
|  | L | 93.36 | L | 91.85 |
|  | a | -1.13 | a | -1.09 |
|  | b | 4.50 | b | 5.92 |
|  |  |  |  |  |
| StDev |  |  | StDev |  |
|  | L | 0.02 | L | 0.03 |
|  | a | 0.01 | a | 0.01 |
|  | b | 0.06 | b | 0.11 |
| **Flat Red** |  |  | **Flat Yellow** |  |
| Avg |  | 3 charts | Avg. | 3 charts |
|  | L | 50.40 | L | 87.42 |
|  | a | 56.40 | a | 0.45 |
|  | b | 33.30 | b | 63.97 |
|  |  |  |  |  |
| StDev. |  |  | St.Dev |  |
|  | L | 0.03 | L | 0.13 |
|  | a | 0.04 | a | 0.07 |
|  | b | 0.36 | b | 0.22 |