

Light, high temperature, and moisture, can cause damage to coatings, plastics, and other organic materials. This damage includes gloss loss, fading, yellowing, cracking, peeling, embrittlement, loss of tensile strength, and delamination. Even indoor lighting and sunlight through window glass can degrade some materials such as pigments and dyes, causing fade and color change. For many manufacturers, it is crucial to formulate products that can withstand weathering and light exposure. Accelerated weathering test is widely used for research and development, quality control and material certification.

## 1. Test method (ASTM G155: Weather-O meter)

Staron (12T) specimens are exposed under the following conditions:  
 The test cycle shall consist of 102 minutes of light followed by 18 minutes of light plus water spray. Black Panel Temperature shall be adjusted to 145°F +/- 6°F (63°C +/- 3°C) attained during the light only portion of the cycle. Water shall be demineralized and delivered in a fine spray, with a water temperature that shall be 77°F +/- 4°F (25°C +/- 2°C). Light source is xenon arc and the irradiance is 0.35W/m<sup>2</sup> (340nm).



## 2. Test result

Staron color changes are measured in ΔE unit by ASTM D2244 method. Staron colors are categorized following Color change ΔE value based on projected 3 years performance. Group A is good for exterior application, Group B is good for the project slight color change is acceptable. Group C is good for the project huge color change is acceptable.

| Group A<br>(Less than 1.0 ΔE unit for 3 years) |                 |                      | Group B<br>(1.0 to 2.0 ΔE unit for 3 years) | Group C<br>(Over 2.0 ΔE unit for 3 years) |
|--|-----------------|----------------------|---|---|
| Aspen Alder                                    | Morning Sky     | Sanded Dover         | Dazzling White                              | Berry Frost                               |
| Aspen Concrete                                 | Pearl*          | Sanded Ginger*       | Metallic Yukon                              | Blonde                                    |
| Aspen Fiesta*                                  | Pebble Chiffon* | Sanded Grey*         | Onyx  | Cool Mint                                 |
| Aspen Glacier*                                 | Pebble Coral    | Sanded Heron*        | Pebble Fresco                               | Fog                                       |
| Aspen Slate*                                   | Pebble Frost*   | Sanded Icicle*       | Pebble Spinel                               | Oasis                                     |
| Aspen Snow*                                    | Pebble Gold*    | Sanded Papyrus*      | Quarry Bisque                               | Pebble Saratoga                           |
| Beige Granite                                  | Pebble Ice*     | Sanded Sahara*       | Quarry Coral                                | Placid                                    |
| Bliss  | Pebble Kernel*  | Sanded Vermillion*   | Quarry Esker                                | Powder Blue                               |
| Bright White*                                  | Pebble Lagoon*  | Sanded White pepper* | Quarry Stoneware                            | Sanded Clay                               |
| Cotton White                                   | Pebble Maize*   | Serene               | Sanded Birch                                | Sanded Night sky                          |
| Delphi   | Pebble Moon*    | Tusk*                | Sanded Cornhusk                             | Sanded Oatmeal                            |
| Magnolia                                       | Pebble Swan*    |                      | Sanded Cream                                | Sanded Onyx                               |
| Metallic Galaxy                                | Pure white*     |                      | Urban Grey                                  |   |
| Mist   | Quasar White*   |                      |   |   |

\*Marked 26 colors among the group A are products which color change less than ΔE=5 unit based on projected 10 year performance.

### Recommendation (17 colors are selected for exterior recommendation colors.)

Bright White, Pure White, Quasar White, Tusk, Pearl, Sanded Grey, Sanded Sahara, Sanded Vermillion, Sanded Icicle, Sanded Ginger, Sanded Papyrus, Sanded Heron, Sanded White Pepper, Aspen Glacier, Aspen Snow, Aspen Slate, Aspen Fiesta

**Note:** Lotte Advanced Materials Staron 10 years limited warranty shall not apply for materials used in an outdoor application.

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