



**Composites Research Project Number
UP-14-3099**

QUV-A Accelerated Weathering for Kreysler & Associates

Final Report

**Kelly Potterf
Composites Research
Technical Service Group**

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CCP Composites US LLC
P.O. Box 419389, Kansas City, MO 64141-6389
(816)-391-6000, Fax: (816)-391-6254

Distribution:

EC:	
	Tim Oliver
IC:	
	Scott Kaphingst, Linda Bergstrom



Objective

To evaluate three pigmented Fireblock™ concrete samples exposed to QUV-A accelerated weathering for color change.

Materials

Keysler and Associates provided three sets of panels for evaluation. The panel sets were labeled:

- 071514-1
- 071514-2
- 071514-3

Four samples were provided with each set. One panel was pulled from exposure from each set every 500 hours.

Approach

QUV-A

QUV-A accelerated exposure assessed weathering properties per ASTM G154 cycle 1. A panel was pulled and an evaluation of color occurred every 500 hours exposure time.

Color Measurements – Data color International Spectraflash SF600® Plus CT color computer with Chrom-calc® software calculated color values. The setup for color measurements is as follows.

- Large area view
- Specular reflections excluded
- 10° lamp angle
- Hunter color coordinates

Color was measured in a 3D color space with dimensions being L, a, and b.

- L – Is the degree of black and white. L values range between 0 and 100, with 0 being black and 100 being white.
- a – Is the degree of green and red. Values range from negative to positive with green being negative and red being positive.
- b – Is the degree of blue and yellow. b values range from negative to positive with blue being negative and yellow being positive.

Results were reported as total color change (ΔE). Total color change is the square root of the sum of the squares of ΔL , " Δa " and " Δb " values.

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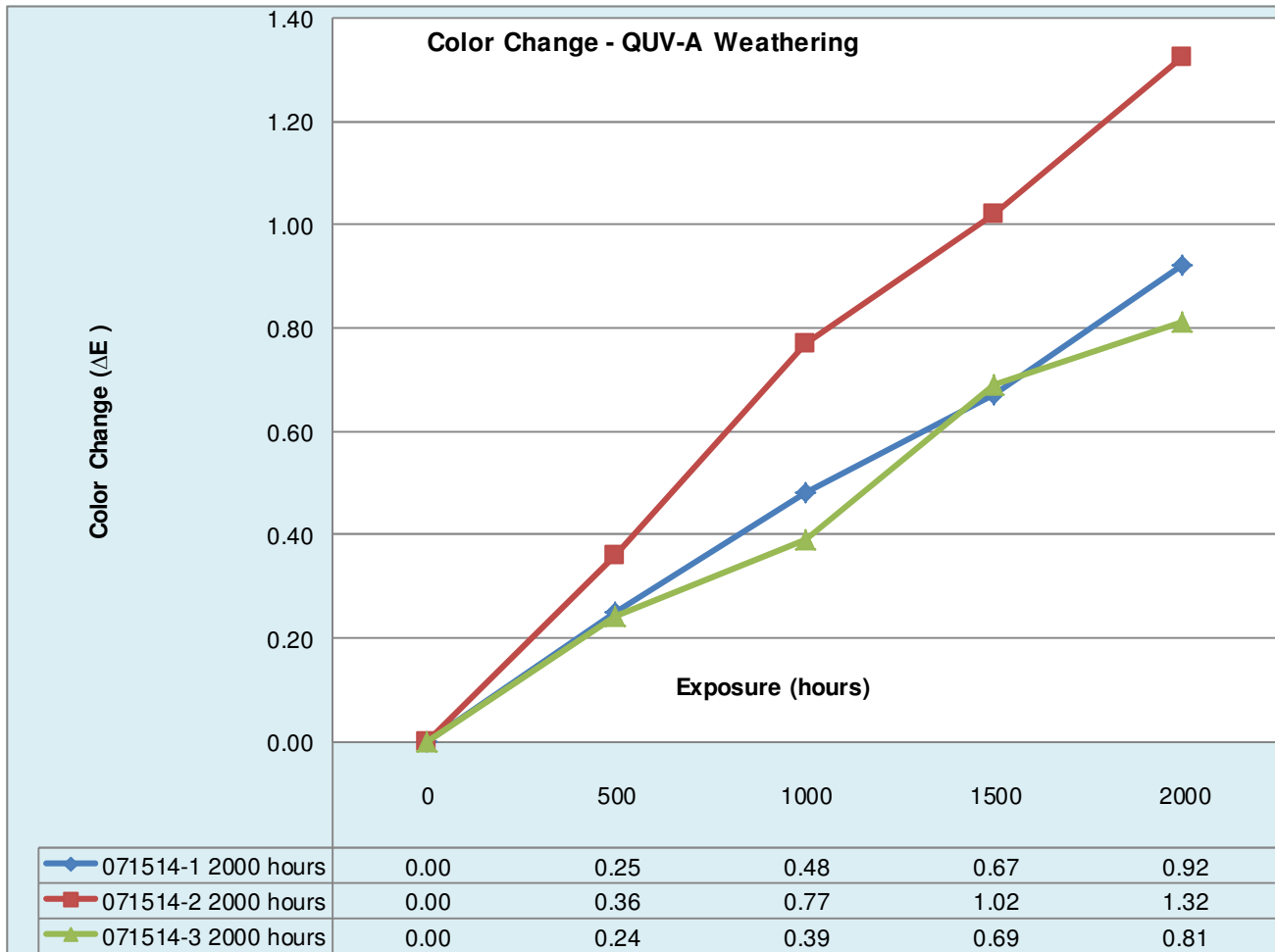
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Results

ΔE color change over 2000 hours of QUV-A exposure is summarized below:



Conclusions

The panels show minimal color change over the course of 2000 hours of exposure.

References

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