

## QUV Weatherometer Testing

QUV Weatherometer accelerated testing (ASTM G 53) has been used as a tool to evaluate the performance of polyurea spray elastomer systems. By using this technique, one can observe the physical affects of simulated sunlight on the surface properties of the exposed elastomer as well as physical property retention.

**AROMATIC SYSTEMS:** Due to the nature / chemical composition of aromatic polyurea spray elastomer systems, there will be a color change noted when exposed to direct sunlight. The level and type of pigmentation used in the formulated systems will affect the degree of color change noted. Formulation steps can be taken to minimize this color fading, but it will still occur over time in exposure to sunlight.

The following basic results have been noted:

Hours of Exposure:	250, 500, 1000, 1500, 2000 and 3000 (4 hours light/4 hours dark cycle)
Light Source:	UVB-313 bulb
Surface Color Change:	Slight yellowing, varies due to exposure,
Surface Chalking:	None
Surface Cracking:	None
Gloss Retention:	varies for total exposure
Physical property retention: (after 3000 hours)	> 90% of original

Note that while there is a color change on the surface of the elastomer system, not significant breakdown of the elastomer is noted as evidenced by the retention of elastomer physical properties. (See following slides.)

**ALIPHATIC SYSTEMS:** Properly formulated aliphatic based, not modified, polyurea elastomer systems show excellent results when exposed to the accelerated QUV Weatherometer testing. This is noted by excellent color, gloss and elastomer physical property retention. The following basic results can be noted:

Hours of Exposure:	3000 (4 hours light/4 hours dark cycle)
Light Source:	UVB-313 bulb
Surface Color Change:	None
Surface Chalking:	None
Surface Cracking:	None
Gloss Retention:	> 90%

Based on earlier work with the aliphatic polyurea spray elastomer systems of this type, it is expected that 5000 hours of exposure can be exceeded with similar results.

# QUV Weatherometer Testing

## Light Gray, Aromatic Polyurea System

**250 Hours**



**500 Hours**



**1000 Hours**



**1500 Hours**



**2000 Hours**



**3000 Hours**



*EnviroLastic®* AR 425, Testing performed as per ASTM G-53, UVB-313 bulbs

# QUV Weatherometer Testing

## Beige, Aromatic Polyurea System

**250 Hours**



**500 Hours**



**1000 Hours**



**2225 Hours**



**3250 Hours**



*EnviroLastic®* AR 425, Testing performed as per ASTM G-53, UVB-313 bulbs

# QUV Weatherometer Testing

## Tile Red, Aromatic Polyurea System

**500 Hours,  
Smooth**



**1000 Hours,  
Smooth**



**2000 Hours,  
Smooth**



**3000 Hours,  
Smooth**



**2000 Hours,  
Textured**



**3000 Hours,  
Textured**



*EnviroLastic®* AR 425, Testing performed as per ASTM G-53, UVB-313 bulbs