QUV Accelerated Weathering Study

Customer: MGM Industries  
Initial Date: 9/20/10  
Report Date: 1/5/2011  
Project: 53773  
LABS ID: WE4115

TEST METHOD

Exposure was performed in a Q-Lab QUV Accelerated Weathering Tester

Exposure conditions were set according to ASTM G154-04, cycle 4 (see table X2.1)

Lamps: UVA340 (approximately 340 nm radiation)  
Irradiance: 1.35 W/m2/nm  
Exposure Cycle: 8 hours UV exposure at 70°C  
4 hours condensation exposure at 50°C  
Exposure Duration: 2000 hours

TEST RESULTS

<table>
<thead>
<tr>
<th>Shepherd Color / IVC Coating System - QUV Weathering Results</th>
<th>2000 Hours of Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>L* a* b* Gloss % TSR</td>
<td>DL* Da* Db* DE* Gloss %TSR</td>
</tr>
<tr>
<td>32.5 0.5 0.9 34 24</td>
<td>0.9 0.1 0.0 0.9 11 28</td>
</tr>
</tbody>
</table>

CONCLUSION

Normally, a DE* of less than 3 units is considered acceptable after QUV exposure of 2000 hours. This test showed a DE* of 0.9 after 2000 hours. This DE is within the normal color standards at the time of manufacture. Based on these results, there should be no significant difference between the 2000 hour test specimen and the original color chip provided.

Brian W. Schwer  
Technical Manager  
bschwer@shepherdcolor.com