UV Through the Years:
A Studio Artist’s Perspective

Sidney Hutter
www.sidneyhutter.com
December 2015
History
Grad School/Boston
As a masters....
Problems:
- Improper light intensity
- Slow cure time
- Inability to cure multiple layers
- Glue chipping during cleaning
Problems:
- Improper light intensity
- Slow cure time
- Inability to cure multiple layers
- Glue chipping during cleaning

Needs:
- Stronger light
- More research
Problems:
- Improper light intensity
- Slow cure time
- Inability to cure multiple layers
- Glue chipping during cleaning

Solution:
Two-Stage Light System
Dymax EC2000
Flood light curing system
The ‘Cooker’

small UV light surrounded by reflective material to cure larger surface areas

BP100 Spot curing light
New Issues:

- Viscosity
- Shrinkage
- Cracking
- Temperature/Sawing
Glue cracking

Hot Box
Reciprolap Grinders
Grinder & Polisher
Color Comparison
Color Comparison
## Combination Possibilities

<table>
<thead>
<tr>
<th></th>
<th>Red</th>
<th>Yellow</th>
<th>Blue</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Red</td>
<td>Yellow</td>
<td>Blue</td>
</tr>
<tr>
<td>2</td>
<td>Fluorescent Red</td>
<td>Yellow</td>
<td>Blue</td>
</tr>
<tr>
<td>3</td>
<td>Red</td>
<td>Fluorescent Yellow</td>
<td>Blue</td>
</tr>
<tr>
<td>4</td>
<td>Red</td>
<td>Yellow</td>
<td>Fluorescent Blue</td>
</tr>
<tr>
<td>5</td>
<td>Fluorescent Red</td>
<td>Fluorescent Yellow</td>
<td>Blue</td>
</tr>
<tr>
<td>6</td>
<td>Fluorescent Red</td>
<td>Yellow</td>
<td>Fluorescent Blue</td>
</tr>
<tr>
<td>7</td>
<td>Red</td>
<td>Fluorescent Yellow</td>
<td>Fluorescent Blue</td>
</tr>
<tr>
<td>8</td>
<td>Fluorescent Red</td>
<td>Fluorescent Yellow</td>
<td>Fluorescent Blue</td>
</tr>
</tbody>
</table>
## Mixing Table for Our Mixes

<table>
<thead>
<tr>
<th>Name</th>
<th>Dye Used</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Our Mix: Green</strong></td>
<td>fYellow083, BlueGN</td>
</tr>
<tr>
<td><strong>Our Mix: Purple II</strong></td>
<td>Pink, fPink285, Clairant Blue</td>
</tr>
<tr>
<td><strong>Our Mix: Orange</strong></td>
<td>fOrange240, OrangeRG</td>
</tr>
</tbody>
</table>
## Curing Times (seconds)

<table>
<thead>
<tr>
<th>Dye</th>
<th>Adhesive</th>
<th>#1</th>
<th>#2</th>
<th>#3</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clear</td>
<td>No UV Stabilizer</td>
<td>9</td>
<td>11</td>
<td>11</td>
<td>10.3</td>
</tr>
<tr>
<td>Clear</td>
<td></td>
<td>30</td>
<td>23</td>
<td>29</td>
<td>27.3</td>
</tr>
<tr>
<td>Red</td>
<td>No UV Stabilizer</td>
<td>13</td>
<td>11</td>
<td>12</td>
<td>12.0</td>
</tr>
<tr>
<td>Red</td>
<td></td>
<td>26</td>
<td>31</td>
<td>28</td>
<td>28.3</td>
</tr>
<tr>
<td>Yellow</td>
<td>No UV Stabilizer</td>
<td>15</td>
<td>15</td>
<td>14</td>
<td>14.7</td>
</tr>
<tr>
<td>Yellow</td>
<td></td>
<td>28</td>
<td>33</td>
<td>25</td>
<td>28.7</td>
</tr>
<tr>
<td>Blue</td>
<td>No UV Stabilizer</td>
<td>17</td>
<td>13</td>
<td>21</td>
<td>17.0</td>
</tr>
<tr>
<td>Blue</td>
<td></td>
<td>23</td>
<td>27</td>
<td>13</td>
<td>21.0</td>
</tr>
</tbody>
</table>
New implementations:

• UV stabilizer
• Photo initiators
• Fluorescent Dyes
Fading Comparison

No UV stabilizer

UV stabilizer

2 MINUTES  4 MIN.  6 MIN.  8 MIN.  10 MIN.
UV stabilizers

- Protect against fading
- Increase curing time
- More chance for error: bubble or crack formation
- Cleaning can be difficult if long curing exposure
Photo Initiators

- Supplement UV light cure
- Enable pre-curing process with incandescent light source
- More forgiving in case the glass shifts