In-House Testing on the Affects of Solvents on Statguard® Conductive Epoxy
2009-08-06

Materials:
Board coated with Conductive Statguard Epoxy over 2 weeks before testing
Dykem Remover and Cleaner
- Acetone CAS# 67-64-1
- Ethanol CAS#64-17-5
- Isopropanol CAS# 67-63-0
- n-Propyl Acetate 109-63-0

Sunnyside Methy Ethyl Ketone CAS# 78-93-9
Sterling Acetone CAS# 67-64-1
200 mL Beaker (3)
Pipette (3)
Wet Paper Towel (3)
Dry Paper Towel (3)
Post-It Notes (multiple)
Camera
Safety Equipment

Figures:
Figure 1: Board after labeling, before solvents are placed
Figure 2: Board directly after last solvent (Sterling Acetone) is placed. Spots are from top to bottom: Dykem Remover & Cleaner, Sunnyside Methyl Ethyl Ketone, and Sterling Acetone
Figure 3: Board ten minutes after solvents were placed. Spots are from left to right: Dykem Remover & Cleaner, Sunnyside Methyl Ethyl Ketone, and Sterling Acetone
Figure 4: Spot of Dykem Remover & Cleaner ten minutes after placed
Figure 5: Spot of Sunnyside Methyl Ethyl Ketone ten minutes after placed
Figure 6: Spot of Sterling Acetone ten minutes after placed
Figure 7: Board after spots were scrubbed with a wet paper towel and then dried with a dry paper towel. Spots are from top to bottom: Dykem Remover & Cleaner, Sunnyside Methyl Ethyl Ketone, and Sterling Acetone
Figure 8: Spot of Dykem Remover & Cleaner after scrubbed with a wet paper towel and then dried with a dry paper towel
Figure 9: Spot of Sunnyside Methyl Ethyl Ketone after scrubbed with a wet paper towel and then dried with a dry paper towel
Figure 10: Spot of Sterling Acetone after scrubbed with a wet paper towel and then dried with a dry paper towel

Test Procedure:
1) Board was labeled with Post-It notes at three different intervals. Notes were labeled **Dykem Remover & Cleaner**, **Sunnyside Methyl Ethyl Ketone**, and **Sterling Acetone**
2) A small amount of Dykem Remover & Cleaner was poured into a beaker and drawn into a pipette to a previously marked line and placed into a small puddle next to its Post-It. This was repeated for Sunnyside Methyl Ethyl Ketone and Sterling Acetone, using separate beakers and pipettes
3) Board was observed ten minutes later and all observations were recorded
4) Spots where solvents had been placed were scrubbed with a wet paper towel and then dried with a dry paper towel, board was observed and observations were recorded

Notes:

- Some Dykem Remover & Cleaner may have splashed onto the bored after labeling had taken place and before testing had begun, due to difficulty in opening the container. The solvent had evaporated before it could be wiped off.
- Initial procedure called for dabbing away of the solvents after the ten minute waiting period, but this was unnecessary because all solvents had completely evaporated away

Results:

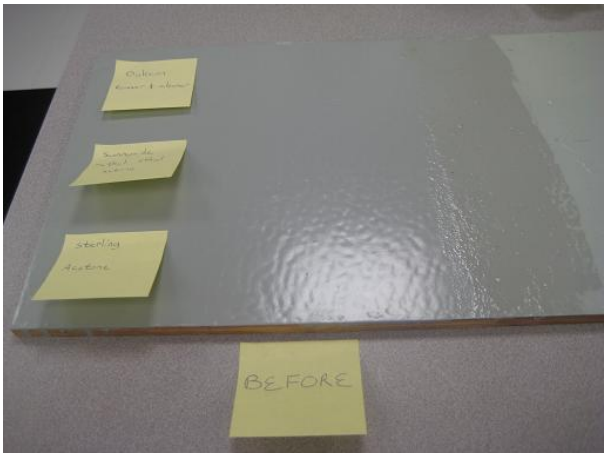

Figure 1

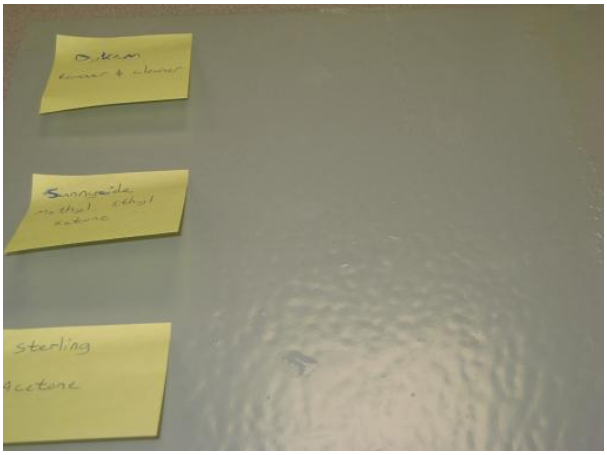

Figure 2

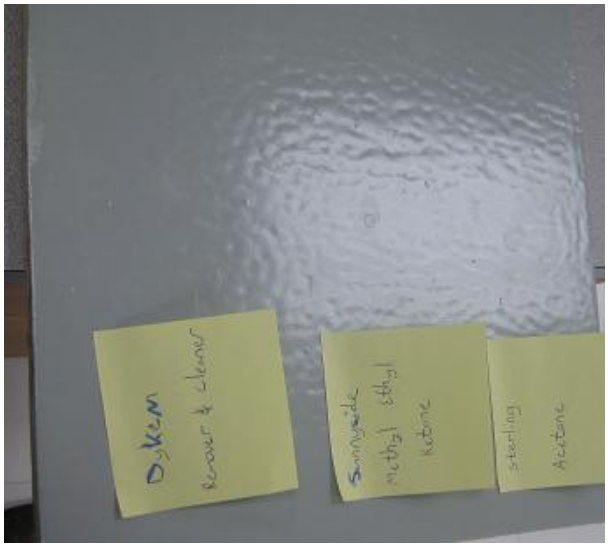

Figure 3

Observations on spot of Dykem Remover & Cleaner ten minutes after placement

- Solvent completely evaporated, no liquid left on board
- Discoloration where placed
    - Lighter gray than the rest of the gray coated board
    - Easy to see
    - Have to be at correct angle to photograph
- No signs of deformation of coating
- No signs of loss of gloss

Figure 4

Observations on spot of Sunnyside Methyl Ethyl Ketone ten minutes after placement

- Solvent completely evaporated, no liquid left on board
- Discoloration where placed
    - Less discoloration that with Dykem Remover & Cleaner, much closer to the color of the rest of the coating
    - Have to be at correct angle to see, photograph
- Small brown ring around a small portion within the spot
- No signs of deformation of coating
- No signs of loss of gloss

Figure 5

Observations on spot of Sterling Acetone ten minutes after placement

- Solvent completely evaporated, no liquid left on board
- Discoloration where placed
    - Less discoloration that with Dykem Remover & Cleaner, but more discoloration than Sunnyside Methyl Ethyl Ketone
    - Have to be at correct angle to see, photograph
- No signs of deformation of coating
- No signs of loss of gloss

Figure 6

Figure 7

Observations on spot of Dykem Remover & Cleaner after being scrubbed with a wet paper towel and then dried with a dry paper towel

- No change in spot

Figure 8

Observations on spot of Sunnyside Methyl Ethyl Ketone after being scrubbed with a wet paper towel and then dried with a dry paper towel

- Spot seems to have come off
- Brown circle is definitely completely gone
- Cannot see with naked eye and cannot photograph

Figure 9

Observations on spot of Sterling Acetone after being scrubbed with a wet paper towel and then dried with a dry paper towel

- Spot is still visible at certain angles but is much harder to see
- Very difficult to photograph

Figure 10

Conclusion:
The purpose of this test was to determine the affects of different solvents on Statguard® Conductive Epoxy.

Small amounts of three different solvents were placed on a board coated with the epoxy and observations were made on the affects ten minutes after the placement. The results showed that the solvents had little effect on the epoxy. Dykem Remove and Cleaner, Sunnyside Methyl Ethyl Ketone, and Sterling Acetone caused a slight discoloration of the epoxy, but no deformation occurred. When the spots of solvent were scrubbed with a simple wet paper towel, Sunnyside Methyl Ethyl Ketone seemed to completely disappear, Sterling Acetone was only barely visible at certain angles, while the Dykem Remover & Cleaner could not be scrubbed away.

Overall, it can be said that solvents have very little affect on Statguard® Conductive Epoxy, and only cause a slight discoloration that can often be scrubbed away.