ABSTRACT:

Have you ever wondered what conformal coating is all about? What are the PROs and CONs of conformal coating? What materials are involved? Which materials work best? Can all electronic assembly surfaces be coated? What does it take to keep the process stable and repeatable? This presentation will go through the general information on the process, materials, and process setup of conformal coatings manufactured by Chase Corporation under the HumiSeal brand name to answer all these questions and more. In general, the conformal coating material is applied to electronic circuitry to act as protection against moisture, dust, chemicals, and temperature extremes that, if unprotected could result in damage or failure of the electronics to function.
Bio-

**Matt Eveline-Technical Support Specialist**

Matt Eveline is a Humiseal Technical Specialist. He has 19 years of industry experience with conformal coatings, adhesives, underfills, die attach, and printed electronics. Matt’s work includes process design, product selection & implementation, failure analysis, and R&D.

**What you missed at the last chapter meeting in April.**

If you were unable to attend the April 1st Dallas SMTA Chapter meeting you missed a great meeting. The technical presentation was on “PCB Surface finishes” and was presented by my colleague Mike Graves of Prototron Circuits. We had a record attendance for a chapter meeting of **54 attendees** which was followed up with by a great question and answer session after Mike’s presentation. I urge you to attend the local Dallas SMTA chapter meetings and see for yourself the different topics that are discussed and also for some great networking opportunities. If you would like more info from the April meeting technical topic please contact Gary Tanel at [GaryT@McDonald-Tech.com](mailto:GaryT@McDonald-Tech.com) or Karl Doebbert at [karlD@Prototron.com](mailto:karlD@Prototron.com)

**Upcoming Chapter meetings**

**May: Technical Speaker:**

**Matt Eveline-Technical Support Specialist**

**Chapter Calendar for 2016:**

**May 6**
Conformal Coating – Matt Eveline from Chase Humiseal

**Jun 3**
Bottom Termination Components – assembly process and reliability

**Sep 2**
Vapor Phase and Selective Soldering

**Nov 4**
DFM and DFR

**Dec 2**
Member Appreciation Event
Presidents Message

Greetings to SMTA Dallas Chapter members and guests.

We had another great turn-out of exhibitors and attendees at the Dallas EXPO in March. Thank you to all that participated. Big thanks to Jim Eatman and the technical committee for getting the 4 great speakers and setting a record attendance at the technical sessions. The technical sessions for the rest of the year chapter meetings are also looking very good. Please spread the word to the other people at your company that can benefit by access to this technical information and the strength of the people in the association. For our meeting on PCB surface finishes in April we had a record turn-out of 54 people. Thank you to Karl Doebbert at Prototron Circuits for organizing. Love the Q&A and the dialog between all the attendees that really added value.

Gary Tanel, Dallas Chapter President

Dallas Chapter Membership Rolls— 114 Members !!

We welcome our newest members to the SMTA family:

Randall Massey       Individual       B2P Solutions LLC
Boyd Thomas          Associate (Students/Retirees)

Corporate Members: 15     Corp Participating members: 14     Individual Members: 61
Global Members: 2           complimentary members: 1            Participating Members: 10
Associate/Student Members: 11

Dallas Chapter   Corporate Member List - April, 2016

Alliance Rubber Company    Keysight Technologies    SVTronics, Inc.
Barry Sales, Inc.           Krypton Solutions      Test Equity LLC
BBM, Inc.                   Mek Americas LLC       The IPS Group, LLC
CalcuQuote                  National Circuit Assembly Trilogy Circuits, Inc.
Conecsus LLC                NPI Technologies, Inc.  Variosystems, Inc.
CR Assembly Corp            PAC Global, Inc.        VI Technology
Creation Technologies Inc.  Philips Entertainment
DG Marketing Corporation    Precision Technology, Inc.
E.T.S. Group, Inc.          Southwest Systems Technology Inc.
Electrolab Inc.             SPEA America
Fujitsu Network Communications St. James Technologies
GSC (Garland Service Company) Sunshine Global PCB Group
JTAG Technologies           Super PCB
Page 4 Technology Corner

Speeding up the Design Cycle....10 Things to Remember Before Sending out a Fab Package

Many people understand the value of a printed circuit board (PCB), but do not understand the best way to interact with PCB manufacturers. Poor planning and communication with fabricators slows down the design cycle and increases overall costs for your project.

In this column I will attempt to help streamline the design cycle through fabrication. Following my tips will minimize the need for future revisions and ensure you get quality boards on time.

10. Eliminate Conflicting Information

It is essential that you eliminate any conflicting information from your drawings or read me’s. Make sure that all documentation is the same. If one document says half-ounce and another says one ounce copper, you may expect a call asking which it is to be. If you need the part expedited this takes valuable time away from the build and from you getting your part.

9. Provide an IPC Net-list

An IPC net-list will allow the fabricator to check your design against your exported data. Make sure any known or intentional net-list mismatches are noted again so our team does not waste time calling you to check on things you are already aware of.

Castellated pads where there are plated half-holes at the part edge that make a connection to a post at some point after fabrication. These typically come up as “broken” or open nets because at the time raw bare boards are fabricated no post exists to connect these castellation’s.

Known A-gnd to D-gnd shorts should also be noted. Make sure no non-plated holes have been specified as test point on the IPC net-list. If you are specifying net-compare on your documentation, be sure to include it!

8. Check for Discrepancies on NC Drill File

Double check to ensure there are no discrepancies of count or size or plating status on the NC drill file. Either one of these can cause communication delays.

7. Communicate With Your Fabricator ASAP

In order to facilitate the best communication, you need to get with your chosen fabricator as soon as possible in the design cycle. Check with them for validation of any impedance you may have. Make sure these notes do not conflict either.

Be sure to: Check for proper reference planes- make sure impedance traces do not traverse multiple splits or are lacking ref-plane altogether. Differentiate between single ended and differential type structures by a tenth- or a hundredth- of a mil. Again, fabricators cannot resolve these small increments but this allows the fabricator to uniquely select just the impedance tracks for any re-sizing that may be necessary to meet desired impedances.
Continue from page 4

Make sure the space between differential pairs is consistent throughout the run. Allow for process deviation, setting up a part as .1mm trace and space on half ounce starting copper does not leave room for any trace resizing that may be necessary to meet the impedances if dielectric cannot be altered.

When calling out materials, call out the 4101/# such as 4101/126, this will allow the fabricator to use any material that falls within the /126 criteria. Calling out a SPECIFIC material may limit the fabricators that can build the part. Avoid creating same net spacing violations when terminating differential pairs, do not “wrap” the differential pairs around the terminus.

6. Annular Ring must be Adequate and Communicated in Plans

Make sure all pads for plated through holes have sufficient annular ring. General rule of thumb is .010 MIN larger than the F.H.S. (Finished Hole Size) for signals and .015 MIN for internal relief/antipads. If VIAS, you may want to specify +.003 /- the entire hole size. This tells the fabricator in no uncertain terms they are indeed VIAS and can be drilled smaller if necessary.

5. Check Your Edges

For Scored parts, do not pour metal any closer to the part edge than .015 for an .062 thick part and at least .009 for an .031 thick part.

4. Check Your Drill Aspect Ratio

If your drill aspect ratio is greater than 10:1, be sure to consult your chosen fabricator.

3. Communicate Uncommon Materials

If using an uncommon material type, make sure you call the chosen fabricator to make sure it is something they stock or can get quickly.

2. File Naming

When exporting Image files avoid the use of control characters in the file names.

And Finally ... The number 1 thing to remember to streamline the design through fab process...

1. Consult

Be sure to consult your chosen fabricator and discuss with them any deviations you may require, be specific about any special needs for the part such as extremely tight tolerances or additional edits necessary. This is KEY!!

Karl Doebbert...
The Most Interesting Man On LinkedIn

I had the pleasure of attending the SMTA Leadership Forum which was held here in Dallas in January. The highlight of the forum was the keynote speech given by Dr. Story Musgrave whom is probably best known for being the lead space walker for the Hubble telescope repair mission. The introduction for Dr. Musgrave referenced his amazing LinkedIn Profile. Interestingly enough, his profile lists student as his first occupation and does not list astronaut. The messages that resonated with me is to know your playing field, understand the mechanics of what you do, never stop learning, work at what you are both good at and passionate about and never be afraid to knock on doors to open up opportunities. I was also impressed with his social media savvy as I got a connection request from him within a couple of hours of viewing his profile after meeting him at the welcoming reception. I urge you to look up his profile for a very interesting read.

Darrell Ray

Dallas Chapter-VP of Technical Programs
REASONS TO JOIN YOUR LOCAL SMTA CHAPTER

- Do you have something to share such as new technologies or new products?
- Are you new in a sales territory – do you know all the players? Do they know you?

Be informed and involved on the Local Chapter level:

- Take advantage of technical information provided at local meetings Get to know colleagues in your local area
- Network for technical information and get to know companies and people in your local area
  - Share information with colleagues on new products and services

THE MISSION OF SMTA

The Surface Mount Technology Association (SMTA) membership is a network of professionals who build skills, share practical experience and develop solutions in electronic assembly technologies and related business operations.

MEMBERSHIP DUES

Participating: $50 - If your company (same location/division) holds a Corporate Membership it’s employees are eligible to receive the full range of benefits at a discounted price.

Individual: $75 - This membership is designed for individuals who wish to join SMTA to receive all the benefits independent of a Corporate Membership.

Corporate: $450 - A corporate membership in SMTA provides discounts to employees located in the same location/division where the Corporate Membership is held.

Student/Retiree: $5 - The Student/Retiree Membership is available to all full-time post-secondary students and retirees at a discounted rate.

HOW TO JOIN

On-line at www.smta.org