Technical Committee
Epoxy and Resin Based Adhesive Bonding Systems (ERB)
Technical Committee Meeting Agenda
Working Session #9
Tuesday, April 24, 2018 1:00PM – 2:00PM

1) **1:00PM-1:00AM:** Call to Order and Introductions
   Have a new vice chair Patrick Upshaw from Florida who couldn’t travel

2) **1:05PM-1:10PM:** Review of Current Technical Committee Members

<table>
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<th>Name</th>
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Epoxy and Resin Based Bonding System Quarterly Conference Call  
Tuesday, March 6, 2018 10:00 AM – 12:00 PM (EST)  
Agenda  

1) Extra classes – Fee based on Manufacturer’s’ class submittal  
   i. Industry wants to see all three classes so that they can show the DOT they meet  
      into each range.  
   ii. Test should be done according to classes temperature range.  
      1. Passing Class A does not mean it will be passing Class C. Industry  
         indicated that it would be up to the states if that is acceptable to be  
         tested by only one class.  
      2. There may need to be a cost increase if more than one class is  
         requested. Industry on the call felt this was ok as long as we were  
         upfront.  

Separate categories, adhesive and anchors. Based on Louisiana model  

2) Separating work plan into 2 categories: [Currently LADOTD is accepting Epoxy on ASTM C881  
   for adhesive, and for structure on ICC-ES AC308 for structure (Anchor System)]  
   a. Adhesives – appropriate C881.  
   b. Anchors – Appropriate C881 with tensile pull out testing  

Cost of extra testing will be additional line item. Freeze Thaw, Anchor pull out. Will be performed at the  
request of manufacture and states.  

3) Should non state DOT get the contract for testing? Price comparison is needed.  
   a. Action Item: Ryan will put out an RFP to laboratories and collect proposals and share  
      that information with Richie.  
   b. Action Item: Mark Nelson will send Ryan and Richie a breakdown of all off the testing  
      required for a class and type to assist with putting the RFP together.  
   c. Industry felt as though the current fee by the testing facility is too high.  
   d. Send survey out to other state. Which state is requiring  
       1. freeze thaw  
       2. pull out  
       3. ICC ES 308 for structure, anchor system.  
   4. Giving Louisiana example of accepting epoxy. (1- Adhesive through NTPEP  
       Adhesive – C881, 2- Structural, anchor, through NTPEP C881 plus ICC ES  
       AC308 data) Will your state accepting ICC ES308 instead of pull out test?  

Only 2 states responded to survey. Alaska said yes. Florida said that they do their own testing.  
Mark Nelson send info on how to classify products by class and type.  

There are still 3 products that have not yet been tested by Florida. Should we wait until work plan is  
revised or immediately suspend program now until work plan and DM can be revised?
Described evaluation by ES308. NTPEP will provide testing for C881 for adhesive products. If product is to be used as anchor, manufacturer can provide ES308 report. ES308 report is being used as part of the NTPEP evaluation process for anchor systems.

Discussion about what should be included in this program. Should it include both anchor and adhesive? Industry said that 308 is quite extensive and costs a $250,000 per product. Industry does think that NTPEP testing of adhesives is of value.

Does ICC provide some basis for fingerprinting products?

4) Open Forum
a. Does any state require NTPEP?
Louisiana is currently requiring NTPEP. Alaska, Arkansas, Florida, Montana, North Carolina, and Vermont all indicated on the survey that NTPEP is allowed in lieu of something else.

b. Keep submission cycle rolling for 2018 and the submission cycle will be reevaluated prior to the 2019 submission cycle.

1:15PM-1:30PM: Review of Testing (Suggested by Mark Nelson, Nelson Testing Laboratory)

**ASTM C881 – Adhesive Testing**

1. **Type I and IV**
   1.1. Viscosity or Consistency (depending upon Grade)
   1.2. Gel time
   1.3. Bond Strength – 2 and 14 days
   1.4. Absorption
   1.5. Heat Deflection – 7 days (type I does not need)
   1.6. Linear Coefficient of Shrinkage
   1.7. Compressive Yield Strength and Modulus – 7 days
   1.8. Tensile Strength and elongation – 7 days

2. **Type I, II, and III correction by Mark Nelson**
   2.1. Viscosity or Consistency (depending upon Grade)
   2.2. Gel time
   2.3. Absorption
   2.4. Heat Deflection – 7 days (type II does not need)
   2.5. Linear Coefficient of Shrinkage
   2.6. Compressive Yield Strength and Modulus – 7 days
   2.7. Tensile Strength and elongation – 7 days

3. **Type III**
   3.1. Viscosity or Consistency (depending upon Grade)
   3.2. Gel time
   3.3. Absorption
   3.4. Thermal Compatibility- 5 cycles
   3.5. Compressive Modulus – 7 days
   3.6. Tensile Strength and elongation – 7 days

4. **Type VI or VII**
   4.1. Consistency
   4.2. Gel Time
   4.3. Bond Strength (2 days for VI for 14 days for VII)
   4.4. Heat Deflection – 14 days
   4.5. Compressive Yield Strength (24hr & 48 hr for VI or 36 hr & 72 hr for VII)
   4.6. Contact Strength (2days for VI or 14 days for VII)
Note - requests for additional classes would force the repeat of the following test methods and the different temperatures – Viscosity/Consistency, Gel Time, Bond Strength, Compressive Yield Strength and Modulus, Tensile Strength and Elongation. Therefore, each category above would also require a different price for adding one or two classes.

5. ASTM D543 – Chemical Testing (with four different chemicals) Are states requiring this? No response from audience.
   5.1. Procedure I – Visual and Weight Change (not costly)
   5.2. Procedure II – Properties – Tensile and Compressive Strength (will be costly)
5. ASTM E488 – Confined Tensile Strength (High cost, will this be necessary if accepting on ICC ES AC308)?
7. Freeze Thaw (Costly) Which state need this? No response from audience.
5. Other
   8.1 FTIR
   8.2 ASTM D1875 density
   8.3 ASTM C531 Linear Shrinkage and Coefficient of Thermal Expansion
      C531 vs D2566 Industry recommends using D2566 because of sample size.
      C531 give Thermal Expansion (Which state need this?)
      D2566 part of C881 with pass/fail limit. Shawn McCormick TEC, is recommending D2566
   8.4 ASTM C580 – Flexural Strength and Modulus of Elasticity – 7 Days

Looking for a task force to review these issues and determine which tests to include for adhesives. Would like to resolve within 60 days if possible.

Any discussion today will not affect the 3 products currently in queue for testing.

Justin from Louisiana, Ahmed from sika, Mark Nelson, Awelda florida, Justin Simons TRL, Shawn McCormick TEC, Dave Kuniega, Kelly Morse – Illinois, Jason Krogman, minndot. Will be led by Richie

Ask companies with currently submitted products if they want to withdraw and have refund for now and then resubmit to revised work plan or have testing from existing work plan continue.

4) 1:30PM–1:40 PM: Survey Results/ Cost Private Lab

5) 1:40PM-1:50PM: Industry Concerns

6) 1:50PM-1:55PM: Open Discussion

7) 1:55PM-2:00PM: Review of Action Items for 2018