



**Federal Aviation
Administration**

International Aircraft Materials Fire Test Working Group Meeting

Refinement of the Radiant Heat Test for Evacuation Slide Materials

Presented to: International Aircraft Materials Fire Test
Working Group, Savannah, GA

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Date: March 4, 2014



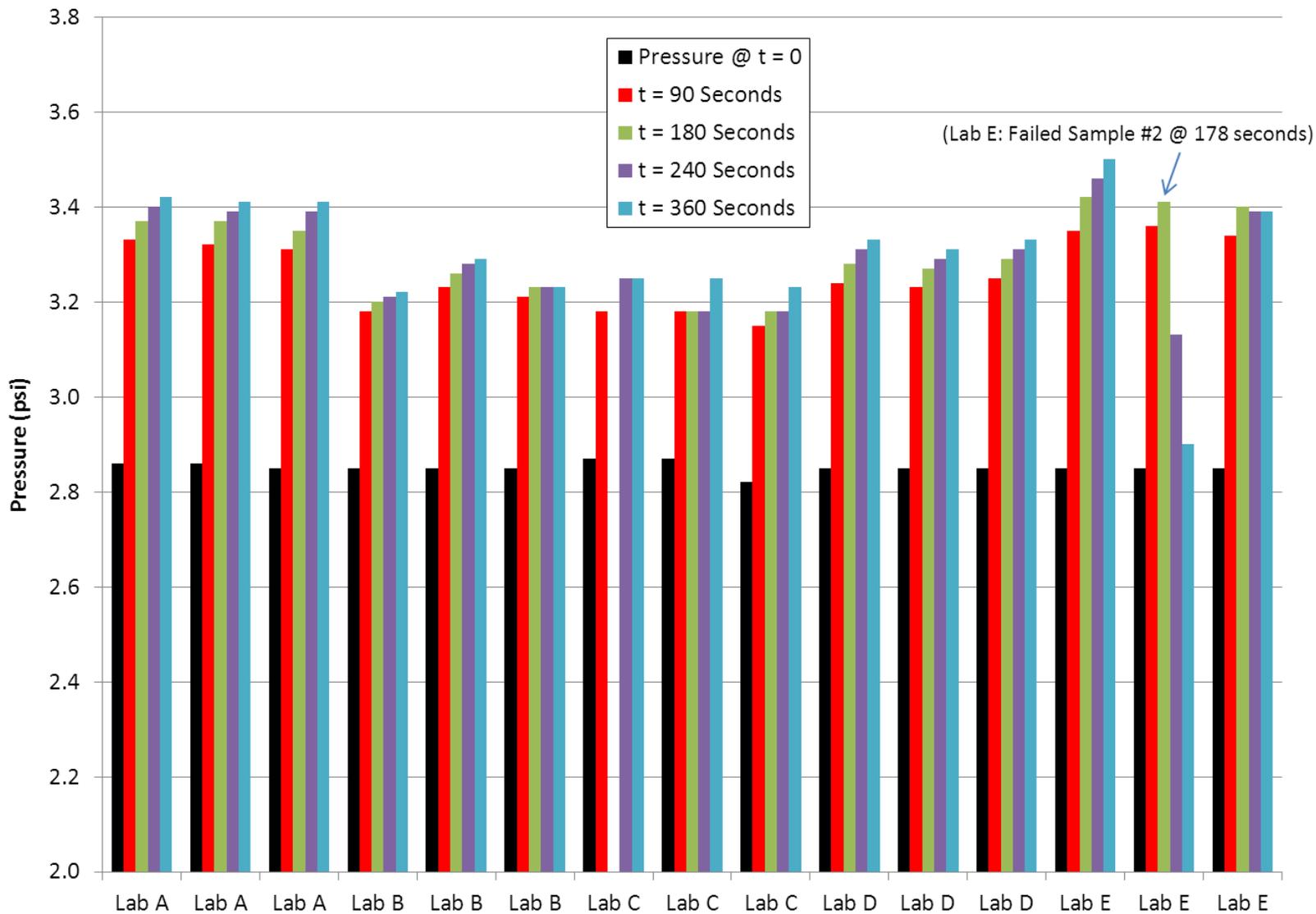
Activities

- **Samples were sent to 7 Laboratories, but only 5 Laboratories participated in Round Robin 3**
- **3 different slide materials were tested**
- **Results from Round Robin 3 were discussed at Triennial Conference.**

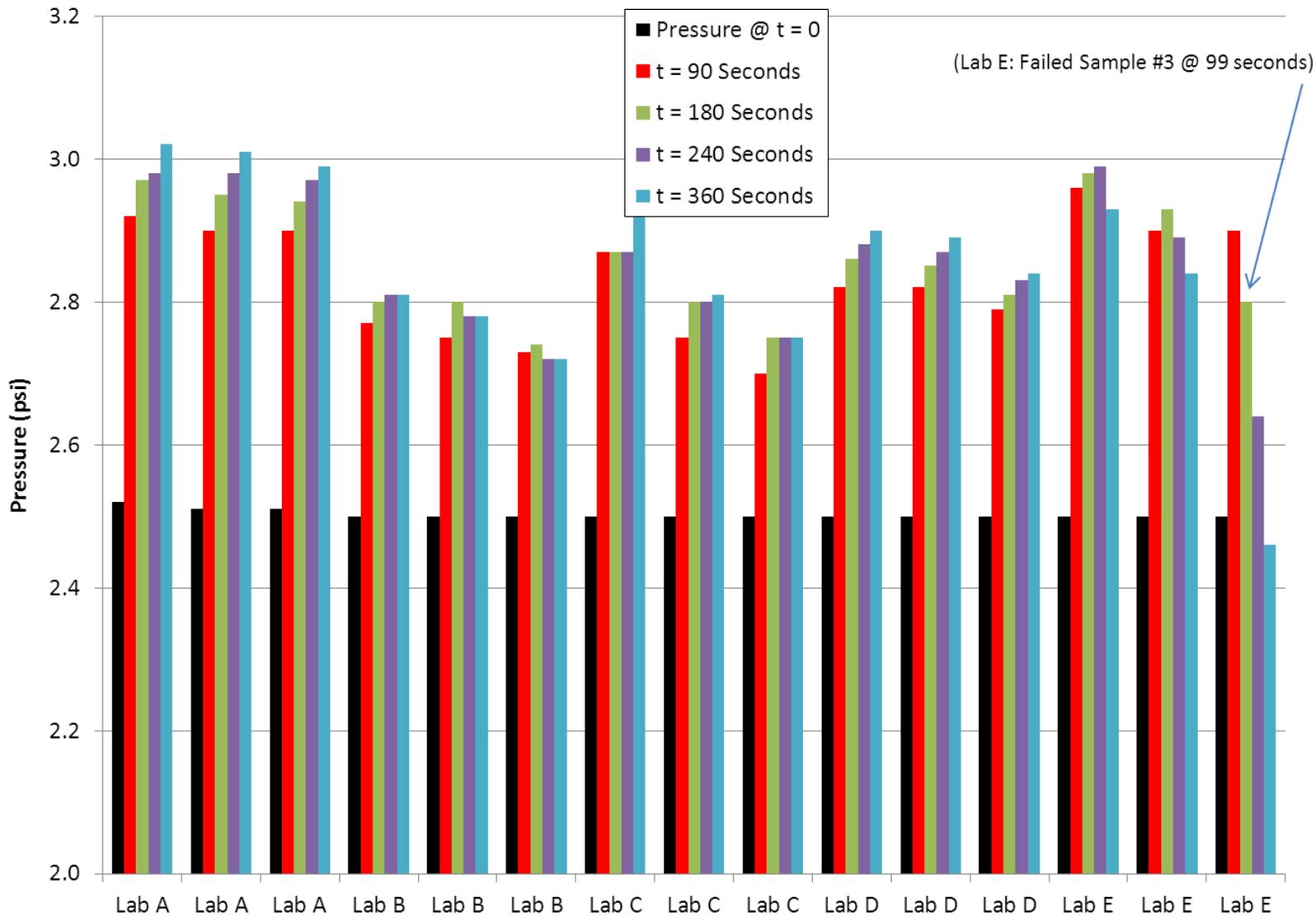
•Round Robin 3 Results

- **Results were discussed the Triennial Conference in Philadelphia this past December.**
- **Two materials with Aluminum Coating passed the tests.**
 - Lab E was an exception having one sample fail for each of these materials.
 - Lab E's failures may have been the result of improper equipment setup.
 - Lab E was sent new samples to re-test, results follow.
 - The results from Lab E's re-test were consistent with those from the other participating labs.
- **One material *without* Aluminum Coating failed the tests.**

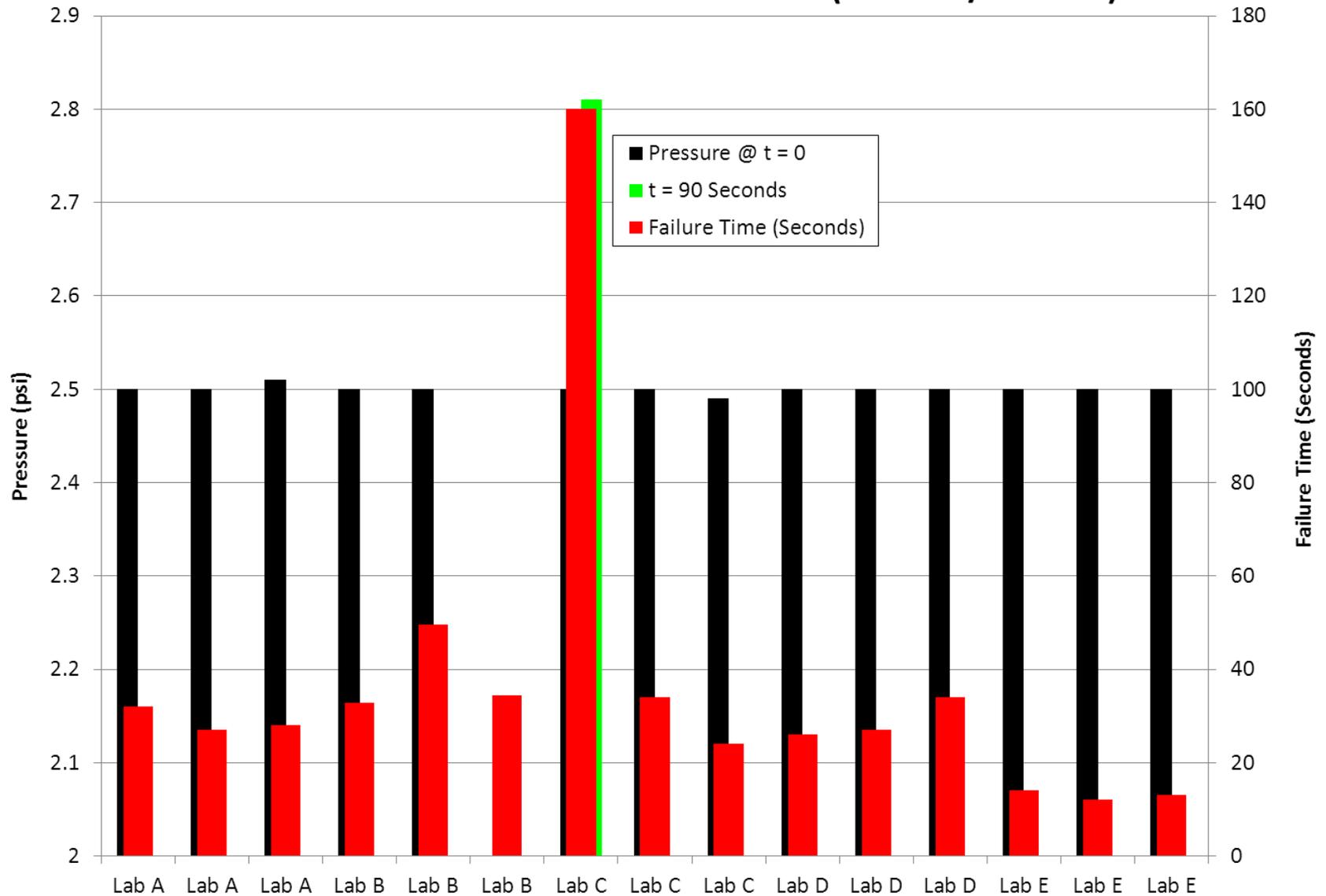
Evacuation Slide Round Robin: Material 1 (Ivory/Gray)



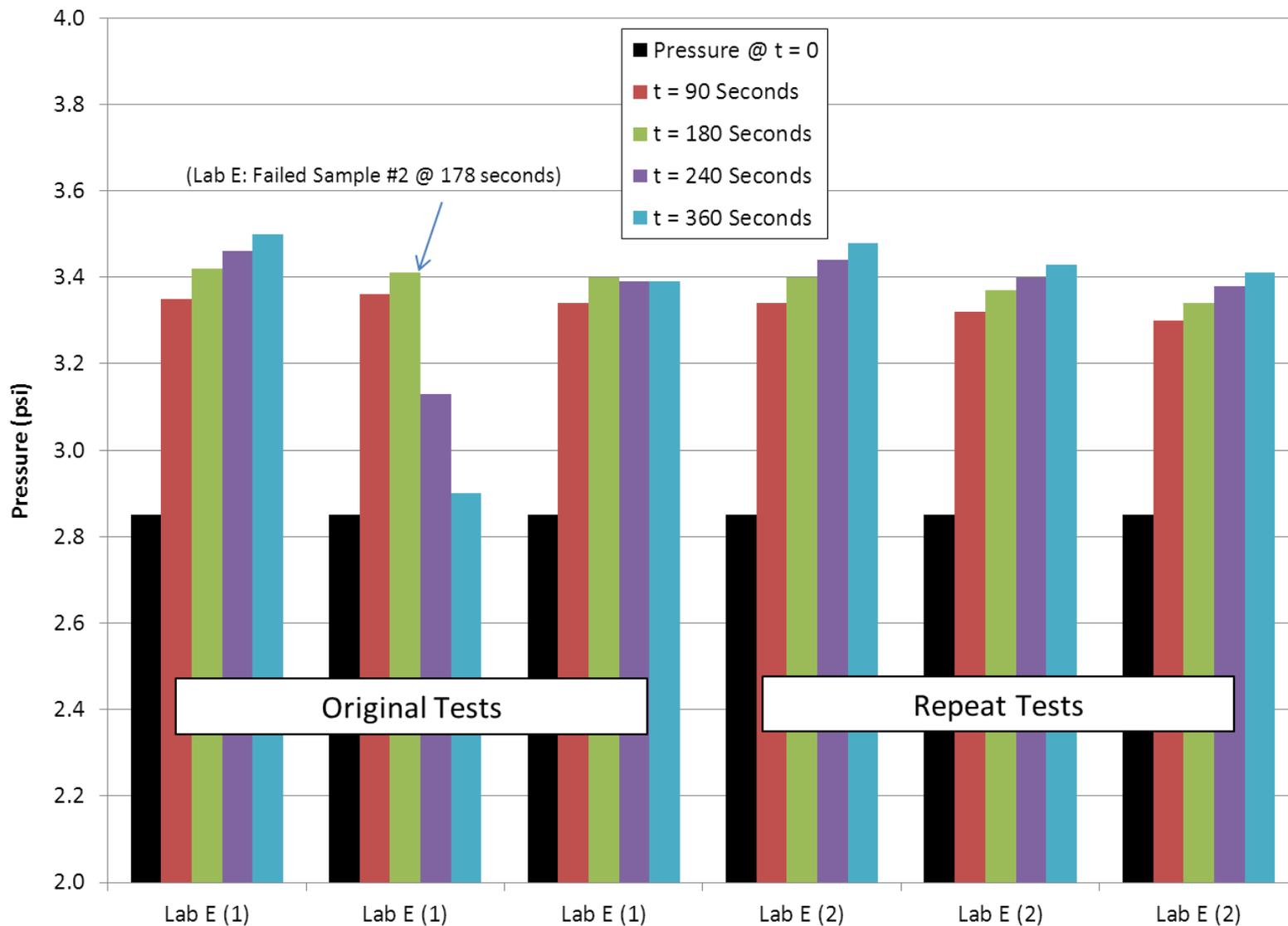
Evacuation Slide Round Robin: Material 2 (Yellow/Gray)



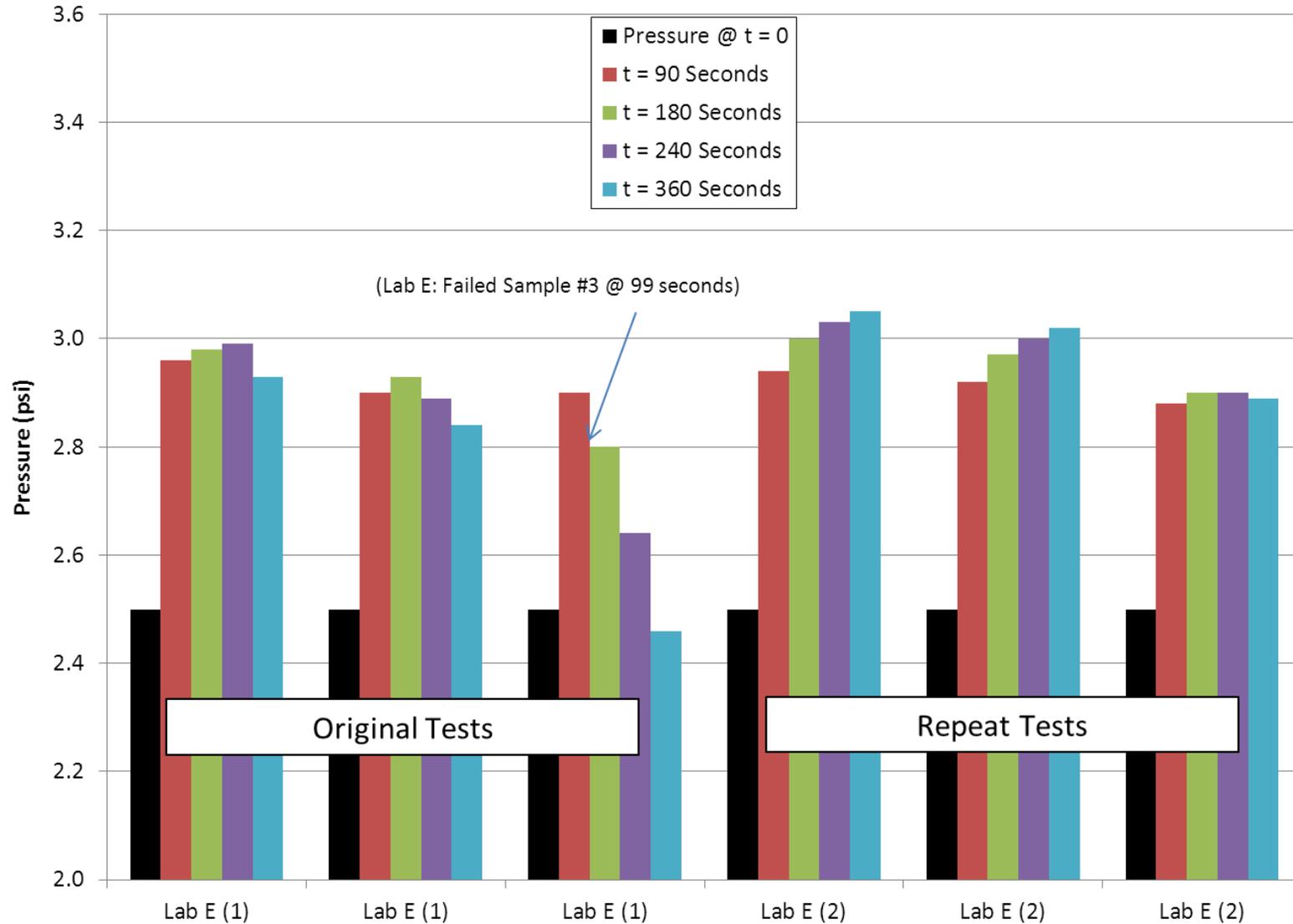
Evacuation Slide Round Robin: Material 3 (Mustard/Mustard)



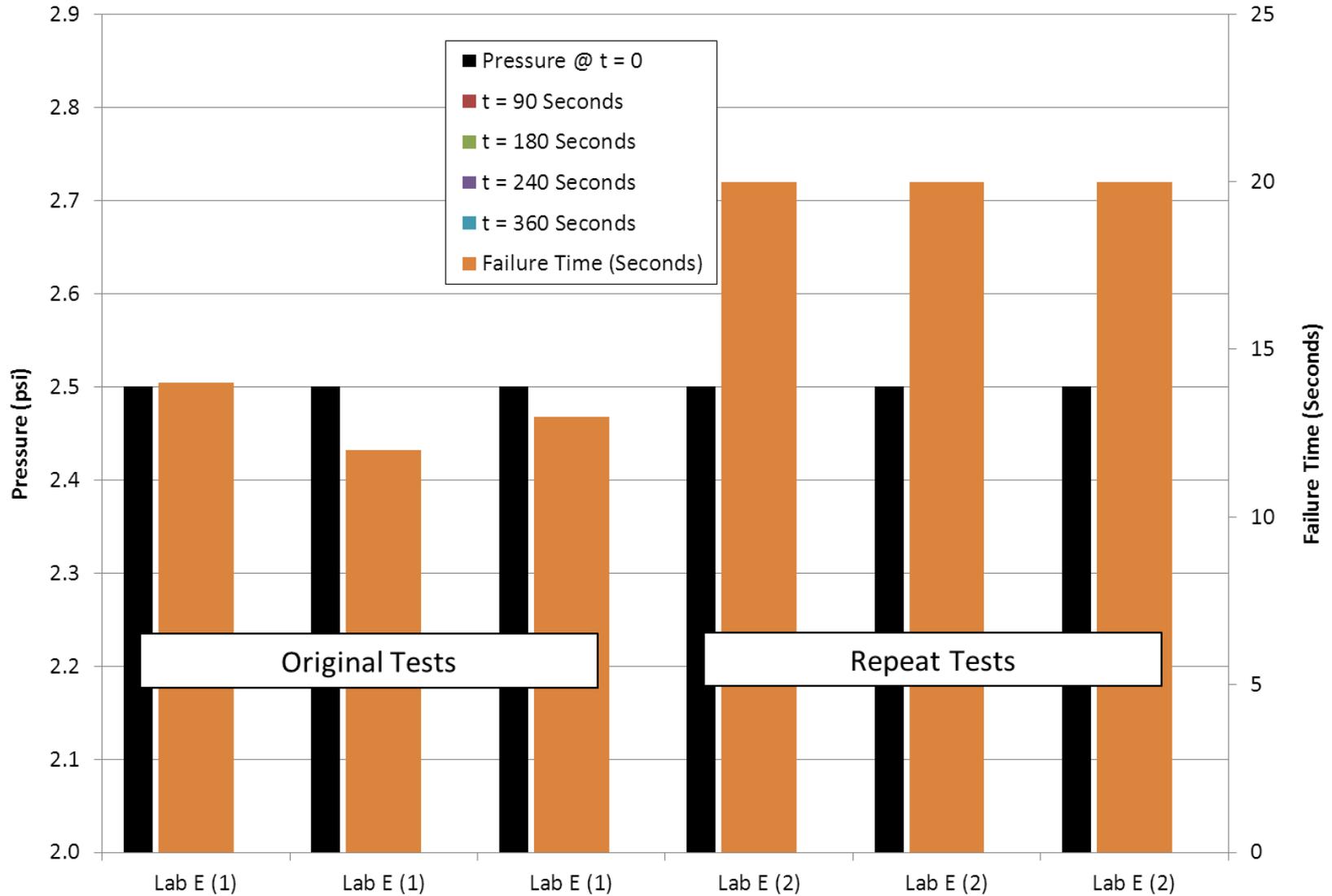
Evacuation Slide Round Robin: Lab E Material 1 Retest



Evacuation Slide Round Robin: Lab E Material 2 Retest



Evacuation Slide Round Robin: Lab E Material 3 Retest



•Activities (continued)

- **Topics discussed at Task Group meeting December 3:**

- The sample must be tightly secured in order to prevent the sample from moving between the test cylinder and the retaining holder. Since the sample is securely held in place, the pressure will increase correctly.
- The Round Robin participant's calorimeter must be checked at the FAA Technical Center before any Round Robin testing.
- Silicone Gaskets are acceptable as well as the existing Neoprene Gaskets.
- New tool may be used to set the centerline of the Calorimeter and the pressure cylinder centered with the center of the furnace. It is recommended that tool be used to check the test equipment monthly or when any equipment is changed.
- Allow 3 minutes to check for air leakage before testing.
- Participants will make comment/suggestions for the new test method.

•Future Work

- **Comparison testing among Labs will be performed using the new test method.**
- **This new method will have the calorimeter placed 2 inches in front of the furnace and the transformer will be adjusted to produce a radiant heat flux of 1.5 BTUs/ft² sec.**
- **The expanded surface of the test specimen must be 2 inches in front of the furnace.**
- **This method will save time for testing.**

Questions?

