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# 2013/2014 OSU Round Robin Conclusion

## Yaw Agyei – BR&T Flammability

# Agenda

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- **Correct Atlantic City Mistake**
- **Round Robin Conclusion / Recommendation**
- **Round Robin Report**

# Round Robin Comparison

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2012	Dark Brown	Light Brown
Peak %St Dev	12%	15%
Total %St Dev	16%	13%
Data from 3 test runs		

2013/2014	Honeycomb Panel with Dec	Aluminum with Tape
Peak %St Dev	23%	20%
Total %St Dev	23%	21%
Data from 10 test runs		

# Round Robin Comparison Correction

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2012	Dark Brown	Light Brown
Peak %St Dev	12%	15%
Total %St Dev	16%	13%
Data from 3 test runs		

  

2013/2014	Honeycomb panel with decorative	Aluminum with Tape
Peak %St Dev	15.49%	13.96%
Total %St Dev	15.56%	-
Data from 10 test runs		

# Round Robin Conclusion / Recommendation

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## ■ Conclusion

- Attempts to control unit preparation, calibration, testing, and calculation methods had no noticeable effects on reducing variability
- No major source(s) of variability identified in this Round Robin analysis

## ■ Recommendation

- Round Robin Phase 3?
- Unit air flow / air flow split = possible major variability factor
  - Determine total air flow for each unit
  - Determine air flow split ratio for each unit

# Round Robin Report

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- Detailed report on round robin
- Discussion at OSU task group meeting



## 2013/2014 OSU Round Robin Analysis, Conclusions, and Recommendations

Round Robin Project Leaders: Yaw Agyei (Boeing Research and Technology), Mike Burns (FAA Technical Center)  
Report: Prepared by Yaw Agyei

### Introduction

#### Background

The analysis of 2012 Round Robin conducted by Mike Burns of FAA tech center and data analyzed by Ben Grogan and Dr. Shobbo Basu suggested tighter controls on OSU parameters was required for better reproducibility and repeatability. Analysis of two panels showed about 12-15% variability for peak heat release rates and 13-16% variability of total heat release. The data gathered suggests the repeatability and reproducibility issues with the OSU test method have not been resolved and further work is required to reduce the variability in OSU test method.

#### Purpose

The purpose of the 2013-14 Round Robin is to pinpoint major sources of variability historically observed in OSU test method. This round robin uses recommendation from Ben Grogan and Dr. Shobbo Basu after their analysis of the 2012 round robin. Ben Grogan and Dr. Shobbo suggested setting up all units with the same parameters, to calibrate heat flux gauges using one calibration method, and to collect a larger dataset. The setup parameters of units are collected, heat flux gauges are calibrated at one facility and 5-10 coupons of three test sets are tested. If all units are set with the same