HAMBURG

Testing laboratory Perspective

Chicago Testing Laboratory, Inc.

OBSERVATIONS

- Commitment
  - Equipment Expense
  - Facility Modifications
    - Large Footprint
- Calibration
- Types of Samples
  - Cores
  - Contractor Prepared
  - CTL Prepared (75%)
    - Lab Mixed
    - Premixed (Plant/Contractor)

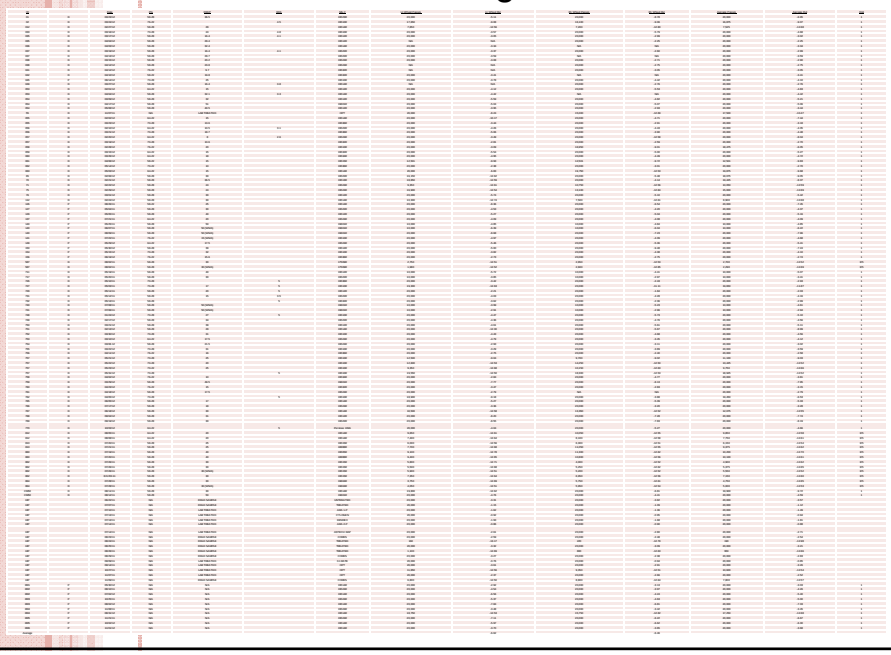
Observations Cont.

- Consistency
  - Results are fairly consistent
  - Variability in Preparation

Observations Cont.

- Maintenance
  - Keep Clean
  - Linear Variable Differential Transducer (LVDT)

CTL's Hamburg Data



Data Summary

130 Total Samples

- 19% Production Samples
  - 10 Proficiency
- 72% Mixture Designs
- 11% R&D "Other"

Data Summary

- 13% With RAS (4.8% Average)
- 83% With RAP (26.9% Average)
- 9% With Both RAS and RAP

Data Summary

- 75% Dolomite
- 11 % Gravel

Data Summary

- Surface (43%)
- Sand Mix (12%)
- Binder (21%)
- BAM (10%)
- HIP/ReHeat (13%)
- Pervious (1%)

Data Analysis

Range

- Low
  - Failure at 190 Passes
- High
  - 0.85 mm at 20,000 Passes

Most fell within:
2.64 to 10.60 mm

Data Analysis

Current Specification Failures

- 14% of Total Samples Failed
- 1.1% of District One Samples Failed

Representative for CTL Data as presented Only

The city of Hamburg uses 4mm at 19,200 passes…

Data Analysis

Failures

- Gravel (61%)
- Dolomite (28%)
- Other (11%)

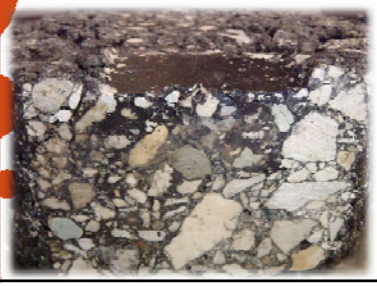
Representative for CTL Data as presented Only

Data Observations

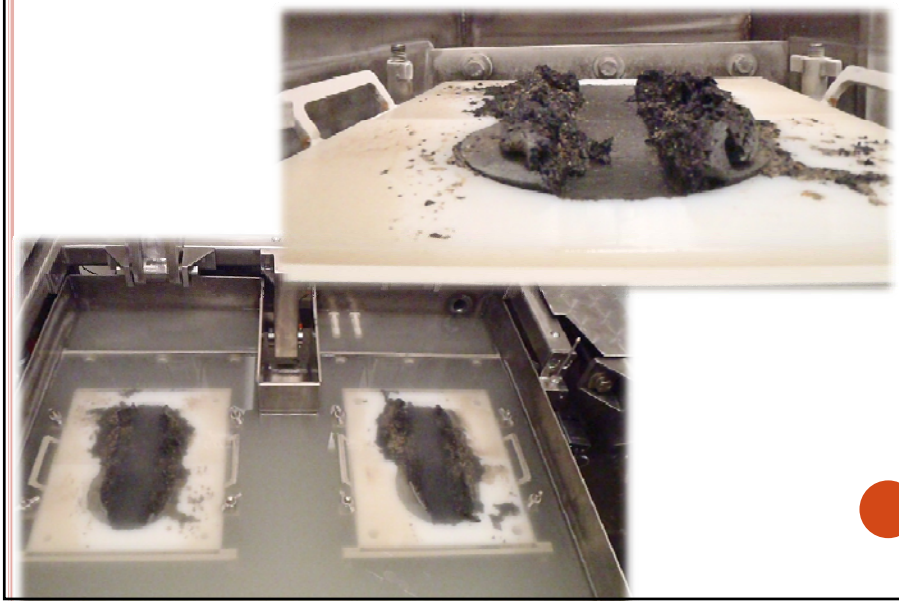
"Flyers" (5% of total)

- Where left and right wheel were significantly different

- Average Right – 6.46 mm
- Average Left – 6.62 mm



Stripping Inflection Point (SIP)



Conclusions

- Major Investment
  - Equipment and Facility
- Most of the "effort" is in sample prep & cleanup
- Equipment has been mostly problem free through 1,000 hours of use

Conclusions

- Majority of samples tested by CTL passed
- Repeatability of test is good*
- Some failures seem to be source specific


THANK YOU