

Type IL Cements

IOWA STATE UNIVERSITY
Institute for Transportation

National Concrete Pavement
Technology Center



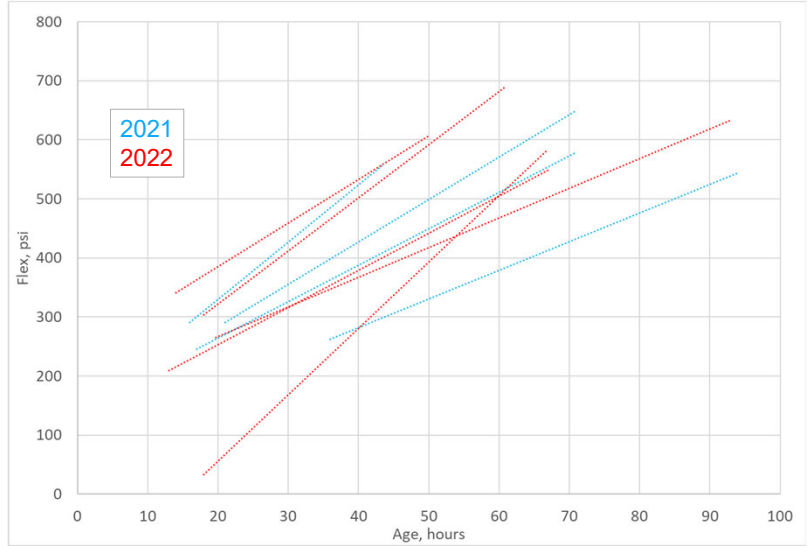
Something is going on

- How much?
- What do we know?
- Then there are the theories
- Where next?



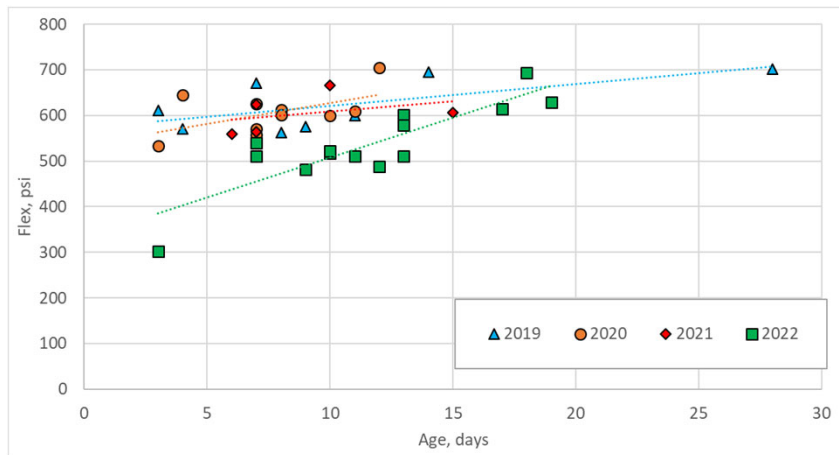
How Much?

- Maturity tests



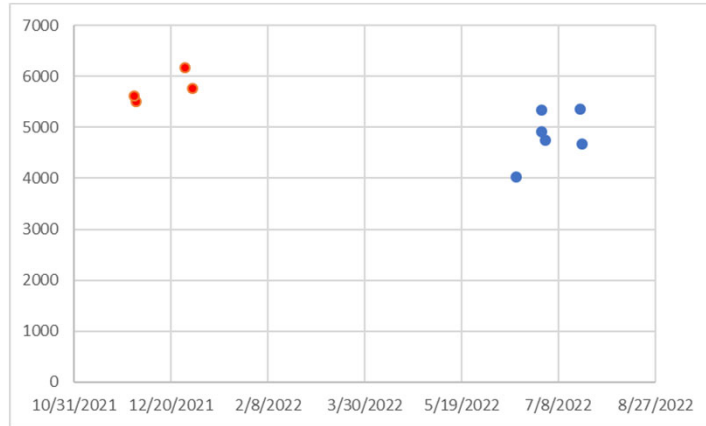
How Much?

- Maturity tests



How Much?

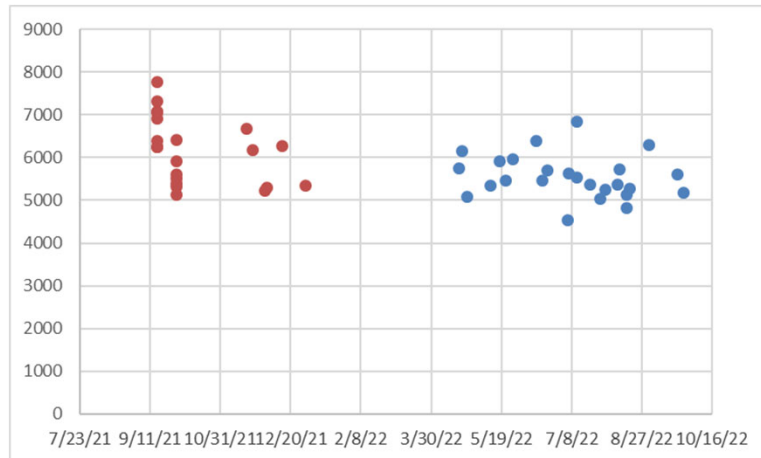
- Compressive strength



5

How Much?

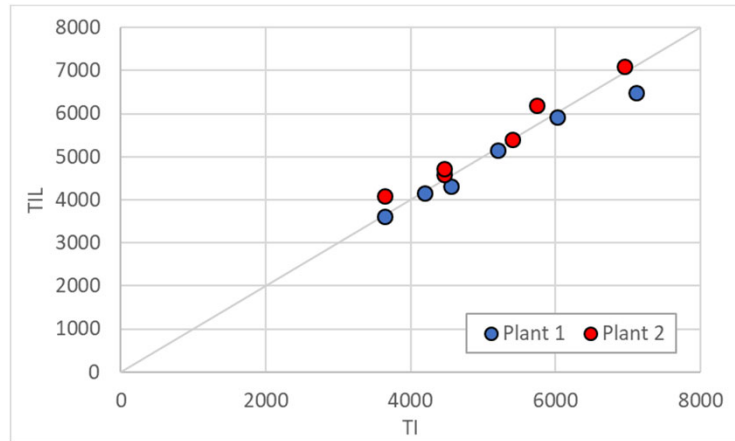
- Compressive strength



6

How Much?

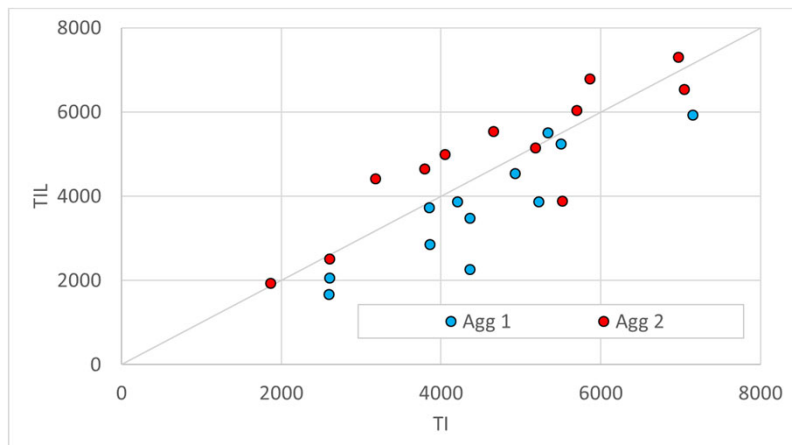
- Compressive strength



7

How Much?

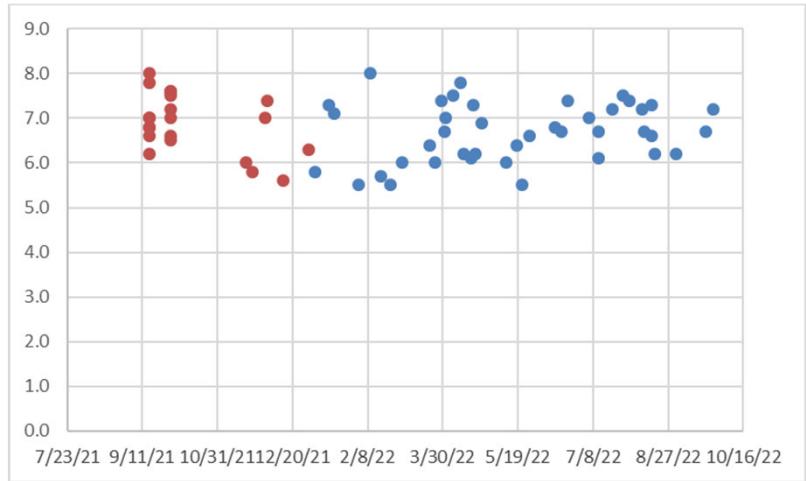
- Compressive strength



8

How Much?

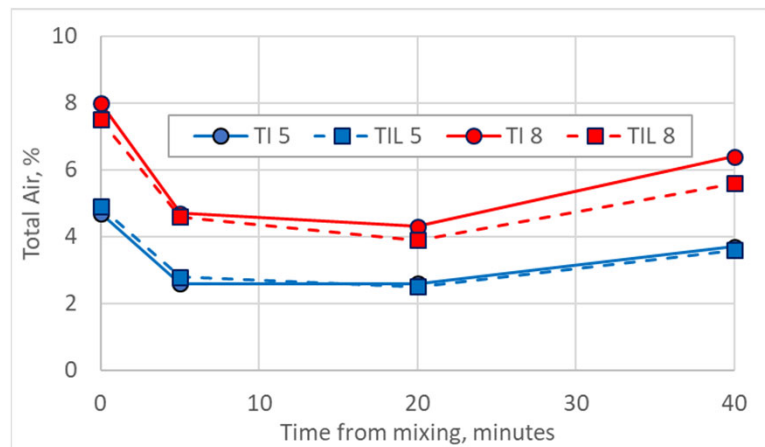
- Air content



9

How Much?

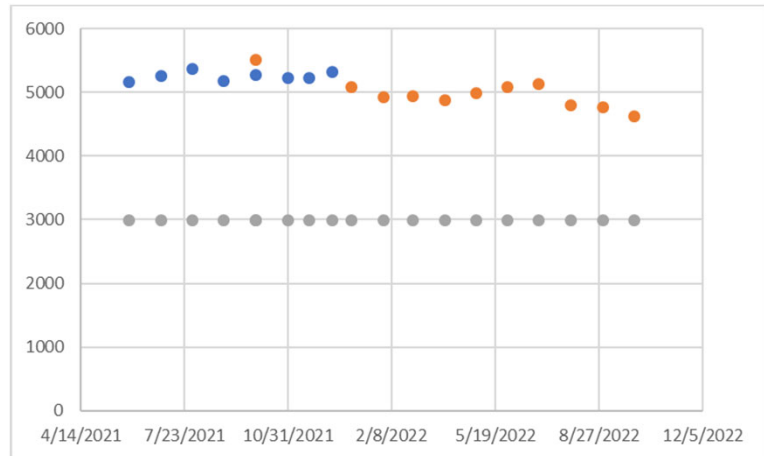
- Air content



10

How Much?

- Mill Cert Mortar Cubes



11

How Much?

- NC2 Survey (2022)
 - 15/17 states DOTs reporting no issues
- 3 Manufacturers reporting limited complaints
- Seems to vary by plant

12

What do we know

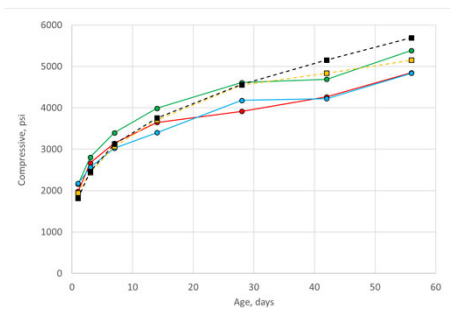
- One for one will not work in all cases
- Trial batches and proportion adjustments are necessary
- Practices may have to be adjusted



13

What do we know

- Manufacturers are engaged
 - Two have shipped paired materials to us
- PCA and NRMCA are paying attention
- MNDOT Test sections were fine



14

The Theories

- Affecting air void system
 - High airs reported in some petro reports
 - Not repeated in the lab
- Water demand is different
- Sulfate balance at high temperature
- Setting times are different
- Normal noise

15

Where next

- Talk to your supplier
- Do those trial batches
 - Call if you need help
 - Stay away from the cliff edge
- Keep coming with the data
 - Include actual w/cm
 - Air data
 - Cement chemistry
 - Weather
 - What else has changed



16



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