

Type IL Cements

IOWA STATE UNIVERSITY
Institute for Transportation

National Concrete Pavement
Technology Center

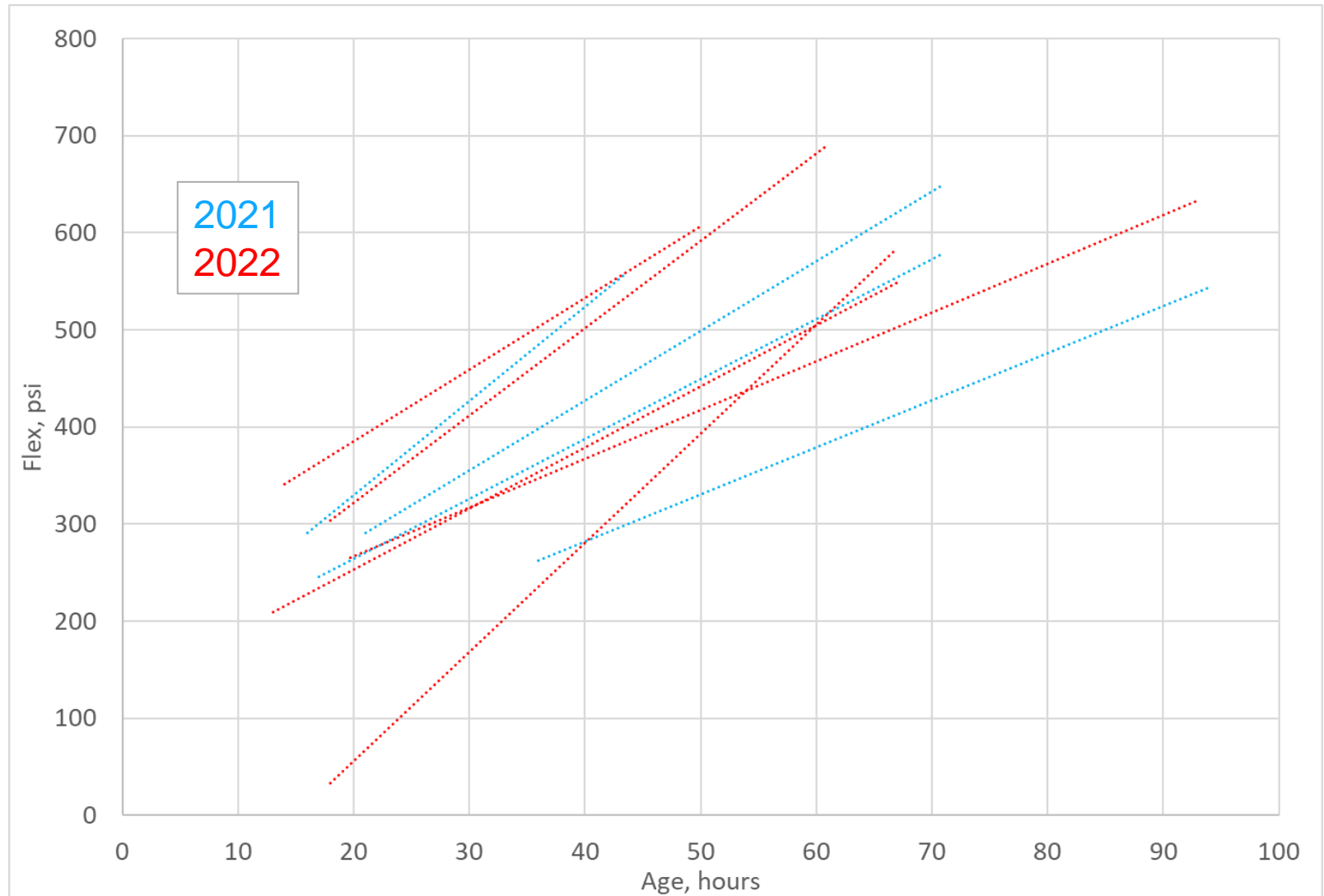


Something is going on

- How bad is it
- What do we know
- Then there are the theories
- Where next

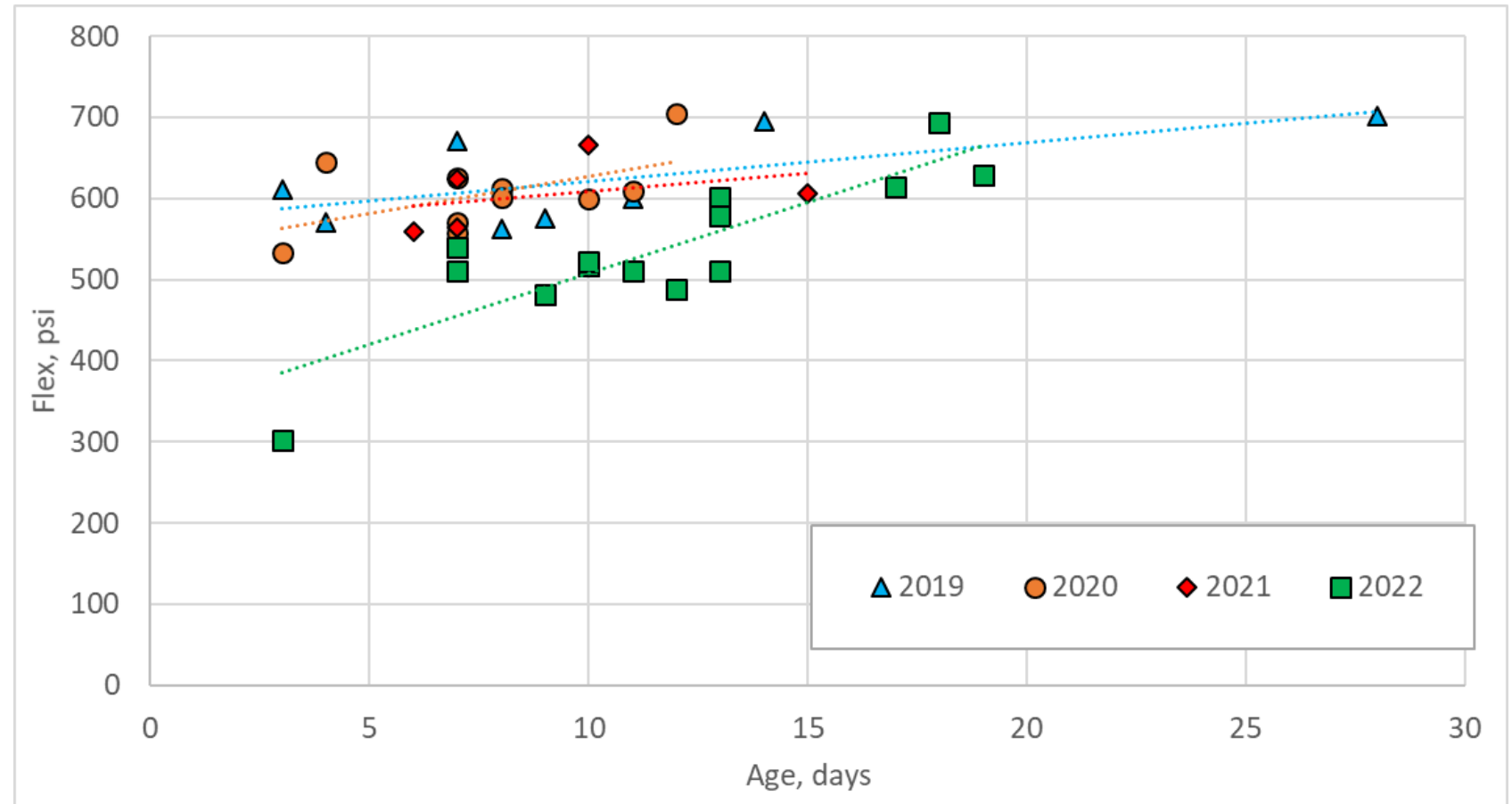
How bad is it

- Maturity tests



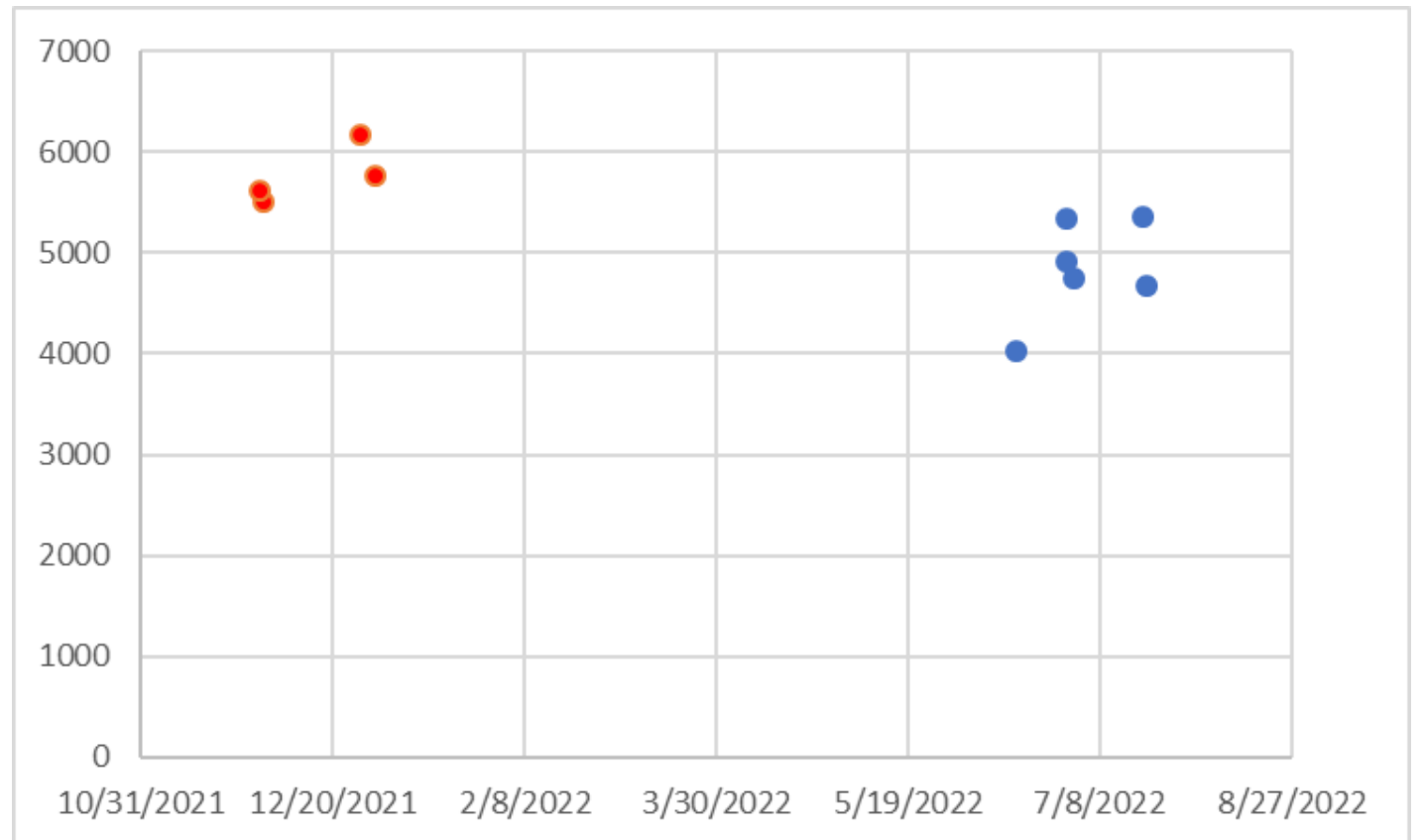
How bad is it

- Maturity tests



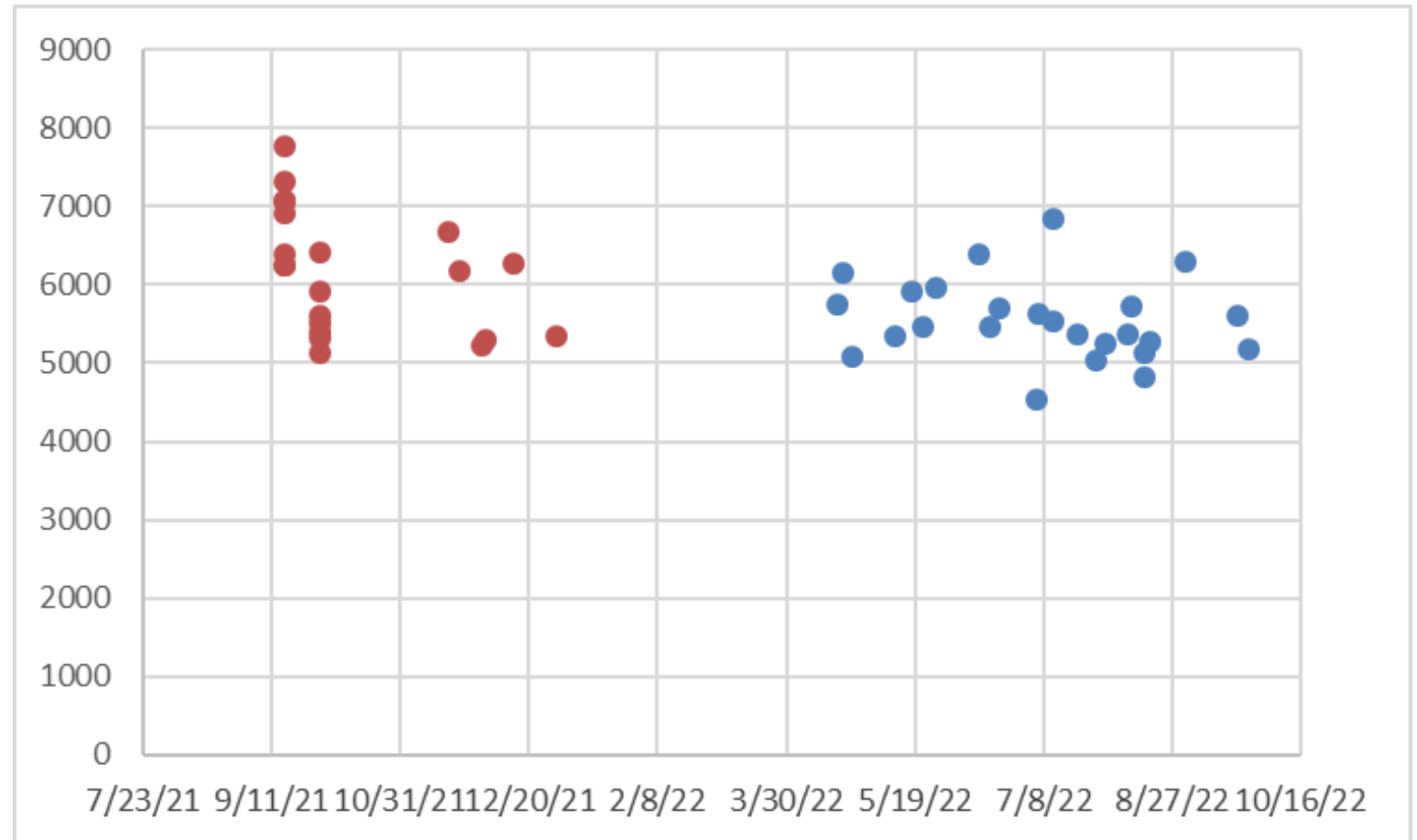
How bad is it

- Compressive strength



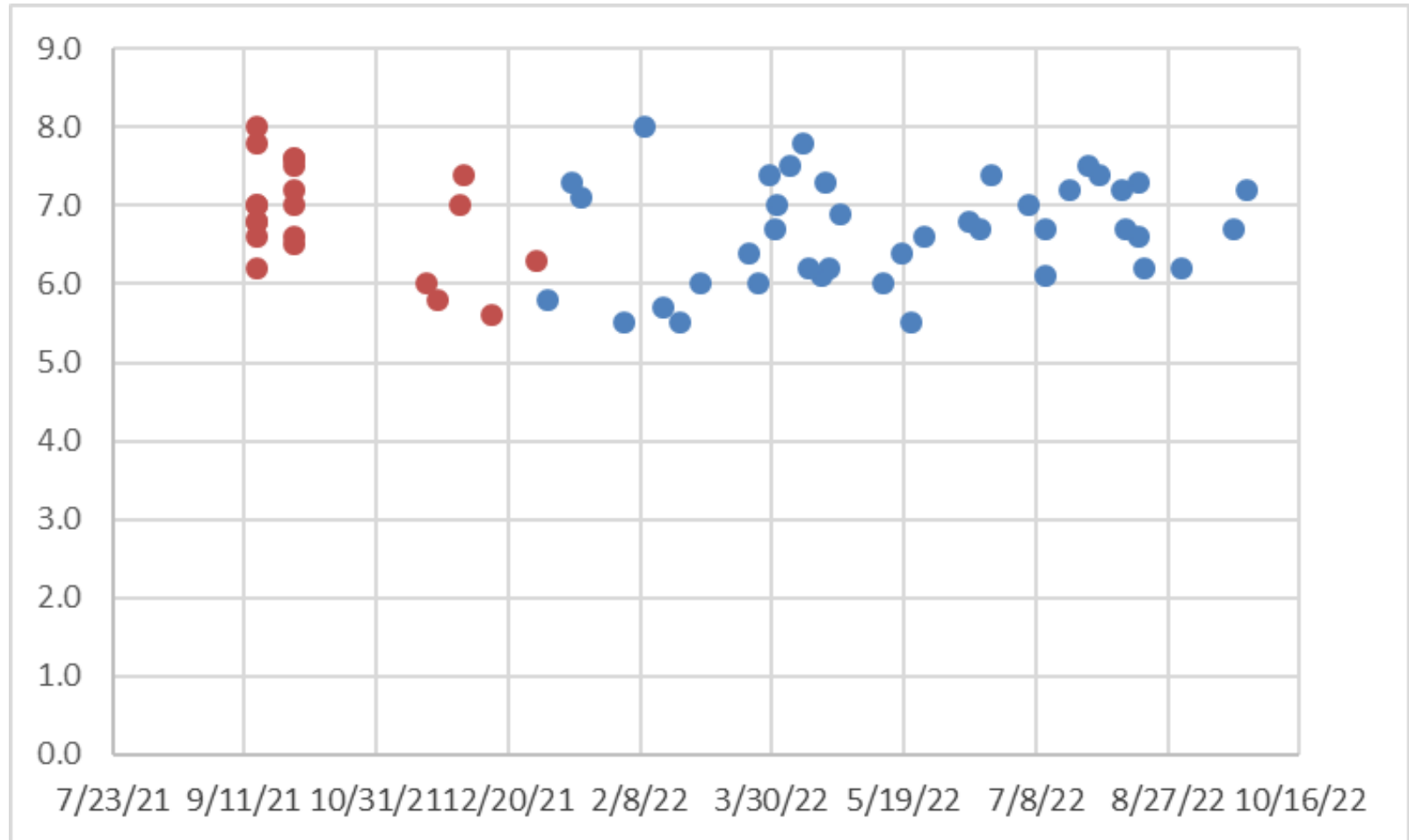
How bad is it

- Compressive strength



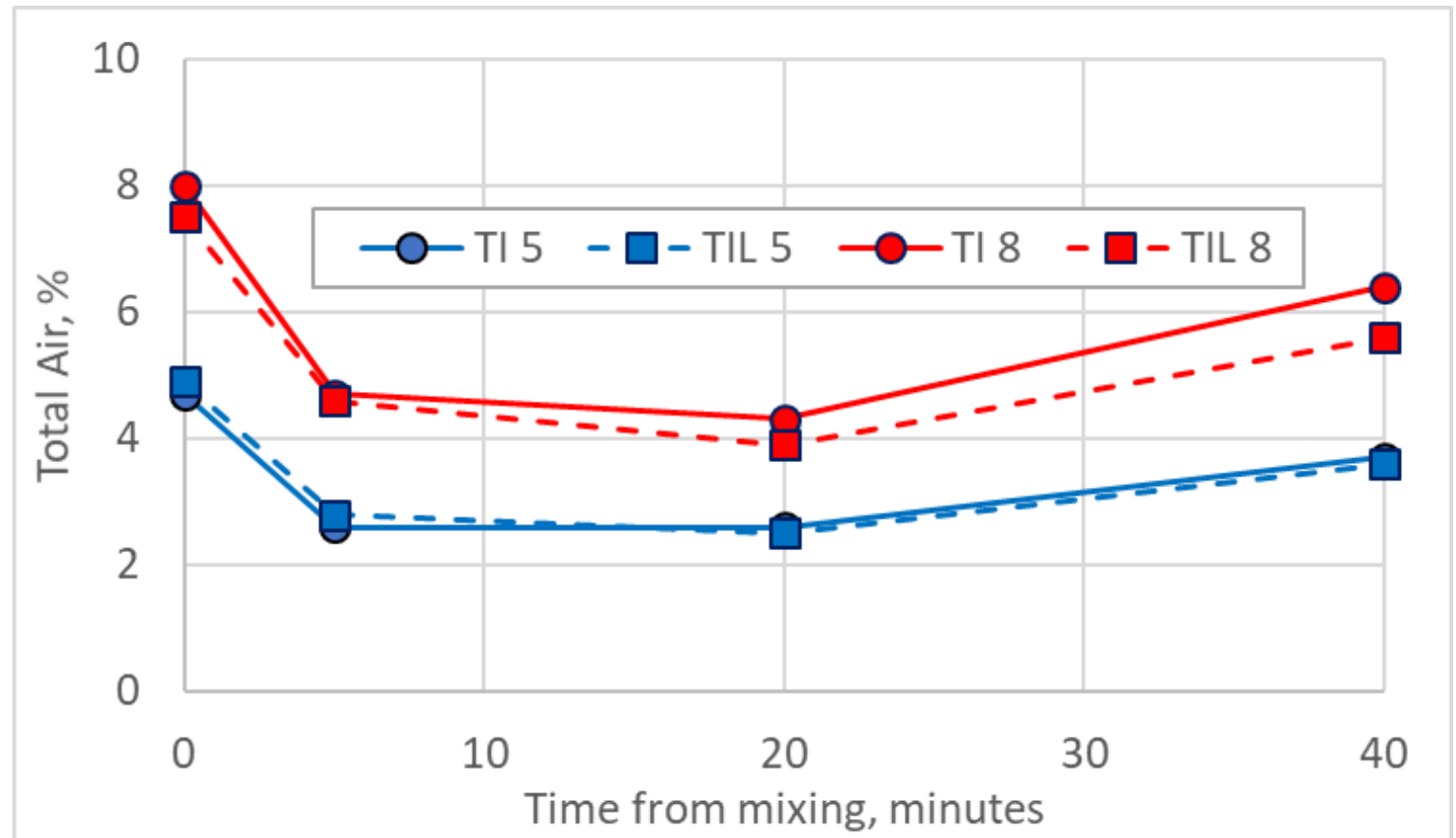
How bad is it

- Air content



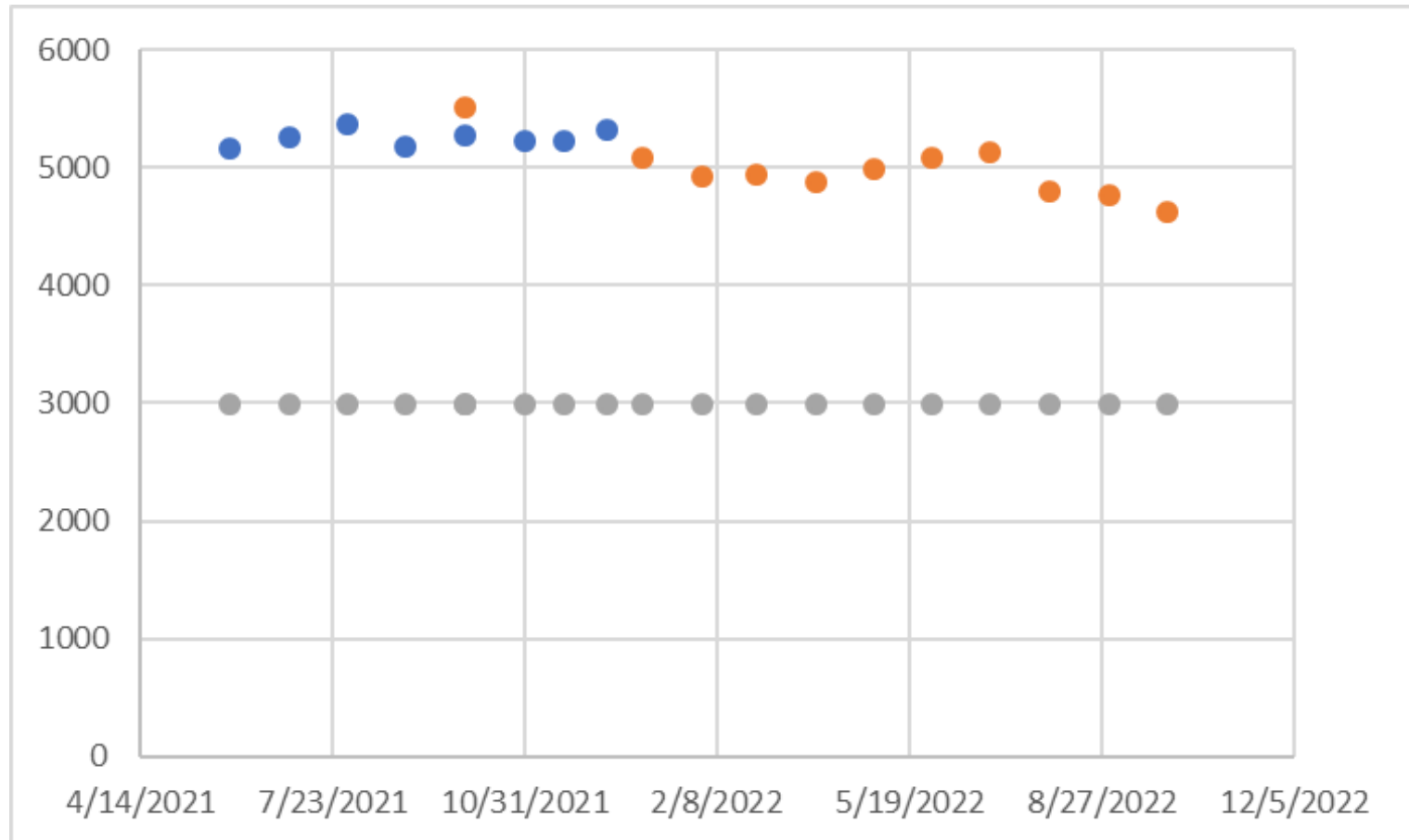
How bad is it

- Air content



How bad is it

- Mill Cert Mortar Cubes

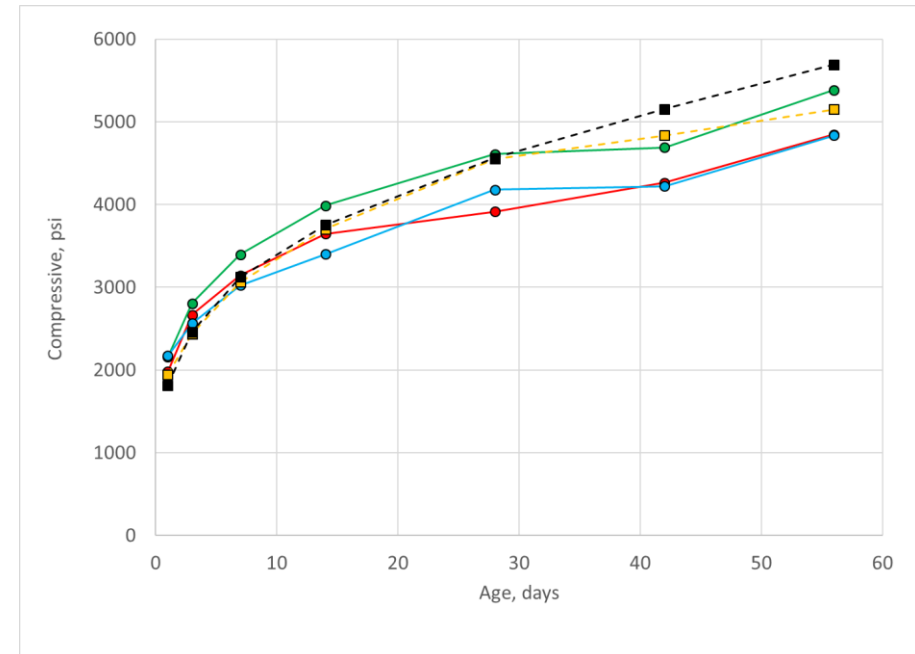


How bad is it

- NC2 Survey
 - 15/17 states DOTs reporting no issues
- 1 Manufacturer reporting no complaints
- Seems to vary by region
- Seems to vary by company

What do we know

- One for one will not work in all cases
- Trial batches and proportion adjustments are necessary
- Manufacturers are engaged
 - Two are shipping paired materials to us
- PCA and NRMCA are paying attention
- MNDOT Test sections were fine



The Theories

- Affecting air void system
 - We are running a comparative program with suppliers
 - To date we are not seeing much signal
 - High airs reported in some petro reports
 - High w/cm also reported
- Water demand is different
- Sulfate balance at high temperature
- Normal noise

Where next

- Keep coming with the data
 - Include actual w/cm
 - Air data
 - Cement chemistry
 - Weather
- Do those trial batches
 - Call if you need help
 - Stay away from the cliff edge

Now I need your help

- Do you use moisture monitors?
- Please answer 3 question survey



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