

Finishing Concrete Pavement



CONSULTING

TRAINING

CONSTRUCTION EQUIPMENT

**“HELPING YOU BUILD
BETTER CONCRETE”**





About the Presenters

- **Matt Fonte** is the president of **Fonte and Company**. A consulting company that specializes in all aspects of concrete pavements.
- **Matt** is also the President of **Fonte Equipment Company**. An equipment company that specializes in Concrete Batching Equipment.
- Matt has 25 years of experience on the heavy civil construction platform, and 18 of those years have been in the concrete paving industry.
- Throughout these years Matt has developed an extensive knowledge of all aspects of concrete pavements. Most notably in mix design, pavement smoothness, and equipment setup.
- Matt believes we should be good stewards of the taxpayer dollars, and one of the best ways to be a good stewards is investing in smooth long-lasting sustainable concrete pavements.



WHAT?



WHY?



WHY?



HOW?

- There is nothing simple about concrete paving.
- Trial Batching
- Testing for workability
- Allow for adjustments to the mix
 - Material variability
 - Changes in weather conditions
 - Don't let water be your only lever
- Proper machine setup
- Proper tools



- What's in the can?
- Water?
- Evaporation retarder?
- Finishing Aid?



“Product X” Evaporation Retarder

- Depending on the application, mix at a ratio of up to 1 part Product X concentrate to 9 parts water. Re-agitate mixed materials before applying.
- Apply using a tank type, hand pump sprayer capable of spraying in a fine mist. Use a slotted tip for the best spray
- Do not immediately work Product X into the surface of concrete

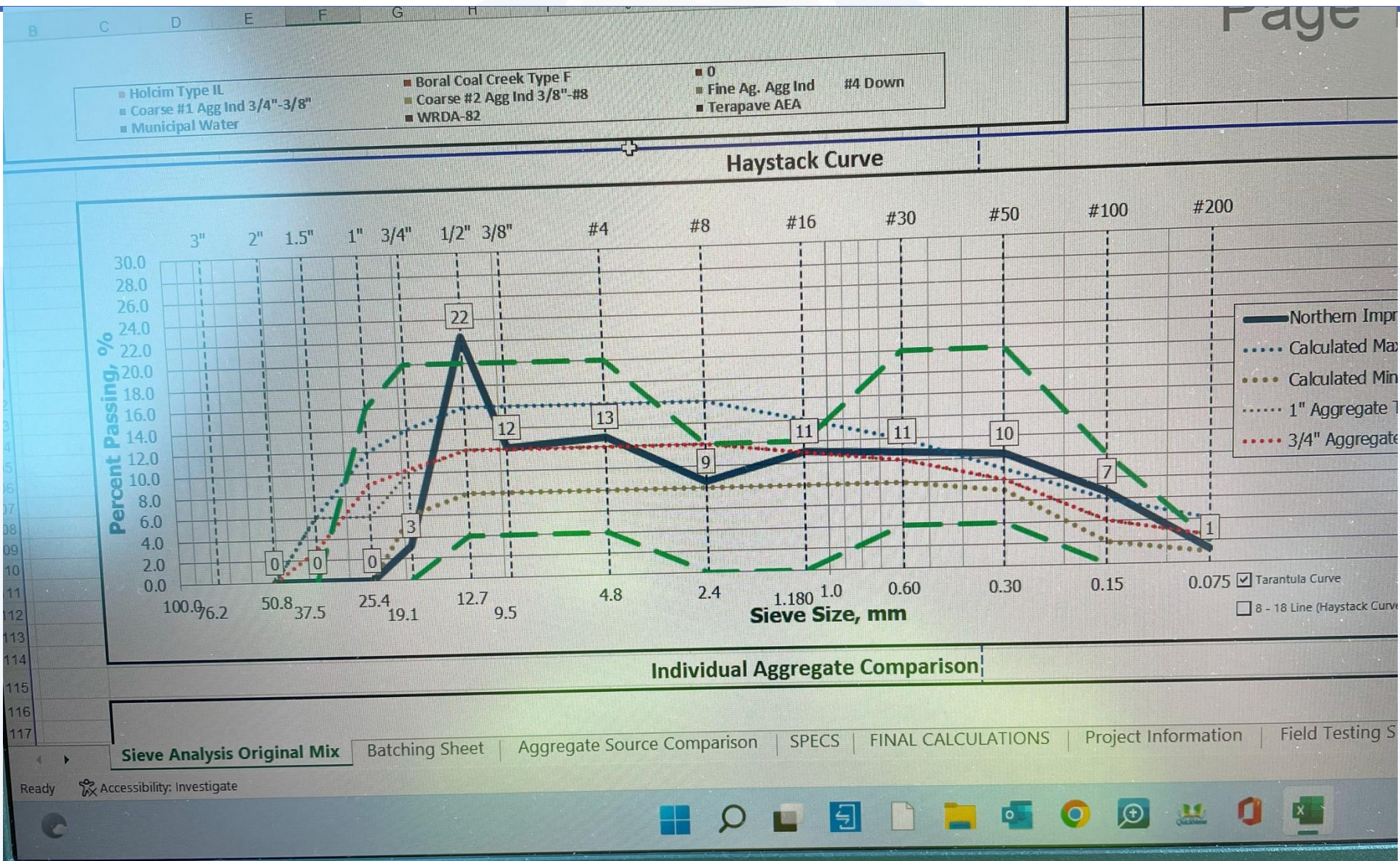
“Product X” Evaporation Retarder

- Do not apply Product X as a final finishing aid or work it into the surface of cast-in-place concrete or cementitious repair applications.
- Product X evaporation reducer is not a curing agent. Concrete treated with this product must still be cured.

“Product Y” Colloidal Silica Finishing Aid

- Apply Product Y Finishing Aid during the floating and troweling stages of fresh concrete pours using a clean sprayer at the suggested application rates. Multiple applications can be applied as needed throughout the finishing process. Ensure each application is thoroughly worked in before subsequent applications. The material should be worked into the concrete by a hand or mechanical trowel immediately after application. Do not let product dry before troweling into the surface. Do not let product puddle or pond. Product Y Finishing Aid will increase the surface cream, allowing for an easier, smoother and faster finishing process.











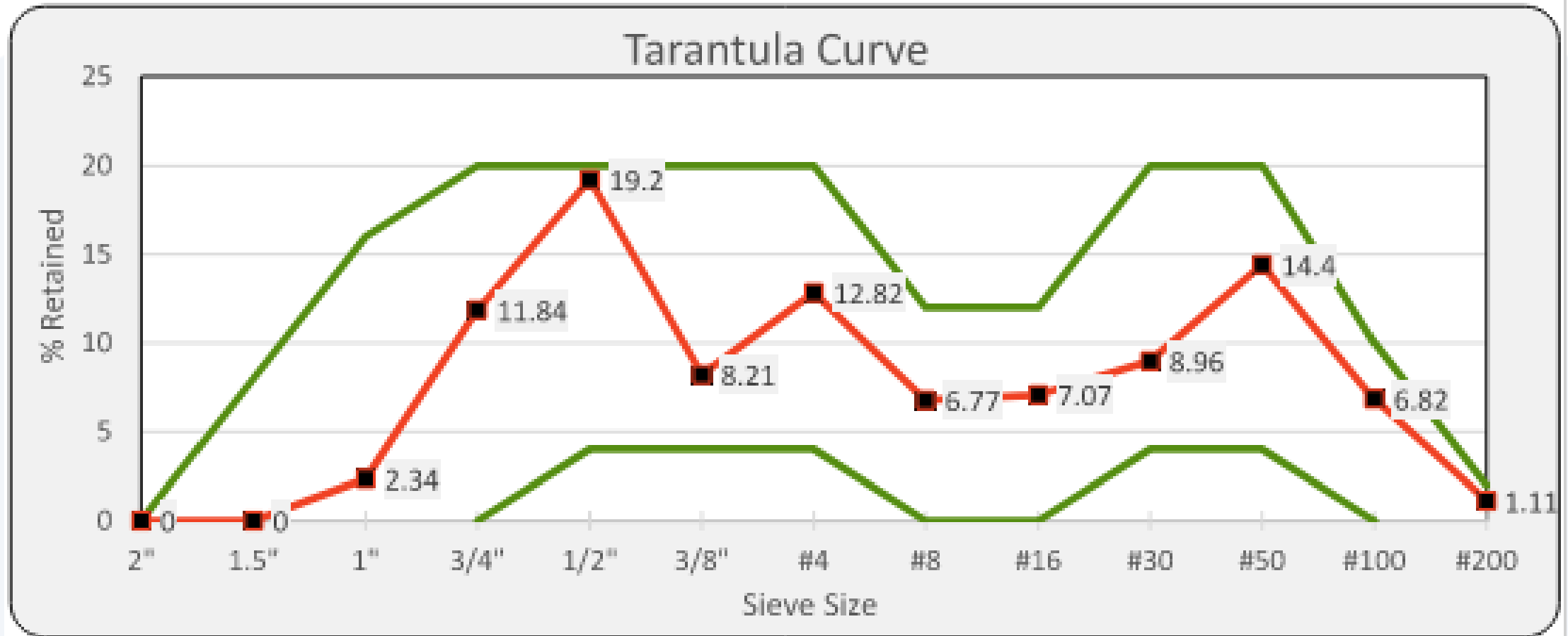
Yes, But





Gradations

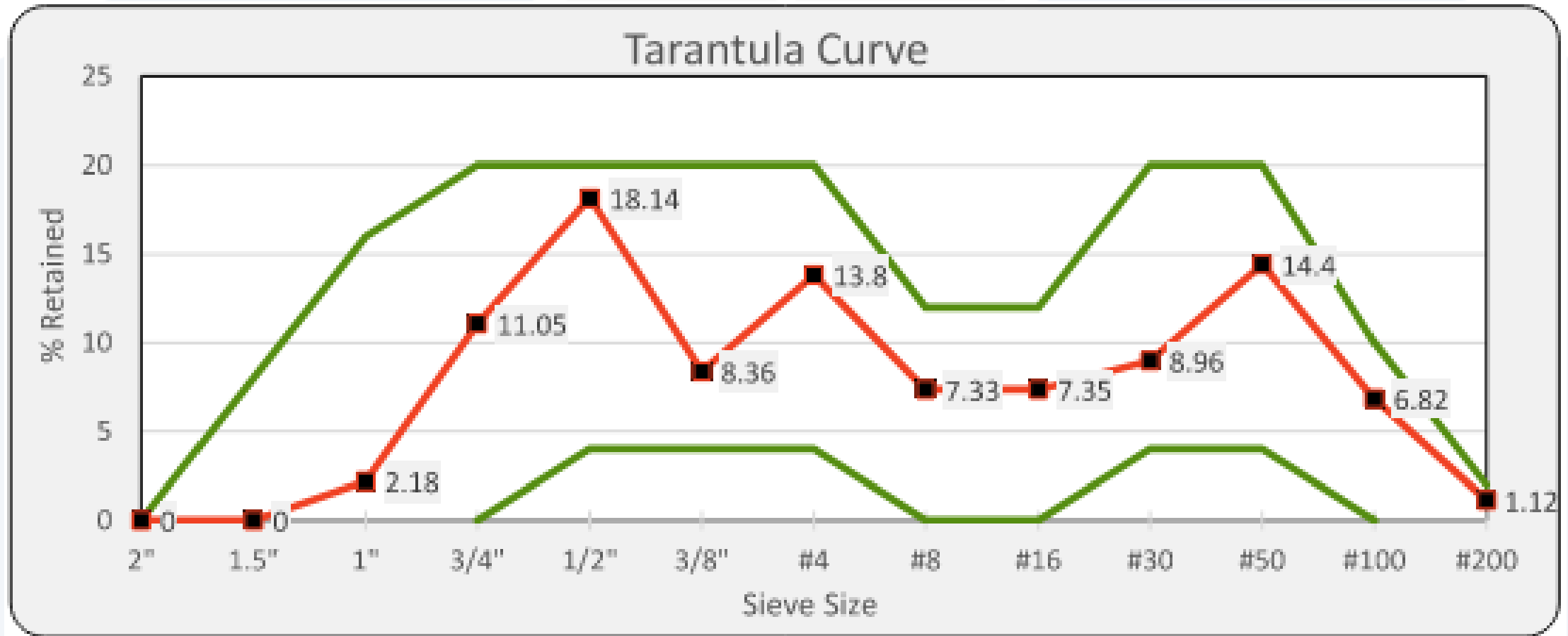
- This mix produced IRI in the 60's & 70's





Gradations

- This mix produced IRI in the 30's



- Swap 70 lbs of rock for sand.
- Reduced the high range water reducer from 2oz/cwt to 1oz/cwt
- Lowered the vibrator VPM's







Trial Batch



- Is the trial batch and the field batch the same concrete?
- Material Variability
- #57 Stone?

Not all Drums are Created Equal



The Box Test

- This test is mandatory for all mix designs.
- This test will tell you how the mix will respond to your paver.
- How well will the mix close up holes
- How well will the mix hold an edge



Should we start over?



Aggregates & Water Reducers

- Mix Designs should always include water reducer effectiveness testing.
- The water reducer can have the second largest impact in the mix.
- Not all water reducers are compatible with all the SCM's or Cements



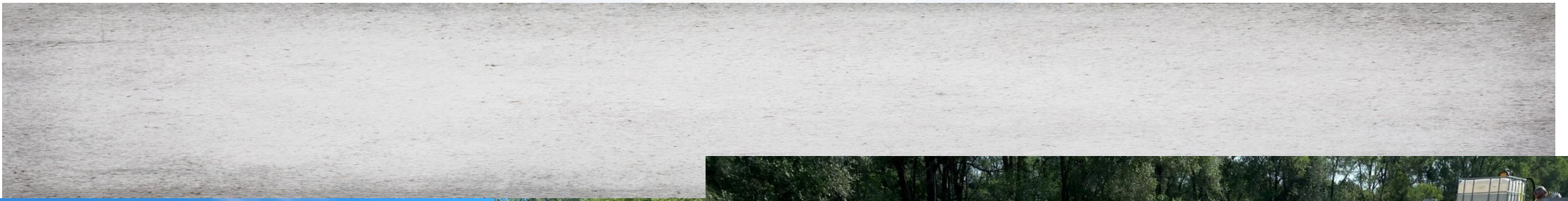
What About Handwork?

- How do I increase slump?
- What does my admixture package look like?

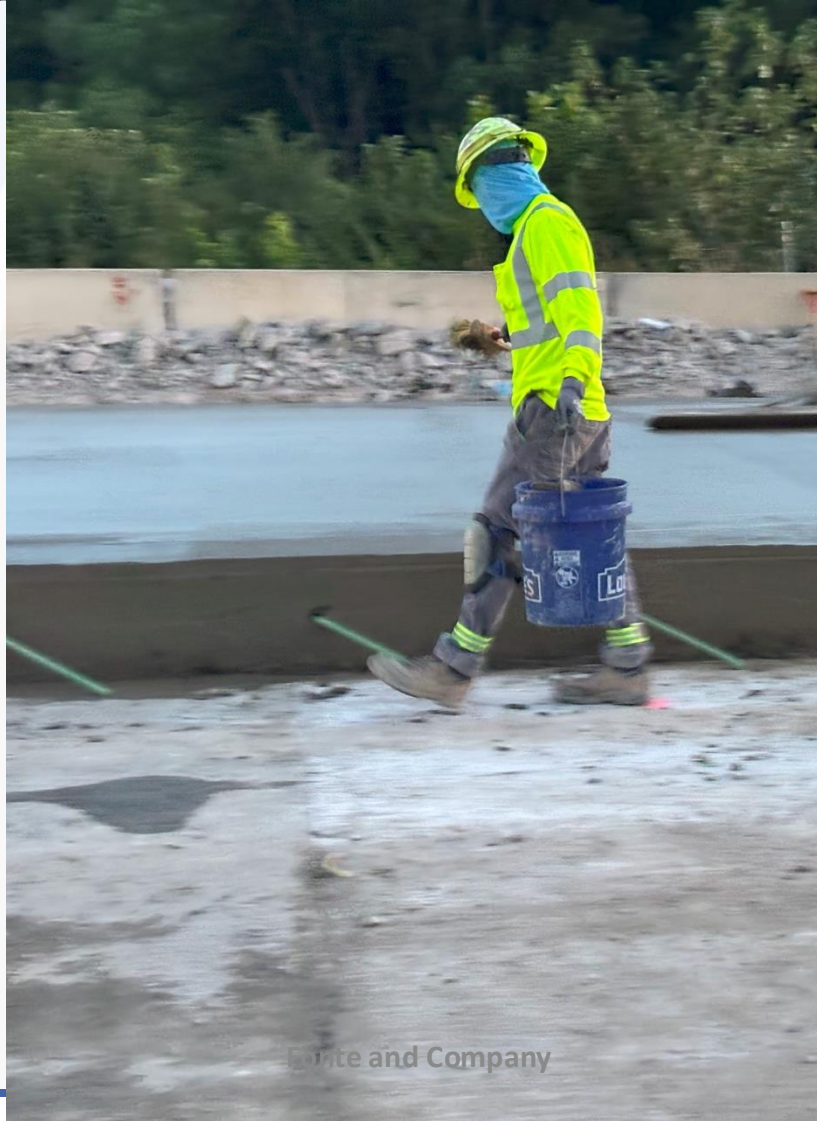


What about this?





No paint brushes EVER!!!



Spray Bar System

- Little water, frequently
- Timers 10 seconds on 60 seconds off



Scaling





Tining?

Why?

Is it
delaying
when you
apply your
cure?



Summary

- Trail Batching is essential
- Allow for calculated adjustments to the mix during production
- Adjust the mix to improve workability
- Don't rely on finishing aids or water
- Adding water the surface is bad
- Evaporation Retarders are not designed to be finished into the surface
- Colloidal Silica Finishing Aids need to be finished into the surface

Thank You

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