

ENGINEERS **“OUR OWN WORST ENEMY”**

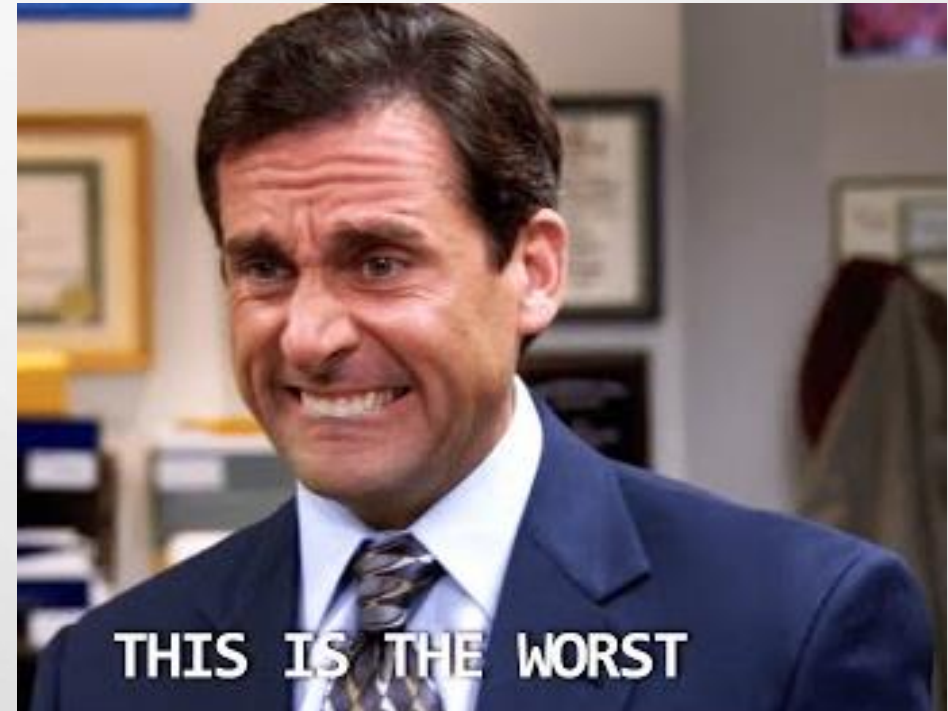
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CMT



ADAPTING TO CHANGE

WE DON'T LIKE IT.



ADAPTING TO CHANGE

- **WHAT CHANGES HAVE BEEN MADE IN THE INDUSTRY:**
 - **CHANGES IN MATERIALS**
 - **CHANGES IN SPECIFICATIONS**
 - **CHANGES IN CONSTRUCTION**

CHANGES IN MATERIALS

- **NEW ADMIXTURES/PRODUCTS**
 - **HOW DO WE USE?**
 - **WHAT'S THE CORRECT APPLICATION?**
 - **HOW DO WE VERIFY?**
 - **HAVE THEY BEEN VERIFIED?**
 - **HOW DO WE ADAPT?**

CHANGES IN SPECIFICATIONS

- **HAVE THERE REALLY BEEN CHANGES??????**
- **ADJUSTING FOR CURRENT NEEDS**
 - **HOW DO WE USE?**
 - **ARE THE CHANGES APPLICABLE TO MY PROJECT?**
 - **HOW DO WE VERIFY?**
 - **PILOT PROJECTS?**
 - **HOW DO WE ADAPT?**

CHANGES IN CONSTRUCTION

- **ADJUSTING FOR CURRENT TECHNIQUES**
 - **HOW DO WE USE?**
 - **ARE THE CHANGES APPLICABLE TO MY PROJECT?**
 - **HOW DO WE VERIFY?**
 - **HOW DO WE ADAPT?**
 - **CONTRACTOR TRAINING**
 - **DOES THE CONTRACTOR UNDERSTAND THE NEW MATERIALS?**

PROJECT STUDY

- **DNR REQUIRES A 4,000 PSI MIX**

SO..... HOW DO YOU MAKE A 4,000 PSI MIX?



MATERIAL / PRODUCT STUDY

- **NEW ADMIXTURES / PRODUCTS**
 - **INTERNAL CURING ADMIXTURES**
 - **TYPE II CEMENTS**
 - **LIQUID FLY ASH**
 - **RECYCLED WIND MILL BLADES (AKA FIBERS)**
 - **BASALT REBAR / FIBER**

PROJECT STUDY

- **NEW TESTING TECHNIQUES**

- **FHWA (9/9/22)**

- **BOX TEST**
- **V-KELLY BALL**
- **RESISTIVITY**
- **PHOENIX**

- **OLD SCHOOL**

- **SLUMP**
- **ROLL-A-METER**

- **NEW SCHOOL**

- **W/CM RATIO**
- **SAM AIR METER**



<https://intrans.iastate.edu/news/pem-technology-displayed-during-fhwa-visit-to-intrans/>

BE THE CHANGE....

- **REVIEW TECHNICAL DATA**
- **ADAPT TO THE NEW PRODUCTS**
- **ASK QUESTIONS**

QUESTIONS

- **ARE YOU BRAVE ENOUGH TO TRY?**
- **MAKE CONCRETE GREAT AGAIN!**



THANK YOU!

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