Corrosion Protection of Grouted Post-Tension Tendons

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Background

- Grouted Post-Tension Tendon Issues
  1. Bleed water voids
  2. Segregated grout
  3. Soft grout
  4. Chloride contaminated grout
  5. Sulfate contaminated grout
Post-Tension Cable Impregnation

- Corrosion protection for bonded post-tension and pre-stressed cables
- Uses corrosion inhibiting impregnation material
  - To make grout / concrete corrosion resistant
  - Coats exposed steel in voids to form a film and prevent corrosion
Impregnation Pattern
Six Months later
Corrosion Testing of Impregnation Material on Exposed Steel
Corrosion Rate Test Specimen
Test Specimen Injection
Average Percent Change in Corrosion Rate
4 Days After Wetting Test Specimen
Average Percent Change in Corrosion Rate
Over 40 Days After Wetting Test Specimen
Testing on Grouted grouped Post-tensioning in ducts
Post-Tension Cable Impregnation

Summary

Corrosion Impregnation material can be pumped over 250 ft in a tendon

Impregnation material is still evident after 6 months

Impregnation material shows corrosion mitigation in laboratory testing
Thank You

Questions
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