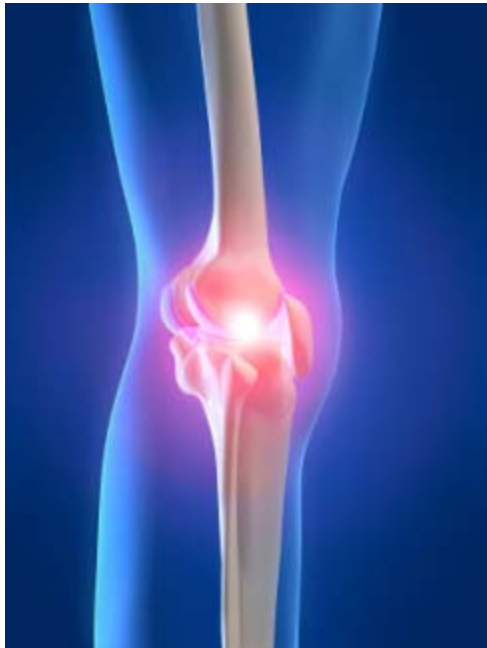


Joint Deterioration



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The problem?

- Some joints are deteriorating faster than we would like
- We are not sure why
- Most commonly in 5 to 10 year old pavements
- Water seems to be part of the problem
- Borderline air void systems are not uncommon

Potential mechanisms?

- New air entraining admixtures
- Compromised air void systems
- Sawing (bruising, heating, cracking)
- Early traffic
- Lack of curing on joint faces
- Over vibration at joints
- Increasing use of SCMs

Potential mechanisms?

- Application rates of deicing salts
- Aggressive deicing salts
- Trapped water
- Longer harder winters
- Cementitious chemistry
- Aggregate faces exposed to weather

What advice can we give now?

- Pay attention to good practice
 - Mixture design and proportioning
 - Air void system
 - Curing
- Allow water to leave
- Seal existing?



How do we research it?

- Brain storm
- Interviews
- Field review
- Test cores from the field
- Mimic mechanisms in the lab
- Develop / check mitigation methods
- Teach



Who pays?

- Pooled Fund TPF-5 (224)
 - Just been signed
- CP Tech Center Cooperative Agreement
 - Proposal with FHWA
- Industry

Who does what?

- CPTech Center
 - Interviews
 - Field sampling
 - Lab investigation
- Michigan Tech
 - Interviews
 - Petrography and analysis
- Purdue
 - Interviews
 - Sealants