

Testing Tests

Peter Taylor

National Concrete Pavement
Technology Center



The Goal

- For performance specs we need measurements
- And limits
- Beyond
 - Slump
 - Thickness
 - And strength



Workability

- Rheology – the study of fluids...
- Fundamental need
 - How does the mix respond to vibration?



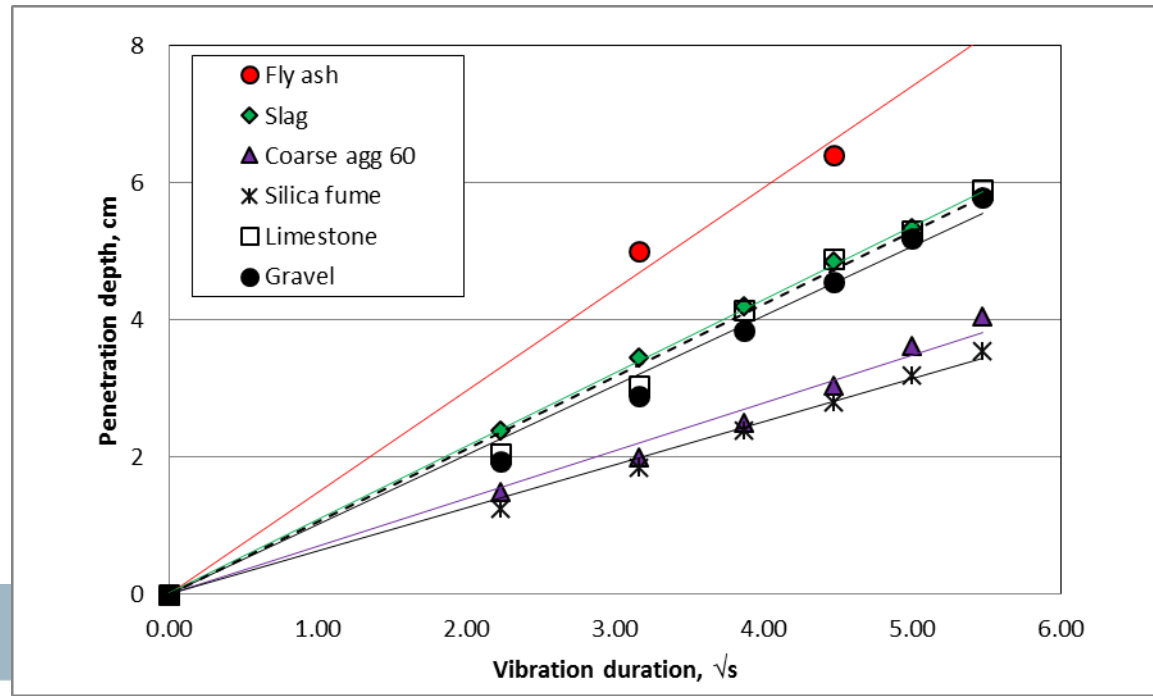
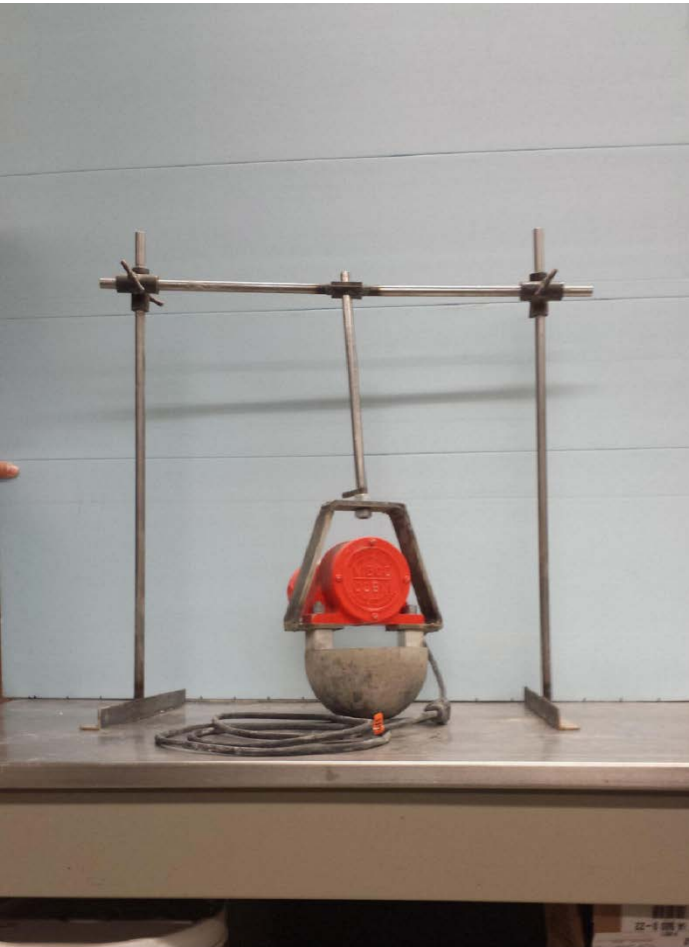
Workability

- Other work
 - Vibrating slope apparatus
 - The Box



Workability

- VKelly
 - Needs work...



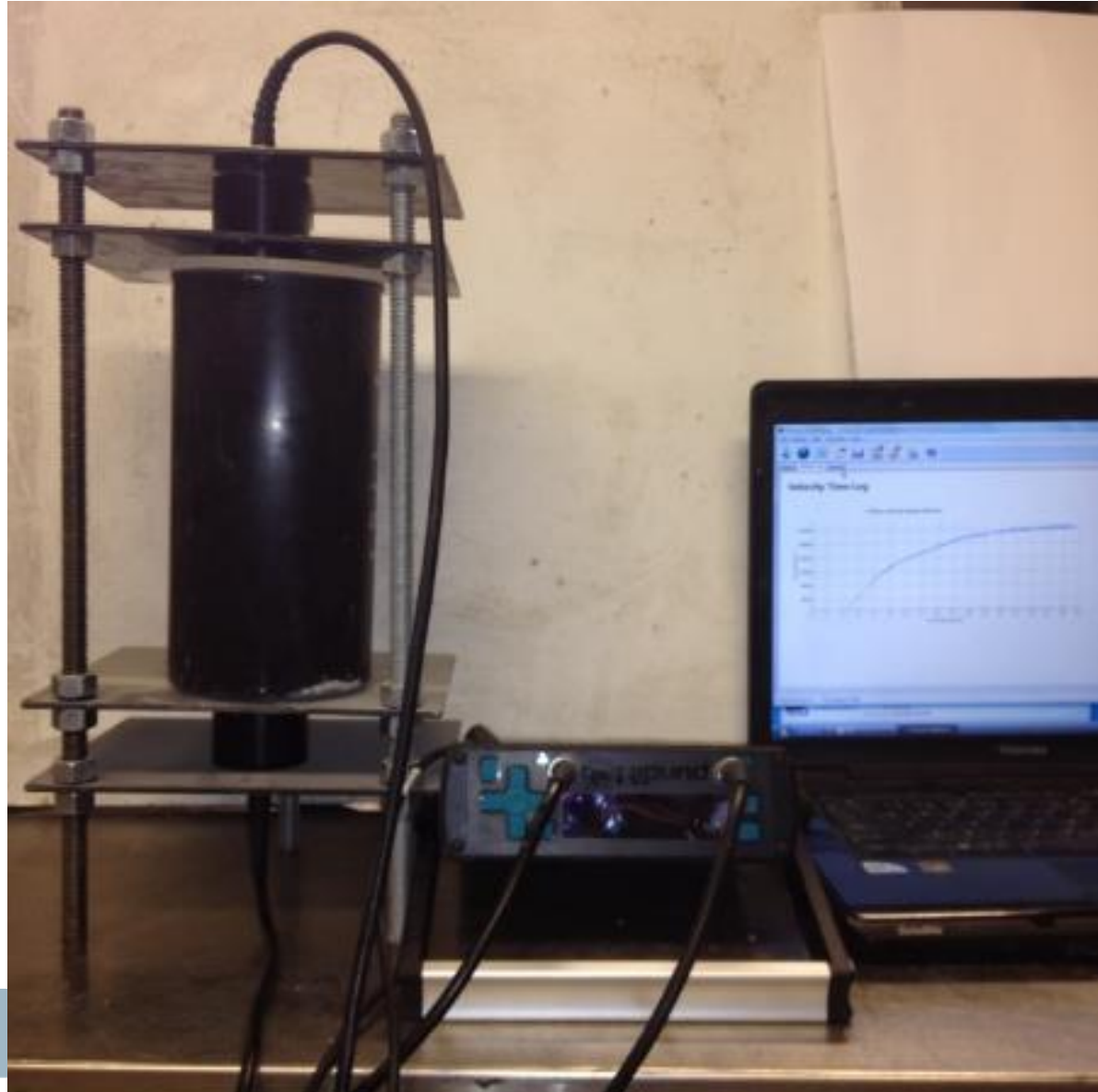
Time of Sawing

- Other Work
 - Calibrated penknife
 - Boot print
 - Try and see
 - Wait for the first crack



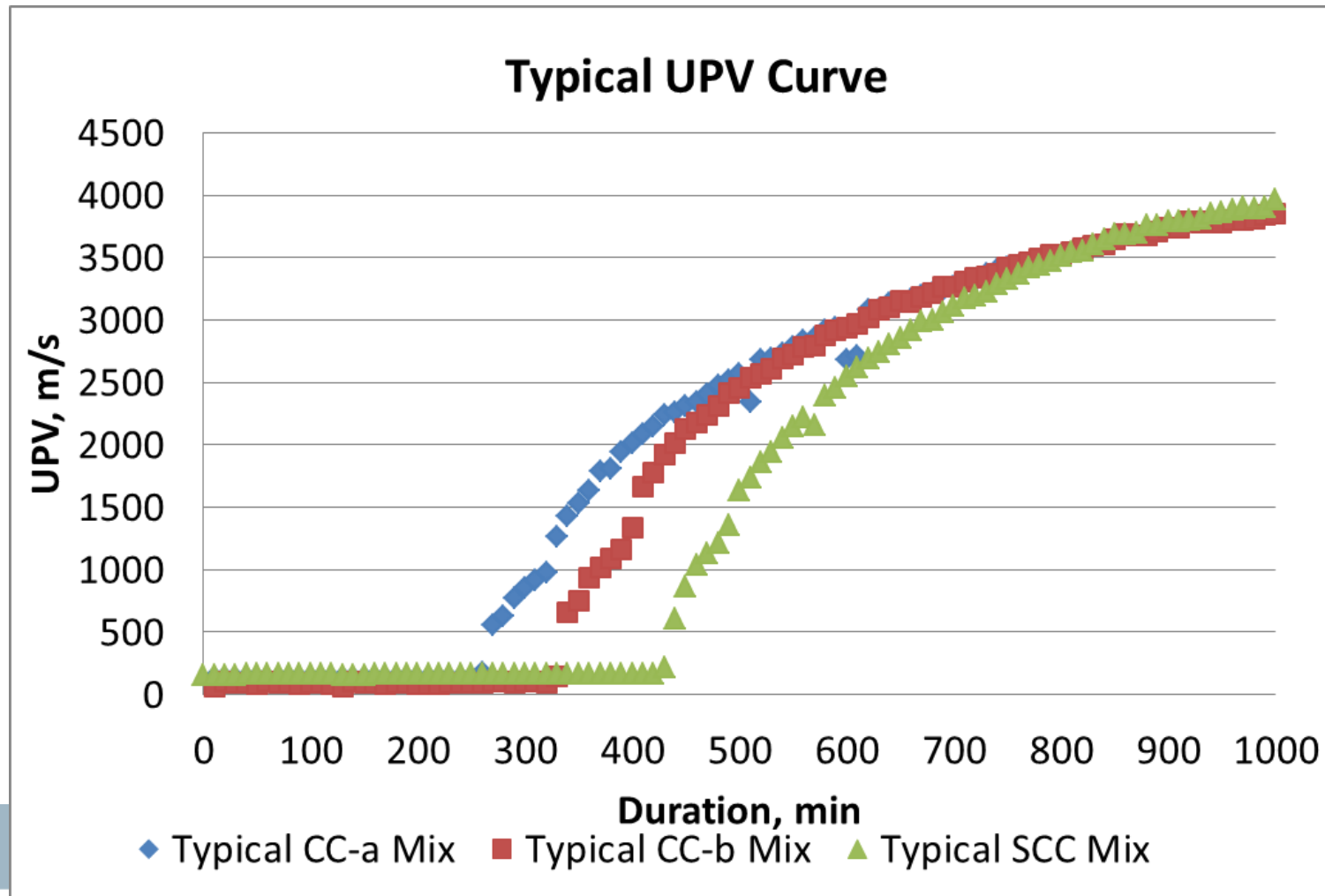
Time of Sawing

- UPV



Time of Sawing

- UPV



Field Work

- Funded by TPF 5(205)
 - 8 sites in Iowa
 - May through Oct 2013
 - State, County and City roads
-
- Test sample exposed to site weather



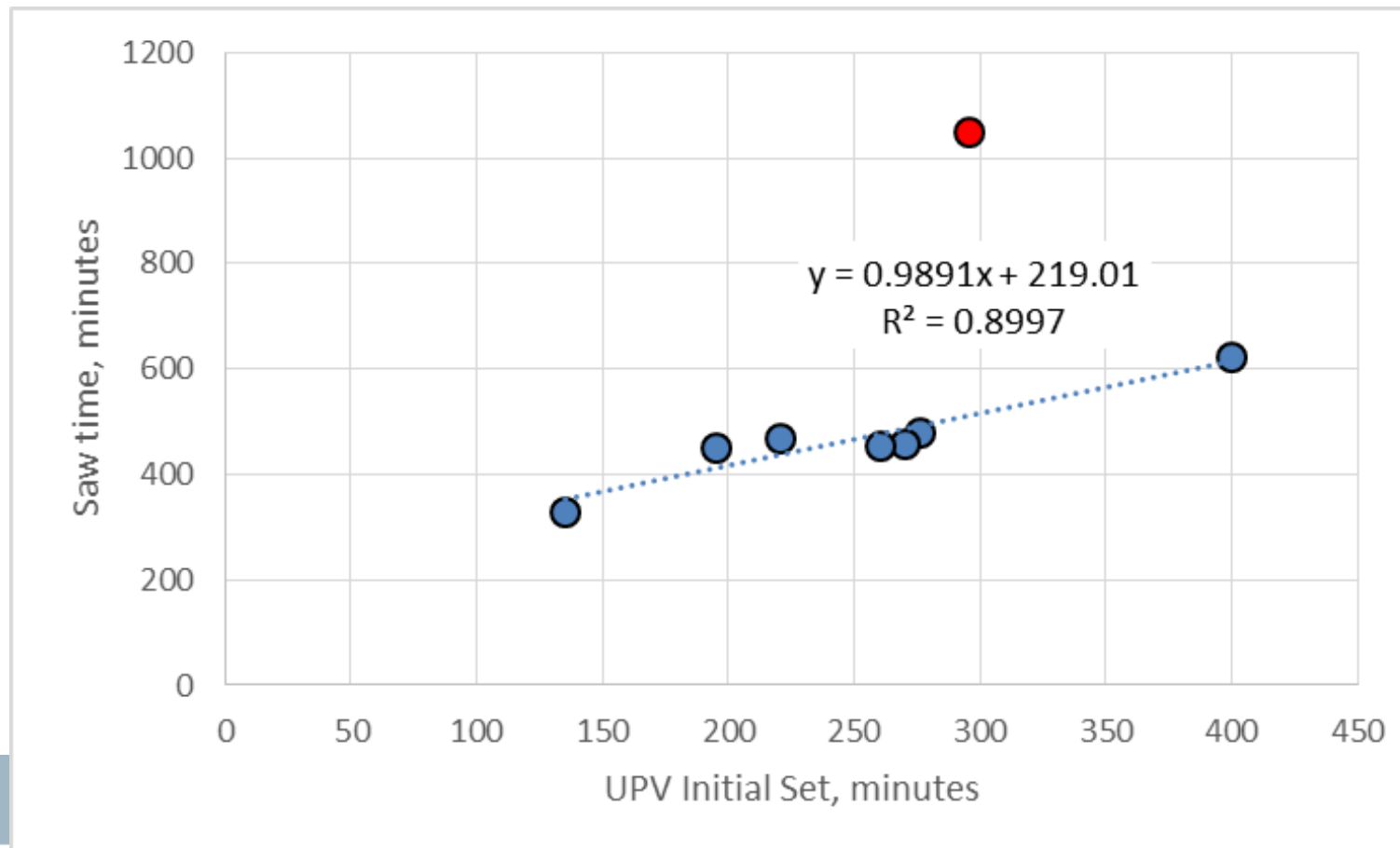
Field Work

- Mostly 20% Class C Fly Ash
- ~550 pcy cementitious
- w/cm 0.40-0.43
- Limestone aggregate
- All early entry sawing
- Weather
 - 40 to 85 °F



Time of Sawing

- Next - Collect data for conventional



Permeability

- Current approaches
 - Resistivity
 - Sorptivity
- Barriers
 - Sample prep
 - Variability



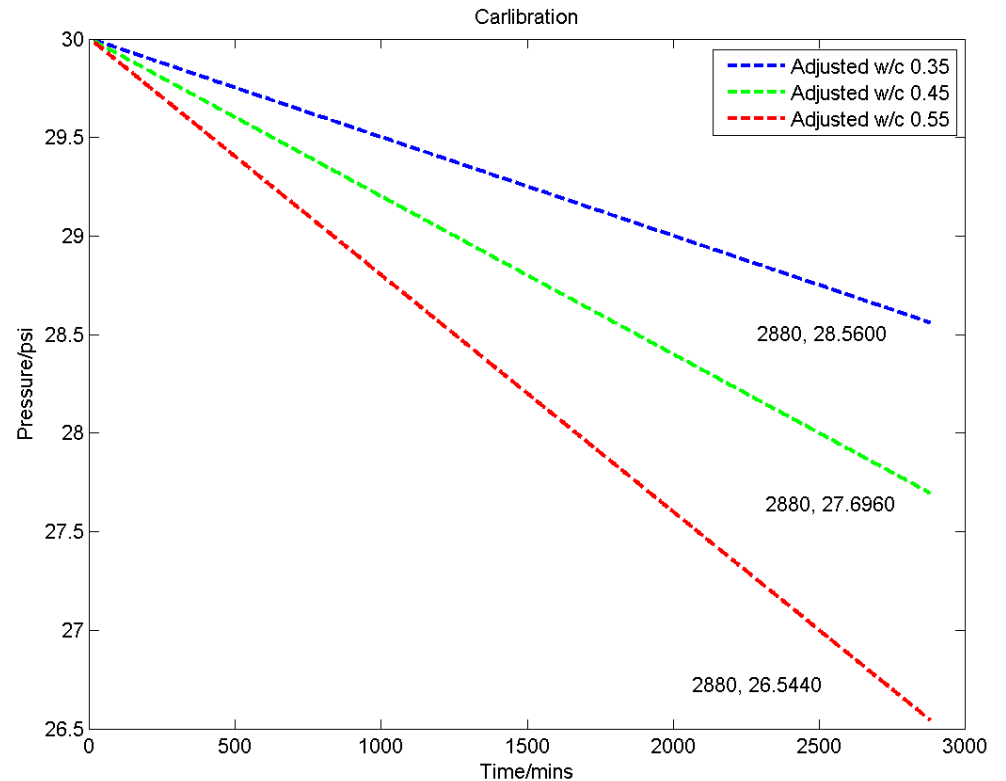
Permeability

- Why not start with a saturated sample...
- Measure water penetration under a falling head
 - Autoclam



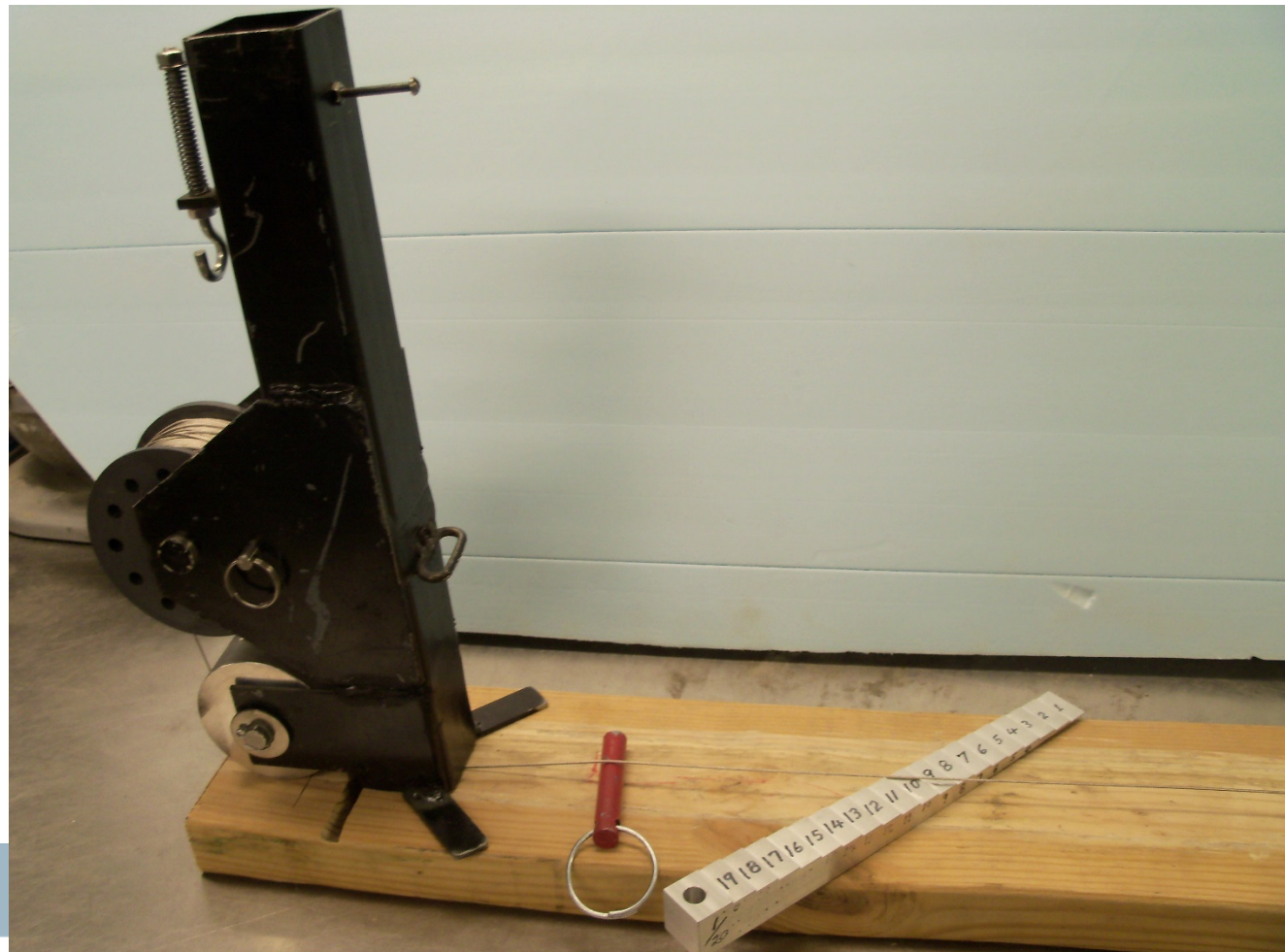
Permeability

- Or... flip a sorptivity rig
 - Needs work...



Curling / Warping

- B♭ (Bob Steffes)



Still needed

- Moisture content in-situ
- Consolidation
- Segregation

