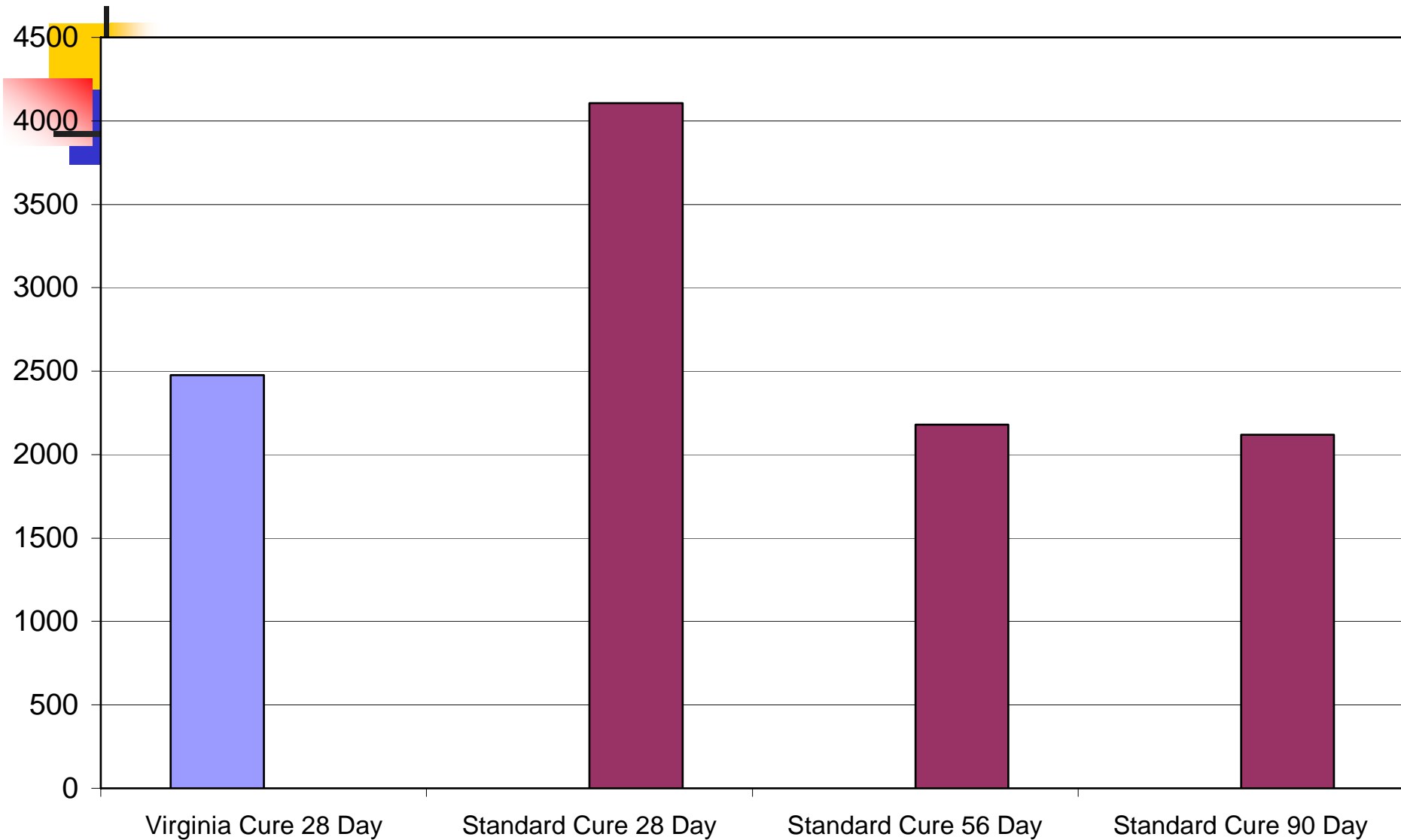


AASHTO T277 Virginia Cure Method

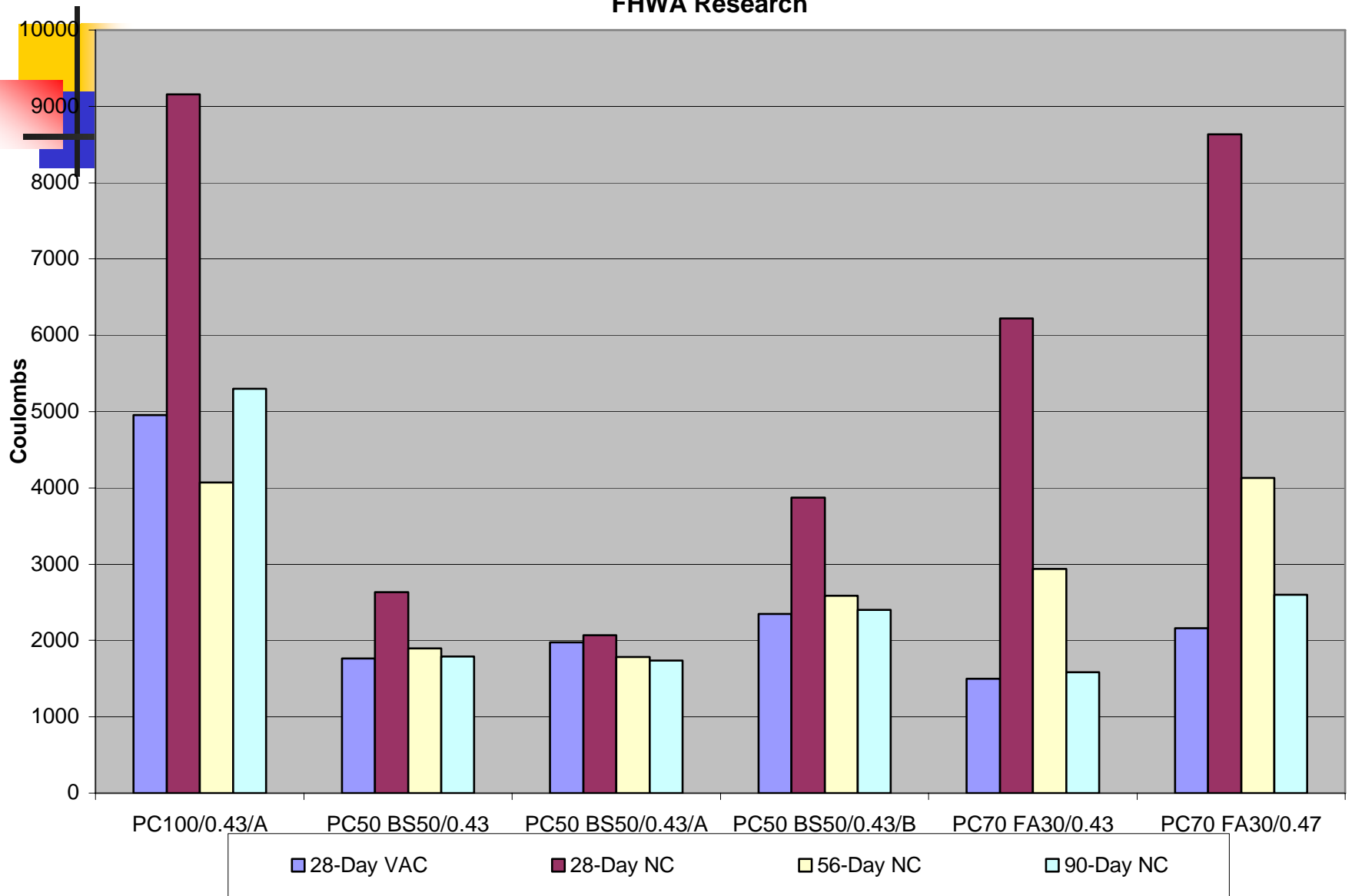


- Developed by Celik Ozyildirim
- Gives 6 mo/1 yr results in 28 days
- Curing 7 days 73 °F moist room,
21 days 100 °F water bath

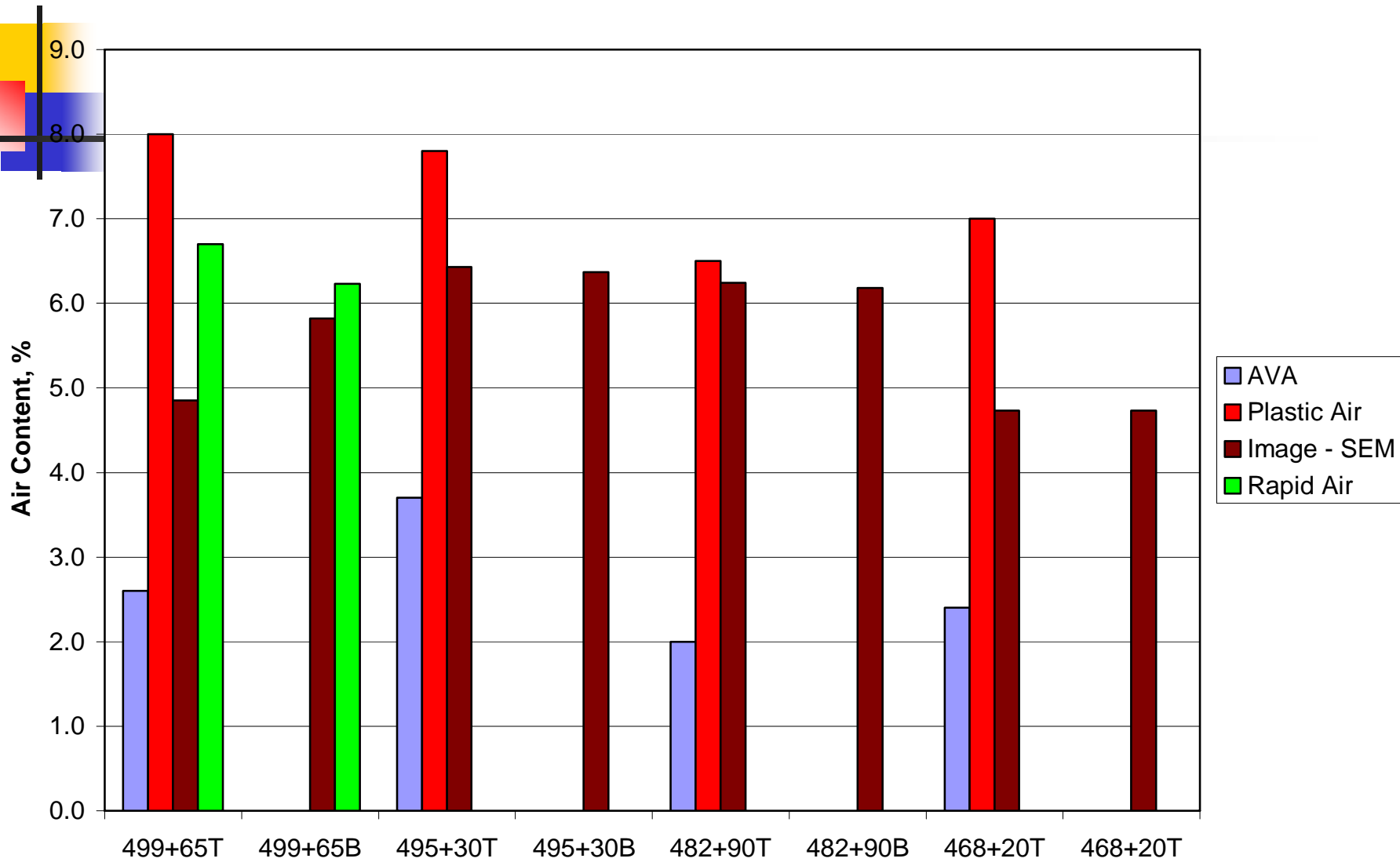
AASHTO T277 Permeability - Virginia Cure vs Standard Cure



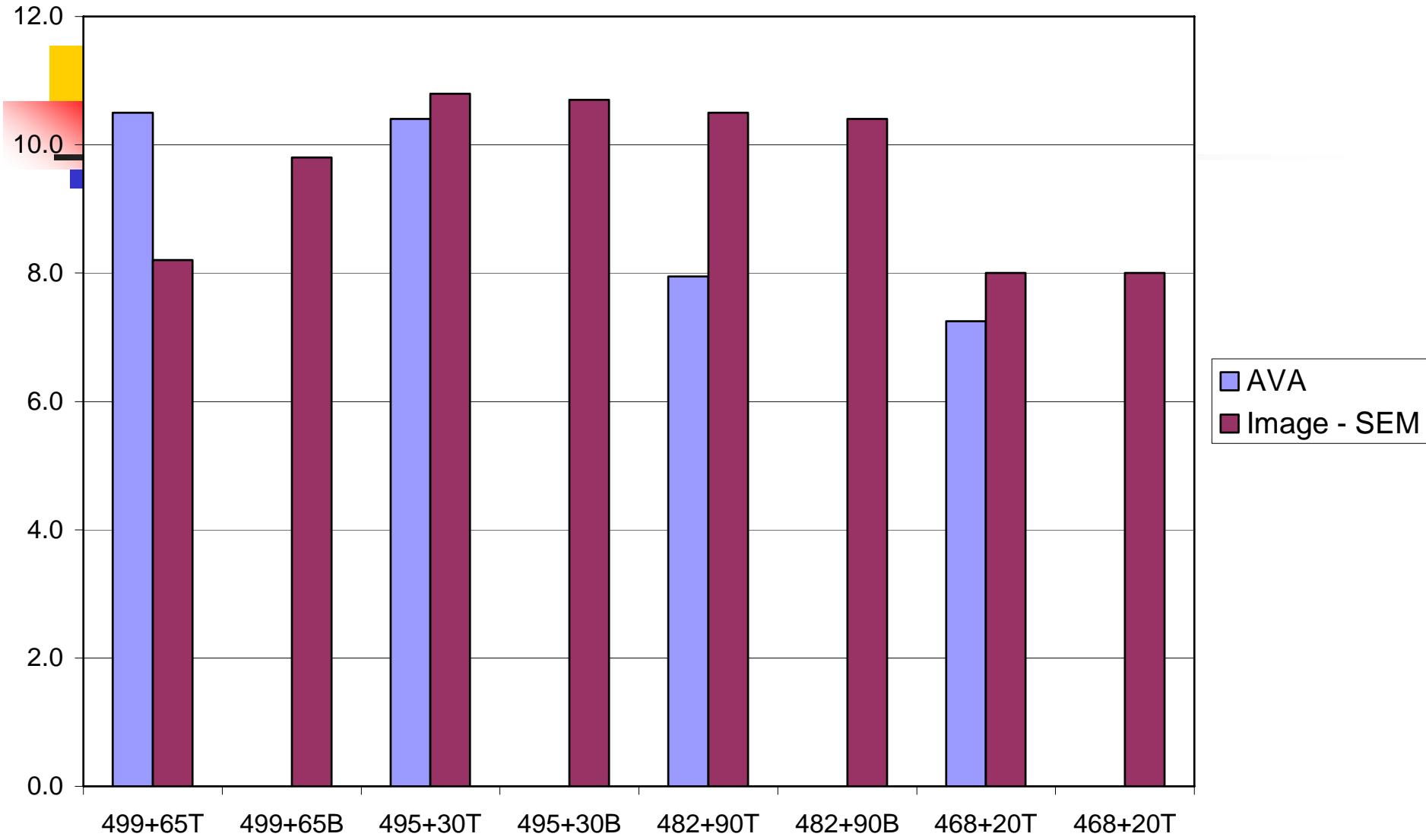
AASHTO T277 - Virginia Accelerated Cure vs Standard Cure FHWA Research



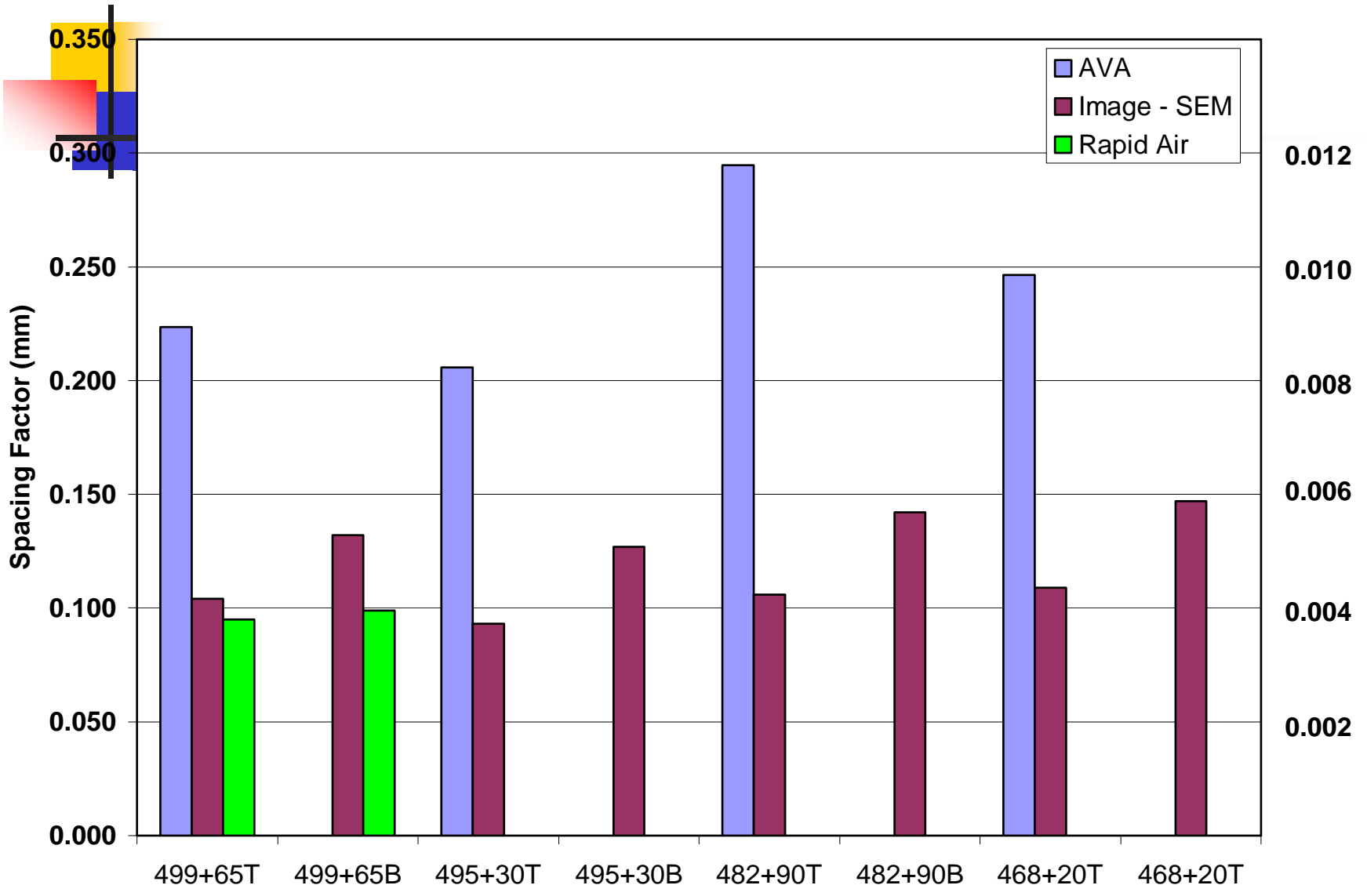
Air Content



Mortar Air Content



Air Void Spacing Factor



Why do old pavements last so long?

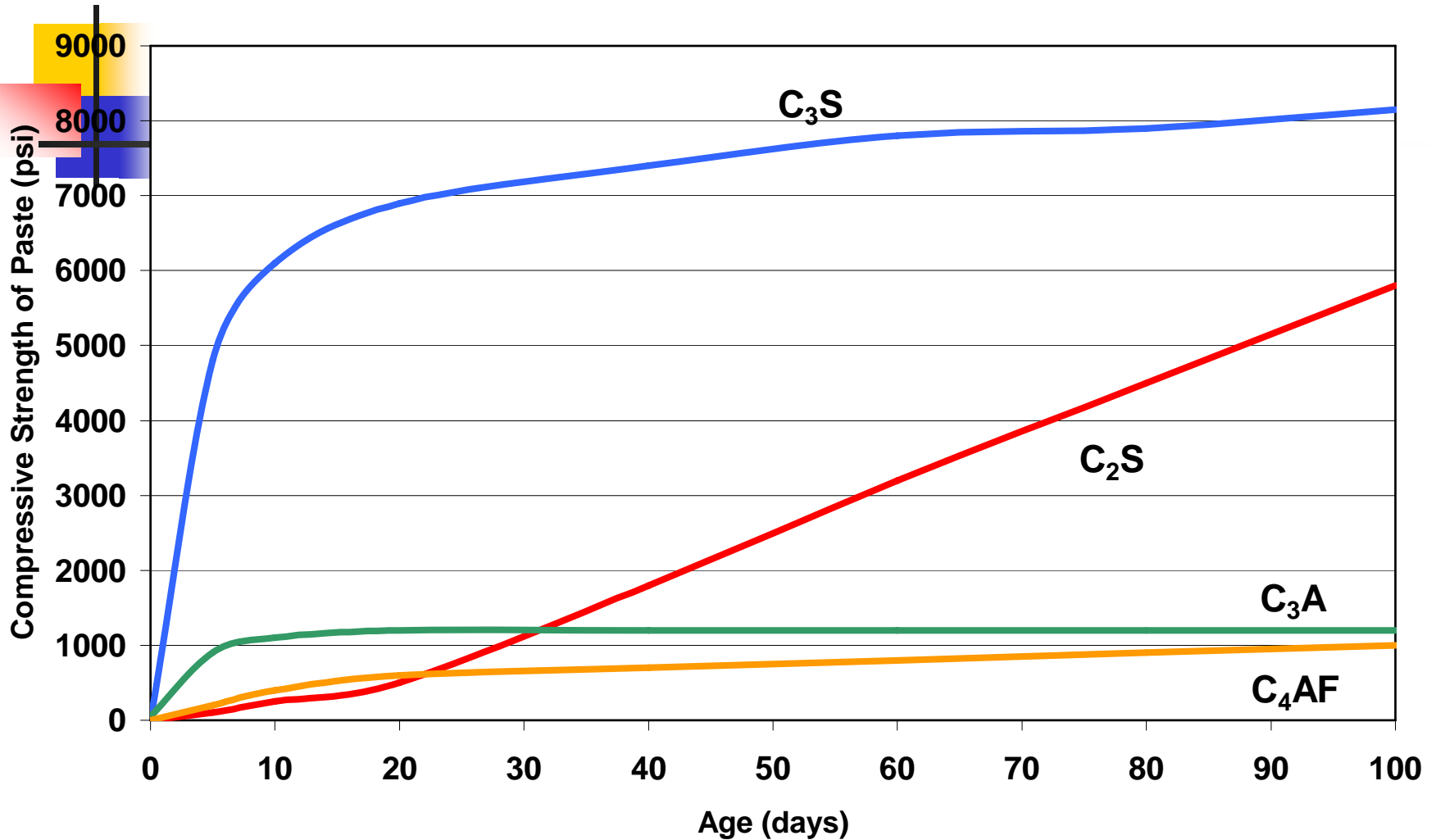
- Cements higher in C_2S
- Slower hydration produced denser structure & higher long term strength
- Today's cements are higher in C_3S for early strength

Old US 20 Woodbury Co. Built 1921



Photo courtesy IDOT Library

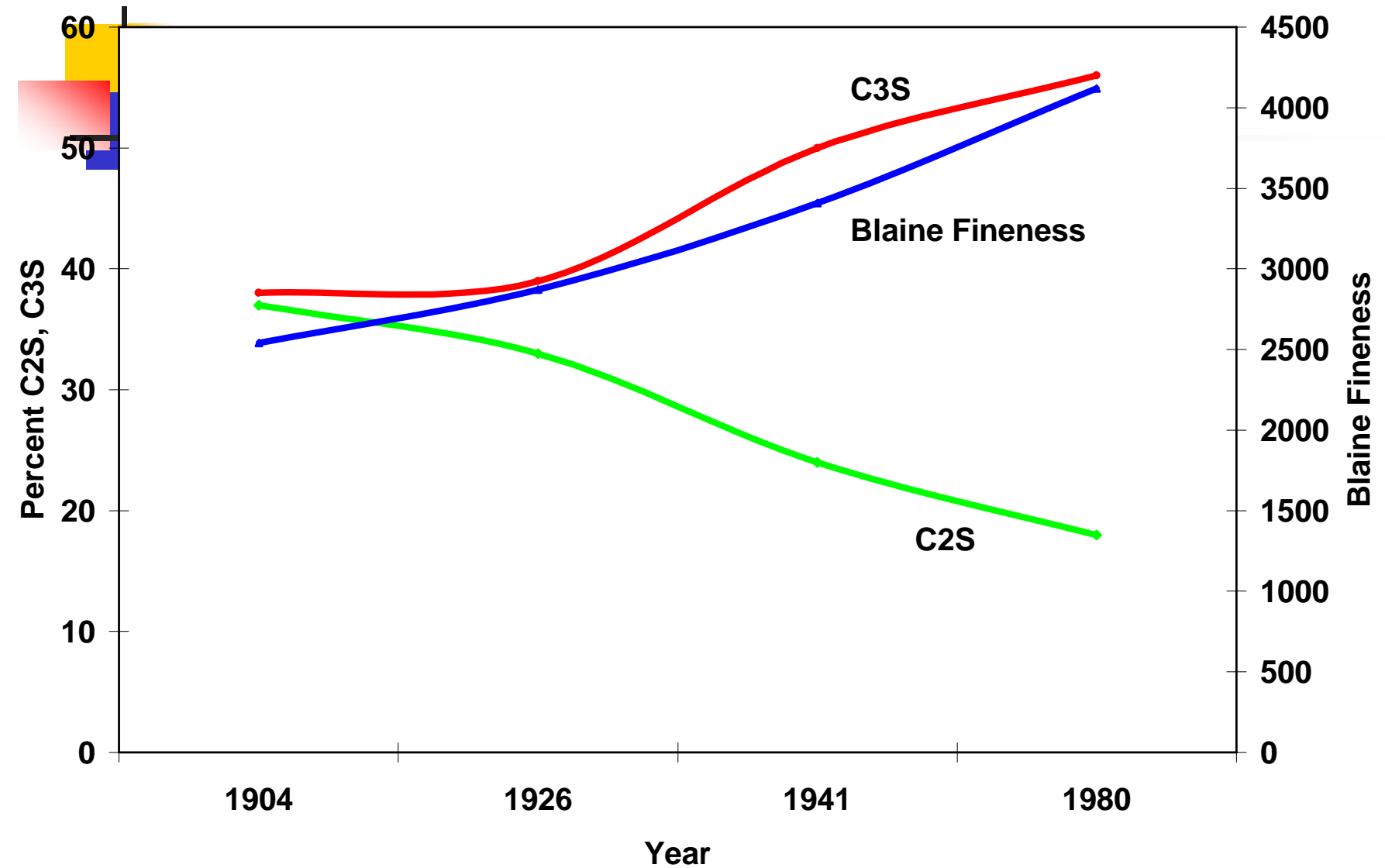
Compressive Strength of Pure Cement Compounds



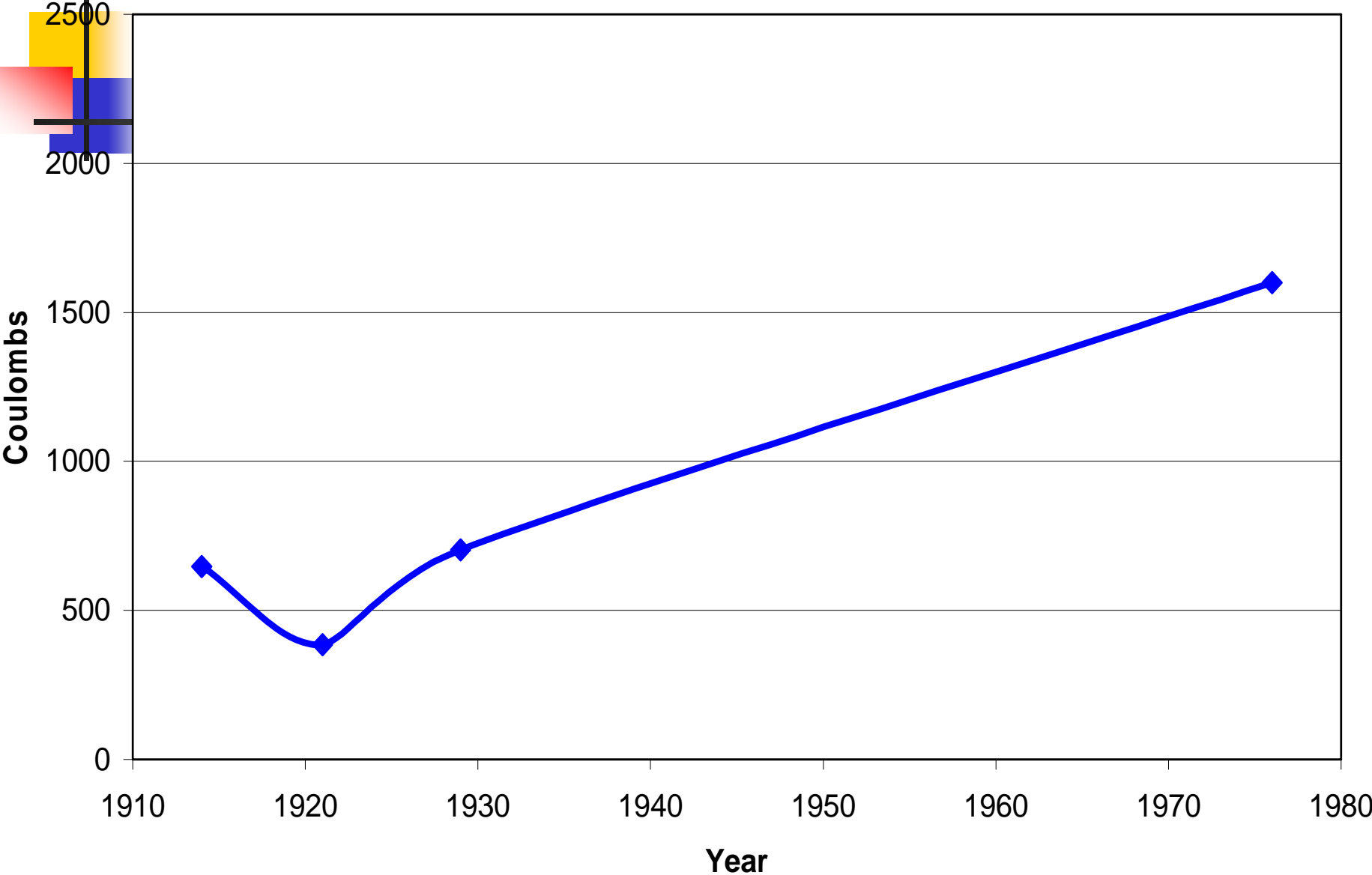
C₃S gains most strength in first few days.

C₂S continues to hydrate for years.

Historical Cement Chemistry



AASHTO T-277 Permeability



Slow Hydration – Longer Curing



Photos courtesy IDOT Library



**Old US 20 Woodbury CO. Picture
Still in Service Today**