Questions and Answers
from NY CPA Webinar on
Performance Engineered Mixtures
Oct 28, 2025

1. Is it better to specify shrinkage as measured by shrinkage prisms (performance), or by limiting paste content (prescriptive)? I may have or need a higher paste content but use admixture or aggregate skeleton to keep the shrinkage acceptable

   ANSWER: The property we are trying to control is shrinkage – the problem is the test is very slow. The substitute then is paste content – and the 25% paste content is guidance.

   Specifying a paste content, while it may be more prescriptive, establishes a control point that can be more readily monitored during production and eliminates some testing requirements for mix development.

   Shrinkage reducing mixtures work well but are expensive.

2. Similar question for the Tarantula curve: I may have an innovative gradation outside this curve but still have good workability, durability, good SR, strength, etc. meeting all the other performance requirements.

   ANSWER: The tarantula curve was initially developed for PCC paving applications. Therefore, the decision was made to utilize this for all PCC paving mixes as the target for optimized gradation. Alternative gradation curves which have been looked at may have excess paste due to the gradation not being fully optimized.

3. How many approved concrete plants are there for PEM? does that list of 100 include asphalt and concrete plants

   ANSWER: Currently there are 120 approved concrete plants for PEM. PEM approved plants are differentiated from non-PEM approved plants on the approved list as follows. "Approved Concrete Plants" are PEM approved. "Concrete Plants Allowed to Only Supply Contracts Let Before 5/1/24" are not PEM approved.

4. For agencies managing jobs where most of the concrete application are sidewalks or concrete road base (overlayed with asphalt). How to set criteria for acceptance like permeability, workability? Is it a good idea to apply some of these tests as Quality Control methods?

   ANSWER: If there is an asphalt overlay then we don't have to worry too much about freeze/thaw, salt attack or abrasion. Will still need to control strength, ASR and workability.

   These two applications for NYSDOT projects would be section 503 (PCC Foundation) and Section 608 (Sidewalks). Sidewalk mix requirements can be reviewed in MP 501-2 and Pavement Foundation requirements can be reviewed in MP 502-1. These may be a good place to start.

5. What was the AASHTO guide mentioned?

   ANSWER: AASHTO R101

6. Will the NYSDOT offer a similar webinar for structural concrete?

   ANSWER: A similar webinar was offered over the summer for structural concrete.

7. From NYS DOT own testing experience, is there a considerable gain in SR between 28 days and 56 days tests?

   ANSWER: This is dependent on the mix, but generally, for mixtures with pozzolans we are seeing around 40% increase in SR from 28 to 56 days.