

2880700 – CEMENT TREATED PERMEABLE BASE
RESPONSE TO COMMENTS FROM INDUSTRY REVIEW

William Sears
william.sears@dot.state.fl.us
(954)934-1115

Comments:

The Turnpike suggests taking samples at the plant rather than the point of placement.

Response: Concrete related materials are sampled at the point of placement because there are too many opportunities for the material to change from the plant to the point of placement. No change made.

Tim Ruelke
timothy.ruelke@dot.state.fl.us
(386)961-7730

Comments:

Do we care if the field unit weight is high? If the field unit weight was 4 pounds higher than the target, what is the engineering basis for rejection? I would suggest only having a tolerance of -3 pounds/cubic foot.

Response: If the density is too high, the material may not meet the permeability requirements. No change made.

Haldi, Daniel
(386) 740 – 3516
daniel.haldi@dot.state.fl.us

Comments:

I'm in favor of a range.

My questions are: 1] What Unit Weight (UW) does this range apply to? The UW on the design mix is Theoretical and derived from weight and volume and estimated % air. It does not truly account for all the entrapped air voids between the solid particles that could (does) exist. Experimenting with several Cement Treated Permeable Bases (CTPB) and Draincrete, the design mix and actual UW are substantially different on the side of 10 lbs lower for actual.

We have performed actual UW in lab during trial and in field during Independent Verification (IV) to establish the "true" UW, that the range may be applied.

Response: Added "of the target unit weight from the approved mix design" to clarify how the range is applied.

2] CTPB must drain in order to function. What test and value would we use to assure drainage?

Response: See response to 3 below.

3] Draincrete has both UW and drain-rate tests, shouldn't CTPB?

D5 has IV'd and required VT do the drain-rate FM 5-570 test to assure performance, whenever contractors substitute a Draincrete design mix for a CTPB application. See Index 287 and specification 446 for essentially the same materials used in both applications. The proportions actually overlap. The drain-rate for Draincrete could similarly be applied to CTPB.

Response: The draincrete in 446 requires more cement than the Cement Treated Permeable Base. There are no strength requirements for either material. We don't know if it would be difficult to sample the material for Cement Treated Permeable Base for drain rate. Without substantial data, we are hesitant to add it as a specification requirement at this point. The SMO will perform research on applying the drain rate for this material. Based on those findings, we will consider future specification changes.

This is D5 Concrete Technologist's review comments.