

# STRUCTURE BULLETIN

## NCDOT Construction Unit

[Website email](#)



### Current Issues: Polyester Polymer Concrete (PPC)

Polyester Polymer Concrete, better known as PPC, is a new type of bridge deck overlay that was first introduced in NC as a pilot project in 2016. PPC is a combination of resin and aggregates (no water) that creates a very durable, extremely low permeable bridge deck overlay with a very high bond strength. This new type of overlay was covered in the 2017/2018 Winter Structures Training and can be found at this link. [PPC Overlay Training](#)

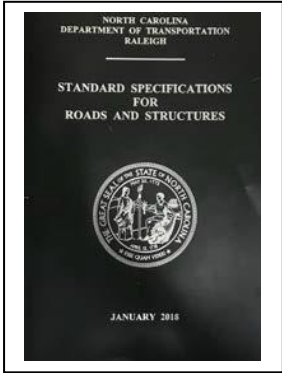
Because this work is new to most offices administering the Contracts, below are a few topics that seem to be reoccurring issues:

- 1) Manufacturer's Rep: It is recommended they be onsite for the first placement and stay until the Engineer is satisfied with the Contractor's work and all questions are answered. The SP currently states that they shall be there for a minimum of 3 days. A new SP will soon require them to be there for the first pour.
- 2) Scarification: Prior to overlays, most decks require scarification (milling). Milling machines can only get within 6" or so of the barrier/sidewalk. The remainder should be removed by alternate methods (jackhammers, etc.)
- 3) Shotblasting: If traffic is allowed on an area already shotblasted, it must be shotblast again prior to placing PPC.
- 4) Sawing Joints: Contractor should make an initial relief cut after paving over expansion joints. Final sawing should be done with a rigid guide to create straight parallel cuts for joint installation.

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2. PPC Overlays
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### PPC Mobile Mixer Calibration

The question is often asked, does the Contractor have to calibrate their mobile mixers prior to placing PPC? Unlike Latex Modified Concrete (LMC), which requires the Contractor to calibrate their mobile mixers any time the mixer leaves the project or maintenance is performed, for placing PPC overlays, as long as the Contractor submits documentation of current certification that mixing equipment has been calibrated (Caltrans California test CT 109 or similar accepted), then recalibration is not necessary. There is no current time requirement in the special provision for when a mobile mixer must be recalibrated. However, if it has been a few months since being calibrated, or there are concerns with the trucks, the Engineer can request that the Contractor re-calibrate the mobile mixers.



## Special Provision Questions:

**Question:** On PPC Overlays, does the pay item Class II Surface Preparation cover the material that is placed back in the patch?

**Answer:** No. Since hydrodemolition can not be done when doing a PPC overlay, all delaminated concrete that is not removed by scarification must be removed by hand and is paid as "Class II Surface Preparation". The special provisions state that after the old

concrete is removed, the Contractor is to fill the patch with PPC or other approved material which is paid as "Concrete Deck Repair for PPC Overlay" (sy), and as "PPC Materials" (cy). This material shall be placed prior to the overlay. These pay items are often used at expansion joints which are usually in poor shape. Care should be taken to remove the bad concrete, while maintaining the integrity of the remaining concrete. When placing PPC back in the patch, insure that the joint is formed appropriately without excessive "spray foam" or other material which prohibits the full patch or joint from being filled with repair material.



## Concrete testing videos Available:

A new video of the proper procedures for testing concrete using a Volumetric Air Meter (Roll-A-Meter) can be found at the following link:

[Roll-A-Meter Video](#)

## PPC - Materials Received Reports:

Don't forget to add the following material to the Contract Bill of Materials (CBOM) and enter MRR's into Hicams:

"Concrete, Polyester Polymer Materials"

## Area Construction Engineers:

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If you have a topic you would like to see addressed in a future edition of the Structure Bulletin please [email](#) us at either [acochran@ncdot.gov](mailto:acochran@ncdot.gov) or [aeerwood@ncdot.gov](mailto:aeerwood@ncdot.gov)