



Florida Department of Transportation

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Tallahassee, FL 32399-0450

KEVIN J. THIBAUT
SECRETARY

January 25, 2019

Khoa Nguyen
Director, Office of Technical Services
Federal Highway Administration
3500 Financial Plaza, Suite 400
Tallahassee, Florida 32312

Re: State Specifications Office
Section: **347**
Proposed Specification: **3470000 Portland Cement Concrete - Class NS.**

Dear Mr. Nguyen:

We are submitting, for your approval, two copies of the above referenced Supplemental Specification.

The changes are proposed by Richard DeLorenzo of the State Materials Office (SMO) to modify the language.

Please review and transmit your comments, if any, within two weeks. Comments should be sent via email to dan.hurtado@dot.state.fl.us.

If you have any questions relating to this specification change, please call me at 414-4130.

Sincerely,

Signature on file

Dan Hurtado, P.E.
State Specifications Engineer

DH/dt

Attachment

cc: Florida Transportation Builders' Assoc.
State Construction Engineer

**PORTLAND CEMENT CONCRETE – CLASS NS.
(REV 11-28-18)**

SECTION 347 is deleted and the following substituted:

**SECTION 347
PORTLAND CEMENT CONCRETE - CLASS NS**

347-1 Description.

The requirements of this Section are applicable to concrete designated as nonstructural portland cement concrete, (Class NS) hereinafter referred to as concrete. Use concrete composed of a mixture of portland cement, aggregates, ~~and water; and where specified, with or without~~ chemical admixtures, slag, or supplementary cementitious pozzolan materials. Deliver concrete to placement site in a freshly mixed, unhardened state. Ensure the concrete is placed and cured in a manner to ensure that the strength and durability of the concrete is maintained.

347-2 Materials.

347-2.1 General: Certify that all materials used in concrete are from Department approved sources, and free from ~~frozen or other~~ detrimental matter.

Meet the following requirements:

Portland Cement.....	Section 921
Coarse Aggregate*	Section 901
Fine Aggregate*	Section 902
Water.....	Section 923
Chemical Admixtures	Section 924
Pozzolans and Slag	Section 929

* Recycled Asphalt Pavement (RAP) may replace up to 20% of the total aggregate in the design mix. Use RAP from a Department approved stockpile.

347-3 Production, Mixing and Delivery.

347-3.1 Concrete Production Requirements: Provide concrete from a production facility ~~that is~~ certified by the National Ready-Mixed Concrete Association (NRMCA), ~~approved by the District Materials Research Office (DMRO),~~ or ~~that~~ meets the requirements of Section 346.

When Volumetric Mixers are used, deliver concrete in accordance with the ~~requirements~~ Volumetric Mixer Standards of the Volumetric Mixer Manufacturers Bureau (VMMB) VMMB 100-01. E ~~and~~ ensure ~~that~~ the batcher is qualified through the ~~vehicle has a~~ VMMB Volumetric Mixer Operator Certification Program and the mixer has a VMMB registered rating plate.

Substitution of structural concrete in lieu of non-structural concrete may be used if approved by the Engineer. If structural concrete is used in lieu of non-structural concrete, obtain the concrete from a production facility meeting the requirements of Section 346. Acceptance is based on the requirements of Section 347.

The Engineer may disqualify any concrete production facility for non-compliance with Specification requirements.

347-3.2 Delivery: The maximum allowable mixing, agitation, and placement time of concrete is 120 minutes.

347-3.3 Small Quantities of Concrete: With approval of the ~~Distriet Materials Research~~ Engineer, small quantities of concrete, less than 3 cubic yards placed in one day and less than 0.5 cubic yards placed in a single placement may be accepted using a pre-bagged mixture. ~~The Engineer may verify that the pre-bagged mixture is prepared in accordance with the manufacturer's recommendations and will meet the requirements of this Specification.~~

~~347-4 Sampling and Testing.~~

~~The Engineer may sample and test the concrete at their discretion to verify its quality. The minimum 28-day compressive strength requirement for this concrete is 2,500 psi.~~

~~347-5.4 Certification and Acceptance.~~

347-5.4.1 General: Furnish a Delivery Ticket with each batch of concrete before discharging concrete at the placement site. ~~Ensure the Delivery Ticket includes information related to the Record~~ material quantities incorporated into the ~~mix batch~~, sources of materials, batch adjustments, ~~batch size, time loaded, time discharged, and the allowable jobsite water addition~~ or substituted material on the Delivery Ticket.

~~Ensure that the Batcher~~ ~~batcher~~ responsible for producing the concrete ~~signs the Delivery Ticket~~, certifying ~~ies~~ that the batch was produced in accordance with the Contract Documents.

~~Record water added at the jobsite~~ ~~signs the Delivery Ticket.~~ ~~The S~~ Contractor will also sign the Delivery Ticket certifying that the ~~maximum allowable jobsite water addition was not exceeded and the~~ concrete was placed in accordance with the Contract Documents.

Acceptance by the Department will be by Certification on the Delivery Ticket, signed by the ~~b~~ Batcher and the Contractor. ~~Certify that the concrete meets a minimum compressive strength of 2,500 psi at 28 days. The Engineer may verify the strength of the concrete.~~

347-5.4.2 Remedial Action: ~~Remedial action will be the removal and replacement of all concrete to the full depth and width.~~

~~Delineate, remove to the full depth and width, and replace, at no cost to the Department, all~~ concrete that ~~has~~:

~~1. A~~ does not meet the 28-day compressive strength requirements or has any cracking greater than 1/4 inch in vertical displacement.

~~2. Any spalling or flaking off of the surface layer that exposes the rough, pitted aggregate surface in excess of 10 square inches.~~

~~3. A~~ is to be removed and replaced in accordance with 347-5.2. Sidewalk, ditch pavement, slope pavement, Traffic Separator, or curb and gutter having any intersecting cracks visible in the ~~dry~~ hardened concrete (regardless of size) ~~in sidewalk, ditch pavement, slope pavement, traffic separator, curb and gutter~~ will be removed and replaced in accordance with 347-5.2.

~~4. A~~ If any uncontrolled cracks ~~that~~ appear during the life of the Contract unacceptable to the Engineer, ~~remove and replace the concrete in accordance with 347-5.2 at no expense to the Department.~~

~~347-5.2 Remedial Action:~~ Remedial action will be the removal and replacement of all concrete to the full depth and width.

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347-2 Materials.

347-2.1 General: Certify that all materials used in concrete are from Department approved sources, and free from detrimental matter.

Meet the following requirements:

Portland Cement.....	Section 921
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When Volumetric Mixers are used, deliver concrete in accordance with the Volumetric Mixer Standards of the Volumetric Mixer Manufacturers Bureau (VMMB) VMMB 100-01. Ensure the batcher is qualified through the VMMB Volumetric Mixer Operator Certification Program and the mixer has a VMMB registered rating plate.

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347-3.2 Delivery: The maximum allowable mixing, agitation, and placement time of concrete is 120 minutes.

347-3.3 Small Quantities of Concrete: With approval of the Engineer, small quantities of concrete, less than 3 cubic yards placed in one day and less than 0.5 cubic yards placed in a single placement may be accepted using a pre-bagged mixture.

347-4 Certification and Acceptance.

347-4.1 General: Furnish a Delivery Ticket with each batch of concrete before discharging concrete at the placement site. Ensure the Delivery Ticket includes material quantities incorporated into the batch, sources of materials, batch adjustments, batch size, time loaded, time discharged, and the allowable jobsite water addition.

Ensure the batcher responsible for producing the concrete signs the Delivery Ticket, certifying that the batch was produced in accordance with the Contract Documents.

Record water added at the jobsite. Sign the Delivery Ticket certifying that the concrete was placed in accordance with the Contract Documents.

Acceptance by the Department will be by Certification on the Delivery Ticket, signed by the batcher and the Contractor. Certify that the concrete meets a minimum compressive strength of 2,500 psi at 28 days. The Engineer may verify the strength of the concrete.

347-4.2 Remedial Action: Delineate, remove to the full depth and width, and replace, at no cost to the Department, concrete that has:

1. Any cracking greater than 1/4 inch in vertical displacement.
2. Any spalling or flaking off of the surface layer that exposes the rough, pitted aggregate surface in excess of 10 square inches.
3. Any intersecting cracks visible in the hardened concrete (regardless of size) in sidewalk, ditch pavement, slope pavement, traffic separator, curb and gutter.
4. Any uncontrolled cracks that appear during the life of the Contract unacceptable to the Engineer.