



MINIMUM QUALITY CONTROL PLAN FOR FIELD PLACEMENT CONCRETE OPERATIONS

(Attach additional sheets as necessary)

State Route (SR) _____ Section _____ County _____ ECMS# _____

Prime/Sub Contractor _____

I. ORGANIZATIONAL CHART

<u>Personnel</u>	<u>Full Name</u>	<u>Responsibilities</u>
A. Superintendent	_____	Oversees concrete operations.
B. Concrete Foreman	_____	Oversees placement of material and related operations.
C. Certified Field Technician	_____	Performs field tests and sampling and acts as contact person to PennDOT.
ACI Certification No.:	_____	Expiration Date: _____
PennDot Certification No.:	_____	Expiration Date: _____
D. Tester in Training	_____	Performs field tests and sampling and acts as contact person to PennDOT under the direct supervision of a certified technician.

Note: Problems related to concrete material, placement operations, and testing shall be directed to the appropriate personnel listed above.

Part 2. MIXING AND DELIVERY

Concrete shall be supplied from a current PennDOT approved concrete plant listed in Bulletin 42.

- A. Two-way communications shall be maintained between the concrete plant and the work site.
- B. A plant delivery slip signed by the plant technician and containing the information specified in Publication 408 shall be supplied for each truck.

Part 3 MATERIAL CONTROL

Material control is considered established when all tests results of concrete temperature, air, and slump of three consecutive trucks are determined to be within the established action points. **If a test exceeds the upper or lower action points the testing frequency shall be increased to every truck until material control is reestablished and the plant technician shall be notified.**

A. List designs and Slump Requirements (Attach additional sheets as necessary)

Concrete Supplier Code	JMF Number and Year	Structural Element Being Placed	Class of Concrete and Slump Upper Limit (Pub 408)	Selected Target Slump Value	Target Range [+/- 1 1/2" from the selected target slump value]	*Action Points [+/- 1" from the selected target slump value]

* More stringent action points may be specified if desired.

B. Testing Requirements

1. Temperature (ASTM 1064) Shall be performed every time an air and slump test is performed. If the action points shown below are reached, the plant shall be contacted so corrective action can be taken. Additional tests shall be performed as specified in Publication 408. Concrete that does not meet the temperature specification requirements shall not be incorporated.

Concrete Temperature Spec. Limits	_____ and _____
Concrete Temperature Spec. Limits (Concrete Deck Placement)	_____ and _____
Concrete Temperature Action Points	_____ and _____
Concrete Temperature Action Points (Concrete Deck Placement)	_____ and _____

2. Slump tests (AASHTO T19) Shall be performed on the first three consecutive trucks and until material control is established. Additional tests shall be performed as specified in Publication 408. If the slump upper limit is exceeded, the contractors' technician SHALL reject the truck.

If the District permits the addition of water to adjust for low slump concrete, specify the controls and procedure for adding the water:

Slump specification limits and actions points are indicated in Section A shown above.

3. Air test (PTM 615) Shall be performed on the first three consecutive trucks and until Material control is established. Additional tests shall be performed as specified in Publication 408.

Concrete Air Content Spec. Limits	_____ % and _____ %
Concrete Air content Action Points	_____ % and _____ %

- Low air content material may be re-mixed at mixing speed and re-tested. (1 time only, not to exceed the maximum allowed time or revolutions)
- High air content material may be allowed to mix at agitating revolutions for a period of time and re-tested. (1 time only, not to exceed the maximum allowed time or revolutions)
- Trucks with high air content material may be pulled aside with the barrel stopped, not to exceed 45 minutes, as per Pub. 408, section 704.2(c). Prior to re-test, the concrete is agitated for at least 20 revolutions. (1 time only, not to exceed the maximum allowed time or revolutions)

4. List Concrete Testing Equipment (Attach additional sheets as necessary)

PART 4 CONCRETE CYLINDERS

A. Number of Concrete Cylinders

The following number of concrete cylinders shall be molded as specified in PTM 611 for testing purposes. Cylinders shall be identified on the outside of the mold using indelible ink and shall be capped with domed lids:

- _____ 3 day Quality Control compressive strength
- _____ 7 day Quality Control compressive strength
- _____ cylinders for form removal strength (Specify: _____)
- _____ cylinders for loading strength (Specify: _____)
- _____ 28 day Quality Control compressive strength
- _____ 28 day Acceptance compressive strength

The number of Verification cylinders and Quality Assurance cylinders molded shall be as specified in Publication 408 and molded as specified in PTM 611.

B. Curing Concrete Cylinders (Attach additional sheets as necessary)

Curing and care of the concrete cylinders shall be the responsibility of the contractor.

First 24 hours of curing:

- Cylinders shall be moved within 15 minutes of molding to the curing location.
- Describe method of curing for first 24-hours for each type of cylinder:

After 24 hours of curing:

- Cylinders shall be stripped from the molds and the original identification shall be transferred from the cylinder mold onto the cylinder using indelible ink.
- Describe method of curing after 24 hours for each type of cylinder:

Cylinder Transportation and Handling

- Describe the method of transportation and handling.

- Specify the location of the concrete break machine.

Part 5 FIELD PLACEMENT MANPOWER AND EQUIPMENT (Attach additional sheets as necessary)

List manpower, equipment, and method of placement (bucket, pump etc.) for each structural element.

Submitted By: _____ **Date:** _____

Reviewed By: _____ **Date:** _____