

Procedure for Performing Slump Loss Test

1. Purpose:

This procedure establishes a consistent method for determining and documenting the amount of slump loss that occurs in freshly batched concrete over select periods of time. This information is utilized in evaluating the suitability of concrete mixtures intended for applications that may require extended haul times or prolonged placements.

2. Requirements:

- a. Perform the test on concrete that is consistent with the mix design used in the final product.
- b. This test may be performed at the concrete plant. Notify the Engineer at least 48 hours before performing this slump loss test to allow arrangements for a Department representative to witness the mixing and testing required.

3. Procedure:

- a. Mix concrete for the slump loss test at a temperature consistent with ambient and concrete temperatures expected during actual concrete placement.
- b. Ensure that the test batch is a minimum of 3 cubic yards and is mixed in a manner similar to what will be used on the project.
- c. All values obtained while conducting this procedure are to be recorded on Attachment 1 – Slump Loss Test.
- d. Record the time when water is first introduced into the mix as “Time Zero”.
- e. Within 5 minutes of obtaining a composite sample of the test batch, measure the slump (ASTM C143), concrete temperature (ASTM C1064), ambient temperature, and air content (ASTM C231 or C173). Record these as the “Initial Values.”
- f. Ensure that the concrete properties are within the required specification limits and contract requirements.
- g. Discharge approximately 1 cubic foot of test batch concrete and perform slump, ambient and concrete temperature every 30 minutes. Discontinue the test when the slump test results in a slump of 3" or less.
- h. Between tests, agitate the mixer at the midrange of the mixer manufacturer’s recommended agitating speed.
- i. Remix the batch for one minute at the mixing speed of the mixer before determining slump, ambient and concrete temperatures.
- j. Submit the completed Slump Loss Test form (Attachment 1) and corresponding Slump Loss Test Graph form (Attachment 2) illustrating the change in slump over time to the Engineer.
- k. If the slump loss test fails to meet the requirements of the contract, redesign the mix and repeat the process.

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Attachment 1 – Slump Loss Test

Plant Name: _____ **Date:** _____ **Location:** _____

Project #: _____ **Mix Design #:** _____

Resident Engineer: _____ **County:** _____

Time Zero:	
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Initial Values

Slump (in)	Conc. Temp. (F°)	Air Temp. (F°)	Air (%)	Comment

Meets Specifications for Class of Concrete? ☐ Yes ☐ No

Slump Loss Measurements

Time	Elapsed Time	Slump (in)	Conc. Temp. (F°)	Air Temp. (F°)	Comment

Print / Sign:

Ready-Mix Representative: _____ **Sign:** _____

NCDOT Representative: _____ **Sign:** _____

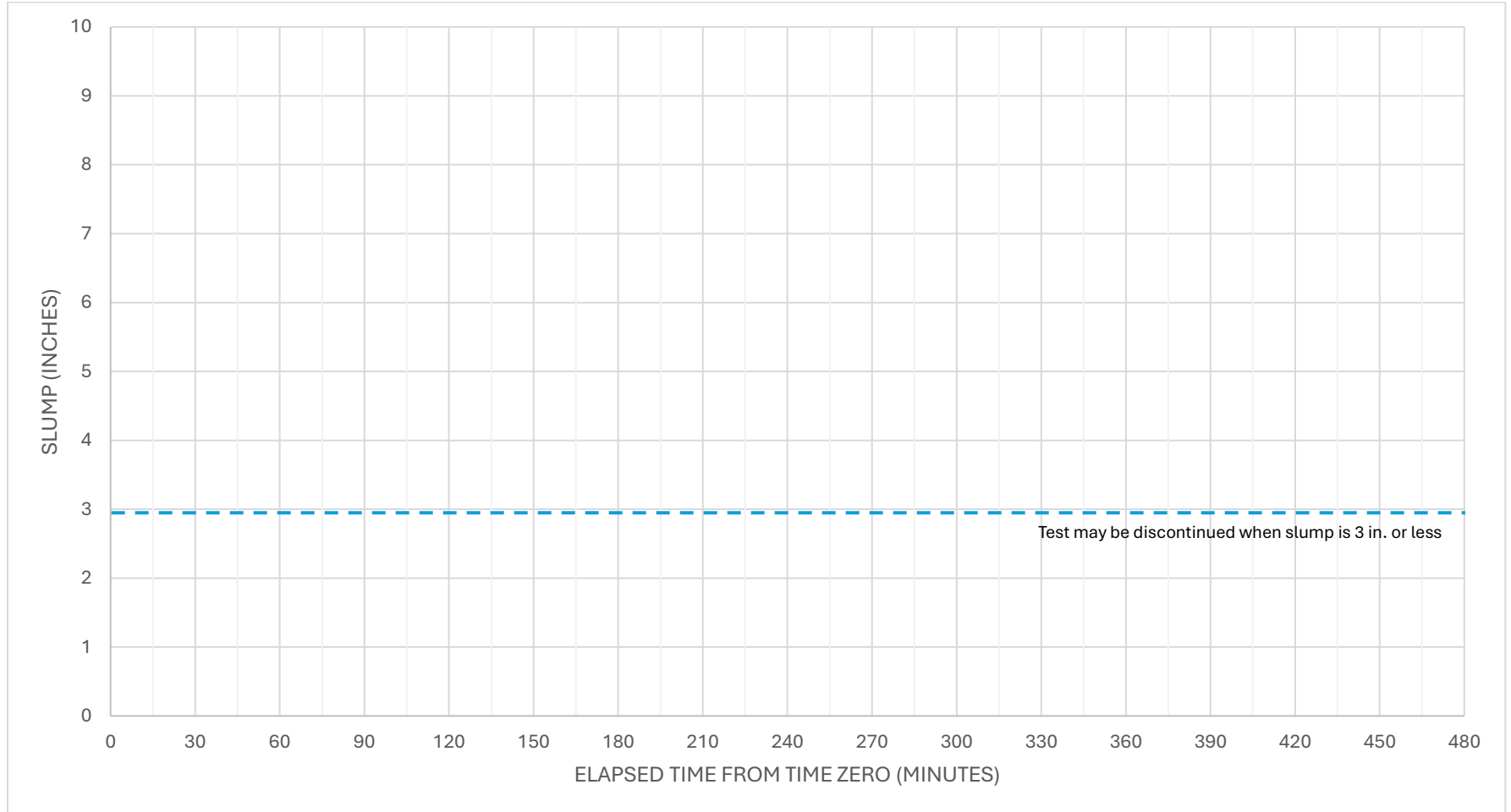
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Attachment 2 – Slump Loss Test Graph

Project #: _____ **Date:** _____ **Mix Design #:** _____

Time Zero:



Plot each measured slump at the corresponding elapsed time and connect consecutive test points.