

# Materials Sampling Guide

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### Section 16

#### Portland Cement Concrete For Structures, Culverts and Miscellaneous Construction

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DATE: 08-23-00  
REVISED: 02-12-04

Minimum Material Certificate, Sample and Inspection Requirements							
MATERIAL	TYPE OF TEST	Q.C. SAMPLING AND TESTING BY CONTRACTOR	VERIFICATION SAMPLING AND TESTING BY NDOR			LOCATION OF ADDITIONAL INFORMATION	
			FIELD PERSONNEL	BRANCH LAB	LINCOLN LAB	NOTE No.	PAGE No.
<b>Section 16 - Portland Cement Concrete For Structures, Culverts, and Miscellaneous Construction</b>							
1) Coarse Aggregates	Gradation & Quality	-----	<p>One gradation test for each 750 cubic yards of aggregate, or fraction thereof, for acceptance either at the source or on the project.</p> <p>Minimum of one gradation test for each day's operation or a sufficient number for proper control.</p> <p>Project personnel to submit 60 pound sample needed to perform the testing shown under the Lincoln Lab column.</p> <p>The sample shall be taken at the project.</p>	-----	<p>One 60 pound sample for quality and gradation tests each 2,250 cubic yards. or fraction thereof. (Duplicate of sample tested in the field)</p>	1 5 6	1 4 5
2) Fine Aggregate Sand Gravel	Gradation & Quality	-----	<p>One gradation test for each 750 cubic yards of aggregate, or fraction thereof, for acceptance either at the source or on the project.</p> <p>Minimum of one gradation test for each day's operation or a sufficient number for proper control.</p> <p>Project personnel to submit the 10 and 60 pound sample needed to perform the testing shown under the Lincoln lab column.</p> <p>The sample shall be taken at the project.</p>	-----	<p>One 60 pound sample for quality test first 1,500 cubic yards, if so designated on DR FORM 324 "Source of Aggregates to be Used"</p> <p>. One 10 lb. sample for gradation tests each 1,500 cubic yards, or fraction thereof, thereafter. (Duplicate of sample tested in the field)</p>	1 4 6	1 4 5

Minimum Material Certificate, Sample and Inspection Requirements							
MATERIAL	TYPE OF TEST	Q.C. SAMPLING AND TESTING BY CONTRACTOR	VERIFICATION SAMPLING AND TESTING BY NDOR			LOCATION OF ADDITIONAL INFORMATION	
Section 16- Portland Cement Concrete For Structures, Culverts, and Miscellaneous Construction (continued)			FIELD PERSONNEL	BRANCH LAB	LINCOLN LAB	NOTE No.	PAGE No.
3) Lightweight Aggregate	Gradation & Quality	-----	See Specifications, Supplemental Specifications and/or Project Special Provisions  Project personnel to submit the 20 pound sample needed to perform the testing shown under the Lincoln Lab column.  The sample shall be taken at the project.	See Specifications, Supplemental Specifications and/or Project Special Provisions	One 20 pound sample per project	---	---
4) All Aggregates	Moisture	-----	Determinations as necessary for adequate control of aggregate proportions and total water content of the concrete.  A minimum of once for each one-third day's operation.	-----	-----	1	1
5) Mixing Water	Quality	-----	One Gallon sample to be submitted to Lincoln Lab, when of questionable nature.	-----	-----	---	---
6) Plastic Concrete	Air Content Slump	-----	Minimum of one test for each day's operation, or sufficient number for proper control.  See Specifications, Supplemental Specifications and / or Project Special Provisions	-----	-----	1 6	1 5

Minimum Material Certificate, Sample and Inspection Requirements							
MATERIAL	TYPE OF TEST	Q.C. SAMPLING AND TESTING BY CONTRACTOR	VERIFICATION SAMPLING AND TESTING BY NDOR			LOCATION OF ADDITIONAL INFORMATION	
Section: 16 – Portland Cement Concrete For Structures, Culverts, and Miscellaneous Construction (continued)			FIELD PERSONNEL	BRANCH LAB	LINCOLN LAB	NOTE No.	PAGE No.
7) Concrete Test Cylinders	Compressive Strength	-----	<p>One set of three cylinders for the first 100 cubic yards.</p> <p>A second set of three cylinders are required if the days placement of concrete exceeds 100 cubic yards.</p> <p>Note: If the days placement of concrete does not exceed 150 cubic yards, one set of cylinders is acceptable.</p> <p>Cylinders will be tested in the Branch Lab or the Lincoln Lab.</p>	Cylinders will be tested in the Branch Lab or Lincoln Lab.	Cylinders will be tested in the Branch Lab or Lincoln Lab.	1 6	1 5

Item or Group	Minimum Material Certificate, Test and Inspection Requirements					Note No	Page No
	Sample Required (Tests to be made at Lincoln laboratory)	Approved Products Lists	Manufacturer Certified Tests Required	Manufacturer Certification of Compliance Required	Location of Additional Information		
<b>SECTION: 16 – Portland Cement Concrete For Structures, Culverts and Miscellaneous Construction (continued)</b>							
8) Concrete Curing Materials						---	---
A) Liquid Compounds	Yes – One quart sample from each lot or batch unless shipped from tested and approved stock.	No	No	No		8	6
B) Plastic Film	No	No	No	No		---	---
C) Burlap Cloth	No	No	No	No		---	---
9) Reinforcement Bars (Including Dowel Bars)	Yes – Two samples six foot long from every bar designation and heat number unless shipped from tested and approved stock.	No	Yes	No		9	6
10) Welded Steel Wire Fabric	Yes – One sample 36 inches square from each 75,000 square feet of fabric unless shipped from tested and approved stock.	No	No	No		9	6
11) Air-Entraining Agent and Concrete Admixtures	No	Yes	No	No		7	5