

## OKLAHOMA DEPARTMENT OF TRANSPORTATION

200 N. E. 21st Street

Oklahoma City, OK 73105-3204

---

DATE: April 30, 2004

TO: Resident Engineers

FROM: Reynolds Toney, Materials Engineer

SUBJECT: Changes to Acceptance Sampling Guide  
(Appendix 700 A, pages; 17, 18, 23)

---

This letter formally describes the changes to the Acceptance Sampling Guide presented at the Resident Engineers Academy on March 10, 2004. Revisions to specific pages of Appendix 700 A are attached. Communicate this information to all personnel involved in sampling, testing and acceptance of concrete materials. This is not a major revision to the entire sampling guide but a change to three specific categories of materials. A major rewrite of the Sampling Guide is in progress.

### Changes :

- Eliminate project aggregate qualification samples.
- Eliminate project Hydraulic (Portland) cement samples obtained and submitted by Residency.
- Eliminate project Fly ash samples obtained and submitted by Residency.

### Aggregates:

Under the current Appendix 700A, "Frequency Guide Schedule for Sampling and Testing Acceptance", qualification samples of coarse and fine aggregate are required to be submitted to the Materials Division for each project. The Materials Division has a system in place for qualifying aggregate sources for use in concrete. Now that a listing of qualified aggregate sources has been made readily available, the current requirement for a project qualification sample is no longer necessary. Elimination of project aggregate qualification samples will result in substantial time savings, allowing us to concentrate more resources on the more important and practical matter of monitoring aggregate quality and aggregate producers. Project acceptance of aggregates is based on gradation testing, **this change will not affect the existing aggregate gradation testing required to be conducted by the Residency Labs.**

## Hydraulic Cement and Fly Ash:

Under the current Appendix 700A, “Frequency Guide Schedule for Sampling and Testing Acceptance”, the sampling frequency states, “Identify as being from an approved source. 1 per 1,000 tons for project over 50 tons”. Hydraulic Cement and Fly ash are currently accepted on the basis of manufacturer supplied certification, therefore the purpose of the current sampling requirement is for monitoring of the manufacturer’s quality control. We have implemented a more rational approach to quality control monitoring through the use of split samples with the manufacturer, and an evaluation of the split sample results. The approval and agreement process is available on our web site. The Materials Division will test split samples from the manufacturer, and obtain random field samples utilizing Independent Assurance personnel. The Residency will be required to verify the material is from an approved source, as documented in Field Acceptance Method Code 5001 (attached). Sections 414 and 509 of the Sampling Guide are affected by these proposed changes.

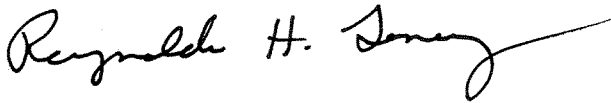
## Benefits of the changes include:

- Less sampling by Residency. Virtually all “failing” samples of cement and fly ash are due to mislabeling of samples and/or contamination during sampling. (this can be a difficult material to sample - without contamination, at a batch plant)
- More emphasis on using “approved” materials.
- Less testing by Materials Division, but more thorough analysis and comparison of results with the manufacturers’ Quality control samples.
- Problem materials can be identified and investigated sooner since Materials Division Lab won’t be seriously backlogged with numerous project samples.
- Utilization of Sitemanager’s material management functionality now.

## Implementation:

- Replace pages 17, 18, 23 of Appendix 700A with the attached copies.
- These changes became effective as of March 10, 2004, when announced at the RE Academy.
- These changes shall be applied to ongoing projects and all future projects.
- The Materials Division will not conduct routine testing on these materials if they are on the approved list unless:
  - ♦ A problem is observed in the field, plant, or source of supply, that may be attributed to the material quality or source.
  - ♦ The observed problem is thoroughly described and documented with sample submittal.
- Personnel responsible for mix design reviews should verify sources listed in the mix design are on the approved list published on the web page.
- Personnel responsible for sampling materials and inspecting sources or production plants, should verify sources being used are on the approved list published on the web page.

Sincerely,



Reynolds Toney, P.E.  
Materials Engineer

Attachment

cc: Materials File  
George Raymond  
Reynolds Toney  
Scott Seiter  
Kenny Seward  
John Benson



## Field Acceptance Method

CODE: **5001**

Page: 1 of 1

Last Revised: 01/05/04

### BASIS

Material quality of products coded 5001 is monitored by the Materials Division per their quality monitoring procedure(s). Acceptance of products coded 5001 is based on:

- Determining what product is being used
- Confirming it is the appropriate product
- Verifying the product is approve listed
- Documenting product information to project records

### PROCEDURE

1. Determine what product is being used. Whenever possible, look for manufacturers' labels or tags attached to delivered items. When that is not possible, inspect batch or delivery tickets. When batched or mixed, inspect documents at the batch or mixing plant. Every effort should be made to make this determination at point and/or time of delivery.

2. When applicable, verify the product being used is the same product listed as an ingredient on the approved mix design or otherwise specified in governing documents.

3. Verify the product has an unexpired listing on the Approved Materials List.

4. Document the product delivered is the product accepted by documenting **Product Name** (in the same manner as approved listed) to project records. This may be done by copying a page of the Approved Materials List and marking the product, completing a sample information record or documentation in project or inspection records.

The project documenting objective is to record the Product Name information in the same manner as it appears on the Approved Materials List and, at the same time, avoid requiring or generating duplicate or otherwise redundant documentation.

### NOTES

1. When visiting plants to obtain samples of other materials, review documentation of these delivered products as well. Verification of materials and sources should be an ongoing effort throughout project duration.

2. This Acceptance Method has a field observed material and source focus as opposed to a material and/or quantity represented by a piece of paper.

### FREQUENCY

Minimum is once per product per project, with continuous awareness that the appropriate nature and product information are unchanged.

### REFERENCE DOCUMENTS

None

Spec Section	Item	Maps	Tests	Test Method	Sampling Frequency	Sampling Location	Size of Sample
			Rice Gravity	T-209	1 per 5,000 tons production	Truck	
			Road Density	L-14	3 per 1,000 tons	Roadway: Random Locations	6" Core or square
			Nuclear Density ASTM-D-2950		3 per 1,000 tons	Roadway	Average of 4 2 min counts
414	Portland Cement Concrete Pavement						
	Portland Cement and Fly Ash	701.02	<del>Lab</del>	Certification	Identify as being from an approved source. 1 per 1,000 tons for project over 50 tons.	Transport or Silo	8 lbs.
	Air Entraining Admixtures	701.03	Lab	Certification	Identify as Lab approved source. (Check for compatibility)		
	Chemical Admixtures	701.03	Lab	Lab	Identify as Lab approved source. (Check for compatibility)		
	Water	701.04	Lab	Lab	Questionable source to Lab	At Source	1 qt.
	Fine Aggregate	701.05	<del>Quality</del>	<del>Lab</del>	<del>Qualification sample each source.</del>	<del>Stockpile at mixing plant</del>	<del>20 lbs.</del>
			Sieve Analysis Fineness Modulus	T-27 M-6	1 per 500 tons Note: for paving projects over 20,000 sq. yds.: 1 per day when stockpiling over 500 tons per day.	Stockpile at mixing plant	20 lbs.
			Clay lumps, etc.	L-9	As required when questionable	Same	Same

\* Revised March 10, 2004. Go to the ODOT Materials Division Web page for:

- Current listing of approved materials. (aggregates, hydraulic cement, fly ash)
- Guidance on field acceptance procedures (method 5001) for accepting hydraulic (Portland) cement and fly ash.

Spec Section	Item	Mat'l's	Tests	Test Method	Sampling Frequency	Sampling Location	Size of Sample
	Coarse Aggregate	701.06	Quality	Lab	Qualification sample each source		1st sample - 75 lbs min. 2nd sample - 50 lbs min.
			Sieve Analysis & Amount of Material Finer than No. 200 Sieve	T-27 T-11	1 per 500 tons Note: For paving projects over 20,000 sq. yds.: 1 per day when stockpiling over 500 tons per day.	Stockpile at mixing plant	50 lbs.
	Preformed Expansion Joint filler (Bituminous Type)	701.08	Lab		Identify as pretested, otherwise sample each shipment.		1 sq. ft.
	Performed Expansion Joint Filler (Non-Extruding and Resilient Types)	701.08	Lab		Identify as pretested, otherwise sample each shipment.		1 sq. ft.
	Ready-Mixed Cold Applied Joint Sealer	701.08			Certification		
	Preformed Elastomeric Compression Joint Sealer	701.08	Lab		Certification Sample each size to Lab for check tests. Dimensional measurements in field as need is indicated.	Project Site	2-24" pieces
	Joint Sealer	701.08			Certification		
	Dowel Assembly	723	Lab		Identify as pretested, otherwise 2 dowels and assembly of each shipment.	Project Site	
	Reinforcing Steel	723	Lab		Identify as pretested, otherwise 2 - 24" bars each size each heat.	Project Site	



\* Revised March 10, 2004. Go to the ODOT Materials Division Web page for:

- Current listing of approved materials. (aggregates, hydraulic cement, fly ash)
- Guidance on field acceptance procedures (method 5001) for accepting hydraulic (Portland) cement and fly ash.

Spec Section	Item	Matls	Tests	Test Method	Sampling Frequency	Sampling Location	Size of Sample
507	Timber Structures						
	Treated Timber	727.01 731.01	Lab		Identify as pretested and marked.		
508	Concrete Culverts,				(Structural concrete same as for Section 509. Reinforcing Steel same as for Section 511).		
509	Structural Concrete						
	Portland Cement and Fly Ash	701.02	Lab		See P. C. Concrete Pavement, Section 414.		
	Fine Aggregate	701.05	<del>Quality</del>	<del>Lab</del>	<del>Qualification sample each source.</del>	<del>Stockpile</del>	<del>20 lbs.</del>
			Sieve Analysis	T-27	1 per 500 tons	Stockpile at mixing plant	20 lbs.
			Fineness Modulus	M-26			
	Coarse Aggregate	701.06	<del>Quality</del>	<del>Lab</del>	<del>Qualification sample each source.</del>	<del>Stockpile</del>	<del>1st sample - 75 lbs. min. 2nd sample - 50 lbs. min.</del>
			Sieve Analysis & amount of material finer than #200 sieve	T-27 T-11	1 per 500 tons	Stockpile at Mixing Plant	50 lbs.
	Air Entraining Admixtures	701.03	Lab		Certification Identify as Lab approved source. (Check for compatibility).		
	Chemical Admixtures	701.03	Lab		Certification Identify as Lab approved source. (Check for compatibility).		

\* \* \*

\* Revised March 10, 2004. Go to the ODOT Materials Division Web page for:

- Current listing of approved materials. (aggregates, hydraulic cement, fly ash)
- Guidance on field acceptance procedures (method 5001) for accepting hydraulic (Portland) cement and fly ash.