

PORTLAND CEMENT CONCRETE PAVEMENT, PAVEMENT WIDENING, BASE WIDENING CURB & GUTTER, & PAVED SHOULDERS

October 18, 2011
Supersedes April 21, 2009

Section 2122, 2201, 2213, 2301, 2302, 2310, Quality Management Concrete (QM-C)

Matls. IM 204
Appendix E (US) Units

MATERIAL OR CONSTRUCTION ITEM	TESTS	METHOD OF ACCEPTANCE & RELATED IMS	QUALITY CONTROL				INDEPENDENT ASSURANCE & VERIFICATION S&T				REMARKS		
			SAMPLE BY	FREQ.	SAMPLE SIZE	TEST BY	REPT.	S&T TYPE	SAMPLE BY	FREQ.		SAMPLE SIZE	TEST BY
SOURCE INSPECTION													
Aggregates-Fine (4110)		AS 209											
Aggregate-Coarse (4115), Intermediate		AS 209											
Portland Cement (4101)	Quality	AS 401											
Fly Ash (4108)	Quality	AS 491.17											
GBBFS (Ground Granulated Blast Furnace Slag)	Quality	AS 491.14											
Curing Compounds (4105)	Lab Tested	405											
Clear Curing Compounds (4105)		AB 405.07											
Air Entraining Admixture (4103)	Quality	AB 403											
Water Reducing Admix. (4103)	Quality	AB 403											
Retarding Admixture (4103)	Quality	AB 403											
Joint Sealer (4136.02)	Lab Tested	436.01, 436.02,436.03											
Backer Rod (4136.02)	Lab Tested	AB 436.04											
Mixing Water (4102)	Lab Tested												

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					SAMPLE BY	FREQ.	SAMPLE SIZE	TEST BY	REPORT	S&T TYPE	SAMPLE BY	SAMPLE SIZE	TEST BY	REPORT	
SOURCE INSPECTION															
Steel Reinforcement (4151) Dowels Tie Bars General Use															
	Quality	AS	451												
	Quality	AS	451												
	Quality	AS	451												
PLANT INSPECTION															
Aggregates-Fine (4110/4111)	Grad QMC	302 306 336	CONTR	1/1500cy	IM 301	CONTR	800240	V	RCE/ CONTR	Sample 1/day, test 1 st day + 2/lot	IM 301	RCE			
	Grad Non-QMC	302 306 336	CONTR	1/day	IM 301	CONTR		IA	RCE/ CONTR	Sample 1/day, test 1 st day + 1/lot	IM 301	RCE			
	Moist	308, 527	CONTR	1/half day	1000 gm	CONTR		IA				DME		Not applicable with probe	
	Sp. Gr.	307	CONTR	IM 527	1000 gm	CONTR									
	Quality	AS	209												
AS-Approved Source ASD-Approved Shop Drawing S&T-Sampling & Testing		Cert A-Type A Certification Cert C-Type C Certification Cert D-Type D Certification				RCE-Resident Construction Engineer/Project Engineer DME-District Materials Engineer CTRL-Central Materials Office CONTR-Contractor				IA-Independent Assurance V-Verification				QMC-Quality Management Concrete	

NOTE: IA may be accomplished by system approach or on a per project basis (IA at 1 per 100,000 sy of concrete) at the discretion of the DME.

NOTE: When Certified Plant Inspection is not provided, the engineer is responsible for performing quality control sampling and testing.

NOTE: RCE/CONTR indicates that the contractor shall assist in the sampling at the direction of and witnessed by the project engineer.

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			SAMPLE BY	FREQ.	SAMPLE SIZE	TEST BY	REPORT	S&T TYPE	SAMPLE BY	FREQ.	SAMP. SIZE	TEST BY	REPORT	
PLANT INSPECTION														
Aggregates-Coarse (4115), Intermediate	Grad QMC	302 306 336	CONTR	QMC 1/1500 cy	IM 301	CONTR	800240	V	RCE/ CONTR	Sample 1/day,test 1 st day+2/lot	IM 301	RCE		
	Grad Non-QMC	302 306 336	CONTR	1/day	IM 301	CONTR		IA	RCE/ CONTR	Sample 1/day, test 1 st day + 1/lot	IM 301	RCE		
	Moist	308	CONTR	1/half day	IM 301	CONTR								
	Sp. Gr.	307	CONTR	IM 527	IM 301	CONTR								
	Quality	AS 209						V	DME	1/100,000 sy	50 lb	CTRL		
Portland Cement (4101)	Quality	AS Cert D	CONTR	Each Load				V	DME	1/100,000 sy	15 lb	CTRL		
	Cement Yield		CONTR	1/10,000 cy		CONTR	820912							
Fly Ash	Quality	AS Cert D		Each Load			800240	V	DME	1/100,000 sy	15 lb	CTRL		
GGBFS(Ground Granulated Blast Furnace Slag)	Quality	AS Cert		Each Load				V	DME	1/100,000 sy	15 lb	CTRL		
Air Admixture	Quality	AS 403						V	DME	1/batch	1 pint	CTRL		Sample batches not previously reported or as required by DME
Water Reducer	Quality	AS 403						V	DME	1/batch	1 pint	CTRL		
Retarding Admixture	Quality	AS 403						V	DME	1/batch	1 pint	CTRL		
AS-Approved Source ASD-Approved Shop Drawing S&T-Sampling & Testing		Cert A-Type A Certification Cert C-Type C Certification Cert D-Type D Certification	RCE-Resident Construction Engineer/Project Engineer DME-District Materials Engineer CTRL-Central Materials Office CONTR-Contractor				IA-Independent Assurance V-Verification							
QMC-Quality Management Concrete														

NOTE: IA may be accomplished by system approach or on a per project basis (IA at 1 per 100,000 sy of concrete) at the discretion of the DME.

NOTE: When Certified Plant Inspection is not provided, the engineer is responsible for performing quality control sampling and testing.

NOTE: Quality samples not required when mix quantity is less than 2000 sq. yds., except for curing compound.

NOTE: RCE/CONTR indicates that the contractor shall assist in the sampling at the direction of and witnessed by the project engineer.

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			SAMPLE BY	FREQ.	SAMPLE SIZE	TEST BY	REPT.	S&T TYPE	SAMP. BY	FREQ.	SAMPLE SIZE		TEST BY
GRADE INSPECTION													
Chloride Solution	Concentration	373	RCE	1/day									
Steel Reinforcement: Dowels Dowel Basket Assembly Tie Bars General Use													
	Quality	AS 451.03B						V	DME	1/District/Yr	2 ft	CTRL	
	Quality	AS 451 Cert D 451.03B											
	Quality	AS 451						V	DME	1/District/Yr	2 ft	CTRL	
	Quality	AS 451						V	DME	1/District/Yr	48 in	CTRL	
Curing Compound (4105)	Quality	Tested 405						V	DME	1/batch	1/qt	CTRL	Sample batches not previously reported or as required by DME
Plastic Concrete	Air QMC	318 327	CONTR	1/350 cy, 1/100 cy ready mix		CONTR	E115	V	RCE	1/700 cy, 1/350 cy ready mix 1/100,000 sy		RCE	Min. 1 test/pour
	Air Non-QMC	318 327					E115	V	RCE	1/700 cy, 1/100 cy ready mix 1/100,000 sy		RCE	Min. 1 test/pour
	Slump	317						IA	RCE	1/700 cy, min 1/pour		RCE	For hand finish or fixed form only
	Grade Yield		RCE	1/1000 cy		RCE							
Hardened Concrete	Beams**	316, 327, 328	RCE	2/day		RCE	E115						
	Thickness*	346, 347						V	RCE/ CONTR	1/2000 sy 10%		RCE DME	
	Smoothness	341	CONTR		100%	CONTR		IA	DME		10%	DME	
AS-Approved Source ASD-Approved Shop Drawing S&T-Sampling & Testing		Cert A-Type A Certification Cert C-Type C Certification Cert D-Type D Certification											IA-Independent Assurance V-Verification
													QMC-Quality Management Concrete

*A thickness cores sent to Central Lab for additional project information testing (Interstate and Primary only.) **None required when maturity is used.

NOTE: IA may be accomplished by system approach or on a per project basis (IA at 1 per 100,000 sy of concrete or as noted in the table) at the discretion of the DME.

NOTE: Quality samples not required when mix quantity is less than 2000 sq. yds., except for curing compound.

NOTE: RCE/CONTR indicates that the contractor shall assist in the sampling at the direction of and witnessed by the project engineer. **NOTE:** Form #E115 available from the Office of Construction.