STRUCTURAL CONCRETE, REINFORCEMENT, FOUNDATIONS & SUBSTRUCTURES, CONCRETE STRUCTURES, CONCRETE FLOORS, & CONCRETE BOX, ARCH & CIRCULAR CULVERTS

October 18, 2011
Supersedes April 19, 2011

Sections 2403, 2404, 2405, 2406, 2412, & 2415

Matls. IM 204
Appendix H (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	REPORT	S&T TYPE	SAMPLE BY	FREQ.	SAMPLE SIZE	TEST BY	REPORT	
SOURCE INSPECTION														
Aggregate-Fine (4110)		AS 209												
Aggregate-Coarse (4115)		AS 209												
Granular Backfill (4133)		AS 209												
Portland Cement (4101)	Quality	AS 401												
Fly Ash (4108)	Quality	AS 491.17												
Mixing Water (4102)	Quality							V	RCE	1/source	1pt	CTRL		Not required for potable water from Municipal Supply
GGBFS (Ground Granulated Blast Furnace Slag)	Quality	AS 491.14												
Air Entraining Admixture	Quality	AS 403												
Retarding Admixture	Quality	AS 403												
Water reducing Admixture	Quality	AS 403												
Curing Compound, White (4105)	Lab Tested	AS 405						V	DME	1/batch	1qt	CTRL		
Curing Compound, Clear (4105)		AS 405.07												

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Cert A-Type A Certification
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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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SOURCE INSPECTION														
Pre-formed Joint Sealer (4136)	Lab-Tested	AS 436.02 436.05												
Reinforcing Steel Bars (4151)	Quality	AS 451 451.03B												
Steel Pile (4167)	Quality	467												
Concrete Pile (4166)	Quality	AS 570												
Timber Pile (4165)	Quality	Cert A 462 AS												
Timber (4162) & Lumber (4163		Treated-Cert A 462 AS												
Concrete Anchors	Quality	AS 453.09												
Epoxy Grout	Quality	AS 491.11												
Concrete Sealer	Quality	AS 491.12												
Subdrain Pipe (4143)	Quality	AS 443, 448												
Neoprene Bearing Pads (4195)		AS 495.03												
Bronze Bearing Plates (4190.03)		AS D/Cert A												

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SOURCE INSPECTION														
Steel Masonry Plate (4152)		ASD/Cert A												
Precast Units (2407)	Quality	AS 570												
Anchor Bolts (lighting, signing, handrail, structures) (4153)	Lab Tested	ASD												
Structural Steel (4152)	Quality	Cert A												Monitor Sample According to plans or other instructions
Aluminum & Steel Bridge Rail & Anchor Assembly		ASD												
Conduit (Electrical) (4185.10)) Steel		AS												
Conduit (Plastic) (4185.10)	Lab Tested							V	DME	1/size	4'	CTRL		
Bentonite		Visual												
Flowable Mortar	Lab Tested	Approved Trial Mix 525, 375												Tested by DME
Fabric Formed Revetment		Approved Trial Mix 375												Tested by DME

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			SAMPLE BY	FREQ.	SAMPLE SIZE	TEST BY	REPORT	S&T TYPE	SAMPLE BY	FREQ.	SAMPLE SIZE	TEST BY	REPORT	
PLANT INSPECTION														
Aggregate- Fine (4110)	Gradation Deck	302, 306 336	CONTR	IM 528	IM 301	CONTR	800240	V IA	RCE/ CONTR	Sample & Test 1/deck/wk	IM 301	RCE DME	Plant Monitor Workbook	
	Gradation All other		CONTR	IM 528	IM 301	CONTR		V IA	RCE/ CONTR	Sample 1/wk Test 1st day +20%	IM 301	RCE DME	Plant Monitor Workbook	
	Moisture	308, 528	CONTR	IM 528	IM 301	CONTR								See IM 528 if Moisture Probe is used
	Sp. Gr.	307	CONTR	IM 528	IM 301	CONTR								
	Quality	AS 209												
Aggregate- Coarse (4115)	Gradation Deck	302, 306 336	CONTR	IM 528	IM 301	CONTR		V IA	RCE/ CONTR	Sample & Test 1/deck/wk	IM 301	RCE DME	Plant Monitor Workbook	
	Gradation All other		CONTR	IM 528	IM 301	CONTR		V IA	RCE/ CONTR	Sample 1/wk Test 1st day +20%	IM 301	RCE DME	Plant Monitor Workbook	
	Moisture	308, 528	CONTR	IM 528	2000gm	CONTR								
	Sp. Gr.	307	CONTR	IM 528	2000gm	CONTR								
	Quality	AS 209						V	DME	1/1000 cy	50 lb	CTR L		(1)
Portland Cement	w/c ratio	528	CONTR	1/pour		CONTR								
	Quality	AS Cert D						V	DME	1/1000 cy	15 lb	CTR L		(1)

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(1) These verification samples for concrete materials not required when mix quantity is less than 50 cu. yd.

NOTE: IA may be accomplished by system approach or on a per project basis (IA at 1 per 1000 cy of concrete) at the discretion of the DME according to IM 207.

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PLANT INSPECTION														
Fly Ash	Quality	AS Cert D		Each Load			800240							
GGBFS(Ground Granulated Blast Furnace Slag)	Quality	AS Cert D		Each Load										
Air-Entraining Admixture (4103)		AS 403						V	RCE	1/batch	1pt	CTRL		(1) Sample lots/batches not previously reported or as required by DME
Retarding Admixture		AS 403						V	RCE	1/batch	1pt	CTRL		
Water Reducing Admixture (4103)		AS 403						V	RCE	1/batch	1pt	CTRL		
GRADE INSPECTION														
Plastic Concrete	Air Content	318, 327					E145*	V IA	RCE	1/30 cy		RCE DME		
	Slump	317, 327						V IA	RCE	1/30 cy		RCE DME		
	Beams	316, 327, 328							RCE	2/placement		RCE		If required per 2403
	Cylinders								DME	3/project		DME		Primary Projects Only (Information only)

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(1) These verification samples for concrete materials not required when mix quantity is less than 50 cu. yd.

NOTE: IA may be accomplished by system approach or on a per project basis (IA at 1 per 1000 cy of concrete) at the discretion of the DME according to IM 207.

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*Available from the Office of Construction.

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GRADE INSPECTION														
Reinforcing Steel (4151)	Quality	AS Cert A		Each Shipment			Field Book	V	DME	IM 451	6 ft	CTRL		
Reinforcing Steel Epoxy Coated (4151)	Quality	AS Cert A		Each Shipment			Field Book	V	DME	1 bar	6 ft	CTRL		Will be acceptance tested for coating
Steel Pile (4167)	Quality	AS Cert A		Each Heat			Field Book		DME	IM 467		CTRL		
Timber Pile (4165)	Quality	AS 462 Cert A						V	DME	IM 467		CTRL		No grade requirement Charge numbers on butt end.
Anchor Bolts (lighting, signing, handrail, structures)	Lab Tested	ASD						V	DME	1/project	1 bolt w/nut & washer	CTRL		Sample only if not source inspected
Steel Masonry Plates (4152)		ASD Cert A		Each Shipment			Field Book							Approved by Materials Department
Bronze Bearing Plates (4190.03)	Lab Tested							V	DME	1/project	1 only	CTRL		Sample only if not source inspected
Neoprene Bearing Pads (4195)		AS 495.03		Each Shipment			820905							
Alum. Bridge Rail & Anchor Assembly		ASD		Each Shipment			Field Book							Approved By Materials Dept.
Drains (Std Steel Pipe)(as per plan)	Dimensions Galvanized	ASD Visual 332						V	DME	1/project		DME		

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GRADE INSPECTION														
Timber (4162) & Lumber (4163)	Quality	AS 462 Treated-Cert A												
Subdrain Pipe (4143)	Quality	AS Cert D 443, 448		Each Shipment										
Flowable Mortar (2506)	Flow Test	375						V	RCE	1/4 hours (critical) Visual (noncritical)		RCE	Plant Report	Mix Design approval by DME
Grout for Stone Revetment 2507 and Fabric Formed Revetment	Air Content	340						V	RCE	1/half day			Plant Report	Mix Design approval by DME
	Flow Test	375						V	RCE	1/half day				Fabric Formed Revetment Only
	Compressive Strength	315							DME	3/project		DME		Fabric Formed Revetment Only Primary Projects Only (Information only)
Bentonite	Flow Test	Visual 375				RCE								
Hardened Concrete	Smoothness	341	CONTR	100%		CONTR	821301	V	DME	10%		DME		

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