

October 19, 2010
Supersedes October 16, 2007

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												
Aggregate-Coarse (4115)		AS												
Granular Backfill (4133)		AS												
Portland Cement (4101)	Quality	AS												
Fly Ash (4108)	Quality	AS												
Mixing Water (4102)	Quality							V	RCE	1/source	1 L	CTRL	731	Not required for potable water from Municipal Supply
GBFS (Ground Granulated Blast Furnace Slag)	Quality	AS												
Air Entraining Admixture	Quality	AS												
Retarding Admixture	Quality	AS												
Water reducing Admixture	Quality	AS												
Curing Compound, White (4105)	Lab Tested													
Curing Compound, Clear (4105)		AS												
AS-Approved Source														
ASD-Approved Shop Drawing														
S&T-Sampling & Testing														
			Cert A-Type A Certification				RCE-Resident Construction Engineer/Project Engineer				IA-Independent Assurance			
			Cert C-Type C Certification				DME-District Materials Engineer				V-Verification			
			Cert D-Type D Certification				CTRL-Central Materials Office							
							CONTR-Contractor							

NOTE: RCE/CONTR indicates that the Contractor shall assist in the sampling at the direction of and witnessed by the Project Engineer.

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

Matls. IM 204
Appendix H (Metric) Units

October 19, 2010
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[Sections 2403, 2404, 2405, 2406, 2412, & 2415](#)

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														
Preformed Joint Sealer (4136)	Lab- Tested	AS 436.02												
Reinforcing Steel Bars (4151)	Quality	AS 436.05 451 451.03B												
Steel Pile (4167)	Quality	467												
Concrete Pile (4166)	Quality	AS 570												
Timber Pile (4165)	Quality	Cert A AS 462												
Timber (4162) & Lumber (4163)	Treat	ed-Cert A 462												
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)		ASD/Cert A												
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				

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			SAMPLE BY	FREQ.	SAMPLE SIZE	TEST BY	REPORT	S&T TYPE	SAMPLE BY	FREQ.	SAMPLE SIZE	TEST BY	REPT.
SOURCE INSPECTION													
Steel Masonry Plate (4152)		ASD/Cert A											
Precast Units (2407)	Quality	AS 570											
Anchor Bolts (lighting, signing, handrail) (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	1 m	CTRL	
Bentonite		Visual											
Flowable Mortar	Lab Tested	Approved Trial Mix 525, 375											Tested by DME
Grout for Revetment Armor Units and Fabric Formed Concrete Structure Revetment		Approved Trial Mix 375											Tested by 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

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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, 336	306	CONTR	IM 528	IM 301	CONTR	800240									IA V	DME RCE/ CONTR	Sample & Test 1/deck/wk	IM 301	DME RCE	Plant Monitor Workbook			
	ion All other			CONTR	IM 528	IM 301	CONTR										IA V	DME RCE/ CONTR	Sample 1/wk Test 1 st day +20%	IM 301	DME RCE	Plant Monitor Workbook			
		308,	528	CONTR	1/lot	1000 gm	CONTR																		See IM 528 if Moisture Probe is used
	Gr.	307		CONTR	IM 528	1000 gm	CONTR																		
	Quality		AS	209																					
Aggregate- Coarse (4115)	Gradation Deck	302, 336	306	CONTR	IM 528	IM 301	CONTR										IA V	DME RCE/ CONTR	Sample & Test 1/deck/wk	IM 301	DME RCE	Plant Monitor Workbook			
	ion All other			CONTR	IM 528	IM 301	CONTR										IA V	DME RCE/ CONTR	Sample 1/wk Test 1 st day +20%k	IM 301	DME RCE	Plant Monitor Workbook			
		308,	528	CONTR	1/lot	2000gm	CONTR																		
Moisture	Gr.	307	209	CONTR	IM 528	2000gm	CONTR										V	DME 1/	750 m³	22 kg	CTRL			(1)	
		AS	528	CONTR	1/pour		CONTR										V	DME 1/	750 m³	7 kg	CTRL			(1)	
	Quality																								
Portland Cement	w/c ratio			CONTR			CONTR																		
	Quality	AS Cert	D																						
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																		

(1) These verification samples for concrete materials not required when mix quantity is less than 40 m³.

NOTE: IA may be accomplished by system approach or on a per project basis (IA at 1 per 750m³ of concrete) at the discretion of the DME according to IM 207.

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.	SAMPLE SIZE		TEST BY
PLANT INSPECTION													
Fly Ash	Quality	AS	Cert D		Ea Load								
GGBFS(Ground Granulated Blast Furnace Slag)	Quality	AS	Cert D		Ea Load								
Air Entraining Admixture (4103)		AS	403					V	RCE 1/ batch		0.5 L	CTRL	(1) Sample lots not previously reported or as required by DME
Retarding Admixture		AS	403					V	RCE 1/ batch		0.5 L	CTRL	
Water Reducing Admixture (4103)		AS	403					V	RCE 1/ batch		0.5 L	CTRL	
GRADE INSPECTION													
Plastic Concrete Slump Beams Cylinders	Air Content	316, 327 317, 327 316, 327, 328					M145*	IA V	DME RCE	1/25 m³		DME RCE	
	IA							DME	1/25 m³		DME RCE		
	V							RCE	placement		RCE		
								RCE 2/ DME 3/	project		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				RCE-Resident Construction Engineer/Project Engineer DME-District Materials Engineer CTRL-Central Materials Office CONTR-Contractor				IA-Independent Assurance V-Verification		

(1) These verification samples for concrete materials not required when mix quantity is less than 40 m³.

NOTE: IA may be accomplished by system approach or on a per project basis (IA at 1.1 per 750m³ of concrete) at the discretion of the DME according to IM 207.

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*Available from the Office of Construction.

Sampling & Testing Guide-Minimum Frequency

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GRADE INSPECTION														
Reinforcing Steel (4151)	Quality	AS Cert A		Each Shipment			Field Book	V	DME	IM 451	2 m	CTRL		
Reinforcing Steel Epoxy Coated (4151)	Quality	AS Cert A		Each Shipment			Field Book	V	DME 1	bar	2 m	CTRL		Will be acceptance tested for coating
Steel Pile (4167)	Quality	AS Cert A		Each Heat			Field Book	V	DME	IM 467		CTRL		
Timber Pile (4165)	Quality	AS 462 Cert A						V	DME	IM 462		CRTL		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		
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
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			SAMPLE BY	FREQ.	SAMPLE SIZE	TEST BY	REPORT	S&T TYPE	SAMPLE BY	FREQ.	SAMPLE SIZE	TEST BY		REPORT
GRADE INSPECTION														
Timber (4162) & Lumber (4163)	Quality	AS Treated-Cert A 462												
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 Revestment Armor Units and Fabric Formed Concrete Structure Revestment	Air Content	340						V	RCE	1/half day			Plant Report	Mix Design approval by DME
	Flow Test	375						V	RCE	1/half day				
Bentonite Flow	Compressive Strength	315							DME	3/project				Primary Projects Only (Information only)
	Test	Visual 375			RCE									
Hardened Concrete	Smoothness		CONTR	100%				V	DME 10%			DME		
AS-Approved Source														
ASD-Approved Shop Drawing		Cert A-Type A Certification												IA-Independent Assurance
S&T-Sampling & Testing		Cert C-Type C Certification												V-Verification
		Cert D-Type D Certification												

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