

Table 1
CCPW Materials Testing and Sampling Frequencies - December 2023 Aggregate and Backfill Materials

Spec Section	Description	Proctor AASHTO T180	R-Value AASHTO T190	Sieve AASHTO T27 & T11	PI AASHTO T89 & T90	Water Soluble Sulfates AWWA 4500E ASTM D2791		Field Density		Laboratory Results Upload Time (Days)	
								Riding Equipment	Walk Behind Equipment		
203 Excavation & Embankment	203.02.02	Drainage Excavation (Subgrade)	1/Type		1 / 1000 yd ³			1 / 5000 ft ² / Lift	1 / 1000 ft ² / Lift	5	
	203.02.03	Channel Excavation (Subgrade)	1/Type		1 / 1000 yd ³			1 / 5000 ft ² / Lift	1 / 1000 ft ² / Lift		
	203.02.04	Borrow	1/Type	1/Type	1 / 1000 yd ³			1 / 5000 ft ² / Lift	1 / 1000 ft ² / Lift		
	203.02.05	Select Borrow	1/Type	1/Type	1 / 1000 yd ³			1 / 5000 ft ² / Lift	1 / 1000 ft ² / Lift		
	203.03.01	Roadway (Subgrade)	1/Type		1 / 1000 lf			1 / 5000 ft ² / Lift	1 / 1000 ft ² / Lift		
	203.03.10	Selected Material	1/Type	1/Type	1 / 1000 lf			1 / 5000 ft ² / Lift	1 / 1000 ft ² / Lift		
	203.03.15	Foundation (Subgrade)	1/Type		1 / 500 yd ³			1 / 500 ft ² / Lift	1 / 100 ft ² / Lift		
	203.03.18	Compaction, Dirt Embankment	1 / 10,000 yd ³ Per Type		1 / 1000 yd ³			1 / 5000 ft ² / Lift	1 / 1000 ft ² / Lift		
	203.03.19	Compaction, Rock Embankment	Due to Material Properties an Engineering Report Documenting Compactive Effort is Required (See Special Provisions)								
			Proctor AASHTO T180	Direct Shear AASHTO T236	Sieve AASHTO T27 & T11	PI AASHTO T89 & T90	Water Soluble Sulfates AWWA 4500E ASTM D2791	pH, Resistivity, Chlorides AASHTO T289, T288, T291	Field Density		Laboratory Results Upload Time (Days)
	Mechanically Stabilized Earth	1 / 10,000 yd ³	1 / 20,000 yd ³	1 / 1000 yd ³		1 / 1000 yd ³		1 / 5000 ft ² / Lift	1 / 1000 ft ² / Lift	5	
Spec Section	Description	Proctor AASHTO T180	R-Value AASHTO T190	Sieve AASHTO T27 & T11	PI AASHTO T89 & T90	Water Soluble Sulfates AWWA 4500E ASTM D2791	Compression Samples Per RTC 704.03.07	Field Density		Laboratory Results Upload Time (Days)	
								Riding Equipment	Walk Behind Equipment		
206 Structure Excavation	206.03.01	Structure Excavation	1/Type		1 / 1000 yd ³			1 / 500 ft ² / Lift	1 / 100 ft ² / Lift	4	
207 Structure Backfill	207.02.01	Selected Backfill	1 / 10,000 yd ³ Per Type		1 / 1000 yd ³	1/Source		1 / 500 ft ² / Lift	1 / 250 ft ² / Lift	5	
	207.02.02	Granular Backfill	1 / 10,000 yd ³ Per Type		1 / 1000 yd ³	1/Source		1 / 500 ft ² / Lift	1 / 250 ft ² / Lift		
208 Trench Excavation & Backfill	208.02.02	Selected Backfill	1 / 10,000 yd ³ Per Type		1 / 1000 yd ³	1/Source		1 / 100 lf / Lift		5	
	208.02.03	Granular Backfill	1 / 10,000 yd ³ Per Type		1 / 1000 yd ³	1/Source		1 / 100 lf / Lift			
	208.02.04	Sand Backfill			1 / 1000 yd ³	1/Source					
	208.02.05	Type II Aggregate Base (Trench)	Sampling Per Section 704						1 / 100 lf / Lift		
	208.02.06	Drain backfill									
	208.02.07	Type I and II CLSM (Flowable Fill)	Aggregate Sampling Per Section 704					1/300 yd ³ /Day			
	208.02.10	Type III CLSM (BAF)						1/300 yd ³ /Day			
301 Selected Material	301.02.01	Select Subbase	1/Type	1 / Type	1 / 1000 yd ³	1/Source		1 / 5000 ft ² / Lift	1 / 1000 ft ² / Lift	5	

302 Agg Base Course	302.02.01	Type II / I Aggregate Base	Sampling Per Section 704					1 / 5000 ft ² / Lift	1 / 1000 ft ² / Lift	5
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CCPW Materials Testing and Sampling Frequencies - December 2020 Aggregate and Backfill Materials - Continued

Spec Section	Description	Proctor AASHTO T180	Sieve AASHTO T27 & T11	PI AASHTO T89 & T90	Sand Equivalent ASTM D2419	Cement Content NDOT T239	Compressive Strength NDOT T237	Field Density		Laboratory Results Upload Time (Days)
								Riding Equipment	Walk Behind Equipment	
304 Cement Treated Base	304.02.01	CTB	Per Special Provisions	1 / 1000 Ton			1 / Day	1 / 5000 ft ²	1 / 1000 ft ²	4 (Agg. Tests)
Spec Section	Description	Proctor AASHTO T180	R-Value AASHTO T190	Sieve AASHTO T27 & T11	PI AASHTO T89 & T90	Fractured Faces NDOT T230	Water Soluble Sulfates AWWA 4500E ASTM D2791	LA Abrasion AASHTO T96 (500 Rev)	Oil Content by Extraction AASHTO T164	Laboratory Results Upload Time (Days)
704 Base Aggregates	704.03.02	Drain Backfill		1 / 1000 yd ³				1 / Source		5
	704.03.03	Type I Aggregate Base	1 / 10,000 yd ³ Per Type	1 / Type	1 / 1000 yd ³			1 / Source		
	704.03.04	Type II Aggregate Base	1 / 10,000 yd ³ Per Type	1 / Type	1 / 1000 yd ³		1 / Source	1 / Source		
	704.03.05	Type III Aggregate	1 / 10,000 yd ³ Per Type		1 / 1000 yd ³		1 / Source			
	704.03.06	Crushed Rock		1 / 1000 yd ³		1 / 1000 yd ³	1 / Source	1 / Source		
	704.03.07	CLSM Aggregate (Type I, II, & III)		1 / 1000 yd ³						
	704.03.08	Aggregates for PC Treated Base	1 / Type		1 / 1000 yd ³			1 / Source		
	704.03.09	Shouldering Material			1 / 1000 yd ³					
	704.03.10	Agg. Base with RAP and/or Concrete	1 / 2,000 yd ³ Per Type	1 / Type	1 / 1000 yd ³		1 / Source	1 / Source	1/2000 yd ³	

Table 1
CCPW Materials Testing and Sampling Frequencies - December 2020 Asphalt Cement Pavement Products and Surfaces

Spec Section	Description	Material Sampling	Prime Coat (Sample)	Tack Coat (Sample)	Field Density		Ride Quality Evaluation NDOT T448	Rut Testing AASHTO T340	Binder Sample	Laboratory Results Upload Time (Days)	
					Field Density Mat Testing	Field Density Joint Testing					
400 Asphalt Rubber Pavement	400.01	Asphalt Rubber Pavement Surface	Per Sec 401	1 / Day		1 / 5000 ft ² / Lift / Day	1 / 400 lf / Lift / Day	1 / Lane / Cont.	1 Set Per 2000 Tons 1 Set / Day Min	2 QT / Day	4
Spec Section	Description	Rice AASHTO T209	Oil Content by Extraction AASHTO T164	Sieve AASHTO T30	Marshall Stability & Flow AASHTO T209	TSR AASHTO T283	Air Void Content AASHTO T269	Coldfeed Sample	Binder Sample	Laboratory Results Upload Time (Days)	
401 Plantmix Bituminous Pavements	401.03.12	Plantmix Bituminous Pavement Sampling and Testing	1 / 750 Tons / Day			1 / Day	1 / 750 Tons / Day		2 QT / Day	2 (6 for TSR)	

Table 1
CCPW Materials Testing and Sampling Frequencies - December 2020 Asphalt Cement Pavement Products and Surfaces - Continued

Spec Section	Description	Material Sampling	Prime Coat (Sample)	Tack Coat (Sample)	Field Density		Ride Quality Evaluation NDOT T448	Rut Testing AASHTO T340	Binder Sample	Laboratory Results Upload Time (Days)	
					Field Density Mat Testing	Field Density Joint Testing					
402 Plantmix Bituminous Surface	402.03	Plantmix Bituminous Surface	Per Sec 401	1 / Day	1 / 5000 ft ² / Lift / Day	1 / 400 lf/ Lift / Day	1 / Lane / Cont.	1 Set Per 2000 Tons 1 Set / Day Min	2 QT / Day	4	
Spec Section	Description	Material Sampling	Field Density				Ride Quality Evaluation NDOT T448	Laboratory Results Upload Time (Days)			
			Mat Testing	Joint Testing							
404 Hot Plantmix Recycled Bit. Pavement	404.03	Recycled Bituminous Surface	Per Sec 401	1 / 5000 ft ² / Lift / Day	1 / 400 lf/ Lift / Day	1 / Lane / Cont.	Per Sec 401				
Spec Section	Description	Sampling	Application Rate	Tack Coat Shear Bond AASTHTO TP114-18							
405 - 406 Tack, Prime, Seal Coat	405 -406	Tack, Prime, Seal Coat Surface Treatment	1 / Day	Calculation / Day	1 Set Per 2000 Tons						
Spec Section	Description	PMM Application Rate RTC 413.03.06	Oil Content by Extraction AASHTO T164	Sieve AASHTO T30	Yield Verification	Ride Quality Evaluation NDOT T448	Binder Sample	PMM Sample	Cold Feed	Laboratory Results Upload Time (Days)	
413 Plantmix Gap-Graded Surface (UTACS)	413.03.06	Ultra Thin Asphalt Cement Surface UTACS	2 / Day Min.	3 / Day	3 / Day	Twice / Day (Mid Day and End of Shift)	1/Lane/Cont.	2 QT / Day	1 / Day	Per Spec Section 705	3
Spec Section	Description	Sieve AASHTO T27 & T11	Methylene Blue AASHTO TP57	Fine Agg Angularity AASHTO T304	Fractured Faces NDOT T230	LA Abrasion AASHTO T96 (500 Rev)	Elongation @ 5:1 ASTM D4791	Soundness ASTM C88		Laboratory Results Upload Time (Days)	
705 Aggregates Bituminous Courses	705.03	Plantmix Base and Surface Agg.	1 / 750 Tons of HMA / Day				1 / Source				4
Spec Section	Description	Sieve AASHTO T27 & T11	Fractured Faces NDOT T230	Methylene Blue AASHTO TP57	Uncompacted Void Content AASHTO T304	Sand Equivalent AASHTO T176	LA Abrasion AASHTO T96 (500 Rev)	Elongation @ 3:1 ASTM D4791	Soundness ASTM C88	Laboratory Results Upload Time (Days)	
705 Aggregates for UTACS	705.03.08	UTACS Coarse and Fine Aggregate	3 / Day	1 / Day	1 / Day	1 / Day	1 / Source				4

Table 1
CCPW Materials Testing and Sampling Frequencies - December 2020 Portland Cement Concrete Pavement, Materials, and Structures

Spec Section		Description	Slump ASTM C172	Unit Weight and Yield ASTM C138	Air Content Pressure Method	Concrete Compression	Concrete Beams Nev T442	Bonding Strength ASTM C1583	Plant Inspection	Aggregate Sampling	Laboratory Results Upload Time (Days)
409 Portland Cement Concrete Pavement	409	PCCP	1 / 300 yd ³ / Day				1 / 750 yd ³ / Day		Continuous	1 / 500 yd ³ / Day	30
409 Spall Repair	409.01.02	Spall Repair Patch Material				ASTM C 109 Cube		1 / Day			30
Spec Section		Description	Slump ASTM C172	Unit Weight and Yield ASTM C138	Air Content Pressure Method	Concrete Compression			Unauthorized Sources		Laboratory Results Upload Time (Days)
									Plant Inspection	Aggregate Sampling	
501 - 502 Portland Cement Concrete and Structures	501.02.04	PCC	1 / 100 yd ³ / Day						Continuous	1 / 500 yd ³ / Day	30
	502.01.01	PCC	1 / 100 yd ³ / Day						Continuous	1 / 500 yd ³ / Day	
Spec Section		Description	PCC Testing	Tests for Popouts ASTM C330	Freezing and Thawing ASTM C666	Dry Unit Weight ASTM C567	Unit Weight & Cement Factor ASTM C138	Air Content Vol. Method (Lw Concrete)	Unauthorized Sources		Laboratory Results Upload Time (Days)
									Plant Inspection	Aggregate Sampling	
504 Lightweight Concrete	504.02.03	LPCC	Section 501	1 / 100 yd ³ / Day	1 / 100 yd ³ / Day	1 / 100 yd ³ / Day	1 / 100 yd ³ / Day	1 / 100 yd ³ / Day	Continuous	1 / 500 yd ³ / Day	30
Spec Section		Description	Ult. Tensile Strength ASTM A615/A706	Bend Test AASHTO T285 ⁶							Laboratory Results Upload Time (Days)
505 Reinforcing Steel	505.02.02	#4 Bars and Larger	2 / Lot / Size	1 / Lot / Size							3
Spec Section		Description	Compressive Strength ASTM C1107/ C109								Laboratory Results Upload Time (Days)
509 Precast Reinforced Section		Non-Shrink Grout	1 / lot / per order								3
Spec Section		Description	Gradation Visual	LA Abrasion (500 Rev) ASTM C 535	Bulk Specific Gravity ASTM C127						Laboratory Results Upload Time (Days)
610 Rip-Rap	610.02.04	RipRap	1 / Shipment	1 / Source	1 / Source						3

Table 1
CCPW Materials Testing and Sampling Frequencies - December 2020 Portland Cement Concrete Materials and Structures - Continued

Spec Section		Description	Field Density Subgrade & Aggregate base		Portland Cement Concrete Refer to Section 501					Laboratory Results Upload Time (Days)	
613 Curb, Sidewalk, Gutter, & Driveway	Varies	Curbs	1 / 100 lf / Day		1 / 100 yd ³ / Day					29	
		Sidewalk	1 / 100 lf / Day		1 / 100 yd ³ / Day						
		Driveways / Spandrels	1 / 250 ft ² / Day		1 / 100 yd ³ / Day						
Spec Section		Description	Sieve AASHTO T27 & T11		LA Abrasion AASHTO T96 (500 Rev)	Soundness Sodium Sulfate AASHTO T104	Clay Lumps AASHTO T112	C.V. Cal Trans 227	Organic Impurities ASTM C40	Bulk Specific Gravity	Laboratory Results Upload Time (Days)
706 Aggregates for Portland Cement Products	706.03.01	Coarse Aggregate	1 / 500 yd ³		1 / Source	1 / Project	1 / Project	1 / 500 yd ³		1 / Source	3
	706.03.02	Lightweight Aggregate	1 / 500 yd ³				1 / Project	1 / 500 yd ³	1 / Source	1 / Source	
		Description	Sieve AASHTO T27 & T11	Sand Equivalent ASTM D2419	Soundness Sodium Sulfate AASHTO T104	Organic Impurities ASTM C40	Lightweight Pieces AASHTO T113			Bulk Specific Gravity	Laboratory Results Upload Time (Days)
	706.03.03	Fine Aggregate	1 / 500 yd ³	1 / 1000 yd ³	1 / Project	1 / Source	1 / 500 yd ³			1 / Source	4
	706.03.04	Grout and Mortar Sand	1 / 500 yd ³			1 / Source				1 / Source	
Spec Section		Description	Ult. Tensile Strength ASTM A615/A706	Bend Test AASHTO T285 ⁶						Laboratory Results Upload Time (Days)	
713 Reinforcement	713.03.01	Deformed Steel Bars	2 / Lot Per 100 Tons	1 / Lot						3	
		Spiral Reinforcement	2 / Lot Per 100 Tons	1 / Lot							

Table 1
CCPW Materials Testing and Sampling Frequencies - December 2020 Notes:

General Notes

- Note 1: The Engineer may request additional testing not to exceed a maximum of 10% of the required testing for any type performed.
- Note 2: Refer to project special provisions for concrete sampling and testing requirements on placement quantities less than 3 yd³/ day and less than 50 yd³/ week.
- Note 3: Deliver binder samples, and cores for rut and tack coat shear bond testing to CCPW Laboratory within 24 hours of sampling.
- Note 4: QA should observe binder sampling at the asphalt plant.
- Note 5: Bend tests required for concrete bridge and retaining wall construction including foundations.
- Note 6: Sample per AASHTO R97-19, method 5.7, 5.8 or 5.9.
- Note 7: Cores for rut testing delivered to CCPW shall have a diameter between 5.6 and 5.8 inches.
- Note 8: Field Density results are to be uploaded within 1 day after testing is performed.
- Note 9: Laboratory results upload time shown is for quantity based testing.
- Note 10: Refer to Table 2 for type, source and project testing.