

AGGREGATE SPECIFICATION LIMITS & SAMPLING AND TESTING GUIDE

April 20, 2010
Supersedes April 21, 2009

(See Specifications for Complete Details.)

Matls. IM 209
Appendix C

TEST LIMITS	Spec #	F & T A	F & T C	LA Abrasion	Absorption	Chert	Shale	Clay Lumps	Plastic Index	Mortar Strength	Al ₂ O ₃ Limit	Pore Index	Gradation Number
Fine Aggregate for PCC													
PCC	4110						2			6000psi			1
		<p><u>Note:</u> Maximum 40% between sieves <u>Note:</u> The Engineer may require mortar strength testing for sources where quality changes. <u>Note:</u> Shale + Coal not to exceed 2% max.</p>											
PCC, Class L	4111						2			5200psi			1
		<p><u>Note:</u> Only from approved PCC sources. <u>Note:</u> Maximum 45% between sieves. <u>Note:</u> Shale + Coal not to exceed 2% max.</p>											
Coarse Aggregate for PCC													
Crushed Stone	4115												
-Structural		6		50		2	1	0.5			0.5		3-5
-Nonstructural		6		50		3	1	0.5			0.5		3-5
		<u>Note:</u> See 4115.02 for maximum allowable objectionable materials.											
Gravel	4115												
-Structural		6		35		2	1	0.5					3-5
-Nonstructural		6		35		3	1	0.5					3-5
		<u>Note:</u> See 4115.02 for maximum allowable objectionable materials.											
Bridge Deck	4115	6		40	2.5	0.5					0.4		6
-Surfacing, Repair & Overlay		<p><u>Note:</u> Unsound Chert+Shale+Coal+Iron not to exceed 1%. <u>Note:</u> Unsound Chert particles are defined in 4115.02.</p>											
Class V Aggregate	4117	6		40			2 (+#16)			1.5			7
		<u>Note:</u> Coarse Aggregates as in 4115 (except abrasion) and Fine Aggregates as in 4110.											
Combination of Materials With Cl. V													
Coarse Limestone		<u>Note:</u> See 4117 for cement requirements.											
Limestone Screenings		<u>Note:</u> Acquire limestone from sources meeting the specified coarse aggregate durability class for PCC.											
		<u>Note:</u> Must meet the requirements of 4115 and be only from sources acceptable as coarse aggregate.											
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Granular Surfacing													
Aggregate for Granular Shoulders	4120.02												Per 4120.02
		<u>Note:</u> Requirements are equivalent to 4120.04, 4120.05 or 4120.06.											
Class C Gravel	4120.03		15				10						10
		<u>Note:</u> Percent of Clay Lumps + percent passing #200 sieve not to exceed 15%.											
		<u>Note:</u> Percent of Clay Lumps + percent of (+4) shale + percent passing #200 not to exceed 20%.											
Class A Crushed Stone	4120.04		15	45				4					11
		<u>Note:</u> For shoulders only; material with Al ₂ O ₃ not exceeding 0.7 or A-freeze not exceeding 10 may have an abrasion maximum of 55.											
Class B Crushed Stone	4120.05		20	55				4					11
		<u>Note:</u> "C" Freeze + Abrasion not to exceed 65%											
Class D Crushed Stone	4120.06												
		<u>Note:</u> "C" Freeze, Abrasion, and Gradation to be specified by Contract Documents.											
Paved Shoulders	4120.07		15	45				4					11
Fillets		<u>Note:</u> Material with Al ₂ O ₃ not exceeding 0.7 or A-freeze not exceeding 10 may have an abrasion maximum of 55.											
Granular Subbase													
	4121	25		50							1.5		12a(Cr. St.) 12b(Grav.)
		<u>Note:</u> Combinations of crushed PCC, sand, crushed gravel, or crushed stone may be used. Specification limits are for crushed stone or crushed gravel.											
Crushed Stone-Base													
Macadam Stone	4122		10	50									13(Visual) Per 4122.02
		<u>Note:</u> Choke stone see 4122.03 for details; when produced from Macadam has certified inspection of 1/3000 ton.											

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Modified Subbase													
	4123		15	45				7(Gravel)			4.7(-#40)		14
<p>Note: Material with Al₂O₃ not exceeding 0.7 (+4) or A-freeze not exceeding 10 may have an abrasion maximum of 55. Note: If gravel only, 75% of +3/8" must be crushed with a minimum of one fractured face. Note: Reclaimed pavements meeting Materials IM 209 may be used.</p>													
Aggregate for Slurry Mixture													
	4124.03	10		40			5				0.7		22 or 23
<p>Note: Friction Type 4 or better, sand equivalent of not less than 45, and organic materials maximum 0.01%.</p>													
Aggregate for Bituminous Sealcoat													
	4125.03		10	40			5						1, 19-21
<p>Note: Friction Type 4 or better, shale on sand cover aggregate shall not exceed 2% maximum.</p>													
Coarse Aggregate for HMA													
Type A	4127.02	10		45	6.0			0.5			0.7		Per Form 955
<p>Note: Organic materials maximum 0.01%.</p>													
Type B													
Primary	4127.02	25	10	45	6.0						1.5		Per Form 955
Non-Primary	4127.02	45	10	45	6.0						2.5		Per Form 955
<p>Note: Organic materials maximum 0.01%.</p>													
Fine Aggregate for HMA													
	4127.03												Per Form 955
<p>Note: Natural sand shall have no more than 50% retained between two consecutive sieves below the #4 sieve. Note: Organic materials maximum 0.01%. Note: Crushed gravel or stone processed from coarse aggregate meeting requirements of 4127.02.</p>													
Combination of Materials													
Type A	4127.04												Per Form 955
Type B													
<p>Note: The fine portion of combined materials shall not exceed 2% shale retained on the #16 sieve. Note: The fine portion of combined materials shall not exceed 5% shale retained on the #16 sieve.</p>													

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Revetment Stone		<u>Note:</u> Rocks that split into layers less than 4" thick shall not be used.											
Class A	4130.01	10*	5**	50	(*Primary/**Non-primary)						0.7	25	Visual
Class B	4130.01	10*	5**	50							0.7	25	Visual
Class D	4130.01		10	50									Visual
Class E	4130.01	10		50							0.7	25	Visual
Erosion Stone	4130.05		15	50				5	<u>Note:</u> See 4130.04 for gradation requirements.				Visual
Gabion Stone	4130.08	10		50							0.7		Visual
		<u>Note:</u> See 4130.07 for gradation requirements.											
Porous Backfill				45			5(+4)				0.7		29
	4131	10											
<u>Note:</u> Material shall be free of visible clay and objectionable clay coating.													
Special Backfill													30,31
	4132.01	Crushed Stone/PCC/CCP/Reclaimed HMA; Mixtures of Gravel, Sand and Soil or Uniformly blended combinations of the above.											
Gravel	4132.03								10				31
<u>Note:</u> Organic material of no more than 1% on fraction passing the #40 sieve.													
Granular Backfill				55				4					32*,**
	4133	20											
<u>Note:</u> "C" Freeze + Abrasion not to exceed 65%.													
*See 4133.04 for gradation when backfill is under flowable mortar.													
**See 4133.05 for gradation when used as floodable backfill.													
Recycled PCC		<u>Note:</u> Recycled PCC must meet gradation and sampling frequency of the intended product; and meet the requirements of IM 210.											
Recycled Composite Pavement		<u>Note:</u> Recycled composite pavement must meet gradation and sampling frequency of the intended product; and meet the requirements of IM 210.											