



**AGGREGATE SPECIFICATION LIMITS & SAMPLING AND TESTING GUIDE**

(See Specifications for Complete Details.)

April 18, 2006  
Supersedes April 20, 2004

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 <sub>2</sub> O <sub>3</sub> Limit	Pore Index	Gradation Number
<b>Fine Aggregate for PCC</b>													
PCC	4110.00						2			1.5			1
		Note: Maximum 40% between sieves Note: Annual Mortar Strength Test of 1.5 or greater is required for continued source approval when fineness modulus is less than 2.75.											
<b>Coarse Aggregate for PCC</b>													
Crushed Stone	4115.00												
-Structural		6		50		2	1	0.5			0.5		3-5
-Nonstructural		6		50		3	1	0.5			0.5		3-5
		Note: Chert refers to unsound chert on 3/8" sieve, which break into 3 or more pieces when subjected to freeze/thaw tests. Note: See 4115.02 for maximum allowable objectionable materials.											
Gravel	4115.00												
-Structural		6		35		2	1	0.5					3-5
-Nonstructural		6		35		3	1	0.5					3-5
		Note: See 4115.02 for maximum allowable objectionable materials.											
Deck Overlay	4115.06	4		40	2.5	0.5					0.4		6
		Note: Chert + shale + coal + iron not to exceed 1%. Note: See 4115.06 for maximum allowable objectionable materials. Note: Chert refers to unsound chert on the #4 sieve, which break into 3 or more pieces when subjected to freeze/thaw tests.											
<b>Class V Aggregate</b>	4117.00	6		40			2 (+#16)			1.5			7
		Note: Coarse Aggregates as in 4115 (except abrasion) and Fine Aggregates as in 4110.00.											
Class V (Fine Limestone)	4117.03												8
		Note: Only from sources acceptable as coarse aggregate											

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<b>Granular Surfacing</b>													
Aggr. For Granular Shoulders	4120.02	<u>Note:</u> A gravel/limestone aggregate mixture may be allowed. See Specification 4120.02 for details.										Per 4120.02	
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 <sub>2</sub> O <sub>3</sub> 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 <sub>2</sub> O <sub>3</sub> not exceeding 0.7 or A-freeze not exceeding 10 may have an abrasion maximum of 55.												
<b>Granular Subbase</b>													
	4121.00	25		50							1.5		12a(Cr. St.) 12b(Grav.)
<u>Note:</u> Combinations of crushed PCC, sand, gravel, or crushed stone may be used. Specification limits are for crushed stone or gravel.													
<b>Crushed Stone-Base</b>													
Macadam Stone	4122.02		10	45									13(Visual) Per 4122.02
<u>Note:</u> Choke stone. See Specification 4122.03 for details.													

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<b>Modified Subbase</b>													
	4123.00		15	45				7(Gravel)			4.7(-#40)		14
<p><i>Note:</i> Material with Al<sub>2</sub>O<sub>3</sub> not exceeding 0.7 (+4) or A-freeze not exceeding 10 may have an abrasion maximum of 55.</p> <p><i>Note:</i> If gravel only, 75% of +3/8" must be crushed with a minimum of one fractured face.</p> <p><i>Note:</i> Reclaimed pavements meeting Materials IM 209 may be used.</p>													
<b>Aggregate for Slurry Mixture</b>													
	4124.00	10		40			5				0.7		22 or 23
<p><i>Note:</i> Friction Type 4 or better, sand equivalent of not less than 45, and organic materials maximum 0.01%.</p>													
<b>Cover Aggregate</b>													
Cover Aggregate for Bituminous Seal Coats													
	4125.01		10	40			5						1,19-21
<p><i>Note:</i> Friction Type 4 or better, Shale on Sand Cover Aggregate shall not exceed 2%.</p>													
<b>Coarse Aggregate for HMA</b>													
Type A	4127.02	10		45	6.0			0.5			0.7		Per Form 955
<p><i>Note:</i> 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><i>Note:</i> Organic materials maximum 0.01%.</p>													
<b>Fine Aggregate for HMA</b>													
	4127.03												Per Form 955
<p><i>Note:</i> Natural sand shall have no more than 50% retained between two consecutive sieves below the #4 sieve.</p> <p><i>Note:</i> Organic materials maximum 0.01%.</p> <p><i>Note:</i> Meet requirements of 4127.02.</p>													
<b>Combination of Materials</b>													
Type A	4127.04												Per Form 955
Type B													
<p><i>Note:</i> The fine portion of combined materials shall not exceed 2% shale retained on the #16 sieve.</p> <p><i>Note:</i> The fine portion of combined materials shall not exceed 5% shale retained on the #16 sieve.</p>													

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<b>Revetment Stone</b>													
Class A	4130.01A	10*	5**	50	(*Primary/**Non-primary)						0.7	25	Visual
Class B	4130.01B	10*	5**	50							0.7	25	Visual
Class D	4130.01C		10	50									Visual
Class E	4130.01C	10		50							0.7	25	Visual
<u>Note:</u> See Specification 4130.01 for bedding plane/concrete slab thickness requirements.													
Erosion Stone	4130.04		15	50									Visual
<b>Porous Backfill</b>													
	4131.00	10		45	5(+4)						0.7		29
<u>Note:</u> Material shall be free of visible clay and objectionable clay coating.													
<b>Special Backfill</b>													
Crushed Stone/PCC, CCP or Reclaimed HMA	4132.02											30,31	
Gravel	4132.03							10					31
<u>Note:</u> Organic material of no more than 1% on fraction passing the #40 sieve.													
<b>Granular Backfill</b>													
	4133.00		20	55							4		32*
<u>Note:</u> "C" Freeze + Abrasion not to exceed 65%.													
<u>*See</u> 4133.04 for gradation when backfill is under flowable mortar or floodable backfill.													
<b>Recycled PCC</b>													
<u>Note:</u> Recycled PCC must meet gradation and sampling frequency of the intended product.													
<b>Recycled Composite Pavement</b>													
<u>Note:</u> Recycled composite pavement must meet gradation and sampling frequency of the intended product.													