



AASHTO Accreditation Policy on PSP Participation – Cement and Mortar

How to use these tables:

The following tables show the standard test methods included in CCRL Masonry Mortar and Cementitious Physical and Chemical proficiency sample programs. Each line item in the table includes a number that corresponds to an accreditation policy related to participation in the proficiency sample program for each standard test method. Each reference sample-specific policy is shown under each table.

A notation of a dash (-) means that the normal policies apply, and there are no additional sample-specific policies for that test method. The general policies related to proficiency testing are in the AASHTO Procedures Manual for the Accreditation of Construction Materials Testing Laboratories.

The following policies apply to all standard test methods and all samples:

- Laboratory accreditation is suspended when any combination of ratings of 0, 1, or -1 and no results occur on samples for a test property (line item on a proficiency sample report) on consecutive sample rounds.
- If a test property's ratings are regularly suppressed, the accreditation program takes no action on those results.
- * These test properties, while assigned ratings, are for informational purposes only and not used for accreditation purposes.

For more details on Proficiency Sample Policies, please review the [AASHTO Accreditation Policy and Guidance on Suspension, Revocation, and Reinstatement Resulting from Proficiency Samples Issues](#).

The following pages describe the proficiency sample-specific policies.



AASHTO Accreditation Policy on PSP Participation – Cement and Mortar

Masonry Mortar ¹				
AASHTO	ASTM	Test Name	Test Property	Policy
T137	C185	Air Content of Cement Mortar	Percent Air	-
			Mix Water for Air Content	*
			Flow for Air Content (Suppressed)	-
T106	C109	Compressive Strength	Average 7-Day Compressive Strength	*
			Average 28-Day Compressive Strength	2
			Flow for Compressive Strength (Suppressed)	-
			Mixing Water for Compressive Strength	-
-	C1506	Water Retention of Cement-Based Mortars	Mixing Water for Water Retention	*
			Initial Flow (Suppressed)	-
			Final Flow	*
			Water Retention	-

Masonry Mortar Program Policies

- 1 Ratings in the Masonry Mortar program are evaluated for accreditation of these tests under the Masonry scope.
- 2 For compressive strength (T106/C109), specification C270 dictates that compressive strength must be tested for the 28-day periods. If a laboratory is enrolled in the Masonry Mortar Program, satisfactory ratings are required for the 28-day compressive strength tests to maintain accreditation for T106/C109.



AASHTO Accreditation Policy on PSP Participation – Cement and Mortar

Masonry Cement ¹				
AASHTO	ASTM	Test Name	Test Property	Policy
T129	C187	Normal Consistency	Normal Consistency: Water	-
T154	C266	Time of Setting Gillmore Needles	Initial Time of Set	-
			Final Time of Set	-
T107	C151	Autoclave Expansion	Percent Expansion	-
T137	C185	Air Content of Cement Mortar	Percent Air	-
			Mortar Mix Water	*
			Mortar Flow (Suppressed)	*
T106	C109	Compressive Strength	Average 7-Day Compressive Strength	2
			Average 28-Day Compressive Strength	
T192	C430	Fineness of Cement by 45-µm (No. 325) Sieve	45-µm (No. 325) Sieve, Retained	-
T133	C188	Density of Cement	Density	-
-	C1506	Water Retention of Cement-Based Mortars	Mixing Water	*
			Initial Flow (Suppressed)	-
			Final Flow	*
			Water Retention	3

Masonry Cement Program Policies

- 1a** If a laboratory chooses to enroll in multiple sample programs (Portland Cement, Blended Cement, Masonry Cement, Portland-Limestone Cement), the laboratory is required to receive satisfactory results for all accredited tests in all sample programs in which the laboratory is enrolled. Please refer to Annex 1 for a comparison of the tests in each program.
- 1b** If a laboratory is accredited for tests that are all included in one sample program (ex. Portland Cement or Blended Cement), the laboratory only needs to maintain enrollment in that sample program.
- 2** For compressive strength (T106/C109), specification C91 dictates that compressive strength must be tested for the 7- and 28-day periods. If a laboratory is enrolled in the Masonry Cement Program, satisfactory ratings are required for the 7- and 28-day compressive strength tests to maintain accreditation for T106/C109.
- 3** Cement test standard C1506 is only available in the CCRL Masonry Cement sample. If a laboratory is accredited for a cement test that is only offered in one sample program, the laboratory is required to maintain enrollment in that program and is required to perform all tests in that sample program that are also included in the laboratory's accreditation.



AASHTO Accreditation Policy on PSP Participation – Cement and Mortar

Portland Cement Physical Tests ¹				
AASHTO	ASTM	Test Name	Test Property	Policy
T129	C187	Normal Consistency	Normal Consistency: Water	-
T131	C191	Time of Setting Vicat Needle	Vicat Initial Time of Set	-
			Vicat Final Time of Set	-
T154	C266	Time of Setting Gillmore Needles	Gillmore Initial Time of Set	3
			Gillmore Final Time of Set	
T186	C451	Early Stiffening	False Set	-
T107	C151	Autoclave Expansion	Percent Expansion	-
T137	C185	Air Content of Cement Mortar	Percent Air	-
			Mix Water	*
			Flow for Air Content (Suppressed)	*
T106	C109	Compressive Strength	Average 3-Day Compressive Strength	2
			Average 7-Day Compressive Strength	
			Average 28-Day Compressive Strength	*
			Flow for Compressive Strength (Suppressed)	-
T153	C204	Air Permeability by Blaine Apparatus	Air Permeability	-
T192	C430	Fineness of Cement by 45- μ m (No. 325) Sieve	45- μ m (No. 325) Sieve, Retained	-
T133	C188	Density of Cement	Density	-
-	C1038	Expansion of Cement Mortar Bars	Average Expansion	-
-	C1702	Heat of Hydration (Calorimetry)	3-Day	-
			7-Day	-

Portland Cement Physical Program Policies

- 1a** If a laboratory chooses to enroll in multiple sample programs (Portland Cement, Blended Cement, Masonry Cement, Portland-Limestone Cement), the laboratory is required to receive satisfactory results for all accredited tests in all sample programs in which the laboratory is enrolled. Please refer to Annex 1 for a comparison of the tests in each program.
- 1b** If a laboratory is accredited for tests that are all included in one sample program (ex. Portland Cement or Blended Cement), the laboratory only needs to maintain enrollment in that sample program.
- 2** For compressive strength (T106/C109), specification C150 dictates that compressive strength must be tested for the 3- and 7-day periods. If a laboratory is enrolled in the Portland Cement Physical Tests Program, satisfactory ratings are required for the 3- and 7-day compressive strength tests to maintain accreditation for T106/C109.



AASHTO Accreditation Policy on PSP Participation – Cement and Mortar

Portland-Limestone Cement Physical Tests ¹				
AASHTO	ASTM	Test Name	Test Property	Policy
T129	C187	Normal Consistency	Normal Consistency: Water	-
T131	C191	Time of Setting Vicat Needle	Initial Time of Set	-
			Final Time of Set	-
T186	C451	Early Stiffening	False Set	-
T107	C151	Autoclave Expansion	Percent Expansion	-
T137	C185	Air Content of Cement Mortar	Percent Air	-
			Mix Water	*
			Flow for Air Content (Suppressed)	-
T106	C109	Compressive Strength	Average 1-Day Compressive Strength	*
			Average 3-Day Compressive Strength	2
			Average 7-Day Compressive Strength	
			Average 28-Day Compressive Strength	
			Flow for Compressive Strength (Suppressed)	-
T153	C204	Air Permeability by Blaine Apparatus	Air Permeability	-
T192	C430	Fineness of Cement by 45-µm (No. 325) Sieve	45-µm (No. 325) Sieve, Retained	-
T133	C188	Density of Cement	Density	-
-	C1038	Expansion of Cement Mortar Bars	Average Expansion	-
-	C1702	Heat of Hydration (Calorimetry)	3-Day	-
			7-Day	-

Portland-Limestone Cement Physical Policies

- 1a** If a laboratory chooses to enroll in multiple sample programs (Portland Cement, Blended Cement, Masonry Cement, Portland-Limestone Cement), the laboratory is required to receive satisfactory results for all accredited tests in all sample programs in which the laboratory is enrolled. Please refer to Annex 1 for a comparison of the tests in each program.
- 1b** If a laboratory is accredited for tests that are all included in one sample program (ex. Portland Cement or Blended Cement), the laboratory only needs to maintain enrollment in that sample program.
- 2** For compressive strength (T106/C109), specification C595 dictates that compressive strength must be tested for the 3-, 7-, and 28-day periods. If a laboratory is enrolled in the Portland-Limestone Cement Physical Tests Program, satisfactory ratings are required for the 3-, 7-, and 28-day compressive strength tests to maintain accreditation for T106/C109.



AASHTO Accreditation Policy on PSP Participation – Cement and Mortar

Blended Cement Physical Tests ¹				
AASHTO	ASTM	Test Name	Test Property	Policy
T129	C187	Normal Consistency	Normal Consistency: Water	-
T131	C191	Time of Setting Vicat Needle	Initial Time of Set	-
			Final Time of Set	-
T107	C151	Autoclave Expansion	Percent Expansion	-
T137	C185	Air Content of Cement Mortar	Percent Air	-
			Mix Water	*
			Flow for Air Content (Suppressed)	-
T106	C109	Compressive Strength	Average 3-Day Compressive Strength	2
			Average 7-Day Compressive Strength	
			Average 28-Day Compressive Strength	
			Mix Water for Compressive Strength	-
			Flow for Compressive Strength (Suppressed)	-
T153	C204	Air Permeability by Blaine Apparatus	Air Permeability	-
T192	C430	Fineness of Cement by 45-µm (No. 325) Sieve	45-µm (No. 325) Sieve, Retained	-
T133	C188	Density of Cement	Density	-
-	C1702	Heat of Hydration (Calorimetry)	3-Day	-
			7-Day	-

Blended Cement Physical Policies

- 1a** If a laboratory chooses to enroll in multiple sample programs (Portland Cement, Blended Cement, Masonry Cement, Portland-Limestone Cement), the laboratory is required to receive satisfactory results for all accredited tests in all sample programs in which the laboratory is enrolled. Please refer to Annex 1 for a comparison of the tests in each program.
- 1b** If a laboratory is accredited for tests that are all included in one sample program (ex. Portland Cement or Blended Cement), the laboratory only needs to maintain enrollment in that sample program.
- 2** For compressive strength (T106/C109), specification C595 dictates that compressive strength must be tested for the 3-, 7-, and 28-day periods. If a laboratory is enrolled in the Portland-Limestone Cement Physical Tests Program, satisfactory ratings are required for the 3-, 7-, and 28-day compressive strength tests to maintain accreditation for T106/C109.



AASHTO Accreditation Policy on PSP Participation – Cement and Mortar

Pozzolan Physical Tests ¹				
AASHTO	ASTM	Test Name	Test Property	Policy
T129	C187	Normal Consistency	Water, Percent by Weight	-
T160	C157	Length Change	Drying Shrinkage	-
T107	C151	Autoclave Expansion	Soundness by Autoclave Expansion	-
T137	C185	Air Content of Cement Mortar	Vinsol Resin (Suppressed)	3
T106	C109	Compressive Strength	7-Day Strength Activity Index	2
			28-Day Strength Activity Index	
			Water Requirement: Percent of Control	-
-	C441	Effectiveness of Mineral Admixtures in Controlling Alkali Silica-Reactions	Reduction of Mortar Expansion (Suppressed)	3
T192	C430	Fineness of Cement by 45-µm (No. 325) Sieve	45-µm (No. 325) Sieve, Retained	-
T133	C188	Density of Cement	Density	-

Pozzolan Physical Policies

- 1 Ratings in the Pozzolan Physical Tests program are evaluated for accreditation of these tests under the Pozzolan scope.
- 2 For compressive strength (T106/C109), specification C311 allows for 7- or 28-day specimens to be tested depending on amount of material and the requirements of the producer or user. In this case, the laboratory is being asked to supply results for 7- and 28-day compressive strength testing by CCRL. Satisfactory ratings are required for the 7- and 28-day compressive strength tests in order to maintain accreditation for T106/C109.
- 3 Even though ratings for T137/C185 and C441 are suppressed, participation is required if a laboratory maintains accreditation for these standards under the Pozzolan scope. The accreditation will be suspended if results are not submitted.



AASHTO Accreditation Policy on PSP Participation – Cement and Mortar

Cement Chemical Tests T105 / C114	Cement Chemical Proficiency Sample Programs				
	Portland Cement	Portland-Limestone Cement	Blended Cement	Pozzolan	Policy
Silicon Dioxide (SiO_2)	X	X	X	X	1
Aluminum Oxide (Al_2O_3)	X	X	X	X	1
Ferric Oxide (Fe_2O_3)	X	X	X	X	1
Calcium Oxide (CaO)	X	X	X	X	1
Free Calcium Oxide [Free Lime] (C_x)	X	X			1
Magnesium Oxide (MgO)	X	X	X	X	1
Sulfur Trioxide (SO_3)	X	X	X	X	1
Loss on Ignition (LOI)	X	X	X	X	1
Sodium Oxide (Na_2O)	X	X	X	X	1
Potassium Oxide (K_2O)	X	X	X	X	1
Strontium Oxide (SrO)	X	X			1
Titanium Dioxide (TiO_2)	X	X	X		1
Phosphorous Pentoxide (P_2O_5)	X	X	X		1
Zinc Oxide (ZnO)	X	X	X		1
Manganic Oxide (Mn_2O_3)	X	X	X		1
Chloride (Cl)	X	X	X		1
Insoluble Residue (IR)	X	X	X		1
Carbon Dioxide (CO_2)	X	X			1, 2
Limestone Content	X	X			3
Chromium Oxide (Cr_2O_3)	X	X	X		3
Tricalcium Silicate (C_3S)	X				3
Dicalcium Silicate (C_2S)	X				3
Tricalcium Aluminate (C_3A)	X				3
Tetracalcium Aluminoferrite (C_4AF)	X				3
Moisture Content (C311)				X	-
Loss on Ignition (C311)				X	-
Available Na_2O				X	3
Available K_2O				X	3
Total Available Alkalies				X	3



Cement Chemical Program Policies

- 1a** If a laboratory chooses to enroll in multiple sample programs (Portland Cement, Portland-Limestone Cement, Blended Cement, Pozzolan), the laboratory is required to receive satisfactory results for all accredited tests in all sample programs in which the laboratory is enrolled.
- 1b** If a laboratory is accredited for tests that are all included in one sample program (ex. Portland Cement, Portland-Limestone Cement, Blended Cement, Pozzolan), the laboratory only needs to maintain enrollment in that sample program.
- 2** Data submission for Carbon Dioxide is required even if limestone has not been added to the Portland cement samples.
- 3** These analytes are not currently offered in the AASHTO Accreditation Program.



Annex 1: CCRL Cement Physical Testing Proficiency Sample Program Comparison

Cement Physical Tests			Cement Chemical Proficiency Sample Programs			
AASHTO	ASTM	Test Name	Portland Cement	Portland-Limestone Cement	Blended Cement	Masonry Cement
T129	C187	Normal Consistency	X	X	X	X
T131	C191	Time of Set – Vicat Needle	X	X	X	
T154	C266	Time of Set – Gilmore Needle	X			X
T186	C451	Early Stiffening	X	X		
T107	C151	Autoclave Expansion	X	X	X	X
T137	C185	Air Content of Mortar	X	X	X	X
T133	C188	Density	X	X	X	X
T106	C109	Compressive Strength	X	X	X	X
T153	C204	Fineness – Blaine Apparatus	X	X	X	
T192	C430	Fineness - No. 325 Sieve	X	X	X	X
	C1038	Expansion of Cement Mortar Bars	X	X		
	C1506	Water Retention				X
	C1702	Heat of Hydration	X	X	X	