

# Blended Cement Samples 97 & 98

## Please Note:

- Please allow until February 27<sup>th</sup> for receipt of samples.
- Both cements are ASTM C595 Blended Hydraulic Cements. Sample No. 97 is a Type IP(8) and Sample No. 98 is a Type IT(P25)(L6).

## How to Submit Test Results:

- On the CCRL Home Page, enter your lab number and PIN and click on “SIGN IN”.
- Click on “Blended Cement Physical” or “Blended Cement Chemical” from the menu on the left.
- Click on “Enter Data”
- Make sure the information at the top of the screen is accurate.
- Carefully enter your data. Round data properly. Data that is not rounded correctly cannot be submitted until correction is made. You will receive an error saying you have bad data, and the data will not be entered into the website.
- DO NOT enter “N/A” or zeros for data that you are not reporting, leave this data area blank. Zeros will be interpreted as data.
- Once all data has been entered click on the “Submit” button.
- You should see a confirmation screen. Print the confirmation screen for your records.
- If you have trouble entering or do not receive confirmation visit [Data Entry Trouble Shooting](#) or contact CCRL via [ccrl@astm.org](mailto:ccrl@astm.org) or by calling 240-436-4800, prior to the closing date. **CCRL cannot make accommodations for data received after the closing date.**
- **Sign out of the website and login again to check that your data was submitted properly.** You may add data or make corrections up to the closing date.
- **Closing date for submitting test results is midnight on Friday, April 10, 2026.**



February 6, 2026

**TO: Participants in the CCRL BLENDED Cement Proficiency Sample Program**

**SUBJECT: Blended Cement Proficiency Samples No. 97 and No. 98**

The current pair of samples in the Blended Cement Proficiency Sample Program were shipped to your laboratory. Both cements are ASTM C595 Blended Cement. Sample No. 97 is a Type IP(8) and Sample No. 98 is a Type IT(P25)(L6). The samples for the physical tests are packaged in plastic bags and weigh approximately 8,000 grams each. The samples for chemical analysis are in glass vials and weigh approximately 50 grams each.

**Please allow until February 27<sup>th</sup>, 2026, for receipt of these samples (non-receipt date). Please weigh these bags to ensure that you have received the proper amount of each material. If the samples have not been received on this date or if the samples you received were damaged, you need to notify us in writing, so please email us at [ccrl@astm.org](mailto:ccrl@astm.org). Replacement samples will be sent. Failure to notify us by this date may result in you not receiving replacement samples in time to perform the necessary testing. Additional shipping charges will be incurred, if contact is not made by the non-receipt date.**

Instructions covering the proposed tests, and the necessary data sheets for reporting the test results, are on the following pages. Please read these carefully before proceeding with the tests.

Each sample should be tested separately. The tests should be made as soon as possible after the samples are received, and the results should be promptly reported to CCRL upon completion of the tests. Test results should be entered at our website: <https://www.ccrl.us/>. Notice and information about the final report will be sent by email.

Additional samples of this sample pair and past CCRL samples are available for sale. These samples can be used for research, technician training, and test equipment verification. Contact us for availability and pricing.

Sincerely,

Kent Niedzielski  
Program Manager  
Proficiency Sample Program  
Cement and Concrete Reference Laboratory

**CCRL PROFICIENCY SAMPLE PROGRAM  
BLENDED CEMENT SAMPLES NO. 97 AND NO. 98**

**INSTRUCTIONS FOR TESTING**

The two samples for the physical tests are packaged in plastic bags, each of which contains approximately 8,000 grams of cement. The two samples for chemical analyses are sealed in glass vials, each of which contains approximately 50 grams of cement. The physical and chemical samples for the odd numbered sample represent one cement, and the physical and chemical samples for the even numbered sample represent another cement. The odd and even numbered samples should **NOT** be combined. Both cements are ASTM C595 Blended Hydraulic Cements. **Sample No. 97 is a Type IP(8) and Sample No. 98 is a Type IT(P25)(L6).**

Insofar as your laboratory is prepared to do so, make the chemical and physical determinations on each sample in accordance with the current edition of the ASTM Standard Specification for Blended Hydraulic Cements (C595), and with the various standards and specifications to which it refers. It is preferred that the same operator make all physical tests on both samples, and that the same chemist make all chemical determinations on both samples. The results of a single determination should be reported rather than an average of duplicate determinations.

**PHYSICAL TESTS**

Prior to testing, pass the cement for the physical tests through a No. 20 sieve in accordance with ASTM Specification C183.

Perform fineness tests on cement taken from the 8,000 g sample.

Perform the following physical tests on each sample in accordance with the current ASTM methods designated below.

Blended Hydraulic Cements .....	ASTM C595-25
Normal Consistency .....	ASTM C187-25
Time of Setting, Vicat .....	ASTM C191-21
Soundness, Autoclave .....	ASTM C151-23
Air Content of Mortar .....	ASTM C185-20
Specific Gravity .....	ASTM C188-25
Compressive Strength (nine cube batch).....	ASTM C109-24
Fineness, Air Permeability .....	ASTM C204-25
Fineness, by the 45 µm (No. 325) Sieve .....	ASTM C430-25
Heat of Hydration using Isothermal Conduction Calorimetry.....	ASTM C1702-24

### CHEMICAL TESTS

Perform the following chemical tests in accordance with ASTM C114-18 on each sample.

Silicon dioxide,	SiO <sub>2</sub>	Potassium oxide,	K <sub>2</sub> O
Aluminum oxide,	Al <sub>2</sub> O <sub>3</sub>	Titanium dioxide,	TiO <sub>2</sub>
Ferric oxide,	Fe <sub>2</sub> O <sub>3</sub>	Sodium oxide,	Na <sub>2</sub> O
Calcium oxide,	CaO	Phosphorus pentoxide,	P <sub>2</sub> O <sub>5</sub>
Magnesium oxide,	MgO	Zinc oxide,	ZnO
Sulfur trioxide,	SO <sub>3</sub>	Manganic oxide,	Mn <sub>2</sub> O <sub>3</sub>
Loss on ignition		Chloride,	Cl
Insoluble residue		Chromium oxide,	Cr <sub>2</sub> O <sub>3</sub>

It is preferred that one chemist make the chemical tests on both samples, on the same day. The results of a single determination should be reported rather than the average result of duplicate determinations.

### INSTRUCTIONS FOR REPORTING

For the sake of uniformity, report the values for the various tests to the nearest significant number indicated in the reporting forms. Be sure to indicate what chemical analysis procedure was used.

Test results should be entered at our website: <https://www.ccr1.us/>.

**CCRL PROFICIENCY SAMPLE PROGRAM  
 BLENDED CEMENT SAMPLES NO. 97 AND NO. 98  
 CHEMICAL ANALYSIS REPORT FORM**

RETURN TO:  
 Cement and Concrete Reference Laboratory  
 4441 Buckeystown Pike, Suite C  
 Frederick, Maryland 21704

FROM: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 e-mail: \_\_\_\_\_

Enter test results at our website: [www.ccrl.us](http://www.ccrl.us)

**CHEMICAL ANALYSIS**

NOTE: Test results reported on this form should be the laboratory's "best effort". The method used should be the method used to qualify cement, or test cement for acceptance or rejection.

	Sample No. 97	Sample No. 98	Test ID	X-ray *	ASTM Alternate Wet Method	ASTM Reference Wet Method	A.A.	Other (specify)
Report values below to nearest 0.01%								
Silicon dioxide, SiO <sub>2</sub>			10	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aluminum oxide, Al <sub>2</sub> O <sub>3</sub>			21	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ferric oxide, Fe <sub>2</sub> O <sub>3</sub>			30	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Calcium oxide, CaO			40	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Magnesium oxide, MgO			50	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sulfur trioxide, SO <sub>3</sub>			60	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Loss on ignition			70	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Insoluble residue			80	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Potassium oxide, K <sub>2</sub> O			100	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Titanium dioxide, TiO <sub>2</sub>			103	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p><b>*Please provide the following information the XRF equipment used for these results.</b></p> <p>XRF instrument:   <input type="checkbox"/> energy dispersive                   <input type="checkbox"/> wavelength dispersive</p> <p>Sample preparation: <input type="checkbox"/> pressed powder                   <input type="checkbox"/> fused glass disk</p>								

**Comments:**

Tests performed by \_\_\_\_\_ Date \_\_\_\_\_  
 Tests reported by \_\_\_\_\_ Title \_\_\_\_\_  
 Phone \_\_\_\_\_ FAX \_\_\_\_\_ CCRL laboratory number \_\_\_\_\_

**CCRL PROFICIENCY SAMPLE PROGRAM  
 BLENDED CEMENT SAMPLES NO. 97 AND NO. 98  
 CHEMICAL ANALYSIS REPORT FORM**

Enter test results at our website: [www.ccrl.us](http://www.ccrl.us)

FROM: \_\_\_\_\_

e-mail: \_\_\_\_\_

	Sample No. 97	Sample No. 98	Test ID	X-ray *	ASTM Alternative Wet Method	ASTM Reference Wet Method	A.A.	Other (specify)
Report values below to nearest 0.001%				Check the method used				
Sodium oxide, Na <sub>2</sub> O			90	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Phosphorus pentoxide, P <sub>2</sub> O <sub>5</sub>			102	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Zinc oxide, ZnO			99	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manganic oxide, Mn <sub>2</sub> O <sub>3</sub>			101	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chloride, Cl			104	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chromium oxide, Cr <sub>2</sub> O <sub>3</sub>			105	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p><b>*Please provide the following information the XRF equipment used for these results.</b></p> <p>XRF instrument:    <input type="checkbox"/> energy dispersive                      <input type="checkbox"/> wavelength dispersive</p> <p>Sample preparation: <input type="checkbox"/> pressed powder                      <input type="checkbox"/> fused glass disk</p>								

**Comments:**

Tests performed by \_\_\_\_\_ Date \_\_\_\_\_  
 Tests reported by \_\_\_\_\_ Title \_\_\_\_\_  
 Phone \_\_\_\_\_ FAX \_\_\_\_\_ CCRL laboratory number \_\_\_\_\_

**CCRL PROFICIENCY SAMPLE PROGRAM  
 BLENDED CEMENT SAMPLES NO. 97 AND NO. 98  
 PHYSICAL TESTS REPORT FORM**

RETURN TO:  
 Cement and Concrete Reference Laboratory  
 4441 Buckeystown Pike, Suite C  
 Frederick, Maryland 21704

FROM: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 e-mail: \_\_\_\_\_

Enter test results at our website: [www.ccrl.us](http://www.ccrl.us)

**TEST RESULTS**  
*Report as Indicated in ( )*

	<b>Sample No. 97</b>	<b>Sample No. 98</b>	
<b>NORMAL CONSISTENCY:</b>			
Water ( <i>nearest 0.1 percent by weight of cement</i> ) .....	_____	_____	[110]
<b>VICAT TIME OF SETTING:</b>			
Initial Set, Report in <b>minutes</b> ( <i>nearest 1 minutes</i> ) .....	_____	_____	[120]
Final Set, Report in <b>minutes</b> ( <i>nearest 5 minutes</i> ) .....	_____	_____	[121]
<b>AUTOCLAVE EXPANSION:</b>			
	<b>No. 97</b>	<b>No. 98</b>	
Final Reading	_____	_____	
Initial Reading	_____	_____	
Difference	_____	_____	
Percent Expansion ( <i>nearest 0.01 percent</i> ).....	_____	_____	[160]
<b>AIR CONTENT OF MORTAR:</b>			
Percent Air ( <i>nearest 0.1 percent</i> ) .....	_____	_____	[170]
Mixing water ( <i>nearest 0.1 percent by weight of cement</i> ) .....	_____	_____	[180]
Flow Obtained ( <i>nearest percent</i> ).....	_____	_____	[190]
<b>Density of Hydraulic Cement:</b>			
Specific Gravity ( <i>nearest 0.01 g/cm<sup>3</sup></i> ).....	_____	_____	[310]
<b>COMPRESSIVE STRENGTH:</b>			
	<b>No. 97</b>	<b>No. 98</b>	
3-day, total load, lbs.	1) _____	_____	
	2) _____	_____	
	3) _____	_____	
Average 3-day ( <i>nearest 10 psi</i> ) .....	_____	_____	[200]

Tests performed by \_\_\_\_\_ Date \_\_\_\_\_  
 Tests reported by \_\_\_\_\_ Title \_\_\_\_\_  
 Phone \_\_\_\_\_ FAX \_\_\_\_\_ CCRL laboratory number \_\_\_\_\_

**CCRL PROFICIENCY SAMPLE PROGRAM  
 BLENDED CEMENT SAMPLES NO. 97 AND NO. 98  
 PHYSICAL TESTS REPORT FORM**

RETURN TO:  
 Cement and Concrete Reference Laboratory  
 4441 Buckeystown Pike, Suite C  
 Frederick, Maryland 21704

FROM: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 e-mail: \_\_\_\_\_

Enter test results at our website: [www.ccrl.us](http://www.ccrl.us)

	<u>No. 97</u>	<u>No. 98</u>	<u>Sample No.</u> <u>97</u>	<u>Sample No.</u> <u>98</u>	
<b>COMPRESSIVE STRENGTH (CONTINUED):</b>					
7-day, total load, lbs.	1) _____	_____			
	2) _____	_____			
	3) _____	_____			
Average 7-day (nearest 10 psi).....			_____	_____	[210]
	<u>No. 97</u>	<u>No. 98</u>			
28-day, total load, lbs.	1) _____	_____			
	2) _____	_____			
	3) _____	_____			
Average 28-day (nearest 10 psi).....			_____	_____	[211]
Mixing Water (nearest 0.1 percent by weight of cement).....			_____	_____	[220]
Flow Obtained (nearest percent).....			_____	_____	[230]
<b>FINENESS:</b>					
<u>Air Permeability –</u>					
Air Permeability, (nearest 1 m <sup>2</sup> /kg) .....			_____	_____	[270]
<u>45 µm (No. 325) Sieve –</u>					
	<u>No. 97</u>	<u>No. 98</u>			
Correction Factor for 45 µm sieve (nearest 0.1 percent).....	_____	_____			
45 µm (No. 325) Sieve, Corrected percent passing (nearest 0.01 percent) .....			_____	_____	[281]

**Comments:**

Tests performed by \_\_\_\_\_ Date \_\_\_\_\_  
 Tests reported by \_\_\_\_\_ Title \_\_\_\_\_  
 Phone \_\_\_\_\_ FAX \_\_\_\_\_ CCRL laboratory number \_\_\_\_\_

**CCRL PROFICIENCY SAMPLE PROGRAM  
 BLENDED CEMENT SAMPLES NO. 97 AND NO. 98  
 HEAT OF HYDRATION REPORT FORM**

RETURN TO:  
 Cement and Concrete Reference Laboratory  
 4441 Buckeystown Pike, Ste C  
 Frederick, Maryland 21704

FROM: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 e-mail: \_\_\_\_\_

Enter test results at our website: [www.ccrl.us](http://www.ccrl.us)

**ASTM C1702 HEAT OF HYDRATION BY ISOTHERMAL CONDUCTION CALORIMETRY**

	<b>Sample No. 97</b>	<b>Sample No. 98</b>	
3-day, J/g (nearest 1 J/g) .....	_____	_____	[500]
7-day, J/g (nearest 1 J/g) .....	_____	_____	[510]

**Method Used:**

- Method A - sample and water are both temperature equilibrated and mixed inside the calorimeter.
- Method B - sample is mixed outside of the calorimeter then put into the calorimeter.

**Instrument Used:**

Manufacturer: \_\_\_\_\_  
 Model: \_\_\_\_\_

Tests performed by \_\_\_\_\_ Date \_\_\_\_\_  
 Tests reported by \_\_\_\_\_ Title \_\_\_\_\_  
 Phone \_\_\_\_\_ Fax \_\_\_\_\_ CCRL Laboratory Number \_\_\_\_\_