

**DEPARTMENT OF TRANSPORTATION**  
**DIVISION OF ENGINEERING SERVICES**  
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## METHOD OF SAMPLING FOR AND REPORTING THE RESULTS OF TESTS FOR ALKALI SILICA REACTIVITY

### A. SCOPE

This method describes the procedure for sampling aggregates for use in alkali silica reactivity tests, the procedure for calculating averages for multiple results and the reporting requirements beyond that required in the alkali silica reactivity tests.

### B. REFERENCES

ASTM D75/D75M - Standard Practice for Sampling Aggregates  
California Test 201 - Soil and Aggregate Sample Preparation

### C. SAMPLING

1. Collect samples of aggregate from stockpiles of finished product at the source of production in accordance with ASTM D75/D75M. Do not collect samples from a ready-mix plant or a construction job site unless that is the source of production and material finishing.
2. The amount of aggregate collected shall be four times the amount sufficient to perform the test or tests one time or four times the amount indicated in Table 1 of ASTM D75/D75M, whichever is more.
3. Divide the sample into four equal parts by the procedures of California Test 201, Section J.
4. Place the portions not used for testing into separate containers or sets of containers. Clearly label each container with identification of the source of material, the laboratory sample identification number and the test number.

### D. CALCULATIONS

1. Calculate individual and average values at the various time intervals as required in the test method performed.
2. When a test has been performed on two or more samples from a single source of aggregate of a particular primary aggregate size within a specified time interval (one year), calculate the mean result for each time interval as:

$$\bar{X} = \sum_{i=1}^n \frac{X_i}{n}$$

where:  $\bar{X}$  is the mean value for the interval  
 $X_i$  is the average value from sample  $i$   
 $n$  is the number of samples tested

#### E. REPORTING OF RESULTS

Report the information required in the test method performed. Include in the report of test results the following information. When a laboratory has only run a test on a single sample of a particular aggregate, the items below that require more than one sample having been run do not need to be included in the report.

1. The name and location of the laboratory performing the test(s).
2. The name of the person responsible for the testing and reporting.
3. The name of the person who collected each aggregate sample.
4. The date that each aggregate sample was collected.
5. The sample identification and test identification for each sample.
6. The name of the person(s) involved in fabricating the test specimens with the responsible technician indicated.
7. The date of specimen fabrication.
8. The actual proportions used in making the concrete or mortar for the test.
9. The measurements of fresh mortar or concrete properties required by the test (e.g., slump, air content, unit weight).
10. A table of the test readings that includes each of the following:
  - a. The date that each reading is taken.
  - b. The name of the person taking the reading.
  - c. The reading of each specimen.
  - d. The average of the specimens from an individual sample.
  - e. The mean value for each interval.
11. The signature of the person responsible for the testing and reporting.
12. When interim reports are made only items 1, 2, 5, 7 and 10a through 10d are required.

**F. HEALTH AND SAFETY**

When sampling, beware of dust. Gloves and safety glasses should be worn.

It is the responsibility of the user of this test method to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use. Prior to handling, testing or disposing of any materials, testers must be knowledgeable about safe laboratory practices, hazards, and exposure, chemical procurement and storage, and personal protective apparel and equipment.

Caltrans Laboratory Safety Manual is available at:

[http://www.dot.ca.gov/hq/esc/ctms/pdf/lab\\_safety\\_manual.pdf](http://www.dot.ca.gov/hq/esc/ctms/pdf/lab_safety_manual.pdf)

Users of this method do so at their own risk.

**End of Test**  
**(California Test 554 contains 3 pages)**