

PART II: INSPECTION OF AGGREGATE TESTING FACILITIES

DESCRIPTION OF INSPECTION

The inspection was designed to include an examination of the apparatus prescribed for use in the methods of test for concrete aggregates listed in ASTM C1077; a review of the apparatus or procedures prescribed in any optional test methods presented for inspection; and an observation of several of the procedures used in the testing of concrete aggregates.

The ASTM Standards on which the work was based are as follows: C33-08, C40-04, C117-04, C127-07, C128-07a, C136-06, C566-97, C702-98, C1077-09, D75-09, and E11-09.

Apparatus

Drying Apparatus

The physical condition of the apparatus used in drying samples of aggregates for testing purposes was observed, and when the apparatus was a ventilated convection oven, a check was made to determine if the operating temperature range of 105° to 115°C was being maintained.

Sample Splitters (C702)

The apparatus available for use in reducing field samples of aggregates to testing size was checked for conformance to the design requirements of C702, and its physical condition was observed. Note was taken as to whether the laboratory had at least one riffle sampler with no less than twelve chutes 1/2 inch in width for use with fine aggregate, and one riffle sampler with no less than 8 chutes of the appropriate chute width for use with coarse aggregate.

Sieves (E11)

The physical condition of each sieve presented for inspection was noted, and a check was made to determine if the size of the opening was marked on the side as required by E11.

With the exception of such omissions as may be set forth in the footnote section, the group of sieves presented for inspection contained one or more of each of the sieves listed by size or number in the various methods of test to which reference is made in this report. The particular sizes and numbers are: 2 in., 1 1/2 in., 1 in., 3/4 in., 1/2 in., 3/8 in., No. 4, No. 8, No. 16, No. 30, No. 50, No. 100, and No. 200.

Mechanical Sieving Apparatus (C136)

The physical condition of each mechanical sieving device presented for inspection was noted. Where possible the device was observed in use to determine if the motion created caused the correct agitation of the aggregate. In addition, the sieving time use by the laboratory was noted.

Balances

The requirements for balances to which reference is made during the inspection were derived from the following sources: C117, C127, C128, C136, C566 and D4753.

Each balance presented for inspection was tested for conformance to the selected sensitivity requirements at 500, 1000, and 2000 g, as appropriate for the capacity. The accuracy of indication was subsequently tested for conformance to the selected tolerance at five points over the capacity of the system, or to 10000 g, whichever was the lesser.

Testing Weights (Masses)

All SI unit weights(masses), if used in the normal weighing operation, were checked for conformance to the maintenance tolerances specified in Section 2.23, Table 2 of the 2000 Edition of NIST Handbook 44. When the weights in a set were within the specified limits and were suitably stored, each storage container was assigned a CCRL identification number. In the event that testing weights were not required for balance operation, the reporting of balance weights will be omitted.

Organic Impurities Apparatus (C40)

The glass bottles, the reagent, and the color standards used in testing for organic impurities in sands were checked for conformance to the requirements of C40.

Apparatus for Specific Gravity and Absorption of Fine Aggregate (C128)

Observations were made to determine if one or more pieces of each item of equipment (pycnometer, conical mold, and tamping rod) needed to determine the specific gravity and absorption of fine aggregates in accordance with the requirements of C128 were available for use and in good physical condition.

Apparatus for Specific Gravity and Absorption of Coarse Aggregate (C127)

Each basket used for holding samples of coarse aggregate during the specific gravity determination was checked for conformance to the requirements of C127, each suspending apparatus was examined, the capacity of each balance being used in conjunction with the foregoing items was noted, and a check was made on the temperature of the immersion water.

Sample Containers for C117 and C566

The size, physical condition, and shape of the pans used in the test for determining fine materials in aggregate (C117), and in the test for determining the total moisture content by drying (C566) were observed.

Miscellaneous

The containers used for transporting samples of aggregate to the laboratory were checked for cleanliness and to determine if they were so made that there would be no loss of fines during shipment.

A check was made to determine if the laboratory had been supplied with a copy of the latest edition of the ASTM Book of Standards pertaining to the testing of concrete aggregates.

Optional Methods (C1077)

At the discretion of the laboratory, selected optional test methods as set forth in C1077 may be presented for inspection. If presented, the inspection of these test methods for concrete aggregates consists of an examination of prescribed equipment and specified procedures for the individual test method.

Procedures

The concrete aggregate procedures which were observed and discussed during the inspection were as follows: Minus No. 200 Wet Sieving, Organic Impurities Test, Sieve Analysis of Aggregates, Specific Gravity and Absorption of Fine and Coarse Aggregate, Moisture Content by Drying, and Reducing Field Samples to Testing Size.

The laboratory's conformance to specified procedures was as indicated in the summary of findings. All departures noted were reviewed in detail with laboratory personnel with particular attention being given to those matters described in the footnote section.