

CRD-C 143-62

SPECIFICATIONS FOR METERS FOR AUTOMATIC INDICATION OF MOISTURE IN FINE AGGREGATE

Scope

1. These specifications cover meters for automatic indication of moisture content of fine aggregate materials as batched into concrete mixtures.

General Requirements

2. The meters covered by these specifications shall be capable of providing an indication of the free (surface) moisture content of the fine aggregate that enters each batch of concrete. The indication shall be given as percentage of surface moisture expressed to the nearest 0.1 percent by weight of the saturated surface-dry fine aggregate. The indication shall be provided in not more than five seconds after the particular quantity of fine aggregate for which an indication is to be furnished comes into the sensing zone of the meter.

Optional Requirements

3. (a) When specifically so required, the meter shall be supplied with suitable accessory equipment to provide a permanent record of each indication furnished, together with other relevant data sufficient to positively identify the batch of concrete to which the indication refers.

(b) When specifically so required, the meter shall be supplied with suitable accessory equipment to indicate directly the amounts of mixing water and fine aggregate to be batched after compensation has been made for the amount of surface moisture indicated to be present in the fine aggregate.

(c) When specifically so required, suitable accessory equipment shall be supplied to accomplish automatically the adjustment of quantities of mixing water and fine aggregate to be batched.

Detail Requirements

4. (a) The meters covered by these specifications shall be capable of convenient and rapid adjustment based on direct testing to compensate for changes in accuracy caused by changes in grading, absorption, or mineral composition of the fine aggregate, or chemical composition of the surface and absorbed moisture in the aggregate.

(b) The indications provided shall be displayed on an easily read dial, scale, or chart located as directed so as to be readily consulted by batch plant operating and inspection personnel.

Inspection and Testing

5. Meters, together with such supplementary equipment as may be required, shall be selected well in advance of the date on which manufacture of concrete is to be started. As soon as the supplier of the equipment has been selected, detailed data on the principles of operation, equipment design, method of installation, and previous performance shall be furnished to the Contracting Officer. At the request of the Contracting Officer arrangements shall be made for inspection and testing of the apparatus either at the manufacturer's or supplier's plant or in a Corps of Engineers' laboratory or both. All equipment installed in a batching plant, whether subjected to preinstallation testing or not, will be subject to testing after concrete production has been in progress, and final approval will be withheld until results of such testing in actual service are available. Indications of lack of ruggedness, sensitivity to dust, moisture or vibration, as manifested by frequent instances of inoperability, or frequent need for recalibration will be cause for rejection.