

**OHD L-25
METHOD OF TEST FOR
TOTAL INSOLUBLE RESIDUE IN AGGREGATE**

- I. **SCOPE.** This method of test is intended for the determination of acid insoluble material in a coarse or fine aggregate sample.
- II. **APPARATUS.** The apparatus for this test will consist of the following:
- A. **3 each Half-Gallon or 2 Liter Jars.**
 - B. **Hydrochloric Acid Technical Grade.**
 - C. **½", #8, and #200 Mesh Sieves.**
- III. **PROCEDURE.**
- A. Crush sample so that all material is less than one-half (½) inch and then remove any material finer than the #200 sieve by washing in accordance with AASHTO T 11.

Note: If the sample is from a single source, removing the +½" material by sieving is acceptable.
 - B. Remove the material below the #8 sieve by sieving the remaining -½" sample. Reduce the sample into three test samples of approximately 200g, weigh each accurately, and place it into a clean, labeled half-gallon jar.
 - C. Add 400 milliliters of water and a slight excess of concentrated hydrochloric acid over the amount needed to react with the available carbonate, approximately one milliliter per gram of rock. Stir mixture occasionally over a period of days until all reaction ceases.

Note: If the sample is a highly reactive aggregate then the acid may be added in smaller amounts over time to prevent the loss of any material from the reaction overtopping the jar.
 - D. Wash the insolubles free of excess ions by filling jar with tap water, allowing all of the material to settle (about 24 hours) and then pouring off the clear solution. This washing procedure is to be repeated three times.
 - E. After the third wash cycle, rinse the insolubles into a shallow pan and roll between thumb and forefinger to crumble any friable particles; wash over a #200 sieve; dry at 100°-105°C and weigh.
- IV. **CALCULATE AND REPORT.** Calculate the percent of the insolubles retained on the #200 sieve as a total of the original weight for each 200g sample. Report the average of the three 200g samples as the total percent of insolubles.

Revision Date	Revision Description
1/9/13	Changed the title and scope to reflect the use of the procedure with both coarse and fine aggregates.
	Made grammatical changes.
	Limited formatting of measurements to the most commonly used.
	Clarified sample preparation to more accurately describe the procedure.
	Clarified the addition of acid to the sample to more accurately describe the procedure.
	Changed the wash cycle settling interval from 48 hours to 24 hours.
	Clarified the calculation and reporting procedure.