

# GDT 61

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## A. Scope

For a complete list of GDTs, see the Table of Contents.

This method describes the determination of percent non-carbonated material (nonreactive with hydrochloric acid) that is contained in a crushed aggregate.

## B. Apparatus

1. 0.5 gal (1.89 liter) jar
2. 13.5 oz (400 ml) graduated flask
3. Evaporating dish
4. A scale sensitive to and graduated in 0.00002 lb (0.01gram)

## C. Sample Size and Preparation

1. Obtain a representative sample of the minus 1/2 in (12.5 mm) size for the aggregate to be evaluated. If unsized quarry samples are obtained, crush the sample until all material is less than 1/2 in (12.5 mm).
2. Wash the sample over a No. 10 (2.00 mm) mesh screen and dry to a constant weight.
3. Split the minus 1/2 in (12.5 mm) plus No. 10 (2.00 mm) sample until a sample of about 0.44 lb (200 grams) is obtained. Avoid selection of individual pieces to obtain the desired weight. Weigh accurately to the nearest 0.00002 lb (0.01 gram).

## D. Procedures

Use the following procedure to determine the percent insoluble residue for crushed aggregate.

1. Place the prepared sample in a clean, labeled 0.5 gal (1.89 liter) jar.
2. Add 13.5 oz. (400 ml) of water and a slight excess of concentrated HCL (approximately one ounce per ounce ( one ml per gram of rock) over the amount needed to react with the available carbonate. Stir the mixture over a period of days until all reaction ceases.
3. Wash the insolubles free of excessions by filling the jar with tap water, allowing all of the material to settle (about 48 hours), and pouring off the clear solution. Repeat this procedure 3 times.
4. After the third cycle, wash the insolubles into an evaporating dish, dry at 212 °F (100 °C), and weigh to the nearest 0.01 gram.

## E. Calculations

Calculate the percent insoluble residue for the aggregate as follows:

$$I.R.= \frac{B}{A} \times 100$$

Where,

A = initial weight of sample, ounces (grams)

B = final weight, insoluble residue, ounces (grams)

## F. Report

No report is listed for this method.