



# CAROLINA STALITE COMPANY

MANUFACTURERS OF LIGHTWEIGHT AGGREGATE "STALITE"

PHONE 704-637-1515 FAX 704-642-1572

DRAWER 1037 SALISBURY, N.C. 28145-1037

## GOLD HILL RESEARCH LABORATORY

### LABORATORY ANALYSIS POROSITY AND VOID RATIO 3/4" STRUCTURAL AGGREGATE

On May 10, 2002 a sample of 3/4" structural aggregate obtained from the stockpile was tested for void ratio and porosity.

#### PROCEDURE

The aggregate sample was dried to a constant mass and used to completely fill a 1/2 cubic foot bucket. The mass of the aggregate and the bucket was determined. The bucket was then filled with water and allowed to saturate for 72 hours. The bucket was then topped off with water to replace any water, which was absorbed by the aggregate and reweighed.

#### CALCUALTIONS

Porosity = Volume Voids/ Volume Total

Void Ratio = Volume Voids/ Volume Solids

#### RESULTS

Mass of Bucket = 19.90 lb

Mass of Bucket and Dry Aggregate = 43.95 lb

Mass of dry solids = 24.05 lb

Mass of Bucket, Saturated material and Water = 59.8 lb

Mass of water (total) = 15.85

Volume Solids =  $24.05/1.44/62.4 = .264$  cf

Volume Voids =  $15.85/62.4 = .254$  cf

Volume Total = .518 cf

Weight of aggregate and water = 82.2 lb per cf

Porosity =  $.254 / .518 = .490$

Void Ratio =  $.254 / .264 = .962$