WET SIEVEING

IS: 2720 (Part 4) – 1985 (Reaffirmed-2006)

THEORY:

Soil gradation is the distribution of different particle size expressed as a percent of the total dry weight. The results of grain size analysis are shown graphically in the form of a grain size distribution curve, in which the cumulative percentages finer are plotted against the particle size in the semilogarithmic scale. The grain size distribution (GSD) of soil is determined by conducting three tests: **Wet sieving**, Dry sieving and Hydrometer analysis.

NEED AND SCOPE:

The results of grain size analysis are used for the soil classification. GSD curves are also used in the design of earth dam filter to determine its suitability.

APPARATUS REQUIRED:

1. Sieve of 75-micron size
2. Plastic tub for washing the soil

PROCEDURE:

If the soil contains a substantial quantity (say more than 5%) of fine particles, a wet sieve analysis is required. All lumps are broken into individual particles.

1. Take 500gm of oven dried soil sample and soaked in water.
2. For heavy clays if deflocculation is required, 2% calgon solution is used instead of water.
3. The sample is stirred and left for soaking period of at least 10 minutes.
4. The material is sieved through 75-micron sieve.
5. The material is washed until the water filtered becomes clear.
6. The soil retained on 75-micron sieve is collected and dried in oven.
7. It is then sieved through the sieve shaker for ten minutes and retained material on each sieve is collected and weighed.
8. The material passed from 75-micron is left undisturbed for 24 hours, so that the soil particles settle at the bottom of the tub.
9. After 24 hours, the water is removed from the tub using the plastic pipe. The settled soil is transferred to the ceramic bowl and kept in oven for drying.
10. The dried soil is further used for the hydrometer analysis.