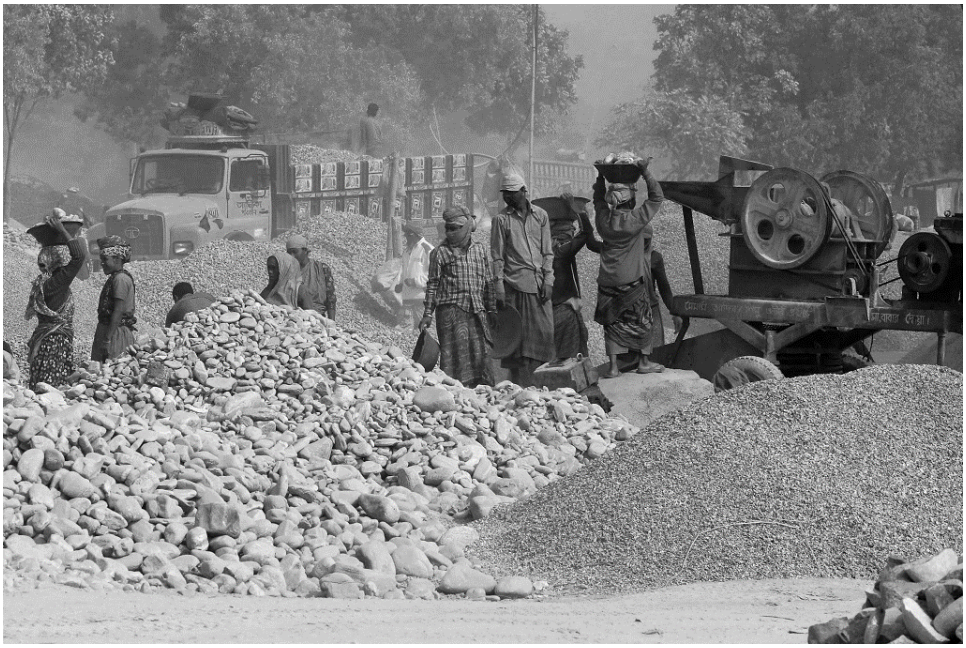

Main products

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SOME COMMON TESTING

The suitability of a stone for a particular structure, some tests on building stones are performed whose results give us a wide knowledge about that stone. Some common tests are as follows:

- Acid Test
- Crushing Test or Compression Test
- Smith's Test
- Water Absorption Test
- Attrition Test
- Brard's Test
- Microscopic Test

ACID TEST

This test is performed to examine the weathering property of stones.

Procedure:

50-100 gm of stone sample is taken and placed in a solution of hydrochloric acid having strength of one percent. The sample is kept in solution for seven days. The solution should agitate at suitable intervals during this period.

After the end of period, the sample is observed. If the sample has sharp edges and surface of sample does not contain powder, it indicates good quality of building stone.On the other hand, if the edges are broken and powder is formed on the surface, it indicates that the stone have poor weathering quality. This show that stone contains calcium carbonate. This test is generally carried out on sandstone.

CRUSHING TEST OR COMPRESSIVE STRENGTH TEST

Compressive strength is determined in this type of test.

Procedure:

This sample taken for the test should be cube of size 40mm^40mm^40mm or 50mm^50mm^50mm. The sides of the cubes are made smooth by dressing and polishing. The test should be carried out on dry as well as on saturated samples. For dry samples,cubes are placed in an oven at 105^C for one day and then cooled in dessicator to room temperature. For saturated samples specimens should be placed in water for about 72 hours and tested in saturated condition.
Each test specimen is tested individually in universal testing machine. The rate of loading should be 140 kg/cm^2 per minute. The load is applied till the specimen fails. Record this load. The crushing strength or compressive strength is given by the formula as

C =P/A

Where C = compressive strength

P = Load at failure

A = Cross-sectional area of bearing face of specimen

Then the average value of six specimen is calculated and the result is recorded for that stone sample.

SMITH'S TEST

This test is carried out to find out the presence of soluble organic matter in the stone.

Procedure:

A small quantity of stone sample is taken and placed in a container. Then, Water is filled in the container in such amount that all the stone samples immerse fully. After 2-3 hour the whole assembly is agitated vigorously. Then the water in the container is observed. If the water becomes dirty, it indicates that stone contains soluble matter and if water remains clear it indicates that stone is free from soluble matter and quality of stone is good and durable.

WATER ABSORPTION TEST

This test is carried out to calculate the %age water absorbed by stones.

Procedure:

For this test stone samples are taken and dried in an oven at 100^C to 110^C for 24 hours. The sample is then weighed and the weight is recorded as w1. Now the sample is immersed in distilled water at room temperature for a period of 24 hours. Sample is then taken out of water and surface water is wiped off with a damp cloth and weighed again. Let the weight at this stage is W2. Then, the percentage of water absorption by weight of given stone specimen is given by the following relationship :-

Absorption value in % age = W2-W1/W1 ^100

or Percentage water absorption

ATTRITION TEST

This test is conducted to determine the resistance power of stone against the grinding action. This test is mainly conducted to find out the suitability of a particular stone for the road construction.

Procedure:

For this test 5 kg of broken angular pieces of stones are placed in both the cylinders of Decal's attrition testing machine. The cylinders are kept in an inclined position such that their axis make an angle of 30* with the horizontal. Now the cylinders are rotated at the rate of 30 r.p.m. for 5 hours.

Later on these pieces are removed from the cylinders and passed through 1.5 mm sieve. The quantity of stone pieces retained on the sieve is weighed. And by this, the loss in weight of sample can be calculated. The percentage wear can be calculated as = loss in weight / original initial weight *100

Stones which have greater percentage wear are unsuitable for road construction.

BRARD'S TEST

This is carried out to known the behaviour of stone against frost action. That's is why, this test is also known as frost test.

Procedure:

In this test few pieces of stone specimen are immersed in boiling solution of sulphate of soda. After this it is kept suspended for few days and reweighed. The loss in weight indicates the effects of frost action.

MICROSCOPIC TEST

This is carried out to examine the stones closely with help of microscope.

Procedure:

In this test, thin specimen of stone sample is taken and put under the microscope. Then it is examined carefully. The various properties of stone sample like composition of stone, any impurities present, grain size, cracks and layers, pores and shakes, texture of stone etc. can be examined.

In addition to above tests, many other tests are also there and they are conducted depending upon the use of stone for a particular work.

Think safe, buy right quality stone!