

**SECTION 90- AGGREGATES AND FILLERS**

**Coarse Aggregate**

2104. Grading. - Coarse aggregate normally comprises stone from 3 inches down to that retained on the  $\frac{1}{8}$  in BS SIEVE. The maximum size must not exceed 75 per cent of the compacted thickness of the construction layer. Recommended grading are given in Chapter 21.

2105. Characteristics. - Stone must be clean and free from loosely bonded coatings. Natural gravel can be used, but crushed angular particles of sound, durable rock are preferable. Blast furnace and steel slag may be used, but a higher percentage of binder is required.

Particle shape affects the degree of interlock.

Surface texture affects the adhesion of the binder:

- a. Medium and fine crystalline textures are the best.
- b. Coarse crystalline texture is suitable for large sizes, but unsuitable for chippings.
- c. Granular texture can be used if the aggregate is washed.
- d. Glassy, and badly pitted textures should not be used.

**Fine Aggregate**

2106. Grading. - The classification of sand in bituminous work differs from that used in soil mechanics, because of definitions adopted in BS publications.

It is taken as material which passes the  $\frac{1}{8}$  in BS sieve down to material on the No. 200 BS

2107. Characteristics. - Sand should be free from organic matter and should not contain more than 2 per cent of silt or clay. Sharpness is not essential, but material must be hard non-absorbent, and well graded. Natural Bank River, dune, or pit sand may be used, and quarry sand is also suitable.

**Fillers**

2108. Filler consists of finely divided inert mineral matter mainly passing a No. 200 BS sieve. Its inclusion increases the viscosity and durability of the binder and improves stability. Materials most commonly used are limestone dust, slate dust, granite dust, and Portland cement. Possible alternatives are slag dust, flue dust, china clay, fuller's earth, and hydrated lime.