



# Study of aggregate in concrete and effect of mixing rubber to the aggregate

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**Introduction** : Aggregates are defined as inert, granular, and inorganic materials that normally consist of stone or stone-like solids. Aggregates can be used alone (in road bases and various types of fill) or can be

used with cementing materials (such as Portland cement or asphalt cement) to form composite materials or concrete. The most popular use of aggregates is to form Portland cement concrete. Approximately three-fourths of the volume of Portland cement concrete is occupied by aggregate. It is inevitable that a constituent occupying such a large percentage of the mass should have an important effect on the properties of both the fresh and hardened products. As another important application, aggregates are used in asphalt cement concrete in which they occupy 90% or more of the total volume.

## Classification of aggregates.

Aggregates can be divided into several categories according to different criteria.

### 1). In accordance with size:

**Coarse aggregate:** Aggregates predominately retained on the No. 4 (4.75 mm) sieve. For mass concrete, the maximum size can be as large as 150 mm.

**Fine aggregate (sand):** Aggregates passing No.4 (4.75 mm) sieve and predominately retained on the No. 200 (75 µm) sieve.



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