

# What Is Aggregate And How Many Types of Aggregates?

[beidoou.com/materials/aggregate-and-how-many-types-of-aggregate.html](http://beidoou.com/materials/aggregate-and-how-many-types-of-aggregate.html)

## First, What Is Aggregate?

Aggregate is a granular material that act as skeleton and filling components in concrete and mortar, such as manufactured sand, natural sand, gravel, crushed stone and recycled concrete etc. Aggregate has a wide range of application in construction and other industries.



## Second, How Myany Types of Aggregates and How To Classify?

Aggregates as the collection of loose materials, its types can be classified according to its its source, aggregate size and its aggregate density as follows 3 categories:

### 1.Aggregate Types On The Basis Of Sources

According to aggregate source, it can be divided into natural aggregate, artificial aggregate and recycled concrete.

**Natural Aggregate:**It is composed of natural rock aggregate, such as sand, pebble, gravel, etc.

**Artificial Aggregate:**

- 1) Hot processed aggregate includes expanded shale, expanded vermiculite, etc.
- 2) Industrial bye-products include slag, iron slag, powder, etc.

**Recycled Aggregate:** It refers to broken concrete, broken clay brick, etc.

## 2. Aggregate Types On The Basis Of Aggregate Sizes

According to the size of aggregate, it can be divided into coarse aggregate and fine aggregate.

**Coarse aggregate:** It refers to rock particles larger than 5 mm, such as pebbles and gravels, usually obtain by crushed rocks.

**Fine aggregate:** It refers to rock particles ranges from 0.16 mm to 5 mm, such as river sand, mountain sand and sea sand.

Type	Fineness Modulus	Particle Diameter (mm)
	3.7-3.1	>0.5
Medium Sand	3.0-2.3	0.5-0.35
Fine Sand	2.2-1.6	0.35-0.25
Extra Fine Sand	1.5-0.7	<0.25

## 3. Aggregate Types On The Basis of Aggregate Density

According to the density of aggregate, it can be divided into 3 kinds: normal aggregate, lightweight aggregate and heavyweight aggregate.

**Normal Aggregate:** It refers to aggregate with density between 2500 and 2700 kg/m<sup>3</sup>, such as gravels, sand and crushed stone.

**Lightweight Aggregate:** It refers to aggregate with density between 0 and 1000 kg/m<sup>3</sup>, such as ceramsite, calcined shale, expanded vermiculite, expanded perlite, foamed plastic particles.

**Heavyweight Aggregate:** It refers to aggregate with density of 3500-4000kg/m<sup>3</sup>, such as iron ore, barite, etc.



## | Quality Of Aggregates

---

1. The aggregate should be hard, clean and well graded; the fineness modulus of artificial sand should be in the range of 2.4-2.8, and that of natural sand should be in the range of 2.2-3.0.

2. The moisture content of aggregate should be stable. The moisture content of artificial sand should not exceed 6%. If necessary, accelerated dewatering measures should be taken.

Usually, gravel aggregate needs to be mined and processed, and the gravel aggregate plants mainly contain 4 parts: feeding system, conveying system, crushing system and

l. Making aggregates need suitable production line.