

Types of stones used in the construction | Basalt, Granite, Limestone

Stones are derived from rock. Rock is a naturally occurring, aggregate of metallic and non-metallic minerals found in earth crusts. Stones are being used in construction since ancient times.

Stones in construction is popular due to their strength, availability, and durability. In construction, the types of stone are chosen according to their property.

Before using the construction, one should know about the characteristics of the stone. Followings are few commonly used stones. Rocks have complex geological, physical and chemical structures.

Types of stones used in the construction

1) Basalt and Trap:



Basalt is an igneous rock, formed by the solidification of

molten magma under pressure. Basalt has a medium to fine-grained structure. These stones are basically used as road metals. It has a specific gravity of 1.8-2.9 and a compressive strength of 200-350 N/mm².

Basalt is mostly in dark grey to black in colour. Basalts are very hard and durable stones, it can resist weathering action and are impervious to moisture. Besides, Basalt is used as coarse aggregates in concrete and rubble masonry for retaining walls and dams.

2) Granite:



Granite is a coarse-grained igneous rock, formed from magma of high content of silica and alkali metal oxides and solidifies underground. They are light grey to pink in colour.

Its specific gravity is 2.6-2.7 and compressive strength is about 100-250N/mm². Granites can be used as coarse aggregates in concrete, bridge piers, river walls, kerbs and pedestals. Polished granites can be used in flooring and tabletop cladding.

3) Sandstone:



Sandstone is a sedimentary rock. Quartz and feldspar are the predominant minerals for sandstone. The colour of the rock is determined by minerals present in it, Sandstone can be found in white, grey, red, brown colour.

The specific gravity of the sandstone varies from 1.82-2.7. It had a compressive strength of 20-170 N/mm². Sandstones are stratified rocks thus are affected by weathering action. Though sandstones are used in heavy masonry structures with silica cement.

4) Slate:



Slate is a metamorphic rock that originated from shale, under high temperature and pressure. Slates are dark grey to black in colour. Slate is a foliated rock having a specific gravity

of 2.6-2.7 and a compressive strength of 100-200 N/mm².

Slates are mostly used as roofing tiles, flooring tiles and pavers due to their property of low water absorption, good weathering action, and resistance to freezing temperature.

5) Limestone:



Limestone is a sedimentary rock, formed in Lakes and oceans. Calcite is the major component in the limestone. Limestones can be used for flooring, roofing, and pavements and as a base material for the cement.

Every kind of limestone can not be used in construction, Also Limestones are unsuitable in coastal and industrial areas. Industrial gases and salty wind can attack limestone.

6) Laterites:

Laterites are metamorphic rock. These are porous and have sponge-like structures. It has a specific gravity of 1.9-2.3. Laterites are red in colour due to the presence of high presence of iron oxides.

Laterites are used as building stones but should be plastered to avoid moisture entrance in the structure. Laterites gain strength with the seasoning.

7) Marble:

It is also a metamorphic rock, originated from limestone under high pressure and temperature. It has a specific gravity of 2.65 and its compressive strength varies from 70-75 N/mm². Marbles are principally used as building decoration and tabletops. used in flooring, staircase, tabletops. These types of stones are used in the construction where the look is more important than the quality of the structure.

8) Gneiss:

It is an igneous rock having fine to coarse grains, Gneiss have dark and white band alternately. Its specific gravity is 50-200N/mm² and its specific gravity is about 2.5-3.

9) Quartzite:

It is a metamorphic rock. It has a specific gravity of 2.55-2.65 and a compressive strength of 50-300N/mm².

10) Travertine:

Travertine is also used as a decorative stone. Its specific gravity is 1.68 and compressive strength varies from 80-120 n/mm². It has a porous surface and concentric texture used for paving gardens, paths yards.

Travertine is also used to make bathroom items. These stones are polished to get a shiny and smooth surface and colour.

I hope this article on “Types of stones used in the construction” remains helpful for you.

Happy Learning – Civil Concept

Contributed by,

Civil Engineer – Rajan Shrestha

Read Also,

Stone Masonry Wall | Types, Advantages, Construction Process

What are the qualities of a good building stone?

What is bulking of sand | How to determine bulking of sand in the field

Sand cone test Method- For Field Density of Soil with Formula