

## Uses of Igneous Rock as Construction Materials :

Igneous rocks have a wide variety of uses. One important use is as stone for buildings and statues. Diorite was used extensively by ancient civilizations for vases and other decorative artwork and is still used for art today (Figure 1).

Granite (figure 2) is used both in building construction and for statues. It is also a popular choice for kitchen countertops. Peridotite is sometimes mined for peridot, a type of olivine that is used in jewelry.

Pumice is commonly used as an abrasive. Pumice is used to smooth skin or scrape up grime around the house. When pumice is placed into giant washing machines with newly manufactured jeans and tumbled, the result is “stone-washed” jeans. Ground up pumice stone is sometimes added to toothpaste to act as an abrasive material to scrub teeth.



Figure 2. Granite is an igneous rock used commonly in statues and building materials.

## Granite :



This is a hard igneous rock made up of clearly visible crystals of various minerals. Granite looks good when it is polished and because it is also a very hard rock, it is often used for the façades (fronts) of buildings, for expensive kitchen worktops and gravestones.

## Basalt :



A dark-coloured, fine-grained rock. Basalt is one of the main rocks to form the oceanic crust (the part of the Earth's surface under the Ocean). When basaltic lava cools down it can form hexagonal columns such as seen in the Giants Causeway in Northern Ireland (see top right picture).

Basalt can be a rich source of iron and it is commonly used as an ingredient of concrete.

## Pumice :



Pumice is formed in volcanic eruptions when gas is violently released from the still molten rock, creating a rock with thousands of tiny bubbles in it. Pumice is very light, so light in fact that it can sometimes float on water.

People often use pumice stones to remove dead skin from the bottom of their feet. It is also used in abrasive (harsh) cleaning products and as an ingredient in lightweight construction materials.

## Glossary :

Abrasive - a hard, gritty substance that is used to smooth a surface

Crystals - pieces of mineral

Façade - the front of something, usually a building

Hexagonal - a structure with six sides

Minerals - a material that is naturally made in rocks

Molten - something that becomes a liquid when it gets hot enough

## **Explanation:**

Extrusive igneous rocks form when magma hardens above the earth's surface. Examples of these include pumice and basalt. Pumice is used in toothpaste and cosmetic products, while basalt is used in the construction of statues and buildings.

Intrusive igneous rocks form when magma hardens below the earth's surface. Granite is an example. Granite is used in countertops, statues and tombstones because of its durability. Gabbro is another intrusive igneous rock which contains profitable amounts of gold and silver.

Igneous rocks are formed from the solidification of magma, which is a hot (600 to 1,300 °C, or 1,100 to 2,400 °F) molten or partially molten rock material. Earth is composed predominantly of a large mass of igneous rock with a very thin veneer of weathered material—namely, sedimentary rock. Whereas sedimentary rocks are produced by processes operating mainly at Earth's surface by the disintegration of mostly older igneous rocks, igneous—and metamorphic—rocks are formed by internal processes that cannot be directly observed and that necessitate the use of physical-chemical arguments to deduce their origins. Because of the high temperatures within Earth, the principles of chemical equilibrium are applicable to the study of igneous and metamorphic rocks, with the latter being restricted to those rocks formed without the direct involvement of magma.

## **Sedimentary Rocks:**

### Types of sedimentary rocks

There are number of sedimentary rock types. These are provided so as to discuss uses of sedimentary rocks based on its types.

#### 1. Clastic sedimentary rocks

1. Conglomerates and breccias
2. Sandstones includes Quartz , Feldspathic, Lithic, "Clean" sandstones, Muddy sandstones

#### 2. Biochemical sedimentary rocks

1. Limestone; corals, mollusks, foraminifera, and coal

#### 3. Chemical sedimentary rocks

1. Pyroclastic flows, impact breccias, and volcanic breccias

## Uses of Sedimentary as Construction Materials :

- Oil, natural gas, coal, and uranium, our major energy resources, are formed in and come from sedimentary rocks.
- Sand and gravel for construction come from sediment.
- Sandstone and limestone are used for building stone.
- Rock gypsum is used to make plaster.
- Limestone is used to make cement.
- Salt is used for flavoring

## Sandstone :



As its name suggests, this stone is made of sand. Because it is easy to work with, sandstone has been a popular building material around the world for a long time. In areas where it is common, like West Yorkshire, almost every building is made from it. Cliffe Castle Museum is constructed from sandstones.

## Limestone :



It is used in many different ways: as a building stone, in the production of lime (an important material to improve soil for farming), glass making, industrial carbon dioxide and cement. Chalk is a form of limestone.



## Shale (Mudstone)



Mud, silt and clay are the ingredients of shale. These are compacted to form a soft, easily broken, usually dark coloured rock. Shale can be used as a filler in the production of paint, used in brick making and is sometimes used as a base material under roads.

## Glossary

**Compacted** - when things are tightly packed together

**Filler** - substance used to fill spaces

**Primarily** - first or originally

**Remains** - all that is left of something, usually a building or a body