



16 Important Types of Cement Used in Construction

Types of Cement



Ordinary Portland cement

This cement, also called the basic Portland cement, is ideal for use in common concrete structures that are not exposed to sulfate in soil or groundwater.

This cement is by far the largest produced than any other cement. It is manufactured by grinding Portland clinker, which may add up to 1% air entrainer with a small amount of gypsum, water, or both. This very useful type of cement.

Portland Pozzolana Cement

Portland Pozzolana Cement is prepared by grinding clinker and Pozzolana or blending Portland cement with fine Pozzolana. The proportion of Pozzolana varies between 10% and 25% of the weight of cement.

PPC cement is suitable for the following conditions: It is also used for waterfront structures or offshore structures like dams, piers, thick foundations where mass concrete is used, sanitation systems such as sewers.

Calculate construction Cost @ <https://www.saibuildersindia.com/saibuilders/construction-cost-calculator>

Rapid Hardening Portland Cement

Cement is made by intimately mixing calcareous and clayey and/or other silica, alumina, or iron oxide containing materials.

This cement has the same chemical composition as regular Portland cement, but is more finely ground. Its 24-hour strength is about the same as that achieved with normal Portland cement after 3 days. This cement allows for early removal of the shutter, which directly impacts time and cost savings.

Extra Rapid Hardening Cement

Extra rapid hardening cement is a suitable modification of quick-hardening cement. Manufactured by grinding calcium chloride with fast-setting Portland cement. Calcium chloride is usually mixed with 2% by weight of quick-setting cement. Since ultra-rapid cement is very sensitive, the concrete should be placed after transportation, placed, compressed and finished within 20 minutes after mixing. After the addition of water, a very large amount of heat is generated in a short period of time with hydration. Therefore, this type of cement is ideal for concrete in cold climates.

Portland Slag Cement

In Portland Slag Cement, blast furnace slag is a non-metal product consisting essentially of glass-containing silicates and lime aluminosilicates and other bases, which are developed simultaneously with iron in a blast furnace or an electric pig iron furnace. Grinded granular slag is obtained by further processing the molten slag by rapid cooling or quenching with water or steam and air.

Request a Quote @ <https://saibuildersindia.com/saibuilders/home#request-quote-to-us>

Hydrophobic Cement

Hydrophobic cements are prepared from regular Portland cement clinker by adding certain water repellent chemicals during the grinding process. A water-repellent coating is formed on each particle of cement to prevent water and moisture from the air from being absorbed by the

cement. This film breaks during concrete mixing and the normal hydration process works just like normal Portland cement.

Sulfate Resistant Cement

Since normal Portland cement is susceptible to sulphate, sulphate resistant cements were developed for use where the soil is sulphate infected.

In the case of cement due to sulphate attack at O.P.C., it can expand in the concrete frame, with cracks and subsequent fracture.

Many studies have found that cements with lower C3A content give better results in order to reduce the attack by sulfates. Sulfate resistant cement has a high silicate content and low C3A and C4AF.

Quick Setting Cement

Quick setting cement sets very quickly. This cement is used for aggressive basic conditions, such as where pumping is required or underwater land.

Fast-setting cement achieves fast-setting by reducing the gypsum content when crushing clinker. Quick setting cement is also used in some typical pouring operations.

High Alumina Cement

This cement is obtained by grinding a high-alumina clinker consisting of monocalcium aluminate. High-alumina cement clinker is a selected mixture of materials containing mainly alumina (Al_2O_3) and lime (CaO), either fully or partially with a low proportion of iron oxide, silica (SiO_2), and other oxides. Obtained by melting. High initial strength, high heat of hydration, and very high resistance to chemical attack are characteristics of high alumina cement. It is black in color. Its rapid hardening properties are due to the high proportion of calcium aluminate in place of the calcium silicate found in normal Portland cement.

Super sulfated Cement

It is a hydraulic cement with less than 5% sulfuric acid (SO_3) content and grinds a mixture of at least 7% blast furnace granulated slag, calcium sulphate and a small amount of lime or Portland clinker. This cement is used for marine construction, large amounts of concrete construction to resist aggressive water attacks, reinforced concrete pipes in groundwater, concrete construction in sulphate-containing soil, and chemical construction exposed to high concentrations of weak sulphate. A solution of mineral acid used in very serious conditions such as. It can also be used on the underside of railway bridges and sewers.

Contact us @ <https://www.saibuildersindia.com/saibuilders/contact>

Masonry Cement

Masonry cement is obtained by mixing a mixture of Portland cement clinker and an inert material (non-pozzolan) with limestone and the like.

Agglomerates, dolomites, limestone, gypsum, and air-entrained plasticizers. Masonry cement has a slow hardening, high workability and high water retention, making it particularly suitable for masonry work.

Oil Well Cement

Well cement is a special purpose cement that seals the space between a steel casing and a sedimentary rock by injecting a slurry into an oil well that has been drilled for oil. This cement prevents oil and gas from leaking out of the well. This cement also prevents sulfur gas and water containing dissolved salts. All these properties of oil well cements are obtained by adding a complex composition of cement with retarders such as starch and cellulosic products and acids.

Colored Cement

Colored cement is made by adding color-carrying pigments with Portland cement clinker. The pigment dosage is 5-10% of Portland cement. White or gray Portland cement is used as a matrix to achieve different colors. White Portland cement is manufactured similar to OPC.

Expandable Cement

Expandable cement is a type of cement that does not change in volume when dried. This type of cement also does not shrink during or after curing. This type of cement was developed using an expanding agent and a stabilizer.

Air-entrained Cement

Air-entrained cement is made by adding an air-entraining agent in powder or liquid form using OPC cement clinker. Other external materials are added animal and vegetable fats, oils and other acids, including aluminum powder, certain wetting agents such as hydrogen peroxide, and the introduction of air entraining agents to harden concrete. Improves frost resistance. By using this cement, the workability, segregation, and bleeding properties of concrete are improved.

Read More @ <https://www.saibuildersindia.com/saibuilders/know-the-different-types-of-cement-used-in-construction>