

Some of the main types of cement

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There are many types of cement . It is used in building and construction works for various purposes. Some of the types are given below.

Rapid Hardening Cement:

This cement is similar to ordinary Portland cement but in this cement content of tri-calcium silicate (C3S) must be higher and finer grinding. This cement is manufactured with similar raw material and processes that used in making of Portland cement. This cement is highly resistant to freezing and thawing and due to its rapid hydration it can be used in cold weather conditions which is not possible with Portland cement. It has much smaller carbon footprint than the Portland cement . It is expensive than the Portland cement which is less expensive. This type of cement is use for the construction of the roads, industries which manufacture concrete products like slabs, electric poles and block fence etc. It attains high strength in early days.

Quick Setting Cement:

The difference between these two cement quick setting cement and rapid hardening cement is that quick setting cement sets earlier while rate of gain of strength is similar to ordinary Portland cement, while rapid hardening cement strength quickly . As the name of this cement indicates that this type of cement are used where quick setting is needed. when this type of cement is mixed with water starts to set in five mints and become hard like stone after 30mints. It is manufactured by adding a small %of aluminum sulfates and then it is finely grinded with cement . It is expensive and not widely available and it is used in under water construction and also used in rainy and cold weather .

Low Heat Cement:

This type of cement contains less percentage of C3S and C3A, but it contains higher percentage of C2S as compare to the ordinary Portland cement. This type of cement has lower strength as compare to ordinary Portland cement. This cement is used in mass concrete construction, because when the temperature increases in mass concrete due to the progression in heat of hydration cause serious crack so, in this case it is very important to limit the rate of heat evolution during construction by using this type of cement. The concrete made by this cement is highly resistance against ruptures but it cannot be used in cold weather condition.

Sulphate Resisting Cement:

This type of cement is available in bulk only. In this type of cement the amount of Tricalcium aluminate is restricted to lower than 5% and it results in the increasing in resisting power against sulphate attack. Ordinary PPC cement is not able to resist attack of sulphates. It is used in marine structures, in sewage linings, and also widely used in chemical industries. This cement has reduces contents of C3A and C4AF. It is also used in coastal works.

Blast Furnace Slag Cement:

It is a hydraulic cement . It is a nonmetallic coproduct produced in the process . It consist of silicates, aluminates and calcium alumina silicates. The content of iron in this cement is usually lower than 0. 5wt . This type of cement minimize the shrinkage cracks, improved workability and also shows resistance against alkali – silica reaction. It is not expansive and used in the construction of dams and other mass concrete works. It is also used in

foundations and piles constructions and also used in water retaining structures.

High Alumina Cement:

It is a special type of cement and also known as the Calcium aluminum Cement. It is used in cold areas where rapid strength at very high temperature. This type of cement is very reactive and it is also fire resistant. This type of cement is more workable than ordinary Portland cement. It is very expansive. It is manufactured from limestone or chalk and bauxite. It has low pH. It hardens rapidly and it cannot be used in mass construction as it produces large amount of heat and sets soon . It is the main raw material for the production of water purification agent. It can also be used in the manufacturing of chemical industry catalyst, casting model and spark plug etc.