

Concrete Curing Compound

Curing is essential for the hydration of cement in concrete making. So, to maintain required moisture content, some precautions are applied. Concrete curing compound is a compound which helps to prevent the loss of moisture content from the concrete. So, concrete is properly cured which results in the full development of strength of concrete.

Types of Concrete Curing Compounds

- Synthetic resin compound
- Acrylic compound
- Wax compound
- Chlorinated rubber compound

Synthetic Resin Concrete Curing Compound

Synthetic resins will seal the concrete by forming a membrane. If we want to provide plastering, the membrane can be removed by washing it with hot water.

Acrylic Concrete Curing Compound

Acrylic is made of polymers of acrylic acid. It also seals the concrete in a good manner. It has the property of adhesion to the subsequent plaster. No need to wash the surface of acrylic with hot water if we want to provide plastering.

Wax Concrete Curing Compound

Wax compounds have similar properties like resin compounds. The wax membrane will lose its efficiency with time increment.

Chlorinated Rubber Curing compound

Chlorinated rubber type curing compound will form a thick layer when applied. It seals the concrete tightly and also fills the minute pores present in the concrete. But the film cannot stay for a longer period. It wears out in the long run.



Properties of Concrete Curing Compound

There are 5 properties to decide the quality of concrete curing compound namely

- Water retention
- Reflectance
- Drying period
- Long term setting
- Non-volatile matter

Process of Applying Concrete Curing Compound

Concrete curing compounds form a membrane when applied to fresh concrete. This membrane does not allow the inside moisture to come out of the concrete, hence, curing occurs. These curing compounds possess waxes, natural resins, synthetic resins, and solvents of high volatility. Generally, white or gray colors appear when the curing compound is applied to fresh concrete. These pigments provide heat reflectance and are also useful to check the area of curing completion.



Curing compound is applied when the finishing is completed and free water present on the surface has disappeared. The curing compound is applied through a spraying pipe as shown in the above figure with a constant rate of pressure. Generally, one liter of curing compound can be sprayed for 0.20–0.25 m² surface area of fresh concrete. The sprayer pressure is usually 0.5–0.7 Mpa. In small areas, we can also use brushes or paint rollers to apply curing compounds. "Curing compound should not be applied on surfaces which receive additional concreting.

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Uses of Concrete Curing Compound

There are many uses of curing compound in concrete. Which are

- If wet curing is not possible, then curing compound can be used to cure the concrete surface.
- For larger areas of concrete surfaces which are opened to sunlight, wind etc. curing is a big task. But with the presence of curing compound it is easier.
- Curing of concrete pavements, runways, bridge decks etc. can be cured to reach their maximum strength.
- Maximum durability of structure will be developed.
- Curing compound can be used for curing of canal linings, dams
- Columns, beams, slabs can also be cured with curing compound
- The membrane can be removed easily after complete curing period.

Testing of concrete curing compounds can be carried out as per ASTM C 309. ASTM C 309 provides specifications and testing of concrete curing compounds.