



Superplasticizers in Concrete

[Source: PR](#)

Superplasticizers are often added to **dry-pressed concrete** to make it easier to work with and to improve its density and surface finish.

- Superplasticizers are **sulfonated melamine formaldehyde condensates or sulfonated naphthalene formaldehyde condensates**.
- It is a **water-reducing admixture** used in making concrete.
- The **water-cement ratio** is an important factor in deciding the durability of concrete because concrete's impermeability, strength and durability are directly proportional to the water-cement ratio.
- In regular cement pastes, when cement particles get close, they tend to stick together in big **clumps** because of the attraction between them. This means more water has to be added than necessary.
 - These can be overcome by adding superplasticisers at the appropriate stage of mixing the ingredients of concrete which reduces the inter-particle attraction of cement particles.
- It helps to reduce inter-particle attraction between cement particles and to disperse the cement particles with less water.
- Superplasticizers are used to produce "flowing" concrete for placement in inaccessible locations, and also to produce high-strength concrete with normal workability but very low water/cement ratio to reduce the heat of hydration in mass concrete.

PDF Reference URL: <https://www.drishtias.com/printpdf/superplasticizers-in-concrete>