

## 1.7 WATER

Water is the most important material for construction, especially for making concrete.

### **The purpose of water in concrete are**

- It distributes the cement evenly.
- It reacts with cement chemically and produces calcium silicate hydrate (C-S-H) gel which gives the strength to concrete.
- It provides for workability, i.e., it lubricates the mix.

Hence, for construction, quantity and quality of water is as important as cement.

### **Effects of water in concrete**

As water quantity goes up in a mix (ill effect), the following are the effects:

- Strength decreases
- Durability decreases
- Workability increases
- Cohesion decreases
- Economy may increase at the expense of quality and reliability.

### **Sources of water in concrete**

- Intentionally added water, known as mix water
- Aggregate moisture, which can either add water to the mixture or absorb water from the mixture.

### **Importance of quality water in concrete**

The quality of water used must be checked for ensuring good quality concrete. Water used for mixing and curing should be free from oil, acid and alkali, salts and organic material. It should be of potable quality and generally purer than that required for drinking.