# SHEET PILES AND DEWATERING

## SHEET PILES

It is the type of pile that is made of concrete, steel or wood

The thickness of the pile is very less when compared to the length and width of the pile

To prevent the entry water in construction the sheet piles are used, this is also used to separate the vertical member of the building

The piles are inserted by some machine the depth of the piles can be increased by proper joints in successive installment

### Functions

To enclose the site or part to prevent escape of loose soil

To retain the sides of trenches or excavation

To construct retaining wall in the marine structures

To prevent seepage below the dams or hydraulic structures to construct coastal defense work

To protect the foundation from scouring action of nearby river

### Concrete sheet piles

Reinforced precast unit having the width of 50 to 60 cm and thickness 2to 6cm and the depth can be increased by further installment

### Timber sheet piles

it is used only for temporary works ,the width of the pile varies from 225to 280 cm the thickness shall not be less than 50mm

## DEWATERING

DEFINITION
When water table exists at a shallow depth below ground surface, it is essential to lower the water so as to carry out construction of foundation, basement, and metro tunnels etc.This is achieved by pumping out water from multiple wells installed at the site. The process is called as dewatering.

**Types of dewatering method**

Dewatering can be done by adopting one of the following four strategies
Dewatering of soil by temporary lowering of water table using wells and pumps prior excavation as depleted in figure

Allowing water to reap into excavation area, collecting it in sumps and pumping it out. Before that adequate steps have to be taken to support the soil on sides of the excavated area, to prevent washing away of fines and have sufficient space for the work area.

Making the soil around excavated zone impermeable by technique such as grouting are freezing so that inflow of water is stop are minimized.

**INSTALATION TECHNIQUE**

Sufficient size and capacity of dewatering system is necessary to lower and maintain ground water table and to allow material to be excavated in a reasonable dry condition.
Excavation slopes to be stabilized where sheeting is not required

Dewatering system is to be operated continuously until backfill work has been completed.

Then, the structure to be constructed at the excavated area has to be finished

The complete stand by have to be available for immediate operation as may be required, to adequately maintain dewatering on continuous basis and in the event that all or any other part of the system may become inadequate or fail

The water removed from the excavation to be disposed in such a manner as will not endanger portions of work under construction or completed.

For dewatering purpose, well points deep well, caissons and tunnels are used.

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