Types of Dams, Earth Dam, Rock Fill Dam, Arch and Storage Dam

Types of Dams

Following are the types of Dams

Earth Dams are constructed of soil pounded and compacted into solid mass. These are constructed in areas where the foundation is not strong to bear the weight of a concrete dam and where earth is easily available.

Rock fill Dams are formed of loose rocks and boulders piled in the river bed. A slab of reinforced concrete is often laid across the upstream face of a rock fill dam to make it water tight.

Solid Masonry Gravity Dams are big and expensive to be built but are more durable and solid than earth and rock dam. They can be constructed on any dam site, where there is a natural foundation strong enough to bear the weight of the dam.

Hollow Masonry Gravity Dams are designed on the same lines on which the solid masonry gravity dams are designed but they contain about 35 to 40 % less concrete or masonry. Generally the weight of water is carried by a deck of R.C.C.

Steel Dams are used as temporary coffer dams needed for the construction of permanent dams. Steel coffer dams are usually reinforced with timber or earth fills.

Timber Dams have short life usually not more than 30 to 40 years and must have regular maintenance during that time. However they are valuable in agricultural areas for meeting low level needs.

Arch Dams ae very complex and complicated types of Dams. They make use of the horizontal arch action in place of weight to hold back water. They are best suited for sites where the dam is required to be very high and narrow.

Storage Dams are constructed in order to store water during the periods of surplus water supply. The stored water can be used in different seasons and for different uses. These dams may be further classified depending upon the specific use of the water, such as navigation, recreation, water supply and electricity etc.

Diversion Dams are small dams used to raise the river water level, in order to feed an off-taking canal. A diversion dam is generally called a weir or barrage.

Detention Dams detain flood waters temporarily so as to retard flood run-off and thus minimize the effects of floods. Detention dams are sometimes built to trap sediment. They are often called debris dams.

Overflow Dams are designed to pass the surplus water over their crest. They are often called spillways. They are made of materials that do not erode with such discharges.

Non-Overflow Dams are those which are not designed to be overtopped. This type of design gives wider choice of materials including earth-fill and rock-fill dams.

Rigid Dams These types of Dams are those which are constructed of rigid materials like masonry, concrete, steel, timber etc while Non**-Rigid dams** are constructed of earth and rock-fill.