

Theory of Structure

Conducted By: Bikash Debnath

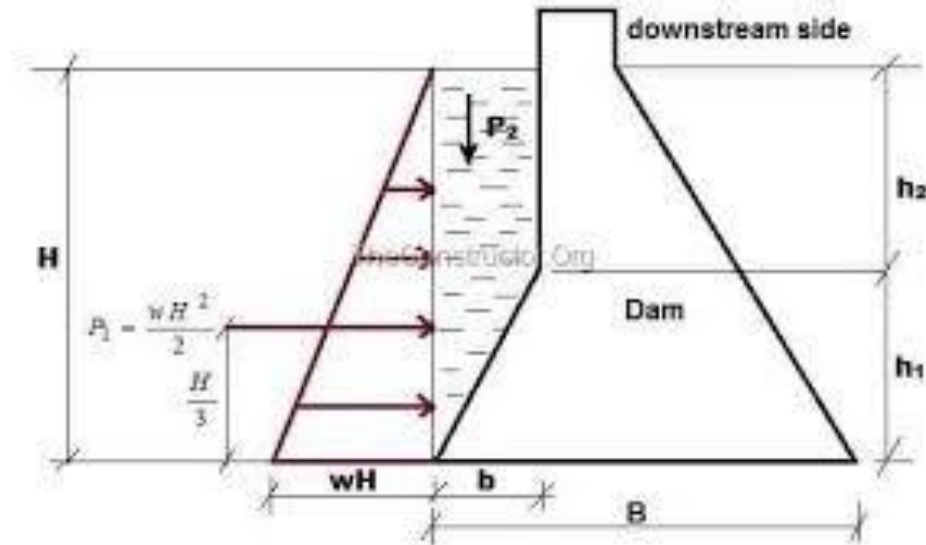
Civil Technology

The meaning of middle third law

- ▶ In civil engineering, the Middle Third Rule states that **no tension is developed in a wall or foundation if the resultant force lies within the middle third of the structure.**

Stability of a masonry dam

- ▶ Therefore, the requirements for stability are, **The dam should be safe against overturning.** The dam should be safe against sliding. The induced stresses (either tension or compression) in the dam or in the foundation should not exceed the permissible value.



Forces Acting on Gravity dam | Components | Design criteria

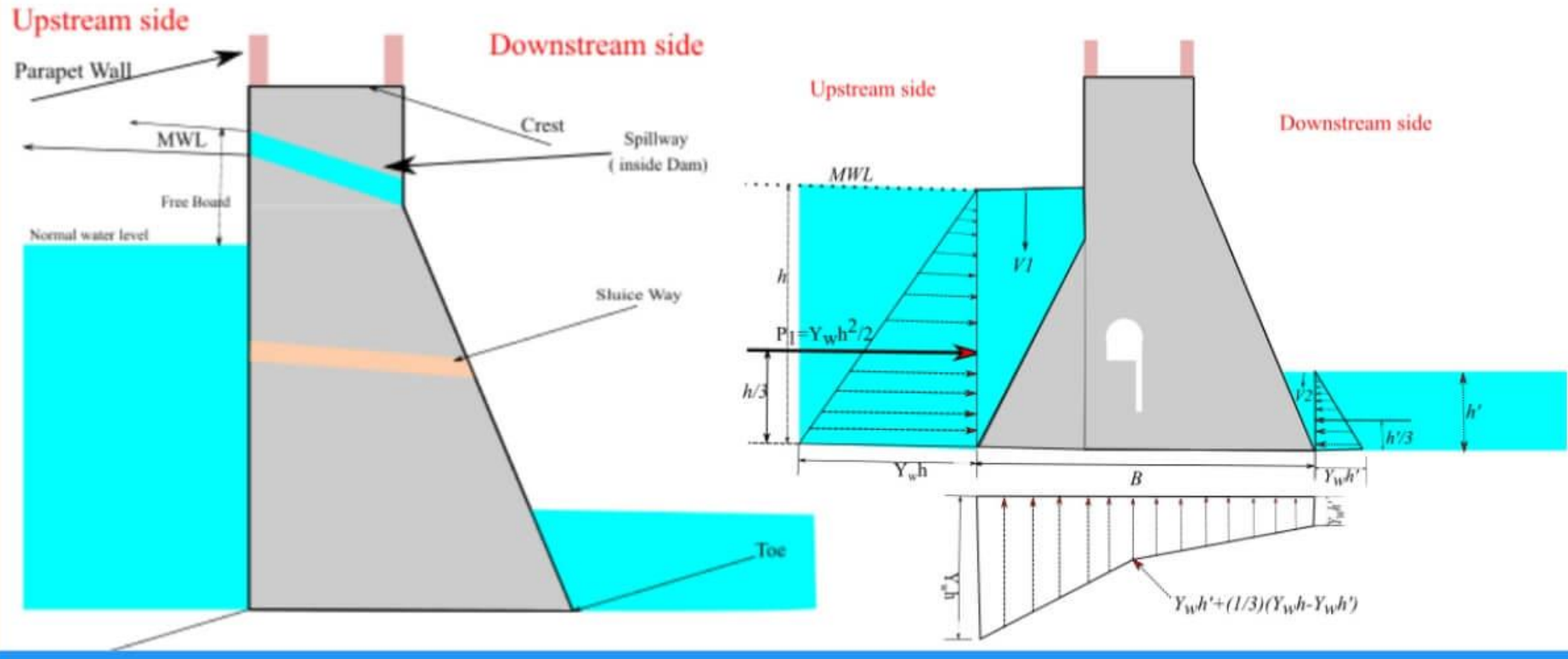
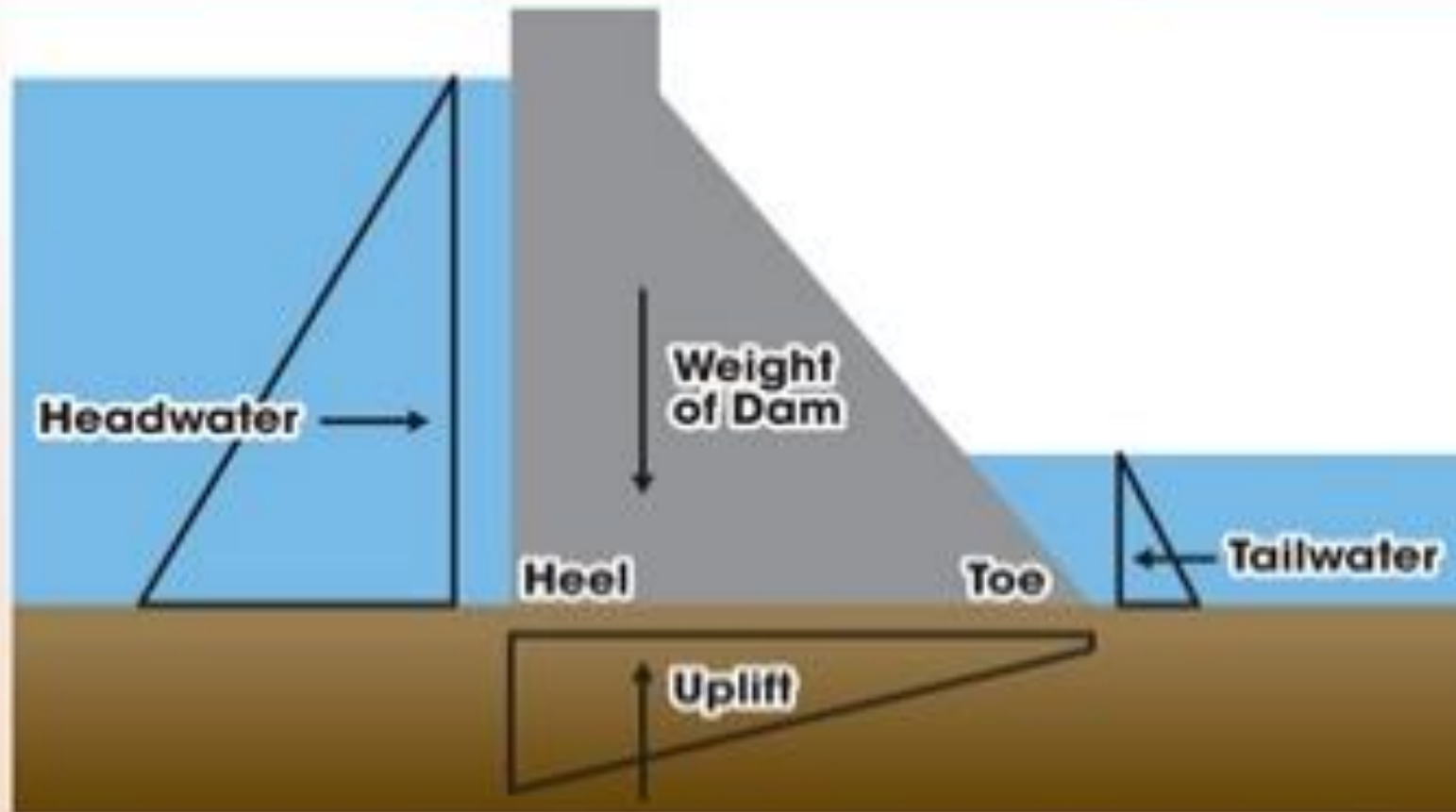


FIGURE 1 Typical Forces for a Gravity Dam



For any size of gravity dam, typical forces included in a two-dimensional stability analysis include headwater and tailwater, weight of the dam, and uplift.