

FLOTATION

Problem: PROVIDE DISCUSSION TO CONVEY AN UNDERSTANDING OF FLOTATION AND HOW IT APPLIES TO PRECAST CONCRETE UNDERGROUND STRUCTURES.

Question 1: WHAT IS FLOTATION?

A body sitting in water is subjected to a vertical force from the buoyant effect of the liquid. This effect can be understood by pushing an empty cup into a bowl of water. It wants to float to the surface as soon as the hand is removed. Flotation occurs when the cup is moving upward out of the water.

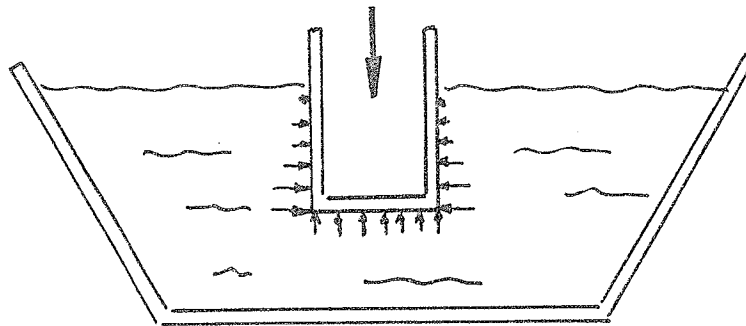


fig 7-1

Using the same principles, a concrete structure will float if there are not enough vertical downward forces.

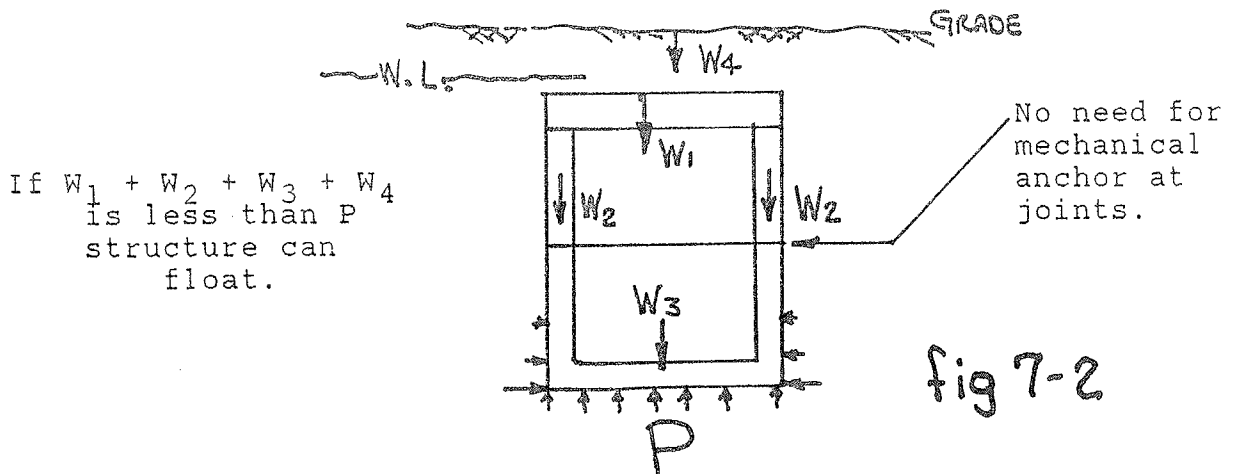


fig 7-2

Note that the upward force is on the bottom slab not on the side walls.