VERTICAL LOAD ANALYSIS FOR OVERHEAD SERVICE RESERVOIR (FOR 75,000 LITER CAPACITY)

ARVIND DEWANGAN AND R. K. BAKSHI

Abstract

This paper presents the view of construction of concrete structure for the storage of water & other liquid the imperviousness of concrete .The permeability of any uniform and thoroughly compacted concrete is given mix proportion is mainly depend on the water cement ratio. The increase in water cement ratio results in increase the permeability. The decrease in water cement ratio may cause compaction difficulties and prove to be harmful also. For a given mix made with particular material there is a lower limit to the water cement ratio which can be used economically on any job. It is desirable to specify cement content sufficiently high to ensure that through compaction is obtainable while maintaining a sufficient low water cement ratio. The quantity of cement should not be less than 330 kg/m3 of concrete. It should also be less than 530 kg/m3 of concrete to keep the shrinkage low. In thicker section ,where a reduction in cement content might be desirable to restrict the temperature rise due to cement hydration ,lower cement content is usually permissible. It is usual to use rich mix like M 30 grade in most of the water tanks. Design of liquid retaining structure has to be based on the avoidance of cracking in the concrete having regarded to its tensile strength. It has to be insured in its design that concrete does not crack on its water face. Cracking may also result from the restraint to shrinkage, free expansion & contraction of concrete due to temperature and shrinkage & swelling.