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**ABSTRACT:**

In this study, Wind Force acting on an Elevated steel water tank with different bracing systems e.g. Cross bracing, K-bracing, V-bracing & Knee bracing are studied. Wind forces acting on the tank are considered of two different zones i.e. NAGPUR & BHUJ and calculated with reference IS: 875-1987(Part III) for wind load on each of the bracing systems. Elevated water tank has different vibratory characteristic compared with ordinary structure, because ‘water’ affect the vibratory behavior therefore water pressure is also considered in analysisand the wind load estimation will be taking into account the random variation of wind speed with time but available theoretical methods have not matured sufficiently at present for use in the code. For this reason, static wind method of load estimation which implies a steady wind speed, which has proved to be satisfactory for normal, short and heavy structure. However, a beginning has been made to take account of the random nature of the wind speed by requiring that the along-wind or drag load on structure which are prone to wind induced oscillation, in this accordance the staging of elevated steel water tank analyze by using the software STAADPRO.And Optimizethe bracing for elevated steel water tank.