

Comparison of International Building Codes Treatments to Multi Hazards affecting Tall Buildings

Tall buildings are designed to resist several loading conditions. A multi hazard design approach that takes advantage of the similar requirements of different loading conditions will achieve efficient design. Different international building codes have different requirements for different loading conditions, and the net effect on the efficiency of the multi hazard approach could vary considerably. This paper will compare the requirements of some international building codes on two main hazard conditions that affect tall buildings, namely wind and seismic hazards. First, the provisions for different international codes for wind and seismic hazards will be presented. Next, the requirements for wind and seismic provisions for each design code will be compared. It will be shown that following a multi hazard approach could result in large cost reductions for tall buildings. Higher cost reductions can be realized for low and moderate seismic zones, if a multi hazard approach is followed. However, the extents of multi hazard approach cost savings vary greatly for different international design codes. The implications to tall building owners and insurers are highlighted.