

## **Torsional Design Method of Asymmetric and Irregular Building under Horizontal Earthquake Action**

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**Abstract :** Based upon elaborate analysis on torsional design methods of asymmetric and irregular structure under horizontal earthquake action, it points out that the main design principles of an asymmetric building subjected to horizontal earthquake are: the torsion of vertical members induced by the torsion angle of the floor (rigid diaphragm) cannot exceed the allowable value, the inter-story displacement at outermost frame or shear wall should be less than that required by design code, stresses in plane of the slab should be controlled within acceptable extent under different intensity earthquakes. That current seismic design code only utilizes the torsion displacement ratio to control the floor torsion, which seems not reasonable enough since its connotation is the multiple of the floor torsion angle and the distance of floor mass center to the edge frame or shear wall.

**Keywords :** earthquake, building, seismic forces, displacement, resonance, response

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