MODELING AND DESIGN OF DEFORMABLE DUCTILE STRUCTURES RESISTANT TO EARTHQUAKE EFFECTS USING THE BEARING CAPACITY METHOD

Perić, Lj.

Abstract: The modern approach to design and sizing of seismically resistant ductile structures is presented in this paper. The bearing capacity method is an integral method of sizing and shaping of reinforcement details of main bearing elements. The result of application of this method is controlled occurrence of mechanisms of plastic hinges with clearly differentiated hierarchy of their development and predictable controlled behavior in the case of computational seismic activity. The method delivered high level of protection against collapse.

Key words: ductility, principle of equal maximum displacements, plastic hinge, behavior factor, cyclic stress, effective mechanical characteristics of material, equivalent single degree of freedom system, local and global ductility.

Authors' data: Perić, Lj.[upko], B. Sc. C. E., Muentzbergstrasse 9, Baden, Switzerland, l.peric@bluewin.ch.