

Efficiency of jet grout columns and sand-recycled material mixtures for mitigating liquefaction damage

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Liquefaction is an important seismic phenomena that has to be assessed and consequently makes it essential to take measures in order to reduce related hazards. There are several ways to assess liquefaction potential analytically and some constitutive models implemented in FEM softwares presenting cyclic behaviour of sand making it possible to observe shear strain or excess pore pressure ratio which are measures to hold a view about liquefaction occurrence. According to various studies in the literature, post-earthquake inspections show that the measures in terms of grouting, piled rafts and sand mixtures with different non-liquefiable materials reduce liquefaction related damage. This paper aims to provide a brief information about effectiveness of jet-grout columns and recycled material-sand mixtures against liquefaction by the help of numerical analyses performed with MIDAS GTS NX software with regard to generation of shear strains.

Key words: liquefaction, numerical analyses, jet-grout, sand mixtures