

NUMERICAL MODELLING ON VIBROFLOTATION SOIL IMPROVEMENT TECHNIQUES, USING SEVERAL CONSTITUTIVE LAWS

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The vibroflotation technique is one of the most extended procedures to improve the compaction and the bearing capacity of a granular soils. It consists of the densification phenomenon produced at dry or completely drained granular soils when they are subjected to punctual vibrations, by means of an equipment called vibrator. This technique is usually designed according to total empirical approaches.

A numerical formulation is presented in this paper, employing both and Endochronic based densification [1], and Generalized Plasticity (Pastor-Zienkiewicz) [2] constitutive laws, which have been implemented in a dynamic numerical finite element code formulated in axisymmetric coordinates. Absorbing boundaries [3] have been considered in the numerical codes aiming to avoid the spurious reflexion of waves in the soil limits, since they would produce not real densification ratios in the numerical computations.

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