

## **Experimental and theoretical studies of bearing capacity and deformation of reinforced soil foundations under cyclic loading**

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### **Abstract**

The article discusses design models bearing capacity and deformation of reinforced soil base vertical elements. Development of new analytical expressions of the mechanical condition of reinforced base with a joint deformation of the soil and reinforcing elements. Resistance reinforced base shift in the boundary zones formed of earth resistance by compression reinforcing elements and the resistance to bending of reinforcing elements. The bearing capacity of the soil under the reinforcing elements is determined from the strength of triaxial compression. The value of shear force, the perceived reinforcing elements is determined from the equation of equilibrium moments of the external and internal forces of the most loaded section of the reinforcing element, clamped through the shear plane of the soil. The resistance of reinforced soil compression in the middle part defined of the requirements of strength under triaxial compressive. Deformation of the reinforced base determined by the method of layer-stack surround the stress-strain state and joint deformation of the soil and reinforcing elements.

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