ENGLIH SUMMARY

UDK 624.154:624.042.1:681.3

SIREN, KARI and MIKKOLA, MARTTI, Analysis of pile foundation. Rakenteiden Mekaniikka 8 (1975) 2, p. 81...106.

A matrix displacement formulation is presented for the solution of the displacements and pile forces of a pile foundation on the assumption of a completely rigid foundation slab and of linearly elastic piles. In the evaluation of the stiffness matrix, the various supporting conditions of individual piles and the lateral elastic resistance of the soil on the piles have been taken into account. Three cases of lateral resistance are treated: (i) no resistance, (ii) constant modulus of foundation (cohesive type of soil), (iii) modulus of foundation linearly increasing with the depth (friction type of soil). A computer program has been prepared on the basis of the presented equations. A numerical example illustrates the use of the method.

UDK 539.376:624.01:691.1/.7
624.044

KANERVA,PEKKA, Creep and long-term strength of building materials A state-of-art-report. Rakenteiden Mekaniikka 8 (1975) 2, p. 107...137.

The main purpose of the article is to introduce to the practicing engineers the dependence of the deformationproperties of materials on their structure. The time-dependence of properties is specially emphasized. The main micromechanismes of creep deformation are briefly described and the observed long-term properties of some usual building materials are explained referring to their structure. The effect of moisture content and temperature on deformations are principally discussed. Some points of view on the long-term strength of materials are also treated presented Steel, concrete, wood and some fine-graded soils are dealed as examples.

UDK 624.042.5:624.072.33

J.S. KAJASTE-RUDNITSKI, Thermal stresses induced by the point source in an isotropic circular ring. Rakenteiden Mekaniikka 8 (1975) 2, p.138...154.

The problem has two parts, the first of which concerns determination of the temperature field, with temperature being expressed in terms of Fourier series in the circumferential direction. The unknown coefficients are functions of the radial coordinate, and are derived, with the help of Bessel functions, from the resultant ordinary differential equations. The second part concerns solution of the stresses attributable to the temperature field obtained. This is achieved by use of the thermoelastic potential, which is expressed similarly to the temperature.