

ENGLISH SUMMARY

RHEOLOGICAL MODELS DESCRIBING
THE DEFORMATIONS OF CLAYEY
SOILS*Antti Leskelä**Rakenteiden Mekaniikka 3 (1970) pp. 75 to 84*

This paper is, above all, a study of literature with the intention of briefly presenting the models used in different loading conditions. Furthermore, the applicability of the same models to laboratory testing is treated.

To begin with, the paper gives a brief description of the fundamental parts which constitute the models illustrating the deformation properties of clayey soils. Likewise, the simplest models together with the basic equations were treated.

Models applicable to different loading conditions are presented basing this knowledge on examples and on test results found in literature. The relaxation and retardation tests were passed over with merely brief statements and attention was principally centered on the constant load, the consolidation and the secondary compression models. Furthermore, an example was given of a model used to depict the deformations due to repeated loading.

Lastly, a short allusion was made to the criticism presented in literature as to the practicability and applicability of rheological models.

NUMERICAL TREATMENT OF PLATE
BENDING PROBLEMS*Pekka Lehtinen**Rakenteiden Mekaniikka 3 (1970) pp. 85 to 88*

A series expansion for the deflection of a plate can be formed by the use of the extremum principle of the potential energy. Such an approximative solution is generally accurate enough for practical purposes. A parallelogram shaped freely supported isotropic plate of constant thickness has been taken as an example for solution. Concentrated loads can be taken into account in a simple way when double sine functions are used as coordinate functions. For more general load distributions, a Fourier expansion can be formed eg. by the method of least squares using the program of linear regression analysis. Any load distribution represented in such a way can be easily taken into account in the treatment. The numerical results have been satisfactory.