

## ENGLISH SUMMARY

UDK 624.011.78:678.743.620.172.2:539.376

MÄKELÄINEN PENTTI, SINISALO HANNU and JÄRVINEN HEIKKI, PVC creep tests and prediction of the long-term deformation properties. Rakenteiden Mekaniikka 10 (1977) 2, p. 1...12

The article reports on the long-term creep tests for unplasticized PVC which have been carried out during several years in the Department of Civil Engineering at Helsinki University of Technology. Besides a description of the arrangements and measuring equipment developed for the creep experiments, the article gives also an account of the sources of errors and inaccuracies included in the experimental arrangements. Further the stages in data processing and curve plotting are described. The modelling methods for the long-term viscoelastic behaviour of glassy PVC are briefly discussed. Finally the use of a modelling method for PVC creep curves developed early in connection with the creep tests is demonstrated.

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HASSINEN PAAVO, Sandwich-structures with a polystyrene core. Rakenteiden Mekaniikka 10 (1977) 2, p. 13...30

This paper deals with the long-term behaviour of sandwich-structures with an expanded polystyrene core. The faces of structures are supposed to be linearly elastic and the core linearly viscoelastic. By the use of test results, some models are calculated for the shear creep of polystyrene. In the analysis, both beam and plate structures are studied. The beams can have thin or thick faces, but the faces of the plates are assumed to be thin.

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LEPPÄVUORI ERKKI KM, Creep of ice. Part I. Rakenteiden Mekaniikka 10 (1977) 2, p. 31...45.

This article treats first the microstructure of ice Ih under normal pressure and at high homologous temperatures. The plastic deformation of ice, especially the movement of dislocations, is essentially determined by the Bjerrum and ionization defects of crystals. There are also many other factors which contribute to the deformation of polycrystalline ice, e.g. grain boundary migration, recrystallization and cracking. In the second article, which will be published later, models for thermorheological properties of ice and some examples for static ice loads will be presented.