

ENGLISH SUMMARY

UDK624.042:69.022:691.32

LOUHENKILPI KARI, Impact on a concrete building. Rakenteiden Mekaniikka 10 (1977)3, p. 1...8.

In this paper simplified procedures are described for determination of both the local impact effects and the overall wall behavior when subjected to impact on a concrete building. A empirical procedure commonly used for determination of penetration depth, perforation thickness and scabbing thickness of concrete targets subjected to missile impact is reviewed.

Overall dynamic response of the target wall consists of flexural deformations and a potential flexural or shear failure if the strain energy capacity of the wall does not exceed the kinetic energy input to the wall by the striking missile. Simplified procedures are defined for determining the dynamic response of the target wall and for preventing overall failure of the wall.

UDK624.04/.07:534.1

RANTA, MATTI A., On the random vibrations. Rakenteiden Mekaniikka 10 (1977)3, p. 9...17.

The paper tries to give only an introduction to the theory of random vibrations and to its applications. The homogeneous stationary processes are treated in more detail because of their importance in the practical use.

UDK624.042:624.046:621.311.25:621.039

PENTTI VARPASUO, The design methods based on the failure probability of nuclear power plants. Rakenteiden Mekaniikka 10 (1977)3, p. 18...22.

The failure probability of nuclear power plants and its prescribed values in codes and standards are treated in the paper. Further, the general principle of the design method based on failure probability is presented. As an example of application the axially loaded straight member is considered. The obtained result is compared to the result determined by the ultimate load design method.

UDK624.046

ASKO SARJA, Comparison of the safety of structures made of different materials. Rakenteiden Mekaniikka 10 (1977)3, p. 23...31.

The safety levels calculated on the basis of the design principles complying with the Finnish standard specifications and of the statistical strength properties of materials obtained from the test results are presented. The safety level is generally rather constant and meets the requirements of international standard specifications even in the cases of structural classes with highest requirements.

The factors which bring about even marked differences in the structural safety are discussed.

Measures to be taken when standardizing the safety levels on developing the standard codes for structures to be made of different materials are proposed.