12:30

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Section 1: Computer simulation

Methodology for assessing the dynamic strength of quasi-brittle materials

The dynamic strength of quasi-brittle materials is investigated as illustrated by the samples from ceramic and refractory bricks. For testing, the equipment was used on the base of split Hopkinson pressure bar, as well as a weight dropper. A compression diagram and a cracking diagram for cylindrical objects are considered.

The analysis of the obtained experimental data is carried out using structural time approach with the use of an incubation time criterion. The assessment of the strength parameters of the tested materials is performed with the use of randomize method of distorted functions.

It is illustrated that based on relatively small number of dynamic tests, the developed experimental and theoretical methodology allows identifying, with the high degree of reliability, the material failure conditions under spontaneous dynamic loads.

There may be changes in the time schedule.
See the current information on the website