Cement Building Materials as an Environmentally Safe Method for Disposal of Optical Discs

N. V. Kuznetsova, A. D. Seleznev, V. A. Ezersky

Tambov State Technical University, Tambov, Russia;
Bialystok University of Technology, Bialystok, Republic of Poland

Keywords: water-cement ratio; optical disk; bending strength; compressive strength; recycling; cement composite material; environmental safety.

Abstract: It is proposed to use recyclable optical disks in crushed form as fine aggregate in cement composite materials to partially replace fine aggregate. Based on experimental data obtained as a result of testing samples, the dependences of compressive and bending strength on the amount of crushed optical disks introduced into the mixture and the water-cement ratio were found. It has been shown that the introduction of crushed optical disks into the mixture of cement composite material instead of part of the fine aggregate in an amount from 0 to 50 % by weight leads to a decrease in the strength of the samples.