

ASSESSMENT OF THE DYNAMIC PROPERTIES OF PLAIN AND RUBBERIZED CONCRETE

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Rezumat. Folosirea cauciucului obținut din anvelopele uzate ca resursă pentru industria construcțiilor poate conduce la o diminuare substanțială a impactului negativ asupra mediului. Determinarea caracteristicilor dinamice poate oferi informații importante legate de capacitatea de disipare a energiei a unui material. Acest lucru poate fi cuantificat prin fracțiunea din amortizarea critică și a coeficientului de pierdere a unui material utilizat la structuri pentru construcții. Lucrare de față prezintă rezultate obținute în cadrul unui program experimental destinat determinării caracteristicilor dinamice pentru betonul clasic și betonul cu adaos de granule din cauciuc provenite din reciclarea anvelopelor uzate. În lucrare se expun abordarea teoretică, metodologia experimentală cu detalii specifice studiului parametric realizat și rezultate obținute pe epruvete cilindrice.

Abstract. The use of rubber from discarded car tires as an alternative to natural aggregates in concrete may help preventing the complete depletion of natural resources and work towards a sustainable future. Moreover it can significantly reduce the environmental footprint of the construction industry. The assessment of the dynamic properties of a material are very important from the point of view of the energy dissipation capability of the investigated material. This can be determined from the dynamic modulus of elasticity, damping and the loss coefficients of the material. The paper presents the results obtained during an experimental program aimed at assessing the dynamic characteristics of plain and rubberized concrete containing rubber crumbs from discarded car tires. The theoretical background and the investigation methodology are presented with particular application to cylindrical concrete specimens.

Keywords: dynamic modulus of elasticity, loss coefficient, rubberized concrete

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