APLICAREA METODELOR BAZATE PE PERFORMANȚĂ A DURABILITĂȚII ȘI STABILIREA DOMENIILOR DE UTILIZARE A BETOANELOR PREPARATE CU MATERIALE COMPONENTE DIN REPUBLICA MOLDOVA

APPLICATION OF THE METHODS BASED ON THE PERFORMANCE OF DURABILITY FOR ESTABLISHING THE DOMAINS OF USING THE CONCRETES PRODUCED WITH COMPONENT MATERIALS FROM REPUBLIC OF MOLDOVA

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This article presents the results of some experimental researches carried out in order to establish the level of performance of the concretes prepared with different types of cements and aggregates that are used in the Republic of Moldova, with a view to develop the National Annex to the EN 206-2013 standard.

Establishing the characteristics of resistance and durability was done by applying some European and national standards and had as its main objectives to establish the domains of using the concretes and the analysis of the conditions of applying the methods based on the performance of durability. In the National Annex were presented (by means linked to practical applying of the document), "deemed to satisfy" rules regarding the types and quality of materials, the composition of concrete and minimal classes of resistance at compression, depending on a certain use of the concrete.

Articolul prezintă rezultatele unor cercetări experimentale efectuate pentru stabilirea nivelurilor de performanță a betoanelor preparate cu diferite tipuri de cimenturi și agregate care se utilizează pe teritoriul Republicii Moldova în vederea elaborării Anexei Naționale la standardul EN 206-2013. Determinarea caracteristicilor de rezistență și durabilitate s-a efectuat prin aplicarea unor standarde europene și naționale și a avut drept obiective principale stabilirea domeniilor de utilizare a betoanelor și analiza condițiilor de aplicare a metodelor bazate pe performanță a durabilității. În Anexa Națională s-au prezentat, din rațiuni legate de aplicarea practică a documentului, reguli de tip „deemed to satisfy" în ceea ce privește tipurile și calitatea materialelor, compoziția betonului și clasele minime de rezistență la compresiune, în funcție de o anumită utilizare a betonului.

Keywords: *cement, concrete, performance, durability.*

1. Introduction

This article shows the results of some experimental researches carried out with a view to drawing up of the national document for applying the European EN 206 [1] standard in R. of Moldova. An important part of this document consists in defining the domains of use of the concretes prepared with component materials produced in R. of Moldova.

Annex F of the standard [1] defines the limits of compositional components of the concrete on each of the exposure classes, specifying that these are valid for cements with use established by applying of national rules/methods. Thus the necessity of establishing the domains of using the cements produced in R. of Moldova came up. In order to achieve this goal, an experimental program was elaborated. This program also contains the types of methods that are to be applied, some based on the performances increasingly recommended also at European level. As a matter of fact, at European level, they are building a system of standards that are to be the base of applying some methods of performance CEN TS 12390-9 [2], CEN TS 12390-10 [3], CEN TS 12390-11 [4]. Already, there are documents detailing the application of the concept of equivalent durability as per CEN TR 16563 [5]. The most advanced method still in a faze of European recognition and application - obviously representing the future of approaching the durability of concrete - is the method of classifying the concrete in resistance classes to various actions of the environment, probabilistic approach, similar to the one used in case of the compression resistance classes of concrete.

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