

SUSTAINABILITY TRENDS WHILE BUILDING WITH ECO-FRIENDLY MATERIALS

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Rezumat. *Substituirea parțială a cimentului Portland obișnuit cu adaosuri industriale este o modalitate recunoscută de a construi cu betoane cu impact redus asupra mediului. Identificarea criteriilor de bază ale unui produs ecologic este corelată cu procesul de fabricație a cimentului tradițional pentru a obține prin studii și analize specifice ajustările necesare asupra unor noi categorii de ciment. Lucrarea prezintă cercetări recente privind cimenturi de generație nouă, numite cimenturi ecologice și domeniile de utilizare în care să poată substitui total cimentul tradițional, la parametri de produs finit superiori.*

Abstract. *Partial substitution of the Ordinary Portland Cement (OPC) with mineral admixtures is an acknowledged procedure to build with concrete of low environmental impact. The identification of the basic criteria for an ecological construction product is correlated with the fabrication process of the traditional cement to obtain the necessary technological adjustments for new cements based on specific study and analysis. The paper presents the recent research of a new generation of cements, the eco-friendly cements, and the domain of use where OPC can be totally replaced, at superior working parameters.*

Keywords: concrete, environment protection, eco-cements, sustainability

1. Sustainability by civil engineering applications

Deterioration of the environment by human activities has multiple consequences, out of which the ones related to the civil engineering domain are directly involved both in producing the necessary construction materials and in casting-in-place technologies. Thus, the following consequences are relevant: the CO₂ emissions, the consumption of non-regenerating resources, producing non-recycling waste, noise pollution and contributions of the continuing regress of bio-diversity by destructing the natural habitats.

Sustainability has on one hand an economical component, through companies that develops profitable activities and at the same time an environmental component, related to efficient and rational use of resources and protection of natural habitats. These components are mutually interacting based on regulations and laws.

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