

Title: The influence of curing conditions on the mechanical performance of concrete made with recycled concrete waste

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Source: Cement & Concrete Composites

Volume: 33 **Issue:** 6 **Pages:** 637-643 **DOI:** 10.1016/j.cemconcomp.2011.04.002 **Published:** Jul 2011

Document Type: Article

Language: English

Abstract: Research on the use of Construction and Demolition Waste (CDW) as recycled aggregate (in particular crushed concrete) for the production of new concrete has by now established the feasibility of this environmentally-friendly use of otherwise harmful waste. However, contrary to conventional concrete (CC), no large applications of concrete made with recycled concrete have been made and there is still a lack of knowledge in some areas of production and performance of recycled aggregate concrete (RAC). One issue concerns curing conditions: these greatly affect the performance of concrete made on site and some potential users of RAC wonder how RAC is affected by far-from-ideal curing conditions.

This paper shows the main results of experiments to determine the influence of different curing conditions on the mechanical performance of concrete made with coarse recycled aggregate from crushed concrete. The properties analyzed include compressive strength, splitting tensile strength, modulus of elasticity, and abrasion resistance. The general conclusion in terms of mechanical performance is that RAC is affected by curing conditions roughly in the same way as CC. (C) 2011 Elsevier Ltd. All rights reserved.

Author Keywords: Concrete; Recycled Aggregate; Curing Conditions; Mechanical Performance

KeyWords Plus: Aggregate Concrete; Compressive Strength; Coarse; Durability; Moisture

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Funding:

Funding Agency	Grant Number
ICIST Research Institute from IST	
Technical University of Lisbon	
Foundation for Science and Technology (FCT)	

Publisher: Elsevier SCI LTD

Publisher Address: The Boulevard, Langford Lane, Kidlington, Oxford OX5 1GB, Oxon, England

ISSN: 0958-9465

Citation: FONSECA, N.; de BRITO, J.; EVANGELISTA, L. - The influence of curing conditions on the mechanical performance of concrete made with recycled concrete waste. Cement & Concrete Composites. ISSN 0958-9465. Vol. 33, n.º 6 (2011) p. 637-643.