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Abstract: Fine recycled aggregates are seen as the last choice in recycling for concrete production. Many references quote their detrimental influence on the most important characteristics of concrete: compressive and tensile strength; modulus of elasticity; water absorption; shrinkage; carbonation and chloride penetration. These two last characteristics are fundamental in terms of the long-term durability of reinforced or prestressed concrete. In the experimental research carried out at IST, part of which has already been published, different concrete mixes (with increasing rates of substitution of fine natural aggregates sand - with fine recycled aggregates from crushed concrete) were prepared and tested. The results were then compared with those for a reference concrete with exactly the same composition and grading curve, but with no recycled aggregates. This paper presents the main results of this research for water absorption by immersion and capillarity, chloride penetration (by means of the chloride migration coefficient), and carbonation resistance, drawing some conclusions on the feasibility of using this type of aggregate in structural concrete, while taking into account any ensuing obvious positive environmental impact. (C) 2009 Elsevier Ltd. All rights reserved.

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