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Artificial Stone Produced with Stone Powder and Polymeric Agglomerant

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Abstract

Artificial stone are nowadays extremely important in civil construction, constituting remarkable branches of this industry. This material is produced by 95% of natural aggregates, that is, it is considered practically natural material. The objective of this work was to study the production of artificial stone for application in interior lining, using waste from the marble industry of the Cachoeiro de Itapemirim-ES region. The physical and mechanical properties of the plates and composites and matrix with resin were studied, with the addition of marble waste in a specific range of 20, 80 and 180 mesh granulometry. The plates were produced by means of the vacuum vibration technique. For the parts produced the density and the water absorption were determined. The material was submitted to tests of resistance to compression and flexion. The artificial marble presented good properties, with its maximum bending tensile strength of 37.75 MPa and maximum compressive strength of 72.47 MPa. The results indicated that the marble waste has great potential for its use in the production of artificial stone and is an alternative to give a destination for this waste generated in the order of millions of tons that represents serious environmental problem.

Keywords: Artificial stone, marble, resin.