Title: Waste Marble Dust Blended Cement

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Abstract: Marble processing activities generates a.significant amount of waste in dust form. This waste, which is nowadays one of the environmental problems worldwide, presents great potential of being used as mineral addition in blended cements production. This paper shows preliminary results of an ongoing project which ultimate goal is to investigate the viability of using waste marble dust (WMD), produced by marble Portuguese industry, as cement replacement material. In order to evaluate the effects of the WMD on mechanical behaviour, different mortar blended cement mixtures were tested. These mixtures were prepared with different partial substitution level of cement with WMD. Strength results of WMD blended cements were compared to control cements with same level of incorporation of natural limestone used to produce commercial Portland-limestone cements. The results obtained show that WMD blended cements perform better than limestone blended cements for same replacement level up to 20% w/w. Therefore, WMD reveals promising attributes for blended cements production.

Author Keywords: Waste marble dust; Mineral addition; Blended cements; Sustainability

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