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Recycling of stone cutting sludge in formulations of bricks and terrazzo tiles

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Abstract: This study examines the possibility for enhancing the use of stone cutting sludge waste in the production of building bricks and terrazzo tiles, which would reduce both the environmental impact and the production costs. Stone cutting wastes in the form of sludge is currently generated at several factories in Jordan. At the Samara factory, incorporation of the sludge in the batch formulations of bricks and terrazzo tiles was examined. The physicochemical and mineralogical characteristics of the sludge were analyzed to identify the major components. Results indicated that the sludge generated from stone cutting could be used in producing concrete bricks. Mixtures of aggregates with added amounts of sludge were used successfully to produce non-load bearing bricks. Sludge was also used to produce terrazzo tiles and the results indicate that the transverse strength, water absorption and tile measurements, for all the taken samples, comply with Jordanian standards. The transverse strength decreased while water absorption increased as the sludge ratio increased.