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# A Review on the Usage of Ceramic Wastes in Concrete Production

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**Abstract :** Construction and Demolition (C&D) wastes contribute the highest percentage of wastes worldwide (75%). Furthermore, ceramic materials contribute the highest percentage of wastes within the C&D wastes (54%). The current option for disposal of ceramic wastes is landfill. This is due to unavailability of standards, avoidance of risk, lack of knowledge and experience in using ceramic wastes in construction. The ability of ceramic wastes to act as a pozzolanic material in the production of cement has been effectively explored. The results proved that temperatures used in the manufacturing of these tiles (about 900 $^{o}$C) are sufficient to activate pozzolanic properties of clay. They also showed that, after optimization (11-14% substitution), the cement blend performs better, with no morphological differences between the cement blended with ceramic waste, and that blended with other pozzolanic materials. Sanitary ware and electrical insulator porcelain wastes are some wastes investigated for usage as aggregates in concrete production. When optimized, both produced good results, better than when natural aggregates are used. However, the research on ceramic wastes as partial substitute for fine aggregates or cement has not been overly exploited as the other areas. This review has been concluded with focus on investigating whether ceramic wall tile wastes used as partial substitute for cement and fine aggregates could prove to be beneficial since the two materials are the most high-priced during concrete production.

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