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Recycled crushed glass in road work applications

M.M. Disfani [a], A. Arulrajah [a,*], M.W. Bo [b], R. Hankour [c]

[a] Faculty of Engineering and Industrial Sciences (H38), Swinburne University of Technology, P.O. Box 218, Hawthorn, Melbourne, Vic. 3122, Australia
[b] DST Consulting Engineers Inc., 605 Hewitson Street, Thunder Bay, Ont., Canada P7B 5V5
[c] Geocomp Corporation, 125 Nagog Park, Acton, MA 01720, USA

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ABSTRACT

A comprehensive suite of geotechnical laboratory tests was undertaken on samples of recycled crushed glass produced in Victoria, Australia. Three types of recycled glass sources were tested being coarse, medium and fine sized glass. Laboratory testing results indicated that medium and fine sized recycled glass sources exhibit geotechnical behavior similar to natural aggregates. Coarse recycled glass was however found to be unsuitable for geotechnical engineering applications. Shear strength tests indicate that the fine and medium glass encompass shear strength parameters similar to that of natural sand and gravel mixtures comprising of angular particles. Environmental assessment tests indicated that the material meets the requirements of environmental protection authorities for fill material. The results were used to discuss potential usages of recycled glass as a construction material in geotechnical engineering applications particularly road works.