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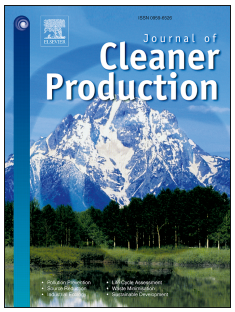

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Marisa Isabel Almeida, Ana Cláudia Dias, Martha Demertzi, Luís Arroja

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Environmental profile of ceramic tiles and their potential for improvement

Marisa Isabel Almeida [a, b *], Ana Cláudia Dias[a, c], Martha Demertzi[a], Luís Arroja[a, c]

[a] Department of Environment and Planning, University of Aveiro, 3810-193, Aveiro, Portugal

[b] Technological Center of Ceramics and Glass - Rua Coronel Veiga Simão, 3025-307, Coimbra, Portugal

[c] Center of Environmental and Marine Studies (CESAM), 3810-193, Aveiro, Portugal

*Corresponding author: E-mail address: marisa@ctcv.pt. Tel.: +351 239 499 200

Abstract

This study evaluates the environmental profile of ceramic tiles produced in Portugal based on a cradle-to-grave Life Cycle Assessment (LCA), including mining, manufacturing, construction, use and final disposal. The main hotspots are identified and improvement actions are suggested in order to reduce the environmental impacts. According to the results, the major hotspot is the production stage (cradle-to-gate), for all categories except ecotoxicity and land use. Within this stage, the processes that have the greatest impact are the following: onsite activities (especially the burning of natural gas for the tile manufacturing process), transport, electricity production and production of natural gas. Among the improvement actions analyzed, the most efficient measure studied to reduce the environmental impacts was a combination of actions to reduce fuel consumption (best available technique), electricity and raw material transport distance,