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Environmental profile of ceramic tiles and their potential for improvement

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## 12 Abstract

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

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