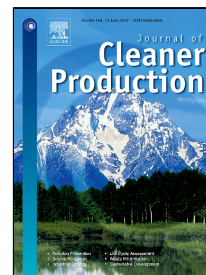


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Towards 90% warm re-use of porous asphalt using foaming technology

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1 Towards 90% warm re-use of porous asphalt using foaming technology

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8 Abstract

9 The growing needs for sustainability demand that porous asphalt (PA), one of the most critical types
10 of asphalt, can be produced with high quality, low production temperature and using high percentages
11 of reclaimed materials. With the support of the European Life+ program, a new decomposition
12 technique was developed to decompose the reclaimed PA into the mortar sand (grain size ≤ 2 mm,
13 bitumen content 10-14%) and the reclaimed stones in various fractions (bitumen content less than 1%).
14 The reclaimed mortar sand can then be rejuvenated, enriched and homogenized to obtain a high
15 quality mortar. When this mortar is mixed with the reclaimed stones, PA-stone, a high quality PA can
16 be obtained with almost 95% reclaimed materials. This paper discusses the influence of different
17 production techniques on the performances of this mixture. These techniques include (A)
18 conventional hot production technique at 170°C, (B) the cold feed of reclaimed mortar sand in
19 combination with bitumen foaming obtaining a mix at 105°C and (C) the hot production of mortar in
20 combination with the newly developed mortar foaming method to obtain a mixture at 105°C.
21 Laboratory results indicate that the PA may be produced at 105°C, containing up to 93% reclaimed
22 materials and having a high quality.

23

24 **Keywords:** Porous asphalt, LE2AP, Life+, foaming, recycling, sustainability

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