

Effect of crumb rubber gradation on a rubberized cold recycled mixture for road pavements - DTU Orbit (08/11/2017)

Effect of crumb rubber gradation on a rubberized cold recycled mixture for road pavements

Cold recycling technique represents the most environmental friendly solution for pavement rehabilitation nowadays. In fact, this technique allows the use of the highest percentage of reclaimed asphalt avoiding the energy consumption related to aggregates heating required by the traditional hot mix asphalt design. The mix design represents a key phase of the cold mix production. The study of workability and compactability properties combined with a deep laboratory investigation is required. The idea of introducing crumb rubber in the cold mixtures was developed based on the concept of maximizing the valorization of recycled materials together with the goal of achieving high performance. In the present research project, two different gradations of crumb rubber, processed with the traditional grading method, have been adopted for the production of a cold recycled mixture stabilized with bitumen emulsion and cement. The spring-back effects of the rubber particles, which occur after compaction, together with the Indirect Tensile Strength and the Indirect Tensile Stiffness Modulus have been studied. The results show that the gradation of the adopted crumb rubber sensibly affects the compaction and mechanical properties of the cold recycled mixture.

General information

State: Published

Organisations: Department of Civil Engineering, University of Bologna

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Number of pages: 9

Pages: 598-606

Publication date: 2015

Main Research Area: Technical/natural sciences

Publication information

Journal: Materials & Design

Volume: 85

ISSN (Print): 0264-1275

Ratings:

BFI (2017): BFI-level 1

Web of Science (2017): Indexed yes

BFI (2016): BFI-level 1

Scopus rating (2016): CiteScore 4.9 SJR 1.751 SNIP 2.481

Web of Science (2016): Indexed yes

BFI (2015): BFI-level 1

Scopus rating (2015): SJR 1.885 SNIP 2.654 CiteScore 4.51

Web of Science (2015): Indexed yes

BFI (2014): BFI-level 1

Scopus rating (2014): SJR 2.418 SNIP 3.474 CiteScore 4.36

Web of Science (2014): Indexed yes

BFI (2013): BFI-level 1

Scopus rating (2013): SJR 2.045 SNIP 3.269 CiteScore 3.8

ISI indexed (2013): ISI indexed no

Web of Science (2013): Indexed yes

BFI (2012): BFI-level 1

Scopus rating (2012): SJR 1.988 SNIP 3.212 CiteScore 3.31

ISI indexed (2012): ISI indexed no

BFI (2011): BFI-level 1

Scopus rating (2011): SJR 1.406 SNIP 2.521 CiteScore 2.63

ISI indexed (2011): ISI indexed no

BFI (2010): BFI-level 1

Scopus rating (2010): SJR 1.07 SNIP 1.822

Web of Science (2010): Indexed yes

BFI (2009): BFI-level 1

Scopus rating (2009): SJR 0.93 SNIP 1.81

Web of Science (2009): Indexed yes

BFI (2008): BFI-level 1

Scopus rating (2008): SJR 0.973 SNIP 1.361

Scopus rating (2007): SJR 0.846 SNIP 1.68

Scopus rating (2006): SJR 0.666 SNIP 1.415

Scopus rating (2005): SJR 0.739 SNIP 1.373

Scopus rating (2004): SJR 0.52 SNIP 1.167

Scopus rating (2003): SJR 0.565 SNIP 1.201

Scopus rating (2002): SJR 0.574 SNIP 1.165

Scopus rating (2001): SJR 0.374 SNIP 0.59

Scopus rating (2000): SJR 0.242 SNIP 0.716

Scopus rating (1999): SJR 0.192 SNIP 0.339

Original language: English

Bitumen emulsion, Cold recycling, Crumb rubber, Gradation, ITS, ITSM, RAP

DOIs:

10.1016/j.matdes.2015.06.139

Source: FindIt

Source-ID: 2279737168

Publication: Research - peer-review › Journal article – Annual report year: 2015