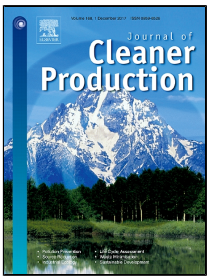
Accepted Manuscript



Investigating the Effectiveness of Vacuum Tower Bottoms for Asphalt Rubber Binder based on Performance Properties and Statistical Analysis

Amir Amini, Reza Imaninasab

PII:	S0959-6526(17)32397-1
DOI:	10.1016/j.jclepro.2017.10.103
Reference:	JCLP 10895
To appear in:	*Journal of Cleaner Production*
Received Date:	02 June 2017
Revised Date:	02 October 2017
Accepted Date:	09 October 2017

Please cite this article as: Amir Amini, Reza Imaninasab, Investigating the Effectiveness of Vacuum Tower Bottoms for Asphalt Rubber Binder based on Performance Properties and Statistical Analysis, *Journal of Cleaner Production* (2017), doi: 10.1016/j.jclepro.2017.10.103

Highlights

- VTB has negative and positive effects on high and low temperatures performance, respectively.
- CRM is able to mitigate the negative effect of VTB on high temperature performance.
- Addition of both CRM and VTB improves intermediate temperature performance of neat binder.
- Introduction of both CRM and VTB into neat binder can improve PG 58-22 to PG 58-34 and PG 70-28 base on PG system.
- Influences of CRM and VTB on high and low temperature performance are statistically significant.