Evaluation of Asphalt Mixtures' Resistance to Cement-Treated Base (CTB) Reflective Cracking in the Laboratory Dataset
Dataset available at: https://digitalcommons.lsu.edu/transet_data/87/

(This dataset supports report **Evaluation of Asphalt Mixtures' Resistance To Cement-Treated Base (CTB) Reflective Cracking in the Laboratory**)

This U.S. Department of Transportation-funded dataset is preserved by the Transportation Consortium of South-Central States (TRAN-SET) in the LSU Digital Commons Repository (https://digitalcommons.lsu.edu), and is available at https://digitalcommons.lsu.edu/transet_data/87/

The related final report **Evaluation of Asphalt Mixtures' Resistance To Cement-Treated Base (CTB) Reflective Cracking in the Laboratory**, is available from the National Transportation Library's Digital Repository at https://rosap.ntl.bts.gov/view/dot/56583

Abstract: The primary objective of this project is to propose a laboratory setup to test and evaluate an asphalt mixture layer on top of a simulated Cement-Treated Base (CTB) layer against reflective cracking. An in-depth literature review on the experimental studies that were conducted throughout the world to investigate the resistance of asphalt mixtures to reflective cracking was conducted. Texas Transportation Institute (TTI) Overlay Tester (OT) was found to be the most appropriate equipment to study thermally-induced reflective cracking in the laboratory, and thereby was selected to be modified and used to assess the performance of asphalt mixtures on top of a pre-cracked CTB layer. Four different asphalt mixtures and two types of stabilized bases were successfully prepared in this study. The reflective cracking performance of the laboratory-produced asphalt mixtures was evaluated using both the modified and conventional OT setup at two different test temperatures. The attempt to modify the conventional OT setup for better mimicking field reflective cracking was unsuccessful because of the inability to establish a bonding between the top and bottom layers of the composite OT specimens. The repeatability of the collected data was acceptable since COVs were below 30%. Results of the conventional OT testing showed that decreasing the test temperature from room to low temperature resulted in the asphalt mixtures to change their behavior from "soft crack-resistant" mixtures to "tough crack resistant" mixtures. On the other hand, no observable effect of changing binder type and RAP content was found when the specimens were tested in conventional OT setup.
Comments: Tran-SET Project: 19BLSU02

Recommended citation:
Sadek, H., Hassan, M., Berryman, C., Hossain, M., & Idris, I. (2020). Evaluation of Asphalt Mixtures' Resistance to Cement-Treated Base (CTB) Reflective Cracking in the Laboratory. Retrieved from https://digitalcommons.lsu.edu/transet_data/87

Dataset description:

This dataset contains 1 file collection described below.

19BLSU02_Dataset.zip:

Names involving special characters were copied and pasted into this document.

- . DS_Store
- PG76-22+20∩┐⌐⅃RAP -25C Folder
    - PG76-22+20∩┐⌐⅃RAP_AV=7_8∩┐⌐⅃-25C-2_Runtime_Pre-Test.csv
    - PG76-22+20∩┐⌐⅃RAP_AV=7_8∩┐⌐⅃-25C-2_Runtime_1.csv
    - PG76-22+20∩┐⌐⅃RAP_AV=7_8∩┐⌐⅃-25C-2.D036
    - PG76-22+20∩┐⌐⅃RAP_AV=7_8∩┐⌐⅃-25C-2.csv
    - PG76-22+20∩┐⌐⅃RAP-AV=7_6∩┐⌐⅃-25C-1_Runtime_Pre-Test.csv
    - PG76-22+20∩┐⌐⅃RAP-AV=7_6∩┐⌐⅃-25C-1_Runtime_1.csv
    - PG76-22+20∩┐⌐⅃RAP-AV=7_6∩┐⌐⅃-25C-1.D036
    - PG76-22+20∩┐⌐⅃RAP-AV=7_6∩┐⌐⅃-25C-1.csv
    - PG76-22+0∩┐⌐⅃RAP_AV=6_2∩┐⌐⅃-25C-3_Runtime_Pre-Test.csv
    - PG76-22+0∩┐⌐⅃RAP_AV=6_2∩┐⌐⅃-25C-3_Runtime_1.csv
    - PG76-22+0∩┐⌐⅃RAP_AV=6_2∩┐⌐⅃-25C-3.D036
    - PG76-22+0∩┐⌐⅃RAP_AV=6_2∩┐⌐⅃-25C-3.csv
- PG76-22+20∩┐⌐⅃RAP -10C Folder
    - PG76-22+20∩┐⌐⅃RAP - AV=7_7∩┐⌐⅃-10C-1_Runtime_Pre-Test.csv
    - PG76-22+20∩┐⌐⅃RAP - AV=7_7∩┐⌐⅃-10C-1_Runtime_1.csv
    - PG76-22+20∩┐⌐⅃RAP - AV=7_7∩┐⌐⅃-10C-1.D036
    - PG76-22+20∩┐⌐⅃RAP - AV=7_7∩┐⌐⅃-10C-1.csv
    - PG76-22+20∩┐⌐⅃RAP - AV=7_1∩┐⌐⅃-10C-3_Runtime_Pre-Test.csv
    - PG76-22+20∩┐⌐⅃RAP - AV=7_1∩┐⌐⅃-10C-3_Runtime_1.csv
    - PG76-22+20∩┐⌐⅃RAP - AV=7_1∩┐⌐⅃-10C-3.D036
    - PG76-22+20∩┐⌐⅃RAP - AV=7_1∩┐⌐⅃-10C-3.csv
    - PG76-22+20∩┐⌐⅃RAP - AV=6_4∩┐⌐⅃-10C-2_Runtime_Pre-Test.csv
    - PG76-22+20∩┐⌐⅃RAP - AV=6_4∩┐⌐⅃-10C-2_Runtime_1.csv
    - PG76-22+20∩┐⌐⅃RAP - AV=6_4∩┐⌐⅃-10C-2.D036
    - PG76-22+20∩┐⌐⅃RAP - AV=6_4∩┐⌐⅃-10C-2.csv
- PG76-22+0∩┐⌐⅃RAP - 25C Folder
    - PG76-22+0∩┐⌐⅃RAP_AV_7.8∩┐⌐⅃_25C3_Runtime_Pre-Test.csv
    - PG76-22+0∩┐⌐⅃RAP_AV_7.8∩┐⌐⅃_25C3_Runtime_1.csv
    - PG76-22+0∩┐⌐⅃RAP_AV_7.8∩┐⌐⅃_25C3.D036
    - PG76-22+0∩┐⌐⅃RAP_AV_7.8∩┐⌐⅃_25C3.csv
    - PG76-22+0∩┐⌐⅃RAP_AV_7.8∩┐⌐⅃_25C1_Runtime_Pre-Test.csv
    - PG76-22+0∩┐⌐⅃RAP_AV_7.8∩┐⌐⅃_25C1_Runtime_1.csv
    - PG76-22+0∩┐⌐⅃RAP_AV_7.8∩┐⌐⅃_25C1.D036
    - PG76-22+0∩┐⌐⅃RAP_AV_7.8∩┐⌐⅃_25C1.csv
    - PG76-22+0∩┐⌐⅃RAP_AV_7.1∩┐⌐⅃_25C2_Runtime_Pre-Test.csv
    - PG76-22+0∩┐⌐⅃RAP_AV_7.1∩┐⌐⅃_25C2_Runtime_1.csv
    - PG76-22+0∩┐⌐⅃RAP_AV_7.1∩┐⌐⅃_25C2.D036
    - PG76-22+0∩┐⌐⅃RAP_AV_7.1∩┐⌐⅃_25C2.csv
- PG76-22+0∩┐⌐⅃RAP - 10C Folder

- o PG76-22+0∩┐╜RAP_AV_7.8∩┐╜-10C2_Runtime_Pre-Test.csv
- o PG76-22+0∩┐╜RAP_AV_7.8∩┐╜-10C2_Runtime_1.csv
- o PG76-22+0∩┐╜RAP_AV_7.8∩┐╜-10C2.D036
- o PG76-22+0∩┐╜RAP_AV_7.8∩┐╜-10C2.csv
- o PG76-22+0∩┐╜RAP_AV_7.3∩┐╜-10C3_Runtime_Pre-Test.csv
- o PG76-22+0∩┐╜RAP_AV_7.3∩┐╜-10C3_Runtime_1.csv
- o PG76-22+0∩┐╜RAP_AV_7.3∩┐╜-10C3.D036
- o PG76-22+0∩┐╜RAP_AV_7.3∩┐╜-10C3.csv
- o PG76-22+0∩┐╜RAP_AV_7.3∩┐╜-10C1_Runtime_Pre-Test.csv
- o PG76-22+0∩┐╜RAP_AV_7.3∩┐╜-10C1_Runtime_1.csv
- o PG76-22+0∩┐╜RAP_AV_7.3∩┐╜-10C1.D036
- o PG76-22+0∩┐╜RAP_AV_7.3∩┐╜-10C1.csv
- PG67-22+0∩┐╜RAP - 25C Folder
  - o PG67-22+0∩┐╜RAP - AV=7_2∩┐╜-25C-3_Runtime_Pre-Test.csv
  - o PG67-22+0∩┐╜RAP - AV=7_2∩┐╜-25C-3_Runtime_1.csv
  - o PG67-22+0∩┐╜RAP - AV=7_2∩┐╜-25C-3.D036
  - o PG67-22+0∩┐╜RAP - AV=7_2∩┐╜-25C-3.csv
  - o PG67-22+0∩┐╜RAP - AV=7_1∩┐╜-25C-2_Runtime_Pre-Test.csv
  - o PG67-22+0∩┐╜RAP - AV=7_1∩┐╜-25C-2_Runtime_1.csv
  - o PG67-22+0∩┐╜RAP - AV=7_1∩┐╜-25C-2.D036
  - o PG67-22+0∩┐╜RAP - AV=7_1∩┐╜-25C-2.csv
  - o PG67-22+0∩┐╜RAP - AV=6_9∩┐╜-25C-1_Runtime_Pre-Test.csv
  - o PG67-22+0∩┐╜RAP - AV=6_9∩┐╜-25C-1_Runtime_1.csv
  - o PG67-22+0∩┐╜RAP - AV=6_9∩┐╜-25C-1.D036
  - o PG67-22+0∩┐╜RAP - AV=6_9∩┐╜-25C-1.csv
- PG67-22+0∩┐╜RAP - 10C Folder
  - o PG67-22+0∩┐╜RAP - AV=7_2∩┐╜-10C-1_Runtime_Pre-Test.csv
  - o PG67-22+0∩┐╜RAP - AV=7_2∩┐╜-10C-1_Runtime_1.csv
  - o PG67-22+0∩┐╜RAP - AV=7_2∩┐╜-10C-1.D036
  - o PG67-22+0∩┐╜RAP - AV=7_2∩┐╜-10C-1.csv
  - o PG 67-22+0∩┐╜RAP_10C-3_AV=7_4∩┐╜_Runtime_Pre-Test.csv
  - o PG 67-22+0∩┐╜RAP_10C-3_AV=7_4∩┐╜_Runtime_1.csv
  - o PG 67-22+0∩┐╜RAP_10C-3_AV=7_4∩┐╜.csv
  - o PG 67-22+0∩┐╜RAP_10C-2_AV=7_3∩┐╜_Runtime_Pre-Test.csv
  - o PG 67-22+0∩┐╜RAP_10C-2_AV=7_3∩┐╜_Runtime_1.csv
  - o PG 67-22+0∩┐╜RAP_10C-2_AV=7_3∩┐╜.csv
  - o PG 67-22+0∩┐╜ RAP_10C-3_AV=7_4∩┐╜.D036
  - o PG 67-22+0∩┐╜ RAP_10C-2_AV=7_3∩┐╜.D036
- P67-22+20∩┐╜RAP - 25C Folder
  - o PG67-22+20∩┐╜RAP - AV=7_8∩┐╜-25C-2_Runtime_Pre-Test.csv
  - o PG67-22+20∩┐╜RAP - AV=7_8∩┐╜-25C-2_Runtime_1.csv
  - o PG67-22+20∩┐╜RAP - AV=7_8∩┐╜-25C-2.D036
  - o PG67-22+20∩┐╜RAP - AV=7_8∩┐╜-25C-2.csv
  - o PG67-22+20∩┐╜RAP - AV=7_2∩┐╜-25C-3_Runtime_Pre-Test.csv
  - o PG67-22+20∩┐╜RAP - AV=7_2∩┐╜-25C-3_Runtime_1.csv
  - o PG67-22+20∩┐╜RAP - AV=7_2∩┐╜-25C-3.D036

- o PG67-22+20∩┐⊔RAP - AV=7_2∩┐⊔-25C-3.csv
- o PG67-22+20∩┐⊔RAP - AV=7_20∩┐⊔-25C-1_Runtime_Pre-Test.csv
- o PG67-22+20∩┐⊔RAP - AV=7_20∩┐⊔-25C-1_Runtime_1.csv
- o PG67-22+20∩┐⊔RAP - AV=7_20∩┐⊔-25C-1.D036
- o PG67-22+20∩┐⊔RAP - AV=7_20∩┐⊔-25C-1.csv
- • P67-22+20∩┐⊔RAP - 10C Folder
    - o PG67-22+20∩┐⊔RAP_AV=7___∩┐⊔_10C3_Runtime_Pre-Test.csv
    - o PG67-22+20∩┐⊔RAP_AV=7___∩┐⊔_10C3_Runtime_1.csv
    - o PG67-22+20∩┐⊔RAP_AV=7___∩┐⊔_10C3.D036
    - o PG67-22+20∩┐⊔RAP_AV=7___∩┐⊔_10C3.csv
    - o PG67-22+20∩┐⊔RAP_AV=6_9∩┐⊔_10C2_Runtime_Pre-Test.csv
    - o PG67-22+20∩┐⊔RAP_AV=6_9∩┐⊔_10C2_Runtime_1.csv
    - o PG67-22+20∩┐⊔RAP_AV=6_9∩┐⊔_10C2.D036
    - o PG67-22+20∩┐⊔RAP_AV=6_9∩┐⊔_10C2.csv
    - o PG67-22+20∩┐⊔RAP - AV=7_8∩┐⊔-10C-1_Runtime_Pre-Test.csv
    - o PG67-22+20∩┐⊔RAP - AV=7_8∩┐⊔-10C-1_Runtime_1.csv
    - o PG67-22+20∩┐⊔RAP - AV=7_8∩┐⊔-10C-1.D036
    - o PG67-22+20∩┐⊔RAP - AV=7_8∩┐⊔-10C-1.csv

The .csv, Comma Separated Value, file is a simple format that is designed for a database table and supported by many applications. The .csv file is often used for moving tabular data between two different computer programs, due to its open format. The most common software used to open .csv files are Microsoft Excel and RecordEditor, (for more information on .csv files and software, please visit https://www.file-extensions.org/csv-file-extension).

National Transportation Library (NTL) Curation Note:
As this dataset is preserved in a repository outside U.S. DOT control, as allowed by the U.S. DOT's Public Access Plan (https://ntl.bts.gov/public-access) Section 7.4.2 Data, the NTL staff has performed *NO* additional curation actions on this dataset. NTL staff last accessed this dataset at https://digitalcommons.lsu.edu/transet_data/84/ on 2021-07-15. If, in the future, you have trouble accessing this dataset at the host repository, please email NTLDataCurator@dot.gov describing your problem. NTL staff will do its best to assist you at that time.