Assessment of Compatibility of Mineral Aggregates and Binders Used In Highway Construction and Maintenance Projects Dataset

Dataset available at: https://doi.org/10.5281/zenodo.4273194

(This dataset supports report **Assessment of Compatibility of Mineral Aggregates and Binders Used in Highway Construction and Maintenance Projects**)

This U.S. Department of Transportation-funded dataset is preserved in the Zenodo Repository (https://zenodo.org/), and is available at https://doi.org/10.5281/zenodo.4273194

The related final report **Assessment of Compatibility of Mineral Aggregates and Binders Used in Highway Construction and Maintenance Projects**, is available from the National Transportation Library's Digital Repository at https://rosap.ntl.bts.gov/view/dot/58868.

Metadata from the Zenodo Repository record:

Title: Assessment of Compatibility of Mineral Aggregates and Binders Used In Highway Construction and Maintenance Projects

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Description: Stripping and delamination have been deemed as some of the major premature pavement distresses to most state Departments of Transportations (DOTs) and highway agencies including the Arkansas Department of Transportation (ARDOT). It is believed that the poor compatibility between asphalt binders and aggregates is one of the major reasons behind this. This study aims to analyze the compatibility of selected asphalt binders and aggregates used in Arkansas. Asphalt binders used in this study include PG 64-22, PG 70-22, and PG 76-22; each prepared from two different crude courses. Additionally, four different types of aggregates (sandstone, limestone, gravel, and dolomite) from four different quarries in Arkansas were evaluated in the laboratory. Selected physical and mechanical properties of the aggregates, rheological properties of the asphalt binders, surface free energy (SFE) measurements of the binders and aggregates, atomic force microscopy (AFM) analyses of binders, and limited laboratory and field performance of asphalt mixture samples were evaluated to determine the compatibility between the asphalt binders and aggregates. The findings of this study are expected to help pavement researchers and highway professionals to find suitable asphalt binder-aggregate combinations for constructing the durable pavements.

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Keywords: Stripping, Pavement Durability, Compatibility, Surface Free Energy, Asphalt Binders

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Dataset description:
This dataset contains 1 file described below.

19BASU02-Data.xlsx:
The .xlsx file type is a Microsoft Excel file, which can be opened with Excel, and other free available software, such as OpenRefine.

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://doi.org/10.5281/zenodo.4273194 on 2022-01-12. 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.