

## **Soil-Recycled Aggregate-Geopolymer Road Base/Subbase Mixtures: Steps Towards Sustainability Dataset**

**Dataset available at:** [https://digitalcommons.lsu.edu/transet\\_data/61](https://digitalcommons.lsu.edu/transet_data/61)

(This dataset supports report **Soil-Recycled Aggregate-Geopolymer Road Base/Subbase Mixtures: Steps towards Sustainability**)

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/61](https://digitalcommons.lsu.edu/transet_data/61)

The related final report **Soil-Recycled Aggregate-Geopolymer Road Base/Subbase Mixtures: Steps towards Sustainability**, is available from the National Transportation Library's Digital Repository at <https://rosap.ntl.bts.gov/view/dot/61712>.

### **Metadata from the LSU Digital Commons Repository record:**

Document Type: Data Set

Publication Date: 10-1-2019

Abstract: Corresponding data set for Tran-SET Project No. 18GTLSU10. Abstract of the final report is stated below for reference: "This study deals with the development of Soil-Geopolymer mixtures using flyash, alkali activator and recycled aggregates (RAG) including recycled concrete (RCA) and reclaimed asphalt (RAP) as an alternative to soil-cement for pavement base and subbase layers. Several mix constituents were varied such as flyash type and content, RCA and RAP content and ratio of sodium silicate and sodium hydroxide. Experiment design was established and mechanical and durability characteristics of Soil-RAG-Geopolymer mixtures were evaluated and then compared to the conventional soil-cement mixtures. The results of the testing showed that for the selected Soil-RAG-Geopolymer mixtures the strength, stiffness, permanent deformation, and durability characteristics were either comparable or better than the soil-cement mixtures. However, such mixtures required more curing time at room temperature to achieve needed strength. In order to further optimize the practical applications of this technology in the field, other variables such as molarity of alkali activator, curing conditions, early strength development at room and ambient temperatures, gradation of RAG and shrinkage characteristics need be investigated."

Comments: Tran-SET Project No. 18GTLSU10

### **Recommended citation:**

Khattak, M., & Odion, D. (2019). Soil-Recycled Aggregate-Geopolymer Road Base/Subbase Mixtures: Steps Towards Sustainability. Retrieved from [https://digitalcommons.lsu.edu/transet\\_data/61](https://digitalcommons.lsu.edu/transet_data/61)

### **Dataset description:**

This dataset contains 1 file collection described below.

**TranSET\_18GTL SU10\_Data.zip:**

- Data\_Notes.docx
- 6\_Durability Data\_Selected Mixtures.xlsx
- 5\_ITS Test Data\_Selected Mixtures.xlsx
- 4\_Compressive Strength Test Data.xlsx
- 3\_Element Composition and gradation Data.xlsx
- 2\_Soil Classification and Compaction Data.xlsx
- 1\_Mix Designation and Description.xlsx

**File Type Descriptions:**

- The .docx file is a Microsoft Word file, which can be opened with Word and other free word processor programs, such as Kingsoft Writer, OpenOffice Writer, and ONLYOFFICE.
- The .xlsx and .xls file types are Microsoft Excel files, 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://digitalcommons.lsu.edu/transet\\_data/61](https://digitalcommons.lsu.edu/transet_data/61) on 2022-05-19. If, in the future, you have trouble accessing this dataset at the host repository, please email [NTLDataCurator@dot.gov](mailto:NTLDataCurator@dot.gov) describing your problem. NTL staff will do its best to assist you at that time.