README

# 1. Introductory Information

Title of the Dataset:  
Strength Performance of PVA-Treated Palm Kernel Shell Laterized Concrete

Description of Contents:  
This dataset contains experimental results from a study evaluating the mechanical and physical performance of concrete incorporating polyvinyl alcohol (PVA)-treated palm kernel shell (PKS) as partial coarse aggregate and laterite as partial fine aggregate. It includes results for compressive strength, flexural strength, tensile splitting strength, density, and slump values across various mix proportions and curing ages.

File Name:  
Strength Performance of PVA Treated PKS Laterized Concrete Data 2.xlsx

File Format:  
Microsoft Excel Workbook (.xlsx)

File Structure:  
The Excel workbook contains structured tables with labeled rows and columns for various test results.

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# 2. Methodological Information

Data Collection Method:  
Concrete mixes were prepared with varying replacement levels of PKS and laterite (10%, 20%, and 30%) and treated with 5% PVA solution. Tests were conducted in accordance with British Standards (BS EN) for each mechanical property. Curing durations included 7, 28, 60, and 90 days.

Processing Method:  
Aggregates were brought to saturated surface dry (SSD) conditions before mixing. Treated and untreated variants were tested to assess the effect of PVA treatment.

Software Used:  
- Data compiled and processed using Microsoft Excel 365  
- Graphs generated using Excel chart tools

Standards and Calibration:  
All test procedures followed British Standards (BS EN 12390, 12350, etc.). Testing machines were calibrated as per standard procedures.

# 3. Data-Specific Information

Column Headings and Definitions:

- Treatment: Indicates if aggregates were 'Treated' (with PVA) or 'Untreated'  
- Compressive Strength (MPa): Cube strength at different curing ages (7, 28, 60, 90 days)  
- Flexural Strength (MPa): Three-point bending test result at specified curing ages  
- Tensile Splitting Strength (MPa): Splitting tensile test result at specified curing ages  
- Density (kg/m³): Hardened concrete density at 28 days  
- Slump (mm): Slump value measured for fresh concrete

Units of Measurement:  
- Strength: Megapascals (MPa)  
- Density: Kilograms per cubic meter (kg/m³)  
- Slump: Millimeters (mm)

Missing Data Notation:  
If applicable, cells with missing results are left blank.

# 4. Sharing and Access Information

License:  
This dataset is shared under the Creative Commons Attribution 4.0 International License (CC BY 4.0). You are free to use, share, and adapt the dataset with appropriate credit to the author.