



## **CORRELATION BETWEEN SPT-N VALUE AND FRICTION ANGLE FOR THE SRI LANKAN CONTEXT**

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### **Abstract**

The Standard Penetration Test (SPT) N value is the main parameter use in empirical equations to predict the shear strength parameter of soil. These empirical equations are generalized based on the selected published data/tests from different sources having inconsistency of test material, test procedures and data interpretation. Hence it is very difficult to predict the outcomes of those relations without justifying them for local conditions. As such Sri Lanka as a tropical country, applicability of such empirical correlations developed by other countries is questionable. Hence the local soil may follow previous correlations with slight deviation or may not follow the trend at all this research has the aim to establish a correlation between SPT-N value and internal friction angle for the local context. For this study, 25 soil samples were collected and followed by laboratory testing and classified the soil type, determine the shear strength parameters, moisture content, bulk density, dry density etc. Laboratory test results and relevant SPT-N values were modelled using SPSS software under regression analysis. Square root SPT- N value and friction angle show the highest meaningful relationship. For the developed correlation, the reliability index value was 0.857, Kendall's tau <sub>b</sub>, Spearman's rho, and Pearson correlation values were 0.833, 0.924 and 0.924 respectively. Comparison results show proposed correlation is in the range of existing predictors indicating its accuracy. Hence, the proposed correlation will give a quick and easy approach to determine the internal friction angle in local context.

**Keywords:** *SPT N, Friction Angle, Correlations, Local Context, SPSS*