

## Preliminary Investigation of Geotechnical Properties of the Rock Aggregates Commonly Used for Civil Engineering Construction in Trinidad and Tobago

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**Abstract:** *To assess the geotechnical quality of rock aggregates used for construction purposes, two (2) rock types namely Blue Limestone (both massive and layered) and quartzite have been collected from the Northern Range of Trinidad. Blue Limestone is heavily used in the Trinidad and Tobago construction industry as aggregates for ready mix concrete, asphalt design mixes and for the production of steel among other uses. Rocks such as quartzite rather play a smaller role (if any) within the same industry. These rock samples were tested to evaluate the correlations between some important petrographic properties (e.g. rock foliation plane, mineral cleavage plane, rock texture and micro-structure) and the measured geotechnical findings (e.g. uniaxial compressive strength and Schmidt Hammer test values). Then these comparative studies have been examined by rock porosity and density parameters. This study confirms a good control of these geological parameters on the strength of the rock aggregates. This study also suggests quartzite to be more compatible than limestone for these types of construction purposes. Limestone may be disadvantage as it may easily react with acidic water. If limestone is the only choice for these purposes, then layered variety of limestone may be avoided because of its anomalous mechanical properties, which is resulted by alternate layers of different mineral assemblages.*

**Keywords:** *Rock aggregates, geotechnical properties, geological significances*