

**RELATIONSHIP BETWEEN LOS ANGELES
ABRASION VALUE AND MINERALOGY OF ROCKS**

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Master of Science in Mining and Mineral Exploration

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Declaration

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Abstract

This research includes study of the relationship between Los Angeles Abrasion Value and the mineralogy of rock aggregates narrowed down to the commonly found high grade metamorphic rocks in Sabaragamuwa Province. The study was carried out minimizing the effect of other factors as much as possible. Los Angeles Abrasion Test and Mineral content of each rock sample selected was determined at the laboratory. Thin section analysis was carried out to determine the mineral content with the help of electronic microscope equipped with a digital camera and the AutoCAD software.

Most of the rock quarries in the study area consist of biotite gneisses. Two samples are selected to represent them. Most of the other samples were selected from waste rock piles of quarries to have samples with varying content of minerals. The Regression Analysis was carried out to develop a relationship between Los Angeles Abrasion Value with engineering and mineralogical properties such as Relative Dry Density, Quartz Content, Feldspar Content as well as Mica Content.

The best regression line fit for the test results is a third order polynomial line between Quartz Content and Los Angeles Abrasion Value which shows coefficient of determination as 0.7952. Another important achievement of this study was developing a field guide to assist the personnel at the field work. It was completed with the photograph of each rock sample, microscopic view of the sample and their respective engineering and mineralogical properties such as Los Angeles Abrasion Value, Dry Density, Quartz Content, Feldspar Content and Mica Content.

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List of Abbreviations

ASTM	American Standard for Testing Materials
ICTAD-	Institute for Construction, Training and Development
LAAV -	Loss Angeles Abrasion Value
GSMB	Geological Survey And Mines Bureau

List of Appendices

Analysis of Mineral Content with AutoCad Software.