The geology, petrography and index properties of limestone and granite aggregates for the construction industry in Central Selangor-Federal Territory

CHEONG, K.W. & YEAP, E.B.

Department of Geology
University of Malaya
50603 Kuala Lumpur

The remarkable growth in the K.L., and P.J. for the past 15 years and the recent setting up of Putra Jaya and Cyberjaya within the central Selangor region has resulted in the increase in the use of construction aggregates. The coarse aggregate needs of the Federal Territory and the Central Selangor region is presently supplied by about 35 natural rock aggregate quarries. It is estimated that about 25 million tonnes of natural rock aggregates are produced by these quarries per year worth no less then RM250 million. There is still some shortages of the aggregate in the Central Selangor-Federal Territory area due to seasonal demand.

In the Federal Territory and the Central Selangor region, granite (28 quarries), limestone (2) of the Kuala Lumpur Limestone and sandstone (1) of the Kenny Hill Formation had been used for the purpose of producing natural rock aggregates for the construction industry. The quartzite and the chloritoid schist of the Dinding Schist can potentially be used for the production of natural rock aggregates also. The rocks in the Federal Territory and the Central Selangor area had been affected by faulting and shearing to a varying degree. These often become channel ways for solutions which caused the alteration and subsequent weathering of the rocks.

Three quarries in this region were mapped to demarcate the different rock types, the weathering grades and the affects of the faulting and alteration. Samples were collected according on the rock types and the effects of these factors. The index aggregate properties of these samples were tested according the British Standard or ASTM procedures. For each sample, detailed petrographic examination was carried out.

The fresh and unaffected granite and marble make very good natural rock aggregates which come well within the limits set by the Jabatan Kerja Raya. Rocks which are affected by weathering, faulting, shearing and alteration were found to show poorer index properties and some are even below the limits regarded as suitable for various construction purposes. Field and petrographic examination can be used to distinguish rocks with poor index aggregate properties from those which are good for the production of natural rocks aggregates for the construction industry in the Federal Territory and Central Selangor.