

**PENCIRIAN PROFIL LULUHAWA BATUAN GRANIT  
DI TERAIN TROPIKA**  
(Characterizations of granite weathering profile  
in tropical terrains)

IBRAHIM KOMOO, ABDUL GHANI RAFEK, HAMZAH MOHAMAD,  
KADDERI MD DESA dan TAN BOON KONG  
Jabatan Geologi  
Universiti Kebangsaan Malaysia  
43600 Bangi

Kadar proses luluhawa kimia yang sangat tinggi di terain tropika menghasilkan lapisan tanah baki dan regolitos yang sangat tebal. Pada batuan granit, ketebalan profil luluhawa ini lazimnya puluhan meter dan membentuk zon tanah, tanah + batuan dan batuan terluluhawa. Dari sudut geoteknik, zon profil luluhawa mempunyai ciri-ciri yang kompleks dan tak-homogen. Pembinaan di atas dan/atau pada zon ini telah menimbulkan pelbagai masalah, khususnya masalah ketakstabilan cerun. Penyelidikan ini berhasrat mengkaji proses dan bahan pada zon profil luluhawa secara bersepadu. Kajian pada satu profil pilot melibatkan aspek berikut: survei geometri dan uraian muka profil, pencirian lapangan profil luluhawa; survei ketakselajaran jasad batuan, dan kajian petrografi, geokimia, mineralogi, sifat fiziko-kimia dan sifat kejuruteraan bahan terluluhawa yang mewakili keseluruhan zon profil luluhawa. Kajian ini bermatlamat menghasilkan satu prosedur pencirian dan pengelasan profil luluhawa untuk terain tropika.

The high rate of chemical weathering in tropical terrains results in deep residual soils and regoliths. In granitic terrain the profile thickness may reach several tens of meters, and can be divided into top proper soil zone, a soil + rock zone and a weathered rock zone. From the geotechnical point of view, the weathering profile is complex in nature, as well as inhomogeneous. The construction at or within the weathering zone always encounter problems, particularly slope instability. This research is an integrated study of the processes involved, and the nature of materials develop at the weathering profile. Detail investigation at the pilot profile involves the following aspects: geometric survey and profile projection, field characterization of weathering profile, discontinuity survey of rock mass, and laboratory studies on petrographic, geochemical, mineralogical, physico-chemical properties, and engineering properties of weathered materials. This integrated studies attempts to formulate characterization and classification procedures of weathering profile for tropical terrains