Thesis Title	A Study of Perlite Concrete by Portland Cement Type 1
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Abstract

Perlite is glass volcanic rock generally shows perlitic textture. Upon rapid high heating, perlite will be expanded into a frothy material of low bulk density. The term "perlite" also is applied to the expanded product. Perlite deposits in Thailand occur in the Lummnarai Volcanic Complex and are associated with rhyolite and pyroclastic rocks. Properties of perlite and commercial perlites in the world are very similar. Pals-green perlite with perlite cracks can be expanded at the temperatures about 850-900 $^{\circ}C$ and has a bulk density in the range 80-200 kg/m^3. Dark colored perlite, expanded at the temperature about 960-1000 $^{\circ}C$, has a bulk density in the range of 180-300 kg/m^3

Nowadays, various materials have been used in the construction industry to reduce construction time and cost, Perlite concrete is another good alternative, due to its strength, durable property and free-form. In addition, its light weight reduces weight of structure. The objective of this thesis was to study compressive strength, tensile strength, bending strength, density and percentage of perlite concrete at various mixes : 1:3, 1:4, 1:5, 1:6, and 1:7 of cement per perlite by volume at various curing : 1, 7, 14, 28 and 56 days as compared with normal concrete.

The study shows that the compressive strength of Perlite concrete decrease in range of 83.65-3.91 kg/cm^2 when Perlite content increase in range of 1:3-1:7 The tensile strength of Perlite concrete decrease in range of 14.96-0.77 kg/cm^2 while Perlite content increase in range of 1:3-1:7. And, the bending strength of Perlite concrete decrease in range of 13.83-1.66 kg/cm^2 when Perlite content increase in range of 1:3-1:7. The percentage of absorption of Perlite

concrete increase in range of 15.64-122.55 percent while Perlite content increase in range of 1:3-1:7. Therefore, it can be concluded that Perlite strength and bending strength is lower.

Keywords : Glassy Volcanic Rock / Perlite / Perlite Concrete