CHAVALIT LIMAMNUAYPHOL : STABILIZATION OF ZINC REFINERY RESIDUE BY LIME. THESIS ADVISOR:ASSO.PROF.BOONSOM LERDHIRUNWONG,Dr.Ing.125PP.

This research aims at the study of property change of zinc refinery residue from Padang Industry Co.Ltd. after mixing with lime at various contents, by considering the changes in mineralogical composition and engineering properties.

The optimum lime content uses to stabilize the zinc refinery residue is considered into two approach as follows:

- Optimum lime content giving the mixture best engineering properties (Engineering Approach) uses unconfined compressive strength and durability of wetting and drying test as the indexes. Components of the mineral is also analyzed by X-ray diffraction.

- Optimum lime content giving enough cementing property of protect dissolution of heavy metal is undertaken by leaching test.

The study results also showed that lime can stabilize the zinc refinery residue. Calcium silicate hydrate, in the forms of C_2SH,$C_5S_3H_2$ which is the main component for increasing the unconfined compressive strength will occur when the lime content is greater than 3% by weight.

The best engineering properties are observed at the lime content of 10% and it is shown that the lime content of 4% is enough for cementing. Curing temperature effect is observed only in the short time.