

Chapter V

CONCLUSIONS

As previously stated, the purpose of this study was to provide comparative strength data between the silty sand and lateritic soil stabilized with Penemulsion and SS-K emulsion using as subbase and base courses for pavement. Results obtained from this investigation lead to the following conclusions :

1. The criteria for design $R_t(R+0.05C)$ is specified not less than 78 for heavy traffic and not less than 70 for low and medium traffic. The results show that the silty sand and lateritic soil stabilized with Penemulsion or SS-K emulsion are good enough for subbase and base courses. But the R and C values obtained from 100 percent compaction in the laboratory might be difficult to obtain in the field. Application of the results in the field would require some modifications.
2. The Penemulsion mixtures gave higher R and C values than the SS-K emulsion mixtures to a certain amount by "Standard" method. These increased strengths are believed to be due to the fact that Penemulsion has less impurity in the base asphalts; thus causing more stable bond between asphalt and soil particles than SS-K emulsion.
3. After Moisture Vapor Susceptibility, the water absorbed between the Penemulsion and SS-K emulsion mixtures were not significantly different. The R and C values of the Penemulsion mixtures were slightly higher than the SS-K emulsion mixtures.

4. The unconfined compressive strength of silty sand mixtures were found to be low comparing with the lateritic soil mixtures. Both emulsions in this study develop strength at fast rate. The unconfined compressive strength of silty sand stabilized with Penemulsion was slightly higher than that of the SS-K emulsion.
5. The unconfined compressive strength of lateritic soil stabilized with Penemulsion gave a higher strength than that stabilized with SS-K emulsion. The higher compressive strength was about 30 percent at 7 days of curing period. From this result, it is expected that higher strength could be obtained by using better gradation aggregates.
6. From triaxial test, the results show that the Penemulsion mixtures gave a higher cohesive strength than the SS-K emulsion mixtures, but the angles of shearing resistance measured were apparently unaffected by the Penemulsion used.
7. The data contained with in this report should provide approximation of the comparative strengths obtained between silty sand and lateritic soil stabilized with Penemulsion and SS-K emulsion and should indicate the approximate amount of asphalt required to stabilize those soils for using as subbase and base courses for pavement.
8. Although the strength of Penemulsion mixture was somewhat higher than the SS-K emulsion mixture. The use of the Penemulsion is not recommended at this present time. This is due to the fact that the cost of the SS-K emulsion is cheaper than the Penemulsion since the former can be manufactured in Thailand while the latter has to be imported from abroad.