

## CHAPTER 5 CONCLUSION

### 5.1 Conclusions

The conclusion can be drawn on the basis of the test results that obtained from air-cement treated soil under monotonic loading and cyclic loading tests as the followings.

1. Trend of secant of modulus at 50% of ultimate obtained from the strain measurement using the LDTs greater than those measured by LVDT.
2. It is necessary to use the local measurement to realistically collect the strain for obtaining the deformation properties of the mixed soil
3. The parameter was proposed namely “effective void ratio” taking to account the effect of after curing void ratio, cement content and remolding water content. It is capable of capturing the strength characteristic of air-cement treated soil with Exponential equation.
4. Initial modulus was close to the equivalent modulus and tangent modulus at the first level of vertical stress, at which minute-amplitude unload and reload cycles were performed. However, the initial Poisson’s ratio was close to the tangent Poisson’s ratio only at the first level of vertical stress.
5. Equivalent modulus and equivalent Poisson’s ratio can be expressed as a function of the vertical stress level means of Power equation.
6. From relation of unconfined compressive strength to effective void ratio, secant of modulus at 50% to unconfined compressive strength and equivalent modulus normalize by secant of modulus at 50% to stress level normalize by ultimate stress can predict equivalent modulus.
7. Value of tangent modulus, there are effect of rate and plastic. Thus, they have less than equivalent modulus.
8. For all of air-cement treated soil specimens, the equivalent modulus and tangent modulus decrease with an increase vertical stress.
9. Moduli of this study have relationships to effective void ratio.

### Recommendations of Future Research

1. The three-dimensional deformation characteristic behaviours of air-cement treated soil should be investigated for studying deformation behaviours, which according to utilize in constructions work.
2. The triaxial test should be conducted for studying the strength and deformation of air-cement treated soil behaviours.