

3937345 ENRD/M : MAJOR : TECHNOLOGY OF ENVIRONMENTAL PLANNING FOR RURAL DEVELOPMENT : M.Sc. (TECHNOLOGY OF ENVIRONMENTAL PLANNING FOR RURAL DEVELOPMENT)

KEY WORDS : RECYCLE OF USED CONCRETE / COARSE AGGREGATED MATERIALS FOR CIVIL CONSTRUCTION / PRECAST NON-REINFORCED CONCRETE DRAINAGE PIPES.

SUPARB TRETHANYA : THE STUDY OF RECYCLE USED CONCRETE AS COARSE AGGREGATED MATERIALS FOR CIVIL CONSTRUCTION : CASE STUDY OF PRECAST NONREINFORCED CONCRETE DRAINAGE PIPES. THESIS ADVISORS : SUCHAT NAVAKA WONG, M.Sc. ADISAK WANNAWAL, M.Sc. CHUMPORN YUWAREE, M.Sc. 170 p. ISBN 974 - 663 - 037 - 7

The main objective of this research is to study the physical and mechanical uses of Recycle Concrete as coarse aggregated materials for civil Construction (Case study of Precast Non-Reinforced Concrete Drainage Pipes) following Standard of Industrial 224 - 2533 and Standard of Industrial 566 - 2528.

The study of Recycle uses of Concrete Construction. The Result is the mechanical test accepted in Standard of Coarse Aggregated Materials Industrial 566 - 2528. The method of testing is LOS ANGELES MACHINE TEST. The Percentage of wear is 8.42% which is less than the Value of Standard of coarse aggregated materials. The Testing Value is not more than 50% of total mass of testing materials. The result shows that used concrete as coarse aggregate meets the standard of coarse aggregated materials of Industrial 566 - 2528.

The Study of Drainage Pipe made from used concrete sizes  $\frac{1}{2}$  ",  $\frac{3}{4}$  " and 1 " in mixed concrete. The results of the compression test are higher than the standard of Precast Non-Reinforced Concrete Drainage Pipe 224 - 2533. The Value of Standard Compression is 26 Kn/m (2,653.06 kg/m). The study results as follows :

Precast Non-Reinforced Concrete Drainage Pipe with coarse aggregated size  $\frac{1}{2}$  " the average of highest compression is 4,401.75 kg/m.

Precast Non-Reinforced Concrete Drainage Pipe with coarse aggregated size  $\frac{3}{4}$  " the average of highest compression is 4,496.25 kg/m.

Precast Non-Reinforced Concrete Drainage Pipe with coarse aggregated size 1 " the average of highest compression is 4,118.25 kg/m.

The Summary Value of average compression of Precast Non-Reinforced Concrete Drainage Pipes, made from used Concrete as coarse aggregated size  $\frac{1}{2}$  ",  $\frac{3}{4}$  " and 1 " are higher than the Standard Compression and can be used in recycle concrete as coarse aggregated materials.