

3937715 ENAT/M : MAJOR : APPROPRIATE TECHNOLOGY FOR RESOURCE DEVELOPMENT ; M.Sc.(APPROPRIATE TECHNOLOGY FOR RESOURCE DEVELOPMENT)

KEY WORDS : ELECTRONIC CONTROLLED SHOWER/ORDINARY SHOWER

SANOMPORN TENGCHAROEN : THE COMPARISON ON WATER CONSUMPTION BETWEEN ELECTRONIC CONTROLLED AND ORDINARY SHOWER.

THESIS ADVISORS : SOMPONG THONGCHAI, M.Sc., VEERASAK UDOMCHOKE, D.Tech.Sc., SANCHAI SUTIPANWIHAN, M.Sc., 110 p. ISBN 974-662-347-8

The objective of this research is to compare the amount of water consumed between electronic controlled and ordinary showers in residences for government officials and other staff employed at Kanchanaburi Technical College. Factors related to amount of water consumed and users' attitudes toward electronic showers are also studied. The equipment used in the experiment comprised the prototype electronic shower stall and a standard type of shower head. Questionnaires were used to collect data from the 90 subjects. Statistical analysis using percentage, mean, standard deviation, one way analysis of variance, t-test, F-test and multiple comparison test was carried out.

The results of this research show that the amount of water consumed using the electronic controlled shower was 40.94% less than that consumed using an ordinary shower at 0.05 (P-value < 0.05) significance level. Concerning attitude towards the electronic controlled shower, 40% of children, 33.33% of adolescents and 20% of adults liked the electronic controlled shower. Sex and age were both related to the amount of consumed water using both electronic controlled and ordinary shower. Females used more water than males at 0.05 (P-value < 0.05) significance level and older subjects used more water than younger subjects at 0.05 (P-value < 0.05) significance level.

The research work shows that electronic controlled showers can reduce water consumption by 39.55% , but the equipment is still expensive and further research on circuit development for higher efficiency and lower cost is necessary. After further work, this technology may be suitable for broader application.