

4036051 PHIH/M : MAJOR: INDUSTRIAL HYGIENE AND SAFETY;
M.Sc.(INDUSTRIAL HYGIENE AND SAFETY)

KEY WORDS : ANNOYANCE NOISE / HIGHLY ANNOYED/
WOOD FURNITURE

CHAMNONG THANAPOP: RELATIONSHIP BETWEEN INDUSTRIAL NOISE LEVEL AND COMMUNITY SUBJECTIVE RESPONSE. THESIS ADVISORS: PREECHA LOOSEREEWANICH, Ph.D., CHALEAMCHAI CHAIKITTIPORN, Dr.P.H., WITAYA YOOSOOK, D.Eng., PIANGCHAN ROJANAVIPART, M.H.S.(Bios.), 126 p., ISBN 974-663-373-2

The objectives of this study were to determine the relationship between industrial noise levels from wood furniture factories and community subjective response and to propose a guideline for annoyance noise from wood furniture factories. Ten wood furniture factories in Bangsue District, Bangkok Metropolis and 198 respondents living nearby the factories were included in this study.

Community noise levels were measured in terms of one and 24 hr equivalent continuous sound pressure level, ($L_{eq}1\text{ hr}$, $L_{eq}24\text{ hr}$), and background noise level (L_{90}). Rating level (L_r), average maximum noise level (L_{10}), noise pollution level (L_{np}), and difference between rating level and background noise level (L_r-L_{90}) were then calculated. Subjective noise perceptions were evaluated by interviewing the respondents using a noise survey questionnaire.

The results suggested a significant linear relationship between percentage of highly annoyed respondents and L_r , L_{10} , L_{np} and L_r-L_{90} ($r = 0.73-0.96$, $p\text{-values} = 0.017-0.0001$). At 20 percent of highly annoyed respondents, the value of L_r , L_{10} , L_{np} and L_r-L_{90} were 65.0, 67.0, 73.4 and 11.5 dB(A), respectively. It was found in this study that the relationship of the value of difference between rating level and background noise level (L_r-L_{90}), and percentage of highly annoyed respondents was highly significant ($p\text{-value} = 0.0001$) with correlation coefficient of 0.96.

Based on published British Standard, BS4142:1990, the value of difference between rating level and background noise level (L_r-L_{90}) of 11.5 dB(A) is proposed as a guideline value for annoyance noise in mixed residential and wood furniture industrial areas.