THESIS TITLE : DESIGN WIND VELOCITIES AND WIND LOADS FOR BUILDING IN THAILAND

AUTHOR : MR.TAWATCHAI KHONTHO

THESIS ADVISORY COMMITTEE :

..... Chairperson

(Associate Professor Yingsak Pannachet)

..... Member

(Associate Professor Rangsri Nantasarn)

ABSTRACT

At present, the buildings in most area of Thailand are built with increasing heights, especially in the cities which are economic centers with dense population. Therefore, wind loads are to be considered in the design of structures. The wind loads estimation used presently by Building Act 1979 is not appropriate in many aspects because it considers only building heights. The objectives of this research were to propose the design wind velocities and wind loads for structure design in Thailand.

In this research, the wind velocities and terrain data were collected from 1951 to 1998 at 73 meteorological stations in Thailand. The typhoons were not included. The extreme value distribution type I was employed to obtain the peak hourly mean gradient wind velocities for return periods of 25, 50, 100 and 200 years. The National Building Code of Canada NBC 1990, was used as guideline to propose the equivalent static wind pressure for different areas, building size, and site exposure.

From the research, it is found that the wind velocities in the southern part and upper northern part are higher than in the middle parts of Thailand. In comparison between the wind loads from this research and the wind loads specified in the Building Act 1979, differences are found in some cases.