

Anawat Wannasri, Lt. 2008: A Study of Grounding for Lightning Protection System using Foundation Earth Electrode. Master of Engineering (Electrical Engineering), Major Field: Electrical Engineering, Department of Electrical Engineering. Thesis Advisor: Mr. Winai Plueksawan, Dr. Ing. 179 pages.

The External Lightning Protection System in the Standard of Lightning Protection for Building: 2000 as defined by The Engineering Institute of Thailand Under H.M. the King's Patronage (E.I.T) consists of three components namely air terminal down conductor and earth termination system. There are two types of earth electrode arrangement which are type A (i.e. horizontal or vertical earth electrode) and type B (i.e. ring or foundation earth electrode). In Thailand horizontal and vertical earth electrodes as well as ring earth electrode combined with vertical earth electrode are widely used. Foundation earth electrode is seldom used because engineers are not familiar with it and not sure of its application.

The objective of this research is to evaluate the electrical characteristic of the foundation earth electrode. The earth resistance measurements were performed on the earth resistance of foundation earth electrode of general building in Bangkok and Suburban Areas of 23 projects. The results show that (1) earth resistance of reinforcement steel in footing ranging from 0.344 - 7.170 Ohms (2) earth resistance of reinforcement steel in beam ranging from 0.010 - 0.727 Ohms (3) earth resistance of reinforcement steel in concrete slab ranging from 0.026 - 0.114 Ohms

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