Evaluasi Instalasi Sistem Pentanahan Pada Gedung di Fakultas Teknik Universitas Indonesia = Evaluation of Grounding System Installation In Buildings At The Faculty Of Engineering, University of Indonesia

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Abstrak

Pembumian (grounding) listrik merupakan sebuah sistem pentanahan untuk menghilangkan perbedaan potensial pada suatu instalasi listrik, sehingga kebocoran tegangan atau arus dapat langsung dialirkan ke tanah. Sistem pentanahan disini diperlukan untuk melindungi bangunan dan peralatan dari aliran listrik akibat gangguan sambaran petir. Grounding juga bisa berfungsi untuk melindungi alat elektronik dari kebocoran arus listirk. Dikarenakan banyak fungsi sistem pentanahan(grounding), maka grounding merupakan suatu sistem yang sangat vital bagi suatu bangunan, dan instalasi suatu sistem pentanahan di suatu gedung sebaiknya perlu diperhatikan agar fungsi-fungsi dari grounding itu sendiri bisa digunakan secara optimal. Penelitian pengukuran sistem pentanahan ini dilakukan di gedung Departemen Teknik Elektro, Departemen Teknik Mesin, dan Departemen Arsitektur Universitas Indonesia. Tujuan dari penelitian ini adalah mengevaluasi kelayakan sistem grounding di gedung-gedung tersebut. Untuk mendapatkan hasil yang lebih akurat maka penulis melakukan pengukuran sebanyak 3 kali. Dalam penelitian ini meninjau berbagai elemen seperti struktur tanah, kondisi tanah, serta kondisi lingkungan. Hasil yang didapat dari pengukuran dengan menggunakan earth tester yakni ketujuh objek yang diukur nilai pentanahannya sudah sesuai dengan standar PUIL 2000 yakni sebesar 5 Î©, dilihat dari hasil pengukuran nilai pentanahan di gedung Departemen Teknik Elektro, Departemen Teknik Mesin, serta Departemen Arsitektur ini maka bisa dikatakan “baik dan optimal’’ untuk sebuah sistem grounding. Setelah melakukan penelitian ini, maka penulis bisa menyimpulkan bahwa ketujuh objek yang diteliti sudah sesuai dengan standar PUIL 2000 dan instalasi pentanahannya masih cukup optimal.

.....Electrical grounding is a grounding system to eliminate potential differences in an electrical installation, so that voltage or current leakage can be directly channeled to the ground. The grounding system here is needed to protect buildings and equipment from electricity due to lightning strikes. Grounding can also serve to protect electronic devices from leakage current. Due to the many functions of the grounding system, grounding is a very vital system for a building, and the installation of a grounding system in a building should be considered so that the functions of the grounding itself can be used optimally. This grounding system measurement research was conducted in the building of the Department of Electrical Engineering, Department of Mechanical Engineering, and Department of Architectural, University of Indonesia. The purpose of this research is to evaluate the feasibility of the grounding system in these buildings. To get more accurate results, the author took measurements 3 times. This study reviewed various elements such as soil structure, soil conditions, and environmental conditions. The results obtained from measurements using an earth tester are that the seven objects measured grounding value is in accordance with PUIL 2000 standards of 5 Î©, seen from the measurement results of the grounding value in the building of the Department of Electrical Engineering, Department of Mechanical Engineering, and Department of Architecture, it can be said "good and optimal" for a grounding system. After conducting this research, the author can conclude that the seven objects studied are in accordance with the PUIL 2000 standard and the grounding installation is

still quite optimal.