FOUNDATION DESIGN FOR GENERATOR SET MACHINE AT PT. PUPUK KALTIM BONTANG NPK SUPER FACTORY WITH SPECIAL ATTENTION TO THE INFLUENCE OF RUBBER VIBRATION ISOLATOR

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ABSTRACT
In general the foundation of the machine transfers and distributes static and dynamic loads to the subgrade without damage. Engine generator sets are classified as a rotating machine with a constant frequency. The engine and alternator of a generator set must be isolated from the mounting structure where it is installed because a generator set will result in excessive noise, vibration, and possible damage to the generator set or other equipment. Vibrations can also be transmitted through the foundation structure and damage the structure itself. Some generator sets, utilize neoprene/rubber vibration isolators that are inserted into the machine between the engine/alternator and the skid. The skid of these generator sets usually can be bolted directly to the foundation, floor, or sub-structure.

The purpose of this final project is to study about design of the foundation for generator set machine in NPK Super factory PT. Pupuk Kaltim Bontang based and influence of rubber vibration isolator on the static and the dynamic loads. The analysis of the static load reckoning the bearing capacity of the foundation. Afterwards with the dynamic load will be analysed using “Lumped Parameter System Method” to obtain the amplitude that the vibration would not disturb the human being and the environment.
The result of the design, the thickness of the machine foundation is 0.6 m with the dimension of the machine foundation is 2.6 m x 2.1 m. And using D16 - 200 mm for the reinforcement. While the rubber vibration isolator uses made of neoprene rubber with a constant value (k) is 98 kg/mm. This generator set machine have frequency 1500 rpm and the level of vertical amplitude was 0.0003805 inch so that included in category "Easily Noticeable to Persons"

**Keywords**: Foundation Machine, Vibration Isolator Rubber, Lumped Parameter System Method.