

# Seismic Isolation Using Magnetic Plates

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## Abstract

In this thesis we want to levitate a concrete seven story building with base isolation system using magnetic plates and separate it from ground. To create and set up a seismic isolation system using magnetic plates, we build a concrete foundation on which the short concrete columns at intervals from each other on the ground. Then we placed steel reinforced elastomeric isolators on the short columns and a metal plate put on the elastomeric isolators, horizontally, after that we placed metal plates perpendicularly on all four sides of it, so that a hollow cube like a pond on the elastomeric isolators, is created. At this point magnetic plates placed inside the cube, finally the bottom of the isolator system will be completed. Next, we levitate a magnetic plate on the bottom of the isolator system. For levitation magnetic plate used horizontal and vertical adjustable height spacers. After flotation balanced magnetic plate, metal plate put on it and finally a concrete foundation to be placed on the metal plate and structure build on the foundation. Thus structure separated from ground by the system completely and this system can theoretically remove earthquake vibration.

**Keywords:** base isolation system, magnetic plate, magnetic repulsion force, levitation force, Separator system

## 1. Introduction

Without doubt one of the most important natural phenomenon in human life is earthquake. Occurrence of millions of earthquakes every year in different parts of the world and the