MME 2011 CERAMIC MATERIALS I LABORATORY
Experiment 2
Dry Pressing

1. Objective of the Experiment

- To show how to form ceramic objects by pressing various types of powders
- To show the pressure and thickness effect on green density

2.What you should know before the experiment?

You should know;

- What are the stages of pressing?
- What is the importance of powder characteristic?
- What are the parameters that should be considered during pressing?
- What are the defects that occured during and after pressing?

3.What will you learn during the experiment?

You will learn;

- How to form ceramic powders by using dry pressing?
- How the thickness affects the green density?
- How the pressure affects the green density?
- How the defects can occur during and after pressing?
- How to control the compaction defects?

4.Equipments and materials (if necessary user manuals)

- Ceramic powder,
- Pressing dies,
- Mechanical press.

5.Important points / hints for the equipments and/or results obtained from the analyses

- Good powder flow is essential for reproducible volumetric filling, a uniform density of the fill and a rapid pressing rate.

- Hard granule difficult to change shape, causing residual pore, thus lowering product strength
- The compact must survive ejection and handling without failure and should be free of defects.
- Using lubricant during pressing is important to be aware of frictional forces.
- To minimize defect formation, some pressure is kept during ejection process.
- Air problem can be minimized by de-airing before compression.