UNIVERSITI TEKNOLOGI MARA

CAWANGAN TERENGGANU KAMPUS BUKIT BESI

MEC299

MECHANICAL AND PHYSICAL PROPERTIES OF BRASS VS ALUMINIUM

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SEM MARCH AUGUST 2022

ABSTRACT

A material's mechanical properties are those that govern the material's response to applied loads. Mechanical properties are used to determine how a material will behave in a particular application. Mechanical and physical properties is very important especially to identify material characteristic and range of usefulness of a material. Two most familiar mechanical properties are tensile test and hardness test. Tensile tests aid in determining a material's effectiveness and behaviour when subjected to a stretching force. These tests determine the maximum strength or load that a material can withstand under optimal temperature and pressure conditions. A common definition of hardness is the measure of a material's resistance to an applied force, which requires the use of a fixed geometry indenter under static load. One of physical properties that usually used is microstructural analysis. The microstructural analysis is widely used in failure investigations, supplementing material performance tests such as environmental degradation studies and welding qualification testing. Nowadays, the manufacture have problem in material selection for gear and bearing , so that it will avoid the material from fail. So, the purpose of this works conducted because want to help the manufacturer or researcher select the best material for certain application. For instance is for gear and bearing. The objective of the project is to study and compare the mechanical properties of brass and aluminum and relate them to theoretical analysis and to investigate the microstructural analysis of brass and aluminum under different magnifications. This chapter focuses on sample preparation processes, as well as laboratory and experimental activities. This chapter describes the processes and steps used in experimental and laboratory work. To ensure that the findings are correct, it is necessary to conduct research on the study's techniques and phases. It is critical to ensure that the experimental work is correct for the experimental results to be extremely reliable. By following the necessary procedures, the error can be avoided, resulting in a precise and exact output. This study was carried out by reviewing a journal and previous research on related subject.

ACKNOWLEDGEMENT

First and foremost, I want to thank God for allowing me to pursue my diploma and for guiding me through this long and difficult journey. My gratitude and thanks go to my supervisor, Mrs. Ros Atikah Abdul Kadir Che Ismail.

Finally, I would like to thank my father and mother for having the foresight and desire to educate me. This magnificent work is dedicated to you both. Alhamdulillah, and don't forget about your friends who morally support you and offer encouragement and help in overcoming obstacles.

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