EFFECT OF CERAMIC PARTICULATE GEL COAT COMPOSITE DEPENDING ON SIZE AND PERCENTAGE OF LOADING ON ITS MECHANICAL PROPERTIES

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ABSTRACT

EFFECT OF CERAMIC PARTICULATE GEL COAT COMPOSITE DEPENDING ON SIZE AND PERCENTAGE OF LOADING ON ITS MECHANICAL PROPERTIES

A composite is made by combining two or more materials to give a unique combination to produce new products that following the standard application. There are various sources that can be used as a fibre/filler to modified and improve the properties of the composites. For this study, the waste ceramic is used as particle size and combined with gel coat and MEKP to produce ceramic particulate gel coat composites. This composite were prepared following the different percentage of ceramic's loading (15%, 25% and 35%) at different size (100μm, 90μm and 63μm). The tensile test, Izod impact test, water absorption test, FTIR test and density was carried out and the results were compared between the percentage of loading and size of the particle.

keywords: mechanical properties, ceramic, gel coat, methyl ethyl ketone peroxide.

CHAPTER 1

INTRODUCTION

1.1 Introduction

About 30% of all polymers produced each year are used in the civil engineering and building industries. Polymers offer many advantages over conventional materials including lightness, resilience to corrosion and ease of processing. They can be combined with fibres to form composites which have enhanced properties, enabling them to be used as structural members and units.

Polymer composites can be used in many different forms ranging from structural composites in the construction industry to the high technology composites of the aerospace and space satellite space satellite industries. Complete structures have been fabricated where units manufactured from glass-reinforced polyester are connected together to form the complete system in which the shape provides the rigidity [1].

Composites are composed of matrix, reinforcement, fillers and additives. Each of these constituents' materials plays an important role in the processing and final performance of the end product. The matrix holds the composites together and influences the physical properties of end product. The reinforcement is a materials added to polymer to improve the strength