



The Effects of Component Changes Within Pultruded Epoxy Resin-Based Products

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The aim of this research paper is to determine the changes in mechanical properties of products when certain changes are made within the resin system that they are produced with.

With this goal in mind, the polymer composite materials¹ which were used in this research effort were obtained via pultrusion². The products are cylindrical in shape and are mainly composed of epoxy resin³ and glass fibers of 4800 tex. The fibers were initially threaded through a preform, followed by a wetting process by submerging them in a resin bath. Once the fibers were fully submerged and coated with resin, they were then pulled through a pultrusion die, heated at specific temperatures, in order to set the resin around the glass fibers, forming what is known as a polymer composite material.

The main aspects which were analyzed and taken note of during this research effort were changes that happened in the production process itself, more specifically the pultrusion of the product, keeping track of potential defects in the product, and the changes that were noticed within the mechanical properties of the products, more specifically, whether there was any improvement or loss in properties, compared to our current norm.

Keywords: epoxy resin, glass fibers, polymer composite, pultrusion, mechanical properties.

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