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DEVELOPMENT OF GLASS FIBER REINFORCED PVC COMPOSITE

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The objective of this project is present a glass fiber reinforced PVC composite, that can be used in technical application due to better mechanical properties than unreinforced rigid PVC compound. This project presents a method to produce fiber glass reinforced PVC composite. The concept is developing a fiber glass with a new sizing compatible with PVC matrix and a process to incorporate the long fibers in the PVC compound. The method is through incorporating continuous glass fibers with vinyl matrix prepared by wire coating process and pelletizing the coated roving (by cutting in the range 13 to 14 μm in length). The pellets are mixed with granulated rigid PVC and this blend is fed directly into the injection-molding process machine. The direct injection molding is an excellent option because it reduces the number of processing, reduces the deterioration of the glass fibers length and reduces the possibility of PVC resins degradation. In summary, long glass fiber reinforced PVC compound through incorporating by wire coating process is a new process of reinforcement into the vinyl area and is an option to take the PVC to engineering applications.