

Design and Optimization of Composite Canopy Structure

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Abstract : A canopy is an overhead roof structure generally used at the entrance of a building to provide shelter from rain and sun and may also be used for decorative purposes. In this paper, the canopy structure to cover the conveyor line has been studied. Existing most of the canopy structures are made of steel and glass, which makes a heavier structure, so the purpose of this study is to weight and cost optimization of the canopy. To achieve this goal, the materials of construction considered are Polyvinyl chloride (PVC) natural composite, Fiber Reinforced Plastic (FRP), and Structural steel Fe250. Designing and modeling were done in Solid works, whereas Altair Inspire software was used for the optimization of the structure. Through this study, it was found that there is a total 10% weight reduction in the structure with sufficient reserve for structural strength.

Keywords : canopy, composite, FRP, PVC

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