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DRILLING CHARACTERISTICS STUDY ON HUMAN HAIR REINFORCED PLASTIC COMPOSITES

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Abstract:

The manufacturing of the natural fibre reinforced composite can broadly be classified as primary and secondary manufacturing. Primary manufacturing processes are hand lay-up, Pultrusion, filament winding, vacuum bag moulding and resin transfer moulding. Secondary manufacturing include drilling, cutting and surface finishing. Hole making is one of the important machining operations to facilitate the assembly operations. Though a number of approaches have been used for making holes in composite laminates, conventional drilling till date is the most widely acceptable and frequently practiced machining operation for hole making. Conventional drilling however results in damage in the form of delamination, micro cracks, fiber pull out and matrix burning around the hole and may ultimately cause variation in the strength of the component with a drilled hole. The objective of this work is Minimize delamination damage and Maximize residual tensile strength. In this work, experiments were carried out as per the Taguchi experimental design hole by varying the parameters speed in the range of (500-1500) point angle in the range of (90-110) Feed in the range of (0.02-0.06) and result are analysed using Analysis of variance (ANOVA) technique to know the percentage contribution of each factor on residual tensile strength, and delamination damage of the hole

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