It was observed that higher tensile strength could be achieved by VIP when compared with vacuum bag (11 % higher) and hand layup (20 % higher). The VIP sample had a modulus which was 15 % higher than the vacuum bag and 20 % higher than the hand layup samples.

The inter-laminar bonding was also observed to be highest in VIP and lowest in hand layup process. The reason is the higher volume fraction of the reinforcement and a smaller number of voids in the VIP and after that vacuum bag samples as compared to hand layup.

By examining the macroscopic surface of the samples, it was found that the specimen was made in a vacuum-free manner, free from any bubbles and dries.

In terms of cost and time, it can be noted that hand layup is the cheapest and fastest process among these processes. The vacuum bag is then placed in the second position, and finally in the VIP, which is the slowest and costliest process among the three processes. Consequently, in each situation, it should choose the desired process according to the properties, time and price of the process.

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## NOMENCLATURE

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|---|---|
| VIP | Vacuum Infusion Processing |
| HL | Hand Layup |
| VB | Vacuum Bag |
| GFRP | Glass Fiber Reinforced Plastic |