A complete seat made of polyurethane foam was designed and manufactured. The produced seat proved that it could withstand 120kg instead of 80kg, since we used safety factor of 1.5 during the design step. Moreover, no metallic joints and autofasteners were used in producing the seat. All the resin curing were under normal pressure and room temperature.

![Image of a seat design](https://example.com/seat-design)

**CONCLUSIONS**

1. The Hand-Lay-Up process is efficient process to make complex shaped and unrepeatable parts. Besides these advantages, many disadvantages can be concluded after applying the HLU procedure:
   - The HLU structures contain many voids, especially if the autoclave equipment is not in use.
   - In HLU, the surface quality of the product is very poor. The layer thickness is non-homogeneous and it depends on the individual labor skills.
2. The cost can be reduced for mass production especially when the process is automated.

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**REFERENCES**