

for carbon fiber. Therefore, the production of materials for the glass fiber reinforced plastic mold and the surface of the mold after the application of gypsum should prevent the occurrence of adhesion. As shown in figure 14 and 15.



Figure 14. Body mold



Figure 15. The production of finished carbon fiber body

The body uses a double layer carbon fiber cloth structure, the inner layer uses the 3K carbon fiber cloth, and the outer layer uses the 12K carbon fiber cloth. Remanufacturing process should ensure that the outer carbon fiber does not wrinkle, burr.

The adhesive should use two-component, slow-dry type epoxy resin, in which the first layer of carbon fiber cloth and second layers of carbon fiber cloth were laid. Attention should be paid to environmental temperature and humidity during the drying process. I should ensure that the temperature is greater than 20°C, the relative humidity is less than 85% while preventing the dust adhering to the dry surface caused by surface pollution.

After the model, the body should avoid direct sunlight, to avoid that the inner side of the epoxy resin is not completely dry deformation, resulting in the distortion and cracking of the body and other issues. The surface of the body should be careful and not to scratch the surface of carbon fiber reinforced layer resulting in the decline of the body structure stiffness.

5. CONCLUSION

Concentrating on the requirements and needs for energy-saving sports car race, using the theory of ergonomics and putting forward the requirements of the basic standard of

sports car body design. Based on CATIA modeling tool designs and XFLOW-CFD analysis tool on several schemes which have different drag coefficient, perturbation flow, mean value of lift coefficient and other parameters, the subsequent aerodynamic test and plan were analyzed and compared, then determining the best one. Thereafter, using HyperMesh to mesh with wind tunnel mesh module 1, using high precision CFD analysis software FLUENT to verify the feasibility of the scheme. On this basis, the body of EPRC can be produced with the selection of light, high modulus, corrosion resistance of carbon fiber composite material. The design process is proved feasible, and the desired objectives can be achieved.

ACKNOWLEDGEMENTS

This work is supported by Shanghai University of Engineering Science High Level Project to Cultivate Special (Project No. 201510856025).

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