

RACE WAJA DEVELOPMENT ON FRONT BUMPER

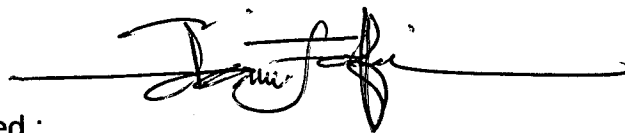
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"I declare that this thesis is the result of my own work except the ideas and summaries which I have clarified their sources. The thesis has not been accepted for any degree and is not concurrently submitted in candidature of any degree".



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ABSTRACT

Fiberglass is the trade name for a man-made fiber that also may be called fibrous glass or glass wool. A fiber is a particle that is at least three times as long as it is wide. The main fiber-forming substance in fiberglass is glass. Fiberglass was first used in the 1930s for home furnace filters and insulation. Fiberglass is a composite material. Composite materials are formed by the combination of two or more materials that retain their respective characteristics when combined together to achieve superior properties. The main components of composites are reinforcing agents and matrix. The fibers, particulates and whiskers act as the reinforcement and provide most of the stiffness & strength. The matrix binds the reinforcement together. Other substances such as fillers are used to reduce the cost and improve process ability and dimensional stability. The bumper of the car is important for racing car because the distribution of aerodynamics downforce between the front and rear tracks affects the directional balance of the car in limit cornering under acceleration and braking. In addition to the downforce from body and underbody shaping, most modern race cars have auxiliary aerodynamic devices front and rear that can be used to control the distribution and hence balance of the car. These devices such as front bumper, rear bumper and side skirts. As a result, every detail about the air flows on the Computational fluid Dynamics (CFD) to ensure the smoothness of directional flow. In this process, I did the parts drawing in CATIA P3 V5R13, airflows in CFD, the molding and the finishing product all by my own to ensure the continuity of knowledge.