

Study of design and functional criteria for motorsport clothing

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Abstract:

The basic principle of the clothing industry is to cover the human being and protect his body from natural factors such as wind, hail, rain, sunlight, and different natural conditions, so the functional clothing appeared, where the clothes became indicative of the job of the wearer and helped him in a better performance.

And there are sports clothes that also express the type of sports game that the player plays. These functional and sports clothes must be designed with standard standards that achieve safety, protection and comfort for the wearer according to the needs of his job.

In this research; we study the design and functional requirements of motorsport clothing and Europe is the main center for this sport, and this sport is organized by the International Automobile Federation called (FIA) and its headquarters is located in Paris, France.

The objective of the research is to achieve the design and functional requirements of the racing suit, which is the comfort, protection, safety and the required suitable appearance.

The racer's suit should be comfortable during the race and also protected against fire hazards, collisions and accidents in the racetrack.

There are also many parts of the motorsports uniform (helmet - face mask - gloves - racing suit - racing shoes) and all of these parts must be made of fire-resistant materials to protect the driver until the flame is extinguished.

Using of Nomex has begun on a large scale in the manufacture of racing suits which is a fire-resistant aramid fiber manufactured in (DU PONT laboratories), There is also (D3O) material, which is a non-Newtonian liquid substance that was discovered in 2005 in Britain, and this material protects the body from accidents, so it is used as a protective padding in dangerous sports clothing.

The research includes three main themes:

The first: includes the theoretical framework that was compiled from research and books, as well as from magazines and the Internet.

The second: includes the practical framework for the research, where a set of proposed designs were made, which achieve comfort and safety for the driver during the race. A questionnaire was also conducted to select the best designs for their implementation

The third: it includes the results of the research, where the best proposed designs were implemented with the recommendation to use Nomex and D3O material in driver suit to protect him. We also reached to the standards and characteristics that required in motorsports clothing.

Key words:

Auto racing, fire resistance, "Nomex" material, functional clothing