

The use of Silicon Rubber with banana fibres and glass fibres to make Sports court ground by suitable technology to Egyptian environment

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Abstract:

The problem of the research concenter Inefficiency of the floors of open or closed sports fields in weather conditions such as heat and rain. also, the floors of sports fields are affected by constant pressure on them, which exposes them to damage and shredding. Most of these floors are imported from abroad and there is no Egyptian technology to produce them. The research aims to providing local qualities for sports stadium floors produced with Egyptian technology and using reinforced fillers of banana and glass fibers. In this research, a hybrid superposed material based on polymeric basis was prepared using the hand lay-up method.

4 -silicon rubber samples were produced :

The first sample : 50 grams banana fiber whiskers, 1 kg silicon rubber.

The second sample: 100 grams banana fibers whiskers, 1 kg silicon rubber.

The third sample : 100 grams of fiberglass (1) woven layer, 1 kg of silicon paper.

The fourth sample: 200 grams of fiberglass (2) woven layer, 1 kg of silicon paper.

The third sample is the ideal sample for the work of the sports stadiums appropriate for the track or field for small sports, due to the increase in the strength by an appropriate amount while maintaining the highest amount of elongation, as it is one of the least samples losing weight and land resistance. These are very suitable qualities for the track and field halls and gymnasium floors, which allows a significant decrease in the percentage of sports athletes injured, and not affected by conditions of weather conditions such as high temperature, cold and rain.

The important economic aspect in producing this type of stadium flooring in a simple way and in a pure Egyptian style, as the material of banana fibers was used instead of burning or disposing in a way that achieves an important environmental aspect. The glass fibers are used for reinforcement, which gives a large part of the continuity of the floor with some maintenance. As for the silicon material, it is less expensive than other materials used to cover sports fields.

Keywords:

Silicon Rubber, glass fibres, banana fibres, Sports court.