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The Effect of changes in Structural Compositions and Nanotechnology on the Functional Properties of fabrics for Protective Clothing for Construction Workers that resist U.V

Dr. Shaimaa Ismail Ismail Mohamed Amer

Assistant Professor, Spinning, Weaving and Knitting Department, Faculty of Applied Arts, Helwan University, shaimaaismailamer@gmail.com

Abstract:

With development and technology, nanotechnology has been developed, and its applications have multiplied in many fields, the most important of which is in the textile industry, which has attracted the attention of those working in various research. It is considered a leap in technology in various fields of research, because it is implemented at the lowest possible cost, and nanotechnology is considered an industrial scientific revolution. (1)

The fabrics used in protective clothing for construction workers must have special standard specifications because they are exposed to many risks, including high sunlight, by using different proportions of cotton blends with various yarns, while preparing them with the addition of titanium dioxide, to have the ability to reflect ultraviolet rays. In addition to improving the structural properties of fabrics, which are fluid absorption, resistance to fungi and bacteria, and absorption of sweat. The research aims to clarify the effect of change in structural compositions and nanotechnology on the functional properties of fabrics for protective clothing for construction workers that resist ultraviolet rays, by arriving at the best implementation method, the best mixing ratio, and the best spinning method for cotton. 16 samples were produced with a double implementation method and a decorative composition. With four mixing ratios of cotton material, the ring end was spun, and various tests were conducted on the fabrics produced, namely measuring the thickness test, the square meter weight test, the air permeability test, tensile strength and elongation test, and the ultraviolet ray resistance test, and most of the samples achieved the required results.

Keywords:

Protection Clothing – Ultraviolet rays –Cotton open ended spin –Cotton Compact spin

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