

Studying the effect of the structural structures of warp knitted fabrics for treating seawater from oil slicks using polyurethane

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Abstract

One of the most important features of the structural composition of knitted fabrics is that it helps to form porous fabrics with holes, which helps to use them in many purposes and makes them more flexible and elastic than woven fabrics.

Environmental pollution is one of the important problems man in the modern era, where we can define pollution as a qualitative change in the components of the environment, whether living or non-living, so that this change leads to an imbalance in the natural balance of the environment. It represents a major danger to all living things, including humans.

The current research aims to remove oil stains from sea, (7 samples) of warp knitting fabrics of different structures were produced on the Raschel warp knitting machine using multiple rods in the production of 28 needles / inch and using polyester material, a number (44/12, and the use of polyurethane at 100ppm and 400ppm to treat samples produced to absorb oil from sea.

Laboratory tests were, taking advantage of the capabilities of the machine used and specialized to reach the best specification for production. Explosion resistance to reach the best production standard. Tests were conducted on the samples produced by treating them with polyurethane at a concentration of 100 ppm and a concentration of 400 ppm. The extent of the samples' ability to absorb oil slick after treatment was measured. The tests proved that the samples absorb a large percentage that may reach to above 90% of the oil slick.

Keywords:

Warp knitting, structural compositions, polyurethane