



Textiles to the Rescue!

Textiles may fulfill a crucial role in the cleanup of the recent oil spill from the Deepwater Horizon oil rig in the Gulf of Mexico.

Fiber-based products are used on skimmers to get oil off the top of water. Oil clings to the fibrous surface mounted on a rotating drum or disk. The capacity of oil skimmers is directly related to their surface area—the larger the area, the higher the capacity. It only makes sense that adding textile fibers to the drums increases the collection surface area. Large skimmers can collect up to 800 gallons of crude per hour.

The disadvantage of skimmers is that they are relatively slow. Even high volume skimmers are limited by the time it takes the oil to soak into the fibrous pad. Skimmers also work best in calm water; waves make them less effective and can cause oil to escape.

Booms also often contain textile fibrous materials to absorb oil. These floating sponges absorb the oily water and prevent it from spreading until skimmers and other cleanup devices can be deployed.

Seshadri Ramkumar, associate professor of nonwoven materials at The Institute of Environmental and Human Health (TIEHH) and director of the Nonwoven and Advanced Materials Laboratory at Texas Tech University, says that cotton-based nonwoven materials may be the perfect sponge for sopping up the oil polluting the Gulf.

Ramkumar says that the properties of raw cotton allow it to soak up 40 times its weight. “With chemical modifications, it can soak up to as much as 70 times its weight,” he claims. This may make cotton a useful fiber in booms and skimmers.

Another nonwoven fabric technology designed

to protect beaches from the oil spill has been developed by Beyond Surface Technologies in conjunction with the TWE Group in Germany and HeiQ Materials in Switzerland. The Oilguard beach-protection fabric has been specially treated to absorb oil while repelling water.

Textiles and textile fibers help mitigate the effects of the spill in a variety of ways. There are roles for several different textile technologies to play. After all, cleaning up a disaster like the Deepwater Horizon spill is a big job.

Links:

The Deepwater Horizon oil spill in pictures

www.boston.com/bigpicture/2010/04/oil_spill_approaches_louisiana.html

Fibertect cotton nonwoven product to help clean the oil spill

www.ireport.com/docs/DOC-447299

Oilguard nonwoven technology to protect beaches from the oil spill

www.oilguard.org