



Advanced Environmentally Friendly Restoratives Lubricants Drag Reducers Protectants & Water Shields For;	SAILS BOTTOMS & FOILS TOPSIDES HARDWARE HATCHES & WINDOWS WOOD SPRAY HOODS & COVERS SHOES & GARMENTS
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## APPLICATION GUIDE

### Synthetic Garment Care

#### GENERAL

Foul weather gear, shirts, sweaters, jackets and other specialty technical clothing frequently become sweat, salt or rainwater soaked and caked with salt, dirt and debris. These contaminants not only degrade appearance but also carry odor-causing bacteria that reduce or destroy the ability of clothing to shed outside moisture while limiting sweat-removing breathability.

Breathable, waterproof clothing functions by allowing small molecule / perspiration caused bacteria vapor to exit garments while maintaining an external barrier to large, self-attracting water molecules from the atmosphere. This process works well as long as internal vapor channels remain open and external waterproofing is in tact. Dirt and debris that accumulate within garment layers may stop vapor molecule escape and dirt-abraded external waterproofing may allow external moisture to enter.

Proper cleaning and re-waterproofing is needed to keep technical clothing functioning properly.

Working with world-class winter sports athletes and Olympic teams, the scientists at **HOLMENKOL** have developed a series of products for the care and restoration of technical clothing made of synthetic and natural materials.

The two-step process that meets the demands of the marine environment include **TEXTILE WASH** for cleaning synthetic materials (**NATURAL WASH** is also available for cleaning natural fibers) followed by **TEXTILE PROOF** for waterproofing. **TEXTILE WASH** works beneath the surface during washing to super soak fibers thus causing debris and bacteria to be fully carried away when rinsed with fresh water. The renewed fibers are then more able to behave as intended to encourage breathability and insulation from cold. Once cleaned and dry, garments should be sprayed with **TEXTILE PROOF** to create a nano-particle barrier to outside moisture.

The result is a much warmer, drier and odor-free garment.

#### ○ **TEXTILE WASH**

##### Product Description:

Available in four sizes, **TEXTILE WASH** is a special hand or machine use liquid detergent created for all synthetic fabrics including high quality, breathable sports and technical clothing and fillings. Contains no bleaches, dyes or fillers and is effective in cold or warm water.

Safe for use on all fabrics including Gore-Tex, eVent, Coolmax, Outlast, Soft Shells, Sympatex, Schoeller, etc. as well as such insulating materials as Thinsulate, Thermolite, Primaloft, etc.\*

Cleans thoroughly by gently coaxing dirt particles and other residue from fabrics. Garments cleaned with **TEXTILE WASH** regain effectiveness and are enhanced with added particle protection and anti-bacterial cleaning. Plus, all cleaning agents in **TEXTILE WASH** are biodegradable.

\* Gore-Tex is a W.L. Gore brand, eVent is a General Electric brand, Coolmax is a trademark of INVISTA, Outlast is an Outlast Technologies, Inc. trademark, Sympatex is a Aksel, Nobel, Fraser, AG trademark, Schoeller is a Schoeller Textil,

AG trademark, Thinsulate is a 3M brand, Thermolite is a E.I. du Pont de Nemours trademark, Primaloft is a Albany International, Corp. trademark.



#### Intended Uses:

**TEXTILE WASH** is a highly effective detergent intended to efficiently clean synthetic materials in the safest most thorough manner possible by deep cleaning all layers and restoring their function.

#### How It Works:

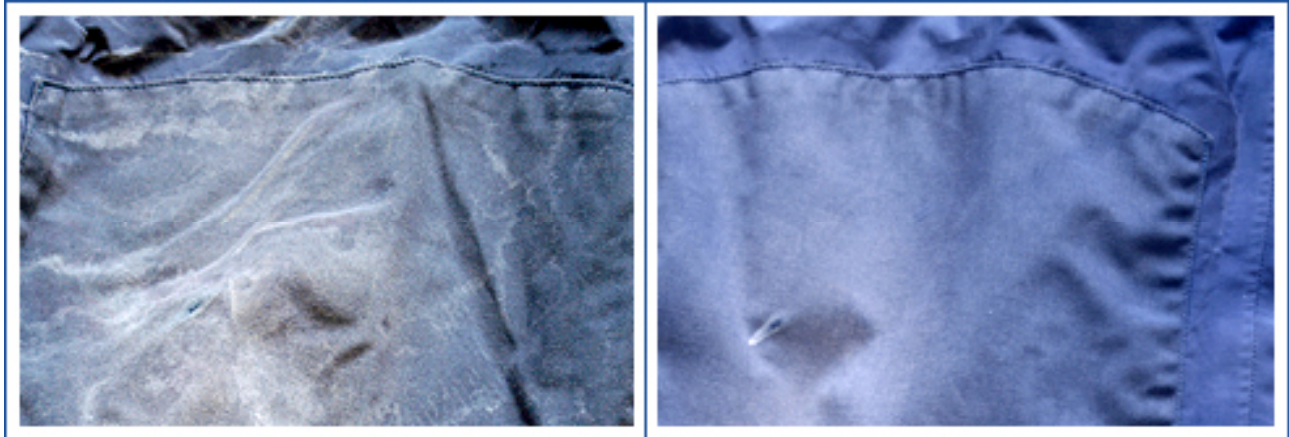
**TEXTILE WASH** offers three major advantages for renewing and restoring technical clothing:

1. It super-soaks garments with an additive that thoroughly penetrates fibers and traps dirt and debris for removal during rinsing.
2. It removes odor-causing bacteria.
3. It provides a nano layer of protection to internal fibers that sheds dirt and debris to enhance and prolong breathability.

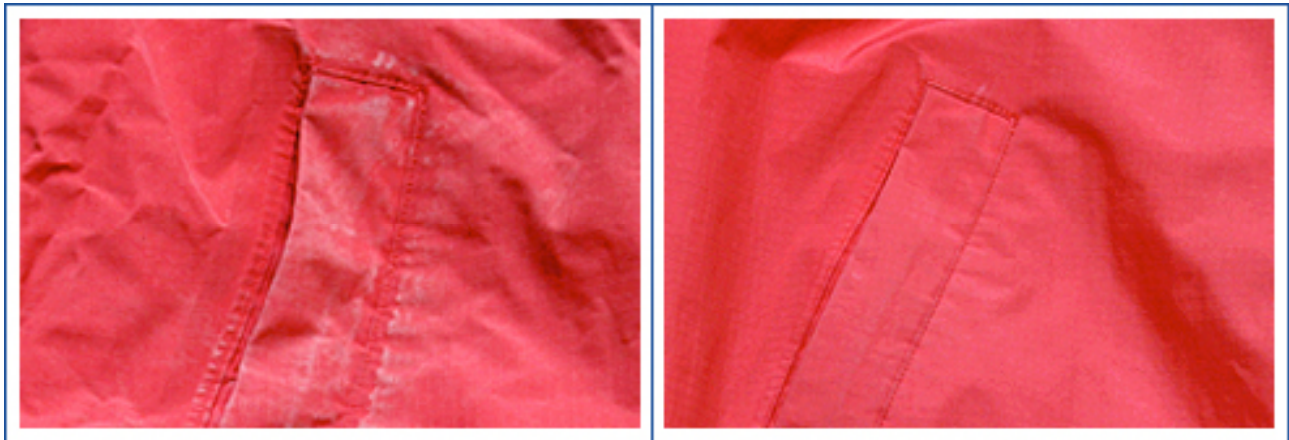
Following are before and after photos of foul weather clothing cleaned with **TEXTILE WASH**. These items were about five years old at the time of cleaning and used for a great deal of sailboat racing and coastal boat deliveries in all types of weather – all in salt water. They had been given reasonable care prior to washing in **TEXTILE WASH**. Some color renewal was noted and breathability was restored.

These photographs typify the results that can be achieved through basic machine-washing in standard household equipment followed by line drying.

Knee area of foul weather salopette after 10 days of saltwater racing and one week of transport on boat – salt caked and full of debris from work on deck.



Salopette washed with several other, similar garments using one 50 ml / 1.7 fl. oz. sachet of **TEXTILE WASH**.



Jacket pocket area before being washed with salopette and other garments.

**Precautions:**

**TEXTILE WASH** is a safe, human and earth friendly detergent that can be used with the same precautions utilized for any liquid laundry detergent for home use.

**Tools:**

Hand washing requires a sink or tub that will hold clothing and fresh water. Machine washing requires a standard home washing machine for most applications. Large loads or heavier items may be cleaned using industrial type washing equipment.

Clothing may be machine or line dried as preferred.

**Usage Guide:**

Usage is generally equivalent to other liquid laundry detergents. Multiple lightweight clothing items (single layer light to medium weight windbreakers, pants, etc.) can be washed together and will require about 50 ml / 1.7 fl. oz. of **TEXTILE WASH**. Heavy duty, multi-layer or extremely dirty clothing should be washed individually if not using industrial type equipment and may require 50 ml / 1.7 fl. oz. per washing. Inspection after each washing is the best way to determine if debris and stains have been adequately removed, however, it is safe to say that a single washing is always adequate to fully renew and nano-coat internal and external fibers.

## ○ TEXTILE PROOF

### Product Description:

Available in two sizes **TEXTILE PROOF** provides aerosol spray-on nano protection for functional clothing and gear to re-waterproof and protect the exterior of technical garments and outdoor gear (sleeping bags, packs, pillows, tents, awnings, etc.) with a nano / lotus affect shield against water, oils, dirt, debris and organic contaminants. **TEXTILE PROOF** prolongs the ability of functional clothing to provide maximum comfort and protection while enhancing breathability.

Safe for woven fabrics, cotton, nylon, polyester and synthetic fabrics such as those from such companies as Gore Tex, Exotherm, Sympatex, Soft Shell, Mantotex, Windtex, Schoeller, Soft Shells, Shimano Technium/Dryshield, etc.\*

**TEXTILE PROOF** is safe for use on new as well as older items is immediately usable after spraying with no stabilization period required, is fully functional without heating and provides maximum durability with an external, multi-layered nano-shell.

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75 ml  
22212

250 ml  
22210

### Intended Uses:

**TEXTILE PROOF** is a nano particle aerosol spray that creates a waterproof layer on external surfaces of garment and gear fibers. The nano coating is further enhanced by creating a Lotus plant like surface that serves to naturally shed dirt and debris.

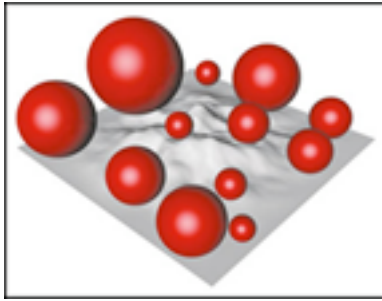
### How It Works:

Clean, dry fabrics sprayed with **TEXTILE PROOF** are provided with a long-lasting surface comprised of uniformly sized and shaped nano particles that form a highly organized, well bonded protection layer that simulates the ability of the Lotus plant to shed surface contaminants. This results in a surface that dirt and moisture are unable to adhere to.

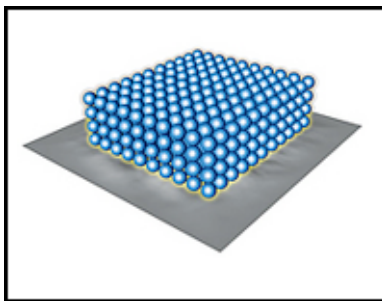
Nano particles are so small that approximately 100,000 of them are equal to the thickness of a sheet of paper. In addition they are very uniform in size, attracted to each other and nearly friction-free resulting in an ability to shed contaminants easily, create very well compacted and even layers and adhere to each other and fabric surfaces very aggressively.

The following diagrams illustrate how nano particles and the Lotus effect work to protect fabrics:

Due to irregular particle size non-nano based coatings do not create uniform surfaces. Thus, use of such coatings compounds surface irregularities providing more areas for water and debris containment. They also leave gaps and spaces that allow degradation to begin almost immediately after application through abrasion.



With **TEXTILE PROOF** a much more uniform surface is created to improve surface characteristics and minimize gaps where abrasion can begin the degradation process. This also limits channels for water and debris to enter fabrics and not only enhances wearer comfort but also allows colors to remain true longer and aid in the exit of small molecule bacteria from interior areas.



It's long been known that water and debris easily roll off the lotus plant creating contaminant-free surfaces. This super-hydrophobicity or "Lotus Effect" occurs because the plant's structure presents contact angles greater than 90 degrees to prevent droplets from combining with each other or other materials and causes them to fall from plant surfaces taking debris along with them.

**HOLMENKOL's LOTUS-HYBRID-MATRIX** duplicates the lotus surface creating a perfect repellent layer on a wide range of substrates.

Below is a computer generated image of water rolling off the surface of a lotus leaf:

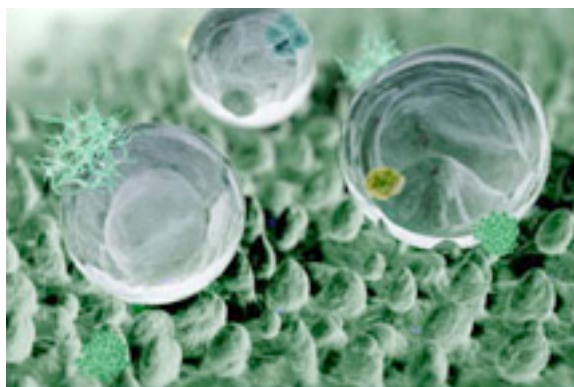
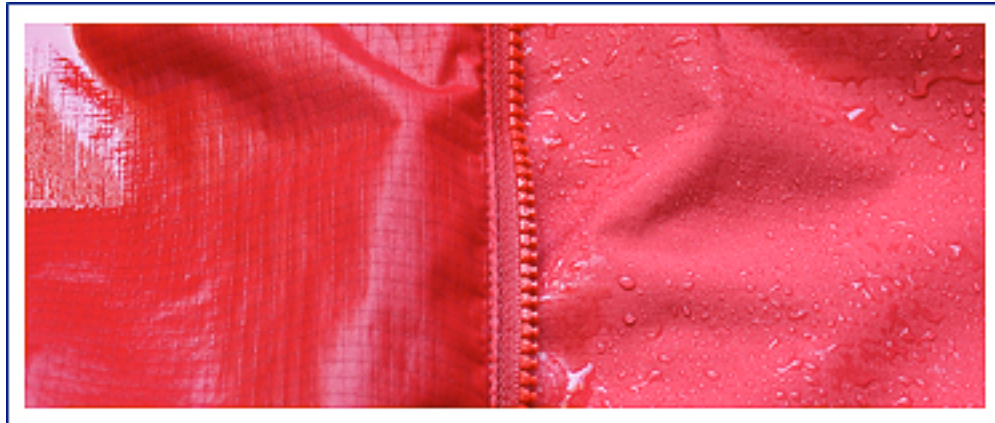


Image courtesy Wikipedia Foundation

The following images show the same foul weather gear pictured earlier after treatment with **TEXTILE PROOF**. In both cases the **TEXTILE PROOF** treated area is on the right:



#### Precautions:

**TEXTILE PROOF** is an aerosol spray that provides a light dispersion of the product in spray form. It should not be applied without adequate ventilation and outdoors is best. Drying is fast and clothing is safe to wear as soon as the natural color of the fabric appears and **TEXTILE PROOF** is no longer wet on garment surfaces. Contact with skin is not known to be a problem. As with any aerosol caution needs to be taken to avoid spraying near open flame or in high heat.

#### Tools:

No special tools are required to apply **TEXTILE PROOF** but it is generally useful to make use of a line to hang garments on for spraying and drying. Outdoor drying is recommended.

#### Usage Guide:

A light but thorough coat of **TEXTILE PROOF** is recommended. Generally one application with the nozzle held at approximately six – eight inches from the garment being sprayed is recommended. Successive applications are possible if it is felt that a heavier layer is required. Extra **TEXTILE PROOF** should be sprayed on seams and closures – especially zippered areas. Depending on conditions and usage one coating ought to last for several months. **TEXTILE PROOF** is safe to use on new as well as used garments.