



Laundering Can Save Money, Extend Glove and Apparel Life

This “green” solution has many considerations, benefits

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Laundering can impact the bottom line by preventing employees from prematurely disposing of used safety gloves and apparel. Workers often dispose of these products after they become soiled—even though the gloves or apparel were worn only once and have plenty of useful life remaining.

Below are questions typically posed about laundering and responses about this “green” solution, its costs and considerations.

What is involved when safety gloves and apparel are laundered?

Laundering is a complex process that combines mechanical energy (agitation), thermal energy (hot water used for washing and heat for drying) and chemical energy (detergents and other cleaning products) to remove soil. These elements are present whether gloves are laundered at home or in a commercial facility.

What are the benefits of laundering?

Depending on the fabric, laundering can extend glove and apparel life if products show no obvious signs of wear, such as holes, excessive abrasion, cuts or heat damage. Laundering offers aesthetic, hygiene and protective benefits, such as removing odors related to perspiration buildup.

Laundering can help maintain glove hygiene by removing substances that may cause skin irritation, including bacteria and residue from certain oils and chemicals used during the manufacturing process. The process can also refresh and maintain the garment’s original appearance by removing soil—while reducing the number of gloves and apparel products that must be incinerated or disposed of in landfills.

How much can I expect to save over the long term by laundering gloves?

Long term savings relative to laundering will depend on the initial cost of the gloves and the number of times gloves are laundered before they are discarded. If it costs \$1 to launder a \$20 pair of gloves five times, the savings would be significant compared to the cost to replace the gloves after they are worn once.

Remember, however, that laundering can compromise the gloves’ protective performance. If performance is altered, the cost of worker injuries could cancel potential savings resulting from laundering.

Will laundering reduce the protective qualities of my gloves and apparel?

Abrasion from other items in the industrial wash load can affect surface fibers on gloves and apparel—especially if the load is overstuffed or improperly sorted. For example, if gloves made from engineered yarns that contain glass or wire cores are combined with gloves made from textured synthetic yarns, the engineered yarns may cause abrasion of the textured synthetic yarns.

Also, if glass and wire cores are broken during laundering, the outer fibers in the engineered yarn could become damaged. This type of damage could lower the gloves' cut resistance or abrasion resistance.

Will laundering affect other performance properties of my protective apparel?

Laundering may impact performance characteristics such as grip, tactility and dexterity. Tactility and dexterity are functions of yarn size and glove design. If temperatures are high enough to affect the shape and size of the glove, they will likely reduce tactility and dexterity.

If drying temperatures are excessive, some synthetic fibers could actually soften and become distorted. Grip designed into the latex of a palm-dipped glove may be impacted if the latex is loosened or removed during laundering.

Will laundering cause my gloves to shrink?

Shrinkage is always a possibility with knitted products, although advances in knitting design allow gloves to be produced that will have minimal shrinkage during laundering and drying. A certain amount of stretch and recovery can be expected when a knitted glove is laundered, although the degree of stretch and recovery will depend on the yarn structure and the amount of latex added to the glove palm.

A glove's latex-covered palm probably will not shrink as much as the knitted portion—and it will not recover as much as the knitted portion. When considering laundering, it is important to recognize the possibility of dimensional changes and adjust the laundering process to minimize those changes.

Will laundering decrease the comfort of my gloves?

While comfort depends on an individual's perception, if gloves shrink to the point that they no longer fit properly, comfort will significantly diminish. Gloves that shrink will probably have less tactility and dexterity, which will reduce the worker's comfort level.

Glove comfort may also be affected by changes in the product's protective and performance characteristics. Broken glass or wire in yarn cores, for example, can cause skin irritation. Residual chemicals remaining from the laundering process can also irritate the skin.

Can I launder flame resistant gloves and apparel?

Flame resistant products require special care during laundering to remove soils as well as residual chemicals from the cleaning process. Bleach and other specific cleaning products cannot

be used on certain flame resistant materials because they will harm the flame resistant fibers or finishes.

What specific gloves and apparel can I launder?

You can usually launder knitted gloves made from a variety of fibers including cotton, thermoplastic synthetics such as nylon, polyester and polyethylene, and non-thermoplastic fibers including aramids. These fibers may be laundered if they are blended with each other or used in engineered yarns with glass and wire.

Glove structure should also be considered—i.e. whether the gloves are jersey knits, terry knits plaited structures—along with the gauge of the gloves. Because the resulting products will require a range of laundering practices, manufacturers' instructions should always be followed.

How do I know which laundering procedure I should use?

One way to determine an appropriate laundering procedure is to identify the most sensitive fiber in the gloves and let it serve as your guide. For example, if the gloves contain an aramid fiber that is sensitive to bleach, the laundering process should not include bleach. If one of the glove fibers is sensitive to heat, water and drying temperatures become critical.

Regardless of fiber constraints, it is essential to consider the difference in cleaning products if laundry recommendations include the use of laundry soaps or detergents. Soaps, for example, are very sensitive to water hardness. If you use soap when laundering gloves in hard water, a scum will form that will leave deposits on the fabric surface.

Detergents, on the other hand, are formulated to work at various levels of water hardness, which means that soil removal will be more efficient and complete.

How many times can I expect to launder gloves and apparel without reducing their comfort, protection or performance?

How many times a glove can be laundered will depend on the application in which it is used, how soiled it was before laundering and the level of soil removed during the laundering process. Heavily soiled gloves will require more severe cleaning processes, which can have a detrimental effect on the gloves' comfort, protection and performance.

Research conducted on the impact of industrial laundering has considered various fabrics and the effect of 26 to 50 cleaning cycles on fabric performance. While some fabrics withstood up to 50 cleaning cycles, it is important to remember that laboratory research may provide different results than actual laundering conditions. Gloves laundered in industrial cleaning operations, therefore, may show an earlier decline in properties than gloves laundered in a laboratory setting.

The easiest way to determine the number of times a glove can be laundered is to check with the glove manufacturer for specific recommendations. If there are no recommendations, then consider establishing your own standard for the acceptable number of laundry cycles.

To determine the optimal number of laundry cycles, you should examine the gloves after each completed industrial cycle, looking for changes in dimensions and appearance. You may want to consider photographing the gloves after each cycle to develop a visual ranking system that can

be used to help determine the maximum number of laundering cycles before the glove becomes unacceptable for use.

Are there certain situations in which I should not launder gloves and apparel?

Some soils are not completely removed during the laundering process, which means soil can remain in the gloves and may cause skin irritation. If gloves have been soiled with a known skin irritant that is difficult to remove, you may want to dispose of the gloves rather than try to launder them.

In some instances, soils may be transferred during the laundering process. Never launder gloves soiled with known skin irritants with gloves that are less severely soiled. This will prevent cross contamination.

How much does laundering cost?

Depending on the level of soil and the overall laundry process, laundering costs for gloves can range from 50 cents to \$1 per pair.

Should I consider laundering gloves and apparel at my site?

Several factors must be considered when establishing laundering capabilities at your own site. First, do you have the space that would be needed to properly collect, sort, clean and redistribute the gloves? Industrial laundry equipment requires more space than conventional laundry equipment and will require different electrical and plumbing hookups.

Second, depending on the type of gloves and the soil on the gloves, laundering may require a dedicated staff to manage the cleaning process. You must also have enough water for laundering.

Finally, you must be able to properly dispose of effluent and wastewater. This is especially important if chemicals used during laundering or the soil removed has the potential to negatively impact the environment.

What should I consider when selecting a laundry partner?

When considering a laundering partner, make sure the potential partner has a program for cleaning and reconditioning work gloves. If so, you will want to determine the program's thoroughness.

Ask the potential partner questions such as whether the process includes a dirty sort during which gloves are separated by glove and soil type. Are there different processes for different gloves and soils?

You will also want to know if the partner has the capability to renovate and repair gloves. If, for example, employees wear gloves while working with metal, you may want to determine whether the potential partner has metal detecting capabilities so metal shavings can be identified and removed.

From a convenience standpoint, you may want to ask if the partner has retrieval and redistribution capabilities (pickup and delivery).

What other recommendations do you have relative to laundering?

You should always follow the product manufacturer's instructions or a trade association's recommendations for laundering specific products. This is especially important when you are laundering gloves and apparel with certain performance properties such as antimicrobial capabilities or flame resistance

For more information about laundering and gloves and apparel that may be laundered, call 800.800.0444 or visit www.ansellpro.com.

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