

A SIMPLE STEP TO HELP REDUCE HOSPITAL ACQUIRED INFECTIONS

Hospital Acquired Infection's (HAI's) continue to be a growing concern for healthcare facilities. In a 2015 survey from the CDC, about 3% of hospitalized patients had one or more hospital acquired infections, with about 72,000 patient deaths during their hospitalization. HAI's can spread through bacteria/germ infested surfaces, especially in health care settings that are not properly cleaned and disinfected. The CDC recommends a sanitization regimen of cleaning, then disinfecting surfaces to reduce the spread of infection.



LDI's feeling has always been the porous nature of woven textiles and pronounced grains of some faux leathers (coated fabrics) cause these materials to harbor large amounts of harmful microorganisms when compared to smoother surfaces of products like LDI's EnviroLeather™ Prints and Solid Collections like California.

To test this hypothesis LDI conducted a laboratory study using Hygiena™ software, comparing microbial increase and decrease before and after proper sanitization. The study compares EnviroLeather™ California with faux leathers that have more pronounced grains and EnviroLeather™ Prints to woven textile fabrics. The test involved 50cm x 50cm pieces of each material, all placed in a microbial-rich environment for 5 days. After 5 days, the samples were brought to the lab for ATP swab testing using the Hygiena™ Cleaning Verification System, soap, water, and 10:1 bleach wipes.



About the software: Hygiena™ is a company who has been a part of creating a cleanliness standard for healthcare facilities, outlining what it means to be “clean”. Their ATP swab verification test detects fast-growing microorganisms through detection of adenosine triphosphate (ATP). This molecule represents the energy molecule in living organisms, like the live bacteria and germs that can make you sick when they enter the body from contaminated surfaces. The Hygiena™ UltraSnap™ swabs contain luciferase, a natural enzyme found in fireflies. The combination of ATP and luciferase creates a chemical reaction, producing light. The Hygiena™ luminometer device then reads the level of microorganisms found in each swab sample, reporting it onto a digital screen in Relative Light Units (RLU's).

In LDI's study each of the contaminated samples were swabbed for an initial RLU readout. Then, each sample was cleaned with soap and water. Once the samples were cleaned, they were dried and disinfected with a 10:1 bleach wipe. The, now properly sanitized, samples were then swabbed and their RLU readings were recorded once again.

Guidance given by Hygiena™ on infection control standards, less than 50 RLU's is considered clean enough for hospital public spaces, less than 25 RLU's is considered clean enough for "near-patient" areas, and higher risk areas such as the ICU should be less than 10 RLU's.

The tables below show the RLU readouts for the sampled materials.

	Before Sanitization	After Sanitization
EnviroLeather™ Print (looks like a woven)	66 RLU's	9 RLU's
Woven Textile A	131	19
Woven Textile B	137	12

	Before Sanitization	After Sanitization
EnviroLeather™ California (has a subtle grain)	99 RLU's	5 RLU's
Deeply Grained Faux A	256	19
Deeply Grained Faux B	166	16

As it can be seen in the above tables, in our study, both woven textiles and deeply grained PU faux-leathers trapped over 200% more microorganisms on average before sanitization than the smoother surfaces of both EnviroLeather™ Prints and EnviroLeather™ California solids.

After sanitization, these woven and deeply grained materials retained more germs and bacteria, never reaching the level deemed appropriate for high risk areas within a facility.

You can help reduce exposure to bacteria and germs by selecting the proper type of material. With LDI Interiors you can be confident that our material will hold up to repeated sanitization while our digital print technology gives you unparalleled design flexibility for the broadest range of healthcare applications.