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## The Future of Surfaces: Antimicrobial

### The Importance of Antimicrobial Surfaces:

As the importance of mitigating the spread of microorganisms continues to grow across all sectors of the economy, innovators continue to explore ground-breaking technologies that will enable increased protection as we conduct our everyday activities.

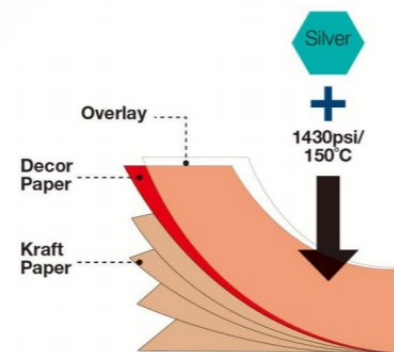
Studies prove one of these life-saving technologies to be antimicrobial surfaces. Antimicrobial, by definition, is “destroying or inhibiting the growth of microorganisms and especially pathogenic microorganisms” (*Antimicrobial*). Antimicrobial surfaces are engineered to inhibit the growth of stains, odor-causing bacteria, mold, and mildew on the surface. These surfaces are designed to be smooth, non-porous, and easy to clean with a durable construction.

As we look at all the surfaces an average person will come in contact with every single day—counters, tables, doors, desks, walls, etc.—it is easy to understand the importance of ensuring these surfaces are not only clean, but helping to protect from any infectious bacteria that could potentially be living on them.

### Composition:

Many major laminate manufacturers have conducted thorough studies and undergone extensive testing measures in order to provide interior surfaces that meet antimicrobial standards as defined by the Environmental Protection Agency (EPA). Surfaces such as Formica’s Protec+™ and Wilsonart’s HD® both offer extremely durable post formable laminates that inhibit bacteria growth and are available in both vertical and horizontal grade.

While each laminate manufacturer has slightly different compositions, all reach the same desired outcome—an attractive, yet durable, antimicrobial surface. Wilsonart’s HD laminate is constructed with “decorative surface papers impregnated with melamine resins pressed over kraft paper core sheets impregnated with phenolic resin. These sheets are then bonded at pressures greater than 1000 pounds per square inch at temperatures approaching 300°F (149°C)” (*Technical Data: Wilsonart HD, 2019*).



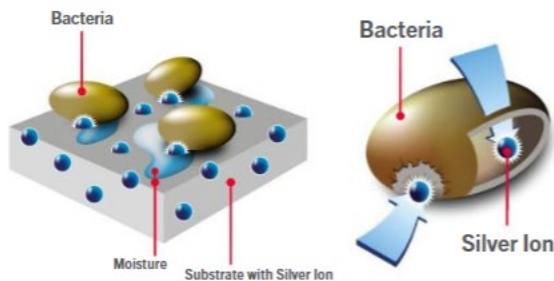
Antimicrobial Composition Diagram (*Protect: Antimicrobial High-Pressure Laminates, 2015*).

Instead of an applied top coating that can easily be worn off, antimicrobial protection is built into the construction using a Silver (Ag+) additive. “Silver is recognized as the most efficient and safe antimicrobial technology” (*Protect: Antimicrobial High-Pressure Laminates*, 2015). Silver ion is commonly known for its ability to interfere with processes critical to maintain cell function.

### Testing & Effectiveness:

The big question everyone wants to know; Are they effective? While there is still a lot of testing around the broad topic of antimicrobial products in general, there is a significant amount of data proving product effectiveness and can be supported by highly regarded testing criteria. Many hospitals and building owners are even starting to require surfaces that meet these requirements as well.

The presence of Silver (Ag+) in antimicrobial surfaces is really the key component in these surfaces. Silver ion has successfully demonstrated the ability to control and eliminate the growth of microbes by interfering with the processes critical to cell functionality that eventually leads to cell death (*Antimicrobial Product Sheet*, 2020).



Antimicrobial diagram demonstrates Silver ion functionality. (*Antimicrobial Product Sheet*, 2020).

Protec+, Formica’s antimicrobial product, has been certified with ISO 22196:2011, JIS Z2801 and ASTM G21 to prevent the growth of bacteria and fungi by stopping cell division, damaging the bacteria structures, and disrupting energy production of the cells.

“It is suggested by manufacturers that these antimicrobial surfaces can provide an additive effect to manual cleaning, and thereby reduce the risk of persistent and re-contaminated surfaces near the patient” (*Antimicrobial Surfaces as a Tool to Support HAI Prevention*).

Although these surfaces are engineered as antimicrobial, preventing the growth of bacteria, they are not “self-cleaning,” and still require standard cleaning and disinfection procedures as outlined by the CDC (*CDC Cleaning and Disinfection Guidelines*, 2020).



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The CDC reports that 1 out of 25 patients admitted to a hospital will develop a healthcare associated infection (HAIs), totaling nearly 650,000 patients annually (*Antimicrobial Surfaces as a Tool to Support HAI Prevention*). A recent study conducted tested the use of antimicrobial laminate surfaces in two urban hospitals compared to the previous twelve months without the antimicrobial surfaces in place. The study found that both hospitals showed a decline of 79% and 75% in the total bacterial colony forming units (CFUs) during the twelve months the antimicrobial surfaces were in place (*Impact of a Novel Antimicrobial Surface Coating on Health Care*).

While there is still much research being done, these surfaces have certainly proved to be a step in the right direction in preventing the spread of harmful bacteria. As more and more research and testing continues to be conducted, it is safe to say that antimicrobial products are here to stay.

#### Applications & Availability:

Where can antimicrobial surfaces be used? The answer is quite simple; anywhere. All sectors of the economy can benefit from antimicrobial surfaces; however, they are becoming a top priority in high-traffic areas such as healthcare facilities, schools, public transportation, and fitness centers. Antimicrobial laminates can be used for both interior commercial and residential as well as both horizontal and vertical grade applications thus making them very versatile for a wide variety of applications.

These laminates are easily post-formable and available with fast lead times allowing them to be used on all your favorite VT products, including VT Dimensions laminate countertops, VT Architectural Wood Doors, and laminate panels. If you have questions regarding antimicrobial surfaces and how you can include them in your next project, please contact your Territory Sales Manager for more information.



Iowa Children's Hospital Common Areas,  
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