

# PVC & POLYURETHANE

## A COMPARISON IN HEALTHCARE



*Reference: Chemical Fabrics and Film Association-Focus on PU and PVC for Upholstery*

Coated fabrics in general have major advantages over textiles in healthcare, in that they present a solid, water resistant surface allowing them to avoid penetration of bacteria and bodily fluids, while making them easy to clean and disinfect. There are no fabric interstices to capture bacteria and nutrients, and no yarn slippage or weave distortion that would allow penetration to underlying foam layers.

Vinyl coated fabrics, produced specifically for healthcare, have a number of advantages over their polyurethane counterparts.

A major issue with polyurethanes involves the significant number of field failures, including cracking and peeling, due to degradation caused by the use (or misuse) of strong disinfectants multiple times per day by hospital staff. With escalating government penalties for recidivism, or re-admissions for hospital-acquired infections, and with public access to statistics for individual hospitals, disinfection procedures have become an obsession. While this is a welcome development for patient wellbeing, it has been a challenge for coated fabrics manufacturers (and even more so for textiles).

Because of these PU field failures, healthcare-grade vinyls have largely replaced them, as they tend to be far more resistant, although they are not totally immune to failure, specifically when exposed to disinfectant concentrates such as Virox II, which is supposed to be diluted, one part to two hundred fifty six parts of water for normal use.

A second PU issue is 'puddling', or a tendency to sag or form depressions in seating from the weight of occupants, resulting in objectionable appearance and shortened service life. While it is often a problem of seat design and cushioning, most PUs consist of a thin film on a woven fabric that may not always completely recover its original shape when distorted in service. Vinyls tend to be thicker, contain a foam layer, and are laminated to knit fabrics that provide stretch for upholstery-ability and recovery from distortion.

Vinyl is the most versatile of polymers because of its unique ability to be transformed and enhanced by additives. While there has been a shift in public perception on the use of flame retardants and biocides, they provide immediate recognized safety benefits that must be weighed against the questionable possibility of future health issues.

In the Contract and Healthcare industries, aesthetics are the driving factors for specifiers. They expect all the performance properties, but color, texture, prints, surface feel and effects, with ever changing taste in fashion, describes the world they live in. In this regard, vinyl has no equal. One just has to look to our wide and ever changing palette of available materials.