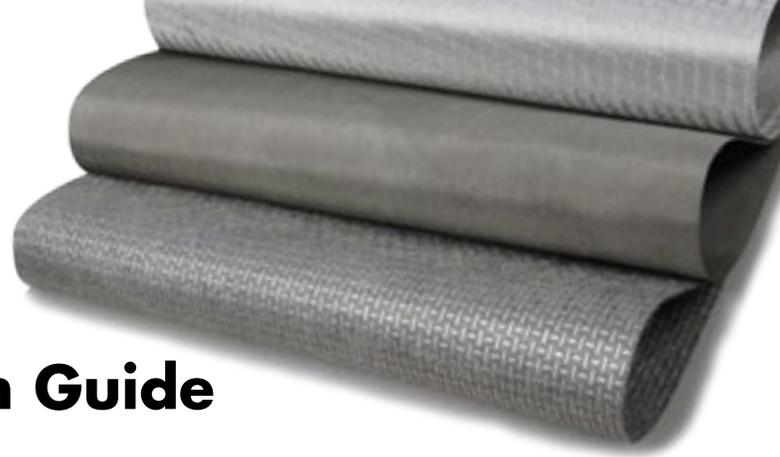




Smart Textile Application Guide

www.swift-textile.com



Athletic Safety & Performance

Swift's electrically conductive fabrics are perfectly suited for integrating electronic monitoring devices into sports apparel to detect and measure a range of human athlete vital signs and biometric data, including:

- Pulse and heart rate in real time, respiration and muscle reflex to measure physical endurance and aid in enhancing athletic performance
- Monitor and identify injuries as they occur to minimize their impact, as well as to accelerate healing and recovery to maximize athletic performance and playing time.
- Examples are identifying head injury and the potential for concussion (sports helmet sensors), compression jerseys and pants to identify arm or leg injuries and pressure mapping system integrated "smart beds", that heal injuries in rehabilitative sleep



Pressure Mapping

Swift's flexible, stretchable and electrically conductive fabrics are ideally suited for pressure sensor matrix constructions that can be designed into a range of devices that improve human performance, reduce fatigue and add comfort, as well as reduce or eliminate the potential for injury. Examples are:

- Pressure ulcer prevention for patients confined to beds or wheel chairs
- So called "Smart Bed" technology, that adjusts the firmness of a mattress to individual preferences to improve sleep, identify and treat soreness from injury or illness or simply improve the sleeping experience
- Foot assessment data collection, to improve shoe and foot comfort, treat a foot health related malady or assist in optimal personal footwear selection



Medical Devices

Swift electrically conductive fabrics are routinely integrated into a host of medical products due to the wide range of characteristics that make them attractive to medical product designers. Soft, flexible and stretchable nylon fabrics are comfortable to the touch and breathable against bare skin. All Swift silver coated fabrics exhibit biocompatibility properties that make them safe for direct skin contact applications and have often been certified for antimicrobial applications. Because of their electrical properties, Swift conductive fabrics are capable of assimilation into a wide spectrum of design applications, such as:

- Head bands and caps equipped to measure EEG for diagnosis of potential brain injury or Stroke
- Compression shirts, vests and jackets for monitoring heart rhythm
- Electrical connectors for prosthetics, including arm, leg, and hand devices



Real Time Location System Technology

The advent of wireless technology has enabled a range of opportunities to incorporate Swift conductive fabrics as a wireless connective material for Real Time Location System devices that connect people and equipment in a room, a building or an entire complex to improve safety and security as well as to better manage the utilization of supplies and equipment. Examples are:

- Hospital Maternity Ward Infant Monitoring Systems – Soft, flexible and comfortable swift conductive fabric replaces copper wire and other ridged connectors to connect newborns to mother to avoid miss-matches, and monitor in real time, exact location of each maternity department newborn to safeguard newborns in hospitals
- Elder Care and Memory Treatment Facilities – Real Time Location System devices keep elders safe and secured in managed care environments while allowing mobility throughout the facility without the need of personal supervision
- Correctional Facility and Hospitality Staff Security – Real Time Location System devices wirelessly pinpoint exact personnel physical location in a hotel, convention center or correctional facility to enable responders to locate staff workers in the event of an emergency. Similar systems capture staff entering and exiting office buildings and sky scrapers to automatically track staff location in emergency situations for First Responders
- Equipment Real Time Monitoring Systems – Equipment RTLS systems save businesses time and money by providing a centralized system to monitor valuable equipment locations to enable optimal utilization. Equipment RTLS Systems alert hospital staff to the location of open beds, available hospital monitoring equipment and other scarce tools and resources that save staff time and promote higher operational efficiencies. Equipment RTLS System also adds another level of security to protect valuable equipment from misuse, underutilization and pilferage.



Corner Reflectors

Swift fabrics, due to their conductivity, inherently have reflective electromagnetic properties that can be beneficial for corner reflector systems to make small objects in remote places easier to detect by radar. Corner reflector systems are used for device, equipment or personnel detection commonly used in atmospheric measurement devices, aircraft life rafts, military supply drops, etc. Swift's entire woven, non-woven, or knit product line can offer varying reflective characteristics depending on your application and design specifications.

Warfighter Uniform Enhancement

Swift fabrics have the unique characteristics of having highly conductive and reflective properties while being lightweight and flexible. This unique combination of properties provides an added benefit for warfighter uniform enhancements. Swift's conductive fabrics can be integrated into warfighter uniforms to enhance the following while reducing the overall weight:

- Radio Communications
 - Satellite Communications
 - Real time location functions all while reducing the overall weight
- Reducing the overall weight increases the warfighter's endurance and ability to carry out missions without the excessive weight of modern equipment needed to carry out missions.

