



Why STEDAIR® PREVENT Is the best option for Particulate Blocking Hoods

• 3-Primary technologies for Particulate Blocking Hoods

- DuPont's Nano-fiber material - While Nano-fiber is highly air permeable, it needs to be quilted to provide durability.
- Gore/Majestic e-PTFE barrier hood with **NO** air permeability. - High TPP, Low THL
- STEDAIR® PREVENT - The **ONLY** highly breathable, air permeable, flame-resistant and particle blocking material.

Selling Points

• DuPont's Nano-fiber

- Provides superior thermal insulation for the weight and thickness.
- Insufficient durability requires quilting. Even with the quilting, it has only been tested to 40-60 wash/dry cycles.
- The Dupont hood sandwiches the loosely entangled, delicate Nano fibers between 2-protective textiles in a quilted composite material. The quilting stitches could provide less protection from particles when the hood is stretched.
- Over time, it is likely to have fiber migration within each of the quilted panels that reduces the particle blocking efficiency. This would make this hood much less durable.
- Washing and Drying tends to loosen the fibers; this will reduce the blocking efficiency during the life of the hood.

• Gore/Majestic Hood

- The loose membrane layer in this hood makes loud crinkle noises, like a plastic bag, when worn.
- Gore's noisy film barely passes the standard for Particulate Blocking Hoods, due to the low THL. The construction of the hood causes much higher TPP than many Fire Departments prefer.
 - **A hood needs low TPP and high THL for breathability and comfort.**
 - NFPA THL Requirement 325 - Gore/Majestic Nomex Blend Hood - THL 332.1
 - NFPA THL Requirement 325 - Gore/Majestic CarbonKnight Hood - THL 331.8
 - NFPA TPP Requirement 20 - Gore/Majestic Nomex Blend Hood - TPP 35.9
 - NFPA TPP Requirement 20 - Gore/Majestic CarbonKnight Hood - TPP 39.9
- The Gore/Majestic needs to provide an inspection port because they leave their delicate membrane exposed within the hood.
 - The membrane is laminated to only one-side of a knit, leaving it free floating and unprotected.
- The Gore/Majestic Hood also needs the inspection port because they placed the particle blocking layer between 2 stretch knits which provides 3- independent uncomfortable free floating layers.
- The Gore/Majestic hood is nearly as water-proof as their moisture barriers. The lack of air Permeability and LOW THL make this hood a poor option due to the likelihood of higher heat stress.

- **STEDAIR® PREVENT**

- STEDAIR® Prevent is the ONLY highly breathable, air permeable and flame resistant material consisting of a composite barrier which offers superior particle blocking performance and durability.
- STEDAIR® PREVENT is made with a special e-PTFE particle blocking barrier.
- STEDAIR® PREVENT is protected by sandwiching the PREVENT film between 2-knits. This also provides a better THL and high air permeability.
- One of the benefits to STEDAIR® PREVENT is the ability of water to easily flow through the particulate blocking layer and flush out loosely trapped particles.
- Overtime, ALL particle blocking layers will become clogged with trapped particles in a similar manner that a filter becomes clogged with dust particles. The benefit of PREVENT is that loosely trapped particles can be flushed out during the washing process.
- Hoods made with STEDAIR® PREVENT maintains and improve their particle blocking efficiency after the NFPA wash/dry/oven conditioning required in NFPA 1971-2018 Edition.
- **High THL.** THL varies based on the final hood construction. **THL values for STEDAIR® PREVENT hoods fall between 380 and 467-W/m².**
- **High Air Permeability.** The Frazier test is typically used to determine whether gear is windproof. If the Frazier is less than 5-cfm, items are typically classified as windproof. STEDAIR® PREVENT Frazier results are between 10 and 20 cfm. The Gore/Majestic Frazier will be as low as 0.5-cfm. Air permeability is an additional important performance attribute for comfort and reduced heat stress.
- Multiple designs: STEDAIR® PREVENT is available from a variety of hood manufacturers. There are many different styles, option and levels of performance available with the PREVENT Particle Blocking Barrier.
- Extreme Durability: The STEDAIR® PREVENT layer has been found to be durable and effective after 200 ISP wash/dry cycles.