

STEDAIR® MOISTURE BARRIERS

TECHNICAL BULLETIN

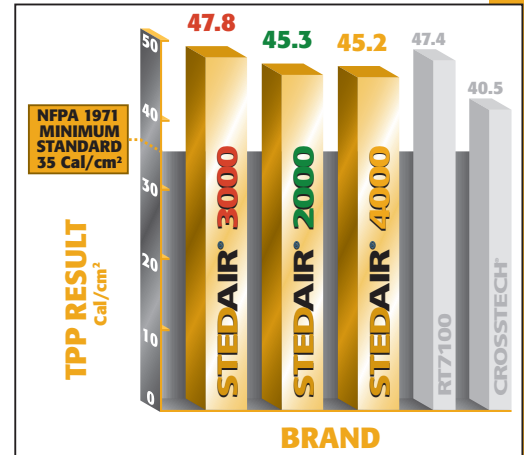
THE FACTS You Need To Know About TPP and THL To SET THE RECORD STRAIGHT!

What is THERMAL PROTECTIVE PERFORMANCE (TPP) and what does it mean to you?

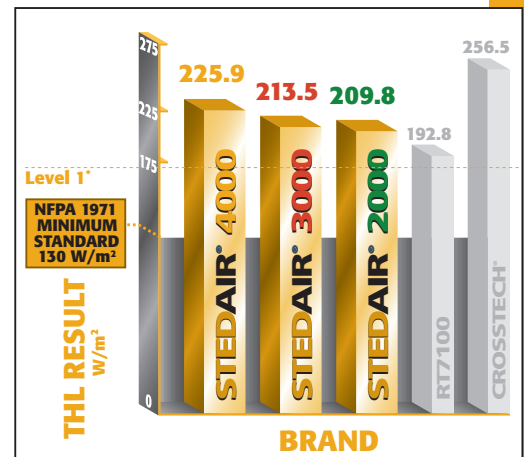
Thermal Protective Performance (TPP) is a test that indicates the amount of protection a material or material system provides against both convective and radiant heat. To determine actual time to burn, the TPP score is divided in half and the resulting number is the time, in seconds, that human tissue reaches second degree burn in a flash over situation. The NFPA 1971 (2000 edition) standard requires a TPP of 35 Cal/cm², which is the equivalent of 17.5 seconds to second degree burn.

What is TOTAL HEAT LOSS (THL) and what does it mean to you?

Total Heat Loss (THL) measures the heat stress reduction capability — or breathability — of firefighter turnout gear. The more heat that gets trapped inside a firefighter's turnout gear, the more likely an individual will experience dangerously elevated skin and core temperatures, as well as an increased heart rate. Material systems that provide a higher THL number will benefit the firefighter in the form of more breathable turnout gear. **Note: Wearers do not notice or feel any difference in breathability between material composites, unless the THL varies by 50 W/m² or greater.** The NFPA 1971 (2000 edition) standard requires a THL of 130 W/m².



Note: TPP & THL values are averages obtained from composites tested by Underwriter Laboratories.



*Level 1: expected THL value for NFPA 1971 (2006 edition) is 170 W/m².

Stedair® Moisture Barriers — TPP AND THL PERFORMANCE COMBINATION — The Best Overall Solution...

Providing the ultimate TPP and THL Performance Combination is not an easy task, but our Research and Development Team has committed itself to producing moisture barriers that provide exceptionally high TPP and THL values without sacrificing either property. The newest Stedair® Moisture Barrier, Stedair 4000, is no exception. This product provides outstanding convective and radiant heat protection while remaining extremely breathable and lightweight, a performance combination the industry has been waiting for.

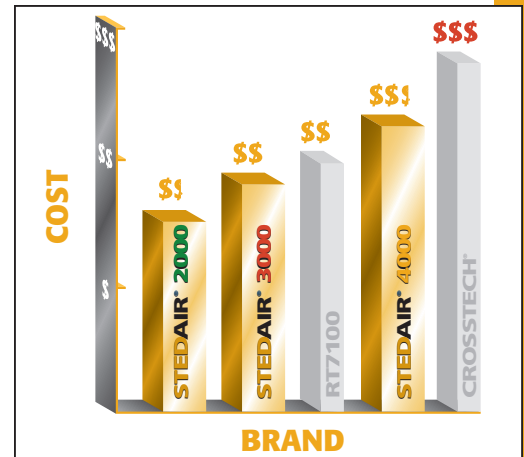
FAST FACT

Since 1930, Stedfast has been serving the material-to-specification needs of the military, medical, industrial, marine and protective clothing fields. From extreme environmental conditions faced by the military, to the reliability and durability required by firefighters, Stedfast's specially formulated barrier fabrics — Stedair® — guarantee high tech protection.

TPP/THL - BEST VALUE

Finding the balance between performance and cost effective pricing.

Finding the balance between **TPP**, **THL** and **PRICE** is a difficult challenge for the firefighting industry. The Research and Development team at Stedfast, Inc. is committed to working with its customers to develop the best products possible at an **AFFORDABLE PRICE**. Stedair Moisture Barriers are a testament to this commitment as they are extremely durable, have exceptional TPP and THL performance ratings and are offered at an affordable price.



NFPA STANDARDS

Requirements of the NFPA 1971 (2000 edition) determine minimum safety standards for protective clothing for structural firefighting. These standards are a great starting point when choosing the best gear for individual needs. However, from an overall performance and durability perspective, it's important to take notice of the numbers and the manufacturers that are committed to exceeding the minimum requirements.

The NFPA 1971 standard requires a minimum THL rating of 130 W/m² and TPP rating of 35 Cal/m².

Looking Forward to NFPA 1971 (2006 edition)

Stedfast's uncompromising commitment to quality drives our Research & Development Team to create breathable moisture barriers that go above and beyond the needs of our customers. In 2006, a new version of NFPA 1971 will be issued. Changes to the minimum THL value (expected to increase to 170) and a UV Resistance requirement (40 hours exposure) will affect performance expectations of the moisture barrier. Because our products are tested above and beyond the NFPA 1971 (2000 edition) standard, we at Stedfast know with confidence that all Stedair Moisture Barriers will continue to meet and exceed our customers needs and expectations.

Further to NFPA 1971 (2006 edition), optional Chemical and Biological protection is being incorporated into the standard. Stedair Moisture Barriers are already being taken to new heights with our chemical and biological protective moisture barriers that will be coming to market in the near future.

- **STEDAIR 2000** averaged a THL rating of 209.8 and a TPP rating of 45.3.
- **STEDAIR 3000** averaged a THL rating of 213.5 and a TPP rating of 47.8.
- **STEDAIR 4000** averaged a THL rating of 225.9 and a TPP rating of 45.2.

*Above and Beyond.
Spec Stedair.*



FAST FACT

Critical in the lamination process, a Class 100,000 "clean room" ensures that every Stedair® Moisture Barrier is assembled in an environment where all variables are controlled, from design to final inspection. Stedfast has spent millions to ensure this precaution.

Toll Free 888 673 8441 www.stedfast.com

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