

The Heat Inside

Key Characteristics of FabRoc™



<i>Flexible Design & Manufacturability</i>	<ul style="list-style-type: none">• Powered by DC or AC current• Integrated design contributes to world supplier status• Moldable to conform to any shape• Thinness• Elasticity
<i>Quality Reassurance</i>	<ul style="list-style-type: none">• Chemically inert for maximized safety• Uniformity of heat over a large area ensures no hot spots• Constant resistance• Stable technology base which is repeatable in production• Cannot be reverse engineered
<i>Inherent Properties</i>	<ul style="list-style-type: none">• Positive Temperature Coefficient ensures user safety• Optimized power to heat conversion ratio• Lightweight• Waterproof• Robust (crush proof and stretchable)

FabRoc™: A Smart Technology

FabRoc™ Heat Technology by EXO2 centers on a unique polymer based element that heats up when low voltage is passed through it.

This 21st century smart technology, under development for over 30 years, can be powered by rechargeable batteries, the accessory socket of a power unit or even regular 120 volt current. By regulating the voltage, the heating element can be made to heat up to a pre-defined level, creating a uniform area of heat with no hot spots. Uniform distribution and dissipation of heat allows the heating element to be located in close proximity of the area to be heated in order to maximize heat and minimize heat response time.

The polymer, which is at the heart of the heating component, is loaded with a proprietary blend of conductive particles which enhance its conductivity properties. This protected 'recipe' allows FabRoc™ to exhibit a **Positive Temperature Coefficient** (PTC) when heated. PTC means that as the temperature of the polymeric material rises its electrical resistance also increases in a non-linear fashion. Once the material reaches the desired temperature, it self-regulates by drawing very little electrical current until it begins to cool.

How Does FabRoc™ Work?

FabRoc™ has a conductive "chain" built into the material. When low voltage is applied, the electric current flows through the material, causing it to heat up. The material expands as it gets hotter, causing the conductive particles to move apart from one another. As a result, the resistance of the material increases and it conducts less current, thereby regulating the temperature. This is one of the many distinct differences that FabRoc™ exhibits over competing technologies such as heated wire, carbon fibers, heated ink, etc. Technologies without a PTC are susceptible to hot spots and thermal runaway situations.

FabRoc™ Key Features

FabRoc® is virtually indestructible. The rubber-like nature of FabRoc™ makes it flexible enough to be configured into almost any shape. Unlike its competitors, freezing temperatures have no effect on the flexibility of FabRoc™. This quality makes it ideal for external climates and suitable for a broad range of commercial applications. Unlike wire-based systems, FabRoc™ continues to operate even if it is slit or torn with no risk of electric shock.

FabRoc™ operates on low voltage, which means that it can be powered by both 12 volt and rechargeable batteries. Since the polymer material self-regulates to its manufactured temperature, there is no requirement for thermostats or fuses. FabRoc™ has the ability to heat up to an incredible 572° F (with higher voltage).

FabRoc™ is:

- **Safe** due to the PTC properties and cannot overheat.
- **Inert** and therefore resistant to most chemicals, making it ideal for use in industrial environments.
- **Energy Efficient**, converting over 98% of electrical energy into heat.
- **Lightweight, Waterproof, and Crushproof.**
- **Stretchable**, with up to 200% elongation before rupture. FabRoc™ is very durable and therefore suitable for applications that need to move and remain pliable such as clothing, coverings, seats, wraps, warming blankets, etc.
- **Very thin** at 0.8mm.

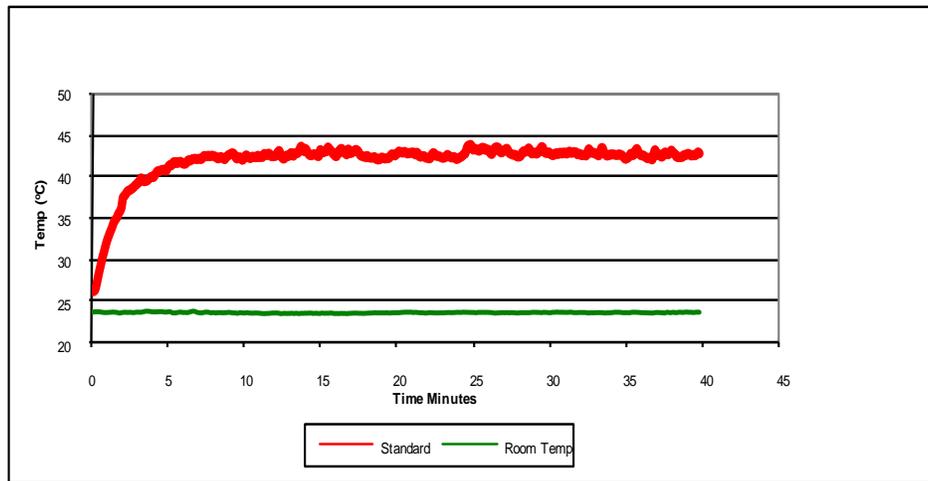
Present/Actionable Uses for FabRoc™

- **Heated Clothing, Body Wraps, Gloves, etc. (Including universal heated liners for use with many different outer garments)**
- **Heated Insoles, Hunting Boots, Waders, etc.**
- **Heated Plant Warmers**
- **Heated Seating (of all kinds)**
- **Heated Hunting Stands, Blinds, etc.**
- **Personal Warming Devices (Spectator Sports, Hiking, Camping, etc.)**
- **Animal Warming**
- **Custom Heaters for Cameras, Batteries, etc.**
- **Pipe Heaters, Tote Heaters, Cylinder Heaters, Tank Heaters, etc.**
- **Ground Thawing Blankets, Concrete Curing Blankets, etc.**
- **Heated Flooring, Heated Wall Systems, etc.**
- **Nitrous Oxide Bottle Warmers, Heated Suspension Warmers, etc.**
- **Artisan Remedies**
- **Therapeutic and Medicinal Products**
- **Aviation Comfort and Safety Remedies**
- **Heated Wheelchairs, Heated Exam Tables, etc.**
- **Heated Food Service Items**
- **Etc., etc., etc....**

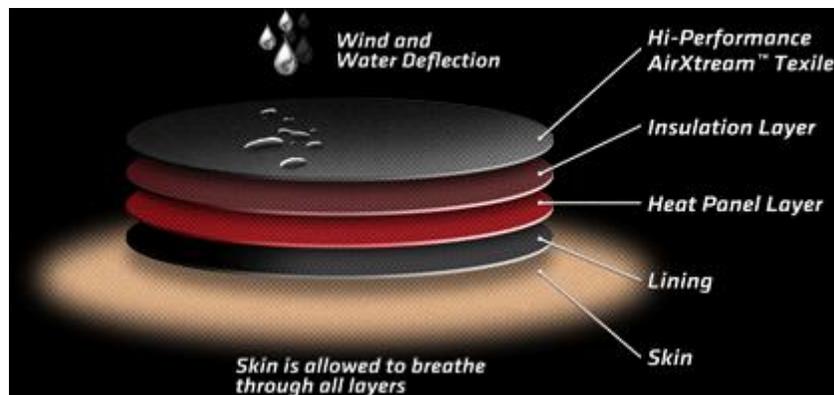
It's a Fact: If you can dream it, we can heat it!

The Performance of FabRoc™

FabRoc™ heats quickly and maintains its manufactured level of heat on a very consistent basis.



All **UL, UN, CE, SGS, CSA, TUV** etc. certifications required for all production products have been successfully granted upon first submission. Any required special certifications for your product line will be confidently pursued/facilitated.



It's a Fact: FabRoc's™ Positive Temperature Coefficient properties prevent hotspots, thermal runaway and inefficient use of the power source.

EXO2 Collaborations



It's a Fact: Although new to North America and in commercial markets, the FabRoc™ fabric has been used for over 30 years and still produces the same heat today as it did in its initial production. Unlike some technologies, it has been proven and tested over many years.



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