



Applications



UNRIVALED PERFORMANCE. UNMATCHED DURABILITY. UNLIMITED POSSIBILITIES.

Table of Contents

What is SuperFabric®?

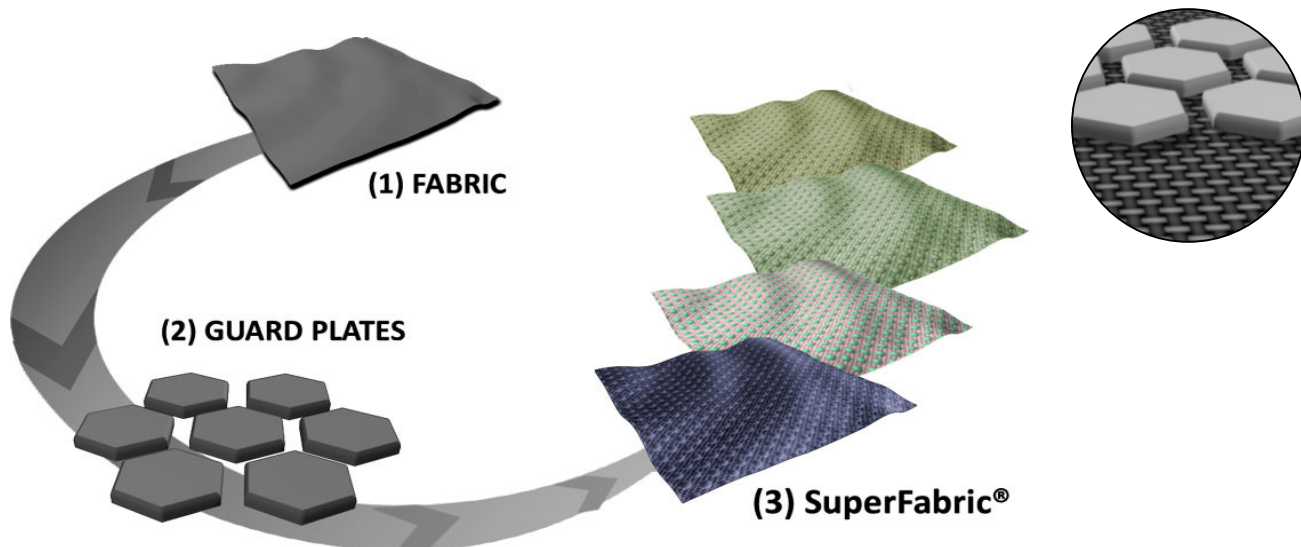
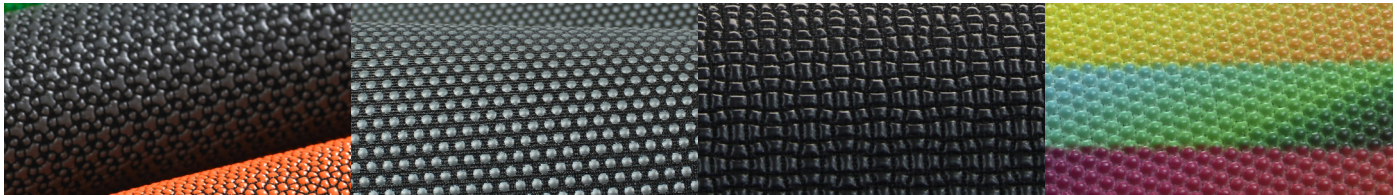
Technology	3
Types of SuperFabric® materials	4
Performance: Abrasion Resistance	5
Performance: Breathability	5
Performance: Stain Resistance	6
Performance: Slash Resistance	7
Performance: Quick Drying	7

Applications for SuperFabric®

Footwear	8
Outerwear Apparel	14
Motorcycle Apparel	18
Bags and Packs	22
Industrial Safety	25
Military Uniforms	28
Seating Applications	31
Specialized Applications	34
SuperFabric® -Am99™	35

What is SuperFabric®?

SuperFabric® technology takes a fabric and overlays it with tiny plates (“guard plates”) in a specific arrangement. The gaps between guard plates allow complete flexibility. The geometry, thickness, and size of the guard plates, as well as the fabric, can be varied depending on the desired attributes. SuperFabric® materials are designed to deliver a range of performance features such as abrasion resistance, stain resistance, quick drying, and more.



Technology

The key to this remarkable material is the fact that locally, the plates are hard. Globally, the plates allow full motion which gives SuperFabric® a feel similar to traditional fabrics.



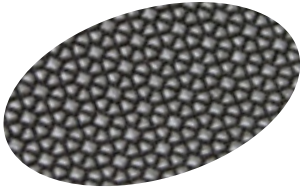
Side View: Small guard plates allow for a high degree of flexibility while providing durable protection



Side View: Showing integration of guard plates, spacing, and fabric

Types of SuperFabric® materials

We have created many types of SuperFabric® materials, all built around the same core technology. These materials are designed for a range of performance and attributes that helps showcase the versatility for which SuperFabric® is known.



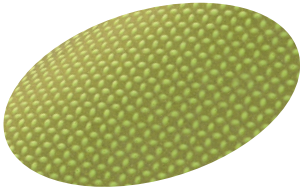
PERFORMANCE SuperFabric®

These SuperFabric® materials have a dense array of guard plates integrated into strong fabric to provide the most rugged performance, such as abrasion resistance, slash resistance and more.



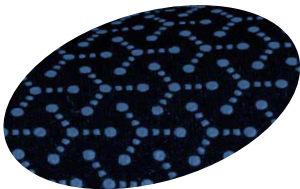
LIGHTWEIGHT SuperFabric®

These SuperFabric® materials are very lightweight, breathable, and flexible. They are ideal for apparel, footwear, gloves, and more. Another benefit of lightweight SuperFabric® is that it does not snag, unlike knit materials such as nylon.



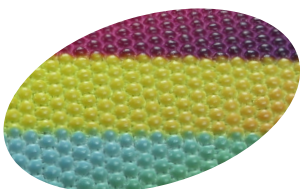
REFLECTIVE SuperFabric®

Light-reflecting SuperFabric® is highly reflective and well suited for safety applications such as work vests, jackets, shoes, and more. This SuperFabric® material provides high visibility for highway workers and others who work in hazardous situations.



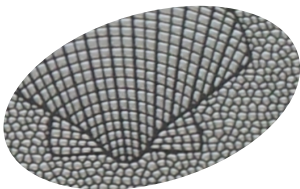
STRETCH SuperFabric®

Many applications require fabric that has a little bit of stretch. Whether it's used for apparel, bags, seating, or forming over hard objects such as cases, our stretch SuperFabric® provides reliable performance in an attractive, supple fabric.



MULTICOLOR SuperFabric®

With Multicolor SuperFabric®, a stunning variety of colors and patterns is possible. Multicolor SuperFabric® provides continuous color sublimated onto the guard plates, resulting in a vibrant product your customers will appreciate.

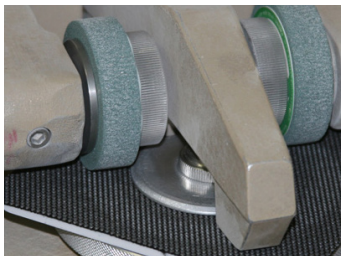
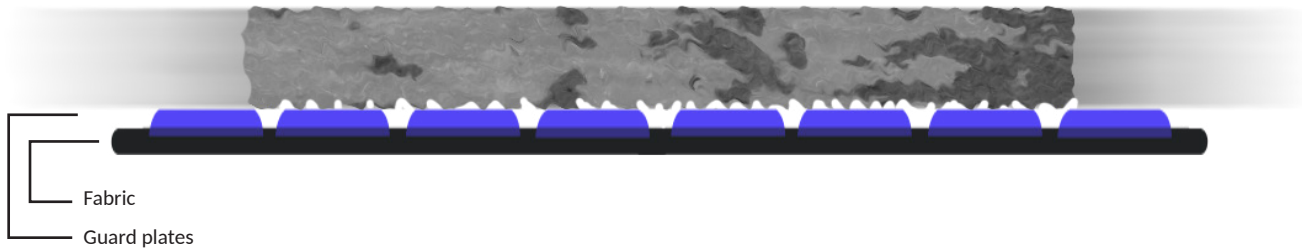


CUSTOM SuperFabric®

In many applications, branding that stands out is required for it to be the most effective. Custom SuperFabric® can be designed to incorporate company logos, distinctive patterns, unique colors and textures, and more.

• Performance: Abrasion Resistance

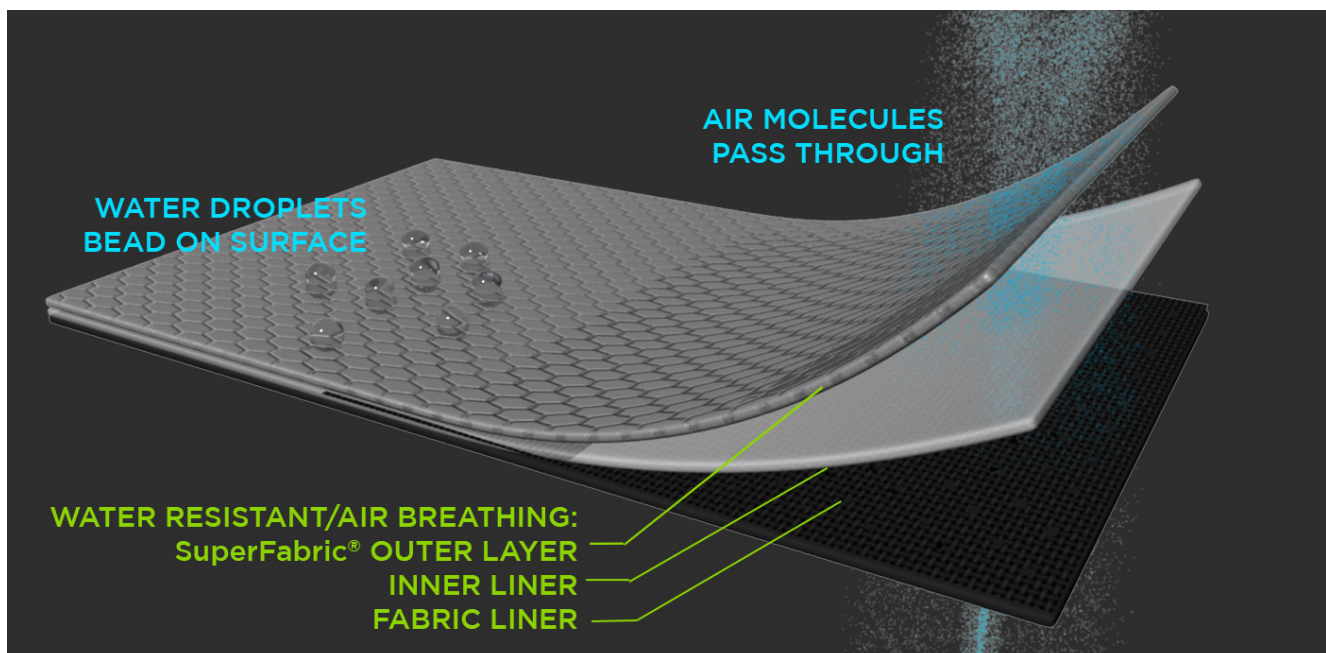
The guard plates are ready to fend off rock, ice, brush, debris, scuffs, and scrapes. SuperFabric® doesn't just look pretty, it performs day in and day out. SuperFabric® materials won't snag like knit fabrics. SuperFabric® is used in demanding abrasion resistant application such as motorcycle apparel, ski and snowboarding apparel, footwear and more.



SuperFabric® material is undergoing a Taber abrasion test using 1000g load and an H18 wheel. This is an aggressive test that demonstrates the ability of the guard plates to perform in abrasion applications.

• Performance: Breathability

It is the ability of a fabric or material to transmit air and moisture. Lots of materials are, of course, breathable. However, being breathable while still being water resistant is a much taller order. By their inherent construction, SuperFabric® materials are both air breathing and water repellent.



• Performance: Stain Resistance

SuperFabric® is highly resistant to stains from mud, dirt, grease, and liquids such as oil, sauces, and more. In the photos, you can see all of the mud washes right off of SuperFabric®. Nylon and conventional materials quickly pick up stains which can deteriorate the performance of the fabric as well as compromise the look of the material.



In photo on left, a combat boot gets 'in the mud'. Afterwards, it is rinsed off...not scrubbed...not pressure washed...just rinsed with water. The photo on the right shows that the mud is gone from the SuperFabric® area of the boot (toe area). The leather and nylon areas don't clean easily and they also don't dry as quickly.



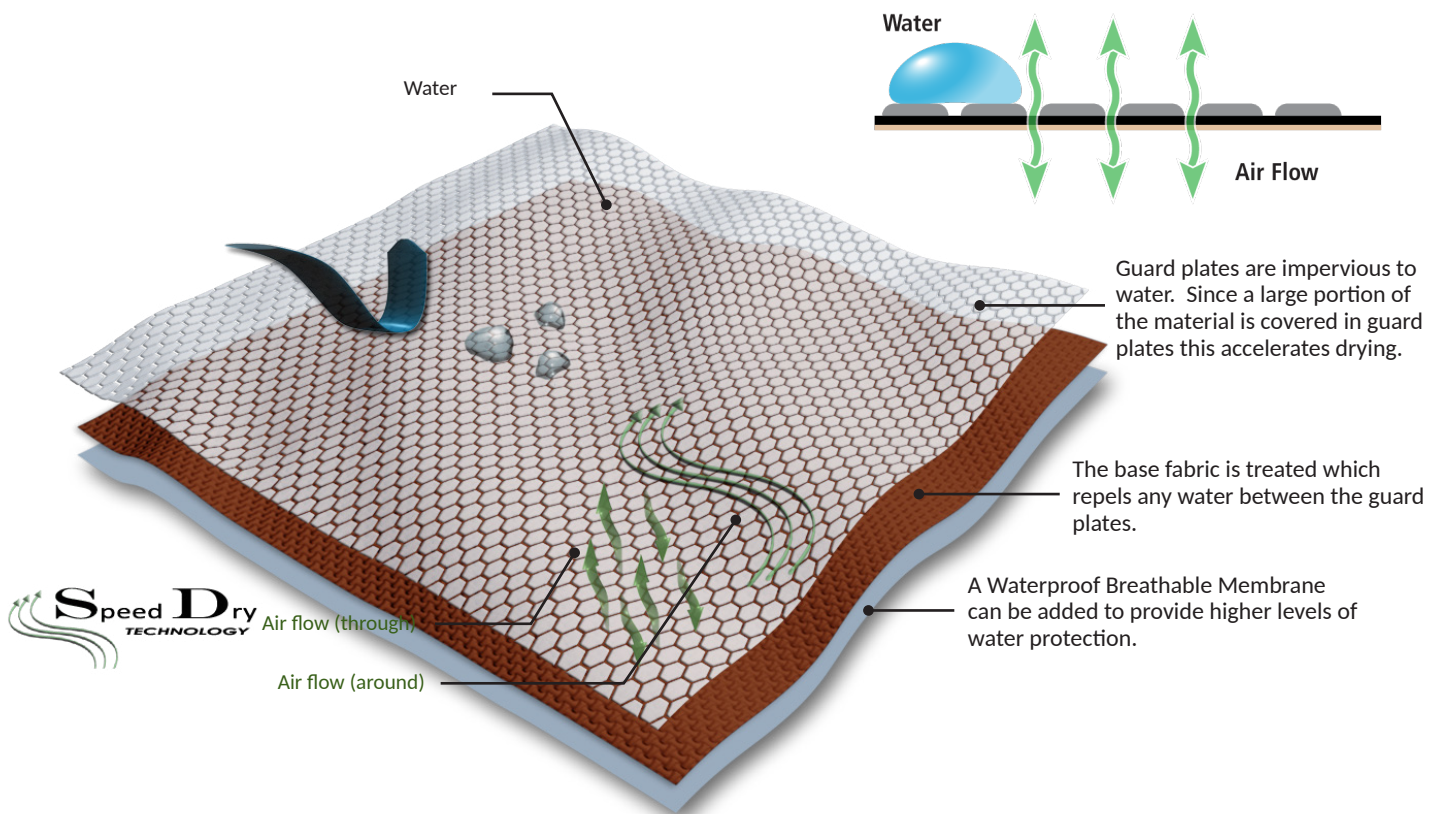
• Performance: Slash Resistance

The performance SuperFabric® materials offer the most slash protection with heavier coverage of guard plating. Many applications, such as motorcycle apparel, scuba apparel, ski and outdoor jackets and pants, all benefit from the slash resistance SuperFabric® materials offer.



• Performance: Quick Drying

SuperFabric® drying is the result of a 3-pronged system that quickly dries, while keeping the elements on the outside and contents dry on the inside. Impervious guard plates, repellent fabric, and optional waterproof breathable membranes are part of the Speed Dry advantage.



Select SuperFabric® materials have other intrinsic properties such as rodent resistance (important for covers and other protective applications), flame resistance, and high UV resistance.

FOOTWEAR



SuperFabric® ADVANTAGES for Footwear

- + Durable: Provides long life even in extreme activities such as mountaineering
- + Unique: Unlike any other material in the world
- + Versatile: Can be used in the upper, toe, tongue, and heel
- + Performance: Breathable, water resistant, rot resistant, abrasion resistant and more
- + Design: Unlimited possibilities of colors and patterns

Product Example



Product: DC SHOES Snowboarding Boots

WHERE: SuperFabric® over toe and side

WHY: SuperFabric® provides high levels of abrasion resistance against ice, compacted snow, and bindings. This boot is part of the Travis Rice Signature series.



■ SuperFabric®



■ SuperFabric®



Product Example



BLACK YAK®

Product: BLACK YAK® Hiking Shoes

WHERE: SuperFabric® used on upper surface

WHY: SuperFabric® provides abrasion resistance and weather resistance to area of shoe subjected to rocks, brush, water, and mud.

FOOTWEAR

Product Example



Product: ALTAI™ Boots

WHERE: SuperFabric® on uppers and toe

WHY: SuperFabric® provides extreme abrasion protection as well as breathability, comfort, and unique design.



■ SuperFabric®



ALTAI™ Footwear is used in law enforcement and SWAT, and has branched out to hiking and other areas. ALTAI™ Boots use SuperFabric® materials extensively throughout the upper and toe (on most models) for superior performance and durability.



■ SuperFabric®

FOOTWEAR

Product Example



Product: LALO Shadow Intruder

WHERE: SuperFabric® on uppers and toe

WHY: SuperFabric® provides rugged abrasion resistance and breathability, comfort, and durability.



Product Example



Product: Nvii Forest 2 Orienteering Shoe

WHERE: SuperFabric® on upper

WHY: SuperFabric® provides lightweight abrasion protection and breathability.



FOOTWEAR

Product Example



Product: HEAD Tennis Shoe

WHERE: SuperFabric® across toe area

WHY: SuperFabric® provides extreme abrasion resistance against asphalt, clay, and concrete surfaces.



SuperFabric®



Product Example



Product: Üni Nursing Shoe

WHERE: SuperFabric® used on entire outer surface

WHY: SuperFabric® provides abrasion resistance against scuffs and scapes.



SuperFabric®

Product Example

NOBULL

PRODUCT: Prism NOBULL OUTWORK

WHERE: SuperFabric® used on entire outer surface

WHY: SuperFabric® provides abrasion resistance and durability, along with an amazing look and style, in this rugged cross-training shoe.

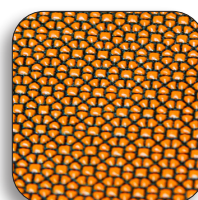
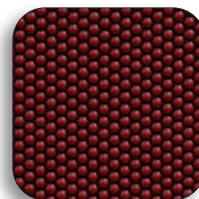


■ SuperFabric®

SuperFabric® materials for FOOTWEAR

Footwear covers a wide range of needs, from lightweight running shoes, to industrial work boots, to hiking shoes. SuperFabric® provides materials perfectly tailored for the diversity and performance needed. SuperFabric® is available in *more than 50 varieties*, not to mention customization that is nearly limitless.

A few examples of SuperFabric® materials for footwear



OUTERWEAR APPAREL



SuperFabric® ADVANTAGES for Outerwear Apparel

- + Durable: Provides long life even in extreme activities such as mountaineering
- + Unique: Unlike any other material in the world
- + Versatile: Can be used in the upper, toe, tongue, and heel
- + Performance: Breathable, water resistant, rot resistant, abrasion resistant and more
- + Design: Unlimited possibilities of colors and patterns

OUTERWEAR APPAREL

Product Example

K2

Product: K2 Ski/Snowboard Jacket

WHERE: SuperFabric® used on shoulders and elbows

WHY: High performance materials are the necessity when it comes to technical jackets such as this K2. SuperFabric® provides abrasion resistance and scuff protection against the elements.



SuperFabric®

Product Example

SLYTECH

Product: Slytech Ski Gloves

WHERE: SuperFabric® used across entire back

WHY: SuperFabric® provides extreme abrasion protection for downhill skiers.



SuperFabric®



OUTERWEAR APPAREL

Product Example



Product: Nepa Ski/Snowboard Jacket

WHERE: SuperFabric® used in key abrasion areas

WHY: This is a high-performance jacket designed for cold and windy environments. SuperFabric® is used in key abrasion and slash areas.



■ SuperFabric®



■ SuperFabric®



Product Example



Product: Lindy Little Joe Fishing Gloves

WHERE: SuperFabric® across entire palm and back thumb

WHY: Regarded as the best fish handling glove on the market, this Lindy glove uses multiple layers of SuperFabric® material to protect against razor sharp teeth, gill plates, hooks, and fillet knives.

SuperFabric® is used in all kinds of harsh weather and environmental conditions. In the cold and ice of snowboarding, alpine mountaineering, and winter trekking, SuperFabric® has proven not to freeze like other materials. This is largely due to SuperFabric® not holding or trapping water like leather, nylons, etc.

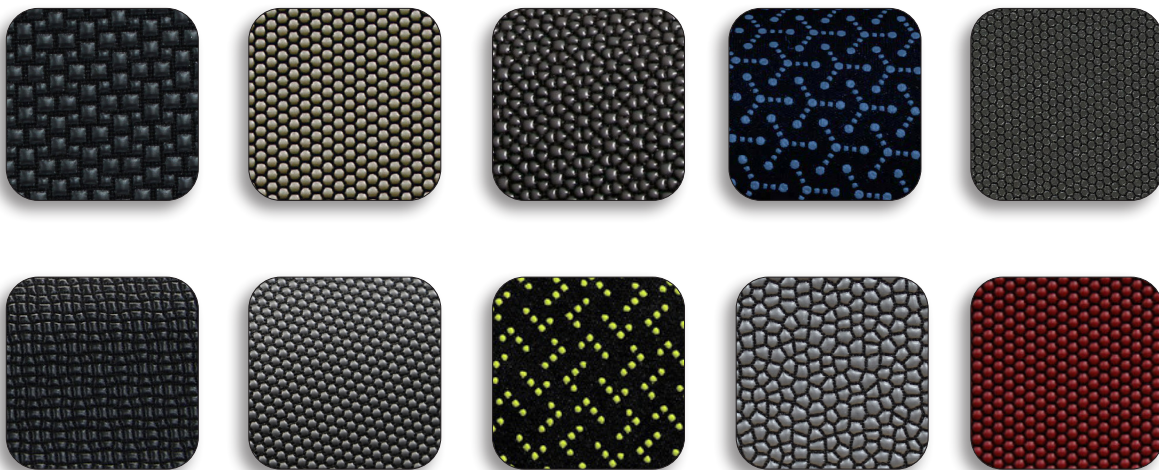
On the other end of the spectrum, SuperFabric® can handle a scorching hot summer day, in running or hiking shoes or in gloves used for fishing.

Whether it's mud, dirt, ice, snow, gravel, rock, or rain, SuperFabric® materials are ready for what comes their way.

SuperFabric® materials for OUTERWEAR APPAREL

As outerwear apparel continues to evolve in both design and performance, SuperFabric® is the obvious choice for strong, lightweight, and innovative technical fabrics. SuperFabric® is available in *more than 50 varieties*, not to mention customization that is nearly limitless.

A few examples of SuperFabric® materials for outerwear



MOTORCYCLE APPAREL



teiz motorsports

Teiz Motorsports makes a variety of motorcycle apparel with SuperFabric® materials.

SuperFabric® ADVANTAGES for Motorcycle Apparel

- + Durable: Provides long life even in extreme conditions
- + Unique: Unlike any other material in the world
- + Versatile: Can be used in the elbows, knees, and shoulders
- + Performance: Breathable, water resistant, rot resistant, abrasion resistant and more
- + Design: Unlimited possibilities of colors and patterns

PROTECTION



Front

Back

- Zone 1: Highest risk
- Zone 2: High risk
- Zone 3: Moderate risk
- Zone 4: Lower risk

Motorcyclists are 28 times more likely than passenger car occupants to die in a crash per vehicle mile traveled and eight times more likely to be injured, according to NHTSA*.

SuperFabric® offers some of the highest levels of abrasion resistance in the motorcycle apparel industry, which is why you will often see it used in the high risk zones (Zone 1).

Product Example



Product: Klim USA Motorcycle Jacket and Pants

WHERE: SuperFabric® is used on elbows, shoulders, and knees

WHY: SuperFabric® used on key areas of abrasion helps protect riders from severe injury.



SuperFabric®



SuperFabric®

MOTORCYCLE APPAREL

Product Example



BIKER FASHION

Product: Held Motorcycle Gloves

WHERE: SuperFabric® fingers, palm, and other high-wear areas

WHY: SuperFabric® is used on areas of high abrasion, which helps protect riders from severe injury.

■ SuperFabric®



SuperFabric® is used in various parts of these gloves including fingers, knuckles and palms

Product Example



Product: REV'IT! Motorcycle Jacket

WHERE: SuperFabric® on elbows and shoulders

WHY: SuperFabric® is used for high levels of abrasion resistance.

■ SuperFabric®

Product Example



Product: Hein Gericke Motorcycle Jacket

WHERE: SuperFabric® on shoulders and elbows

WHY: SuperFabric® provides protection against abrasion and scrapes.



SuperFabric®

Motorcycle riding is a dangerous activity that can put protective equipment and materials to the test. SuperFabric® provides a number of materials that are performance driven. SuperFabric® can be further customized without compromising high levels of abrasion resistance, slash resistance, or other performance features. SuperFabric® is available in *more than 50 varieties*, not to mention customization that is nearly limitless.

A few examples of SuperFabric® materials for motorcycle apparel



BAGS and PACKS



SuperFabric® ADVANTAGES for Bags and Packs

- + Durable: Offers long-lasting reliability in activities such as bikepacking and hiking
- + Unique: Unlike any other material in the world
- + Versatile: Can be used on a wide variety of bags, backpacks, duffels bags, etc.
- + Performance: Breathable, water resistant, abrasion resistant and more
- + Design: Unlimited possibilities of colors and patterns

BAGS and PACKS

Product Example

OVEJA NEGRA™

Product: Oveja Negra Bicycle Seat Bags

WHERE: SuperFabric® on top part of bag

WHY: SuperFabric® provides protection against abrasions.



SuperFabric®

Product Example



Product: Amabilis Stash Capsule

WHERE: SuperFabric® on the entire bottom half

WHY: SuperFabric® provides protection against abrasions.



SuperFabric®

Product Example



Product: The North Face Backpacks

WHERE: SuperFabric® in high wear area (tool)

WHY: SuperFabric® provides abrasion resistance from tools such as picks and axes.

■ SuperFabric®

Photo credit: climbinggearreviews.com

SuperFabric® materials for BAGS and PACKS

Let's face it, bags get tossed around, knocked over, scrunched, and in general...abused. SuperFabric® is a great material to help keep bags and packs functional.

A few examples of SuperFabric® materials for bags and packs



INDUSTRIAL SAFETY



SuperFabric® ADVANTAGES for Industrial SAFETY

- + High levels of cut resistance
- + High levels of abrasion resistance
- + Can be used in gloves, aprons, arm guards, and covers
- + Often exceeds the highest levels of safety standards
- + Washable, breathable, and stain resistant

Product Example

HexArmor®

Product: HexArmor® Gloves, Aprons and Arm Guards

WHERE: SuperFabric® in high safety risk areas

WHY: SuperFabric® provides cut, abrasion, and puncture resistance in a variety of safety products such as gloves, arm guards, and aprons.



A few examples of the many industrial safety products made by HexArmor®





Product Example

HexArmor®

Product: HexArmor® Mechanics Gloves

WHERE: SuperFabric® in high safety risk areas in palm and back of hand

WHY: SuperFabric® provides cut and abrasion resistance.



■ SuperFabric®

SuperFabric® materials for INDUSTRIAL SAFETY

SuperFabric® brings superior protection in the industrial safety market. Whether they're materials with high abrasion resistance, multiple layers that provide puncture resistance, or light-reflecting materials designed to provide high visibility, SuperFabric® offers performance solutions for a wide variety of industrial safety products.

A few examples of SuperFabric® materials for industrial safety



MILITARY UNIFORMS



SuperFabric® ADVANTAGES for Military Boots and Uniforms

- +** Durable: Provides long life even in extreme conditions such as fast rope rappelling
- +** Unique: Unlike any other material in the world
- +** Versatile: Can be used in footwear, jackets, pants, rucksacks and backpacks
- +** Performance: Breathable, water resistant, rot resistant, abrasion resistant and more
- +** Easy to clean, highly breathable

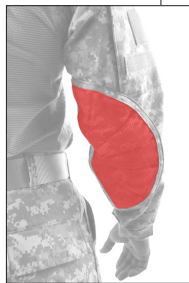
Product Example



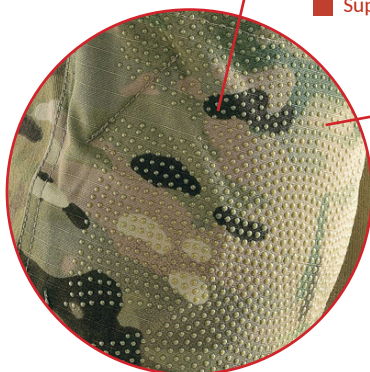
Product: Massif® Army Combat Shirt

WHERE: SuperFabric® on the elbows

WHY: A flame retardant SuperFabric® is used on the elbows to provide abrasion resistance and flame retardance.



■ SuperFabric®



■ SuperFabric®



Product Example



Product: DriFire® Combat Shirt and Pants

WHERE: SuperFabric® used on the elbows and knees

WHY: A flame retardant SuperFabric® is used on elbows and knees to provide abrasion resistance and flame retardance.

Product Example



Product: Atlanco Military Uniforms

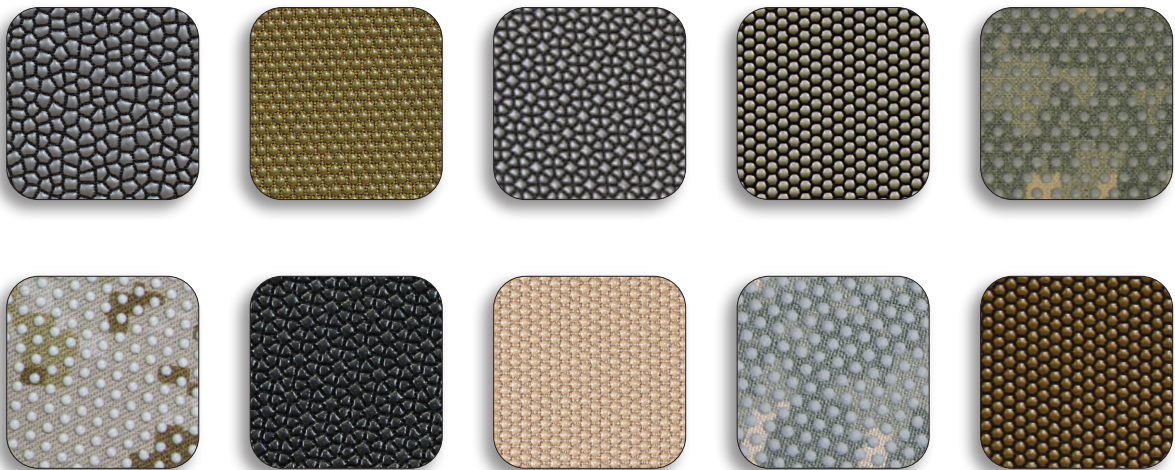
WHERE: SuperFabric® on knees and elbows

WHY: SuperFabric® provides abrasion resistance against rough terrain, sand, dirt, and rock.



SuperFabric® provides superior protection in key wear areas. In addition to apparel, SuperFabric® can be used in rucksacks, duffel bags, razor wire gloves, and more.

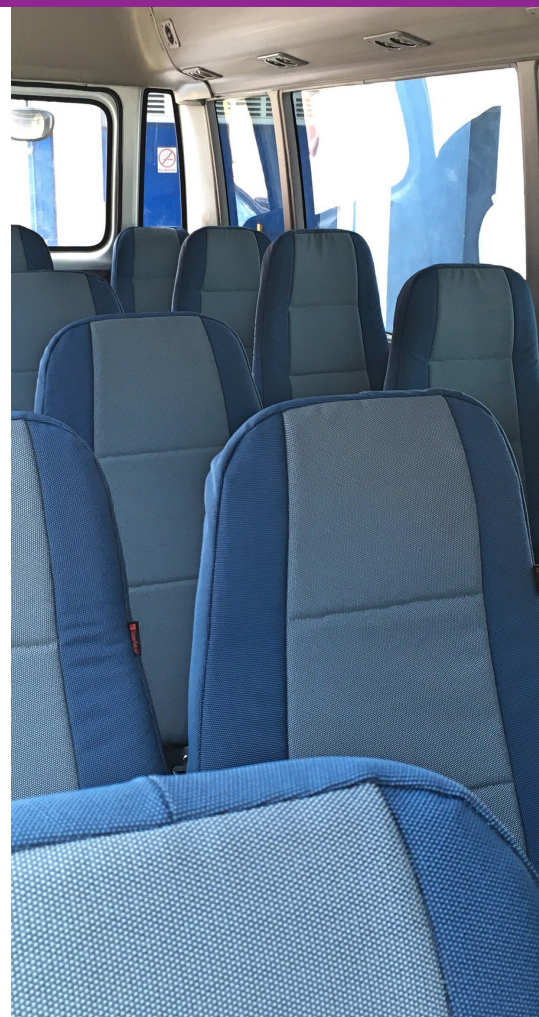
A few examples of SuperFabric® materials for military uniforms



SEATING APPLICATIONS



Prototype



SuperFabric® ADVANTAGES for Seating Applications

- + Durable: Provides long life even under continuous use such as in public transit
- + Unique: Unlike any other material in the world
- + Versatile: Can be used in seats, backs, headliners, cargo areas, floor mats
- + Performance: Breathable, water resistant, abrasion resistant, stain resistant
- + Design: Unlimited possibilities of colors and patterns

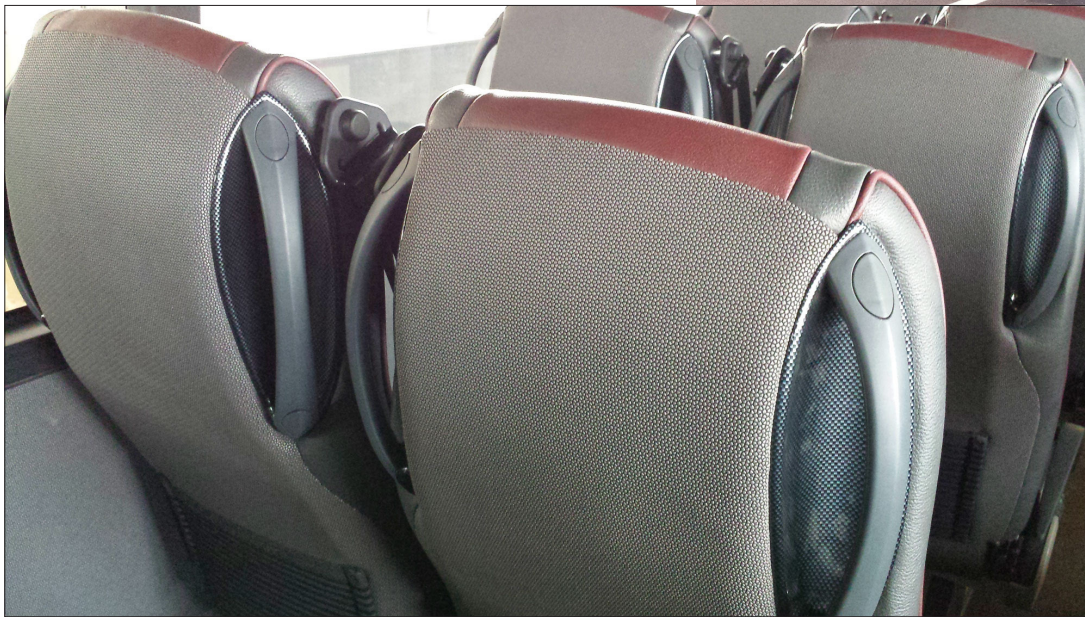
SEATING APPLICATIONS

Product Example

Product: Sightseeing Bus Seating

WHERE: SuperFabric® on backrest of seats

WHY: SuperFabric® provides abrasion, cut, and stain resistance.



SuperFabric®



Product Example

Product: Hospital Seating

WHERE: SuperFabric® over entire seat and backrest

WHY: SuperFabric® provides abrasion, cut, and stain resistance and durability to seating surfaces.

SEATING APPLICATIONS

Which chair would you rather sit in? The choice is obvious with SuperFabric®. Vinyl fades, hardens and cracks. Whether it's an office chair, bus seat, or seating at an airport, hospital or other public place, SuperFabric® material offers a durable and long-lasting solution for your upholstery applications.

Vinyl



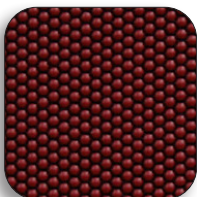
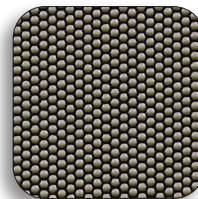
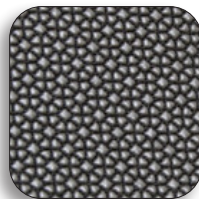
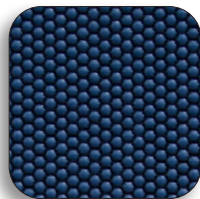
SuperFabric®



SuperFabric® materials for SEATING APPLICATIONS

Seating surfaces need to be able to withstand everyday contact. SuperFabric® is durable enough to handle the rigors of seating in products such as chairs, sofas, benches and vehicle seats. SuperFabric® is available in *more than 50 varieties*, not to mention customization that is nearly limitless.

A few examples of SuperFabric® materials for seating



SPECIALIZED APPLICATIONS

Product Example



Product: Dive Rite® Scuba Diving Buoyancy Compensator

WHERE: SuperFabric® on outer surface of buoyancy compensator

WHY: SuperFabric® provides critical protection from life-threatening slashes caused by sharp rock and coral.



SuperFabric®



Product Example



Product: Weaver Tool Gear® Tool Belt

WHERE: SuperFabric® lining pockets of tool belt

WHY: SuperFabric® provides abrasion protection from tools.



SuperFabric®-Am99™

SuperFabric® adds an exciting offering to its selection of products with the addition of SuperFabric®-Am99™.

SuperFabric® materials are already known for their performance properties such as durability, stain resistance, breathability, quick drying, and more. SuperFabric® attains this remarkable combination of properties by having an array of closely spaced, engineered guard plates that creates a **LOCALLY HARD, GLOBALLY FLEXIBLE** fabric.

SuperFabric®-Am99™ offers these benefits:

- **Microbe Resistant**
 - **Odor-Resistant**
 - **Mold and Mildew Resistant**
 - **Durable**
 - **Stain Resistant**
 - **Quick Drying**
-

Antimicrobial agents used in Am99™ protects its surface from damage or deterioration by microbes.

- **Bacteria**
- **Fungi**
- **Mold**
- **Mildew**
- **Algae**

* SuperFabric®-Am99™ is formulated with antimicrobial properties to protect the SuperFabric® itself from stains, odors, and damage caused by bacteria and other microbes. Antimicrobial protection is limited to the SuperFabric® material. Higher Dimension Materials makes no direct or implied claims to protecting users or providing other health benefits.

This revolutionary textile contains one or more of silver glass (EPA Registration Number 73148-1) embedded into its guard plates, and/or Silane Quaternary Ammonium Compounds agents (EPA Registration Number 83019-1, EPA Registration Number 83019-2, EPA Registration Number 83019-3, EPA Registration Number 83019-4) that are either incorporated into the guard plates or chemically bound to the substrate fabric, resulting in a durable treatment that does not wash off under normal laundering conditions, does not leach and is highly resistant to being abraded off.

SuperFabric.com

HDM, Inc. USA

570 Hale Avenue N.
Oakdale, MN 55128
+001 651-730-6203
findoutmore@superfabric.com

HDM, Inc. Korea

NO. 202, 94-7, Sinseol-dong,
Dongdaemun-Gu,
Seoul 02586 South Korea
Phone: 82-(0)70-7099-9596

HDM, Inc. Singapore

1 Tampines North Drive 1
#01-38, T-Space Building
Singapore 528559
Tel:+65 68444012



SuperFabric® materials are not puncture, abrasion, or cut proof, etc. SuperFabric® materials are available in a variety of configurations and intended to be matched with suitable applications. Branding agreement is needed for the use of SuperFabric® materials.

©Higher Dimension Materials, Inc. 2024

Higher Dimension Materials, Inc. is the owner of all copyrights in the text, graphics, and fabric designs shown in this information guide. For more information please visit our website.

SuperFabric® is a registered trademark of Higher Dimension Materials, Inc. in the United States.
Pat. 5906873, other patents pending.



©Copyright HDM, Inc. 2024