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**Nothing stops flats like SpinSkins**



**SpinSkins Race**



**SpinSkins Duro**

# SpinSkins: The best flat protection money can buy.

## *Nothing stops flats like SpinSkins.*

SpinSkins offer the best puncture protection while remaining the lightest liner on the market. SpinSkins' outstanding toughness is derived from our patented weaving technology that produces the tightest weave ever achieved in high-strength fibers. This weave is so that tight, thorns, including cactus, goathead, hawthorn and mesquite, snap off and are ground into powder as fine as talc. These liners even protect your tube from glass shards, sharp rocks, and general road debris.

### *SpinSkins Race*

This high-performing, lightweight tire liner offers twice the puncture resistance of any liner on the market. At only 34 grams per MTB wheel, it is also the lightest. It can withstand up to 7.5 Pounds Force from a .05" diameter needle and has approximately the same lifespan of the best racing tires, making it the perfect choice for the competitive cyclist.



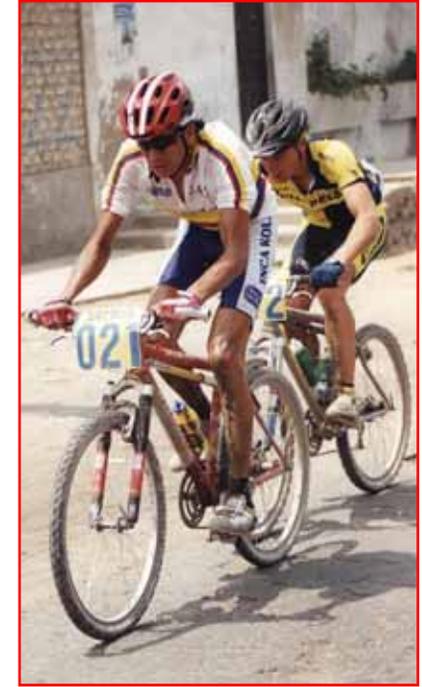
### *SpinSkins Duro*

This longer-lasting, lower-priced tire liner provides excellent puncture protection and is preferred by both commuters and recreational cyclists. It can withstand up to 3.8 Pounds Force from a .05" diameter needle and lasts up to 5,000 miles, giving it the best puncture resistance, second only to SpinSkins Race.



### *Choice of The Pros*

SpinSkins are recognized worldwide as an essential tool by riders such as Ned Overend, Steve Tilford, Chris Pic, and members of the Navigators Professional Cycling team. SpinSkins were also instrumental in numerous racing events, including the NORBA Nationals and World Cup Mountain bike events, Masters Mountain Bike World Championships, XTERRA World Championships and series, South American Championships, Redlands Classic Road Race, Tour de Toona, and Sea Otter. SpinSkins were also used in one of the fastest races in North America, The Athens Twilight.



## Liner Sizes

SpinSkins are sized to specific tire dimensions.

They should not be cut to size.

Model	Size	Weight Per Liner in grams	
		Race	Duro
<b>Mountain 26"</b>	Fits 1.9 -2.2 inch tire widths	34	41
<b>BMX 20"</b>	Fits 1.9 -2.2 inch tire widths	26	30
<b>Cross/Hybrid</b>	Fits 700c 35-45mm tire widths & 26" 1.35-1.75"	26	30
<b>Touring</b>	Fits 700c 26-34mm tire widths & 26" 1-1.3"	20	24
<b>Road</b>	Fits 700c 18-25mm tire widths	14	18

*spinskins.com*

# Installation Instructions



**PLEASE FOLLOW THESE INSTRUCTIONS CAREFULLY:**  
Proper installation is critical to long-term performance.  
We suggest not using pre-talced or latex tubes.

1. Deflate tube, remove one bead of the tire from the rim and remove the tube.
2. Add 1/2 of talc packet to inside of tire (1 tsp). While rotating the tire, rub in talc over entire center surface to evenly distributing the talc. Remove excess talc from sides with damp cloth.
3. Apply talc to the ends of the liner only, about 3 inches on both ends.  
Do not apply talc on any other area of SpinSkins or tube.
4. Install liner inside tire, so the white side will face towards the tube.
5. Reinstall tube (we suggest using a new tube) with only enough pressure for the tube to hold its shape. Remount the tire bead on the rim.
6. Slowly inflate to low psi. Use a hand pump to ensure the tube is not inflated too rapidly.
7. Center SpinSkins by squeezing the sidewalls around the tire. Slowly inflate tire to its proper inflation pressure. We suggest using at least **40 psi**, for mountain bike and BMX versions.  
High psi tires can be run within manufacturer's suggested limits. Under-inflated tires will damage SpinSkins and/or tire.

**Performance.** SpinSkins are a light, flexible tire system providing puncture resistance without sacrificing weight. What separates us from other flat prevention is the use of our patented weave technology. It produces the tightest weave ever achieved using in high-performance fibers. Our rugged fabrics are then coated, making them superior to anything else used for flat prevention. Best of all, they are the lightest by far. Our Race liner weighs a mere 34 grams per wheel while Duro weighs just 41 grams, other prevention systems are at least 3 times as heavy.

**Lifespan.** The fibers we use are extremely durable and are utilized in many products. In applications where these fibers are not being flexed or bent, they offer unsurpassed longevity and strength. In situations needing more dynamic performance, as in bicycle tires, they breakdown in time. The time it takes to breakdown is referred to as the lifespan. SpinSkins will need replacing periodically as they reach the end of their lifespan, at the user's expense, in order to provide continued and reliable service. Although lifespan of SpinSkins will vary upon different rider's abilities and terrain, average lifespan for SpinSkins Race ranges between 1,000 - 3000 miles, and between 3000 to 5000 miles for Duro based on average conditions.

**Results will vary with riding conditions.** Once SpinSkins have reached the end of their lifespan, the liners will split into sections. Though the sections will remain puncture resistant, punctures can occur between them. At this point, the liners have served their intended purpose and no longer function at the desired performance level. This is similar to the diminishing performance of tires due to the wearing of tread.

# Leaders in Puncture-Resistant Materials

## You don't get second chances on missions to Mars.

That's why NASA chose Warwick Mills to design a protective system to prevent punctures to the crash bags for their Mars landings for *Pathfinder* in 1997, as well as the Mars *Spirit & Opportunity* in 2004.

SpinSkins products are manufactured by Warwick Mills, the world leader in puncture & cut-resistant fabrics. Our patented materials are used in a variety of protective apparel, including gloves for police officers to prevent needlesticks, flame and cut resistant fabric for firefighters, and protective suits for high pressure water jetting. From the sails on America's Cup racing yachts to the blimps flying over the Super Bowl, you'll find Warwick's products where quality, durability, & high performance matter most.



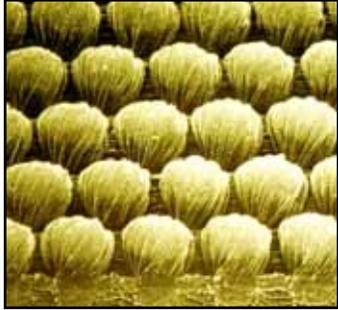
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# How SpinSkins Stops Flats



# How SpinSkins Compare

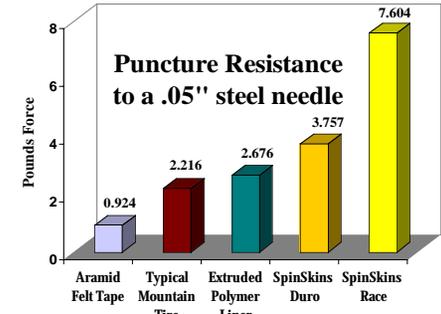
## Patented Material



Both SpinSkins models use patented weaving technology to produce the tightest weave ever achieved in high-strength fibers. Duro is made from industrial-strength fibers. Race uses the exotic fiber Vectran®, as well as aramid fibers found in ballistic vests. Both fibers used in Race are twice the strength of steel and five times lighter; while Vectran also further enhances flexibility. We used Vectran to make the crash bags for NASA's space probe *Pathfinder*, allowing the probe to land safely on Mars' jagged volcanic surface. SpinSkins' tight weave is further enhanced with flexible protective coatings for unsurpassed performance.

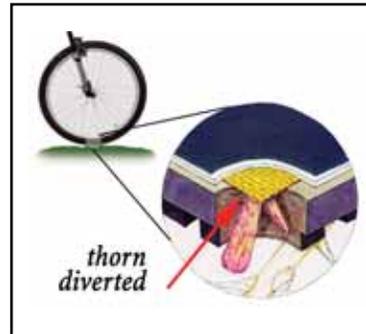
## Puncture Resistance

Test results on the right reveal SpinSkins Duro is more puncture resistant than any tire liner on the market while Race is more than 2 times better! To evaluate a product's puncture resistance, we use the Series IX Automated Materials Testing System made by the Instron Corp. per modified European Standard EN344. This machine measures how many pounds of force it takes for a .05 inch needle to puncture a material .045 inches thick, traveling at a constant, automated rate of .395 inches per minute. This needle is as sharp as any thorn found in nature.

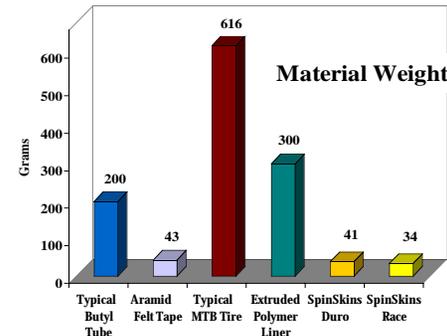


## Puncture Protection

Other liners cannot stop the tip of a thorn from breaking off inside. Eventually this tip will work its way into the tube and cause a flat. SpinSkins tire liners are woven so tightly that thorns such as cactus, goathead, hawthorn and mesquite have trouble penetrating the weave. The tip is diverted or is pushed back out of the tire before it can cause any damage. The fabric even helps prevent glass shards, sharp rocks, and general road debris from piercing the delicate tube. Racers and recreational bicyclists alike can enjoy their rides with confidence, knowing they are using a reliable, nonintrusive form of flat protection.



## Lightest Weight



One of the most important places to minimize weight on a bicycle is on the wheels. This is because centrifugal forces acting on the wheels throw this critical weight outward, requiring more effort in both pedaling and bike handling. SpinSkins only adds the barest minimum of weight while offering the most protection from punctures. Our Mountain Bike liners weigh a mere 34 grams for Race and 41 grams for Duro; some flat tire prevention systems weigh as much as seven times these amounts, as displayed in the chart on the left.

## Pinch Flat Protection



SpinSkins Race tire liners are able to double a tube's pinch flat resistance by spreading the contact force upon impact over the densely-packed fabric. This works much the same way snowshoes prevent you from sinking into the snow by distributing your weight over a larger area. The densely-woven fabric helps prevent impacts from pinching the tube. Lab tests show that the average pinch flat can occur at as low as 500 lbs. of force at straight impact. SpinSkins can help protect from pinch flats up to 1,000 pounds of force. At 1,100 pounds, a typical rim will start to dent!

## Minimal Thickness

Material thickness is a consideration when performance is a must. At only .022 & .029" thick, SpinSkins are as thin as three sheets of paper, making a thin overlap at the ends of the liner. Heavier liners create significant overlap thickness, causing annoying thumps that are felt at every revolution. As tire pressure rises, overlaps are even more noticeable. Worse yet, these overlaps often cause the very flats they are meant to prevent. Only SpinSkins liners offer maximum puncture resistance at a minimal thickness. When properly installed, the liners are unnoticeable at even 140 psi.

