

The Secrets of Dark Matter

Inside K2's reinvented **Mindbender Collection**

Words - **Jordan Grant-Krenz**

"PEOPLE SHOULD KNOW THEY HAVE MEGA-NERDS DESIGNING THEIR SKIS!"

That was the third sentence K2 R&D Manager, Sean Fearon, said to me. Even from the other side of a computer screen 760 miles away, his excitement was palpable. He spoke like a tenured professor infatuated with his work; calm and calculated, walking through the intricacies with grace, but plowing ahead to the next topic all the same. And that was fair, because we had a lot of ground to cover. Designing a new ski is hard. Incorporating novel technology into it is even harder. Explaining the whole thing to the equivalent of an engineering plebeian like myself? Almost impossible.

But when it came to the rebuilt 2027 Mindbender collection, I had more questions than I knew what to do with. Mainly, what exactly was happening inside the cornerstone of the collection, within a new proprietary tech dubbed Dark Matter? In the years prior, the Mindbender lineup had been a staple for K2, and the burly, strong-armed collection of the past had acquired for itself a cult following. It had its downsides, as any ski does, but by and large it was selling, and those who were riding it had positive reviews. All that to say, this overhaul wasn't needed. It was wanted. And that's an intersection where the best creations come from. Yet too often in skiing, promises of advancement and craftsmanship are only propped up by nothing more than creative marketing jargon. Although I'd tested the newly revised Mindbender 101 and 111 myself just months ago, I still wanted to know if Sean could really unpack what was so different under the hood of this sleek-looking ski.

His demeanor immediately told me he had confidence in his team's creation. A veteran ski engineer with over six years at K2, he explained that Dark Matter wasn't something they'd whipped up fast and shipped out quick. This was a science project that was years in the making. The nerds had been busy. "There are plenty of lightweight skis on the market," Fearon began, "but few, if any, can hold up around the entire mountain. We wanted to change that." Within this sentence, and in the ski industry at large, lies a baked-in assumption, which is that a light ski will tremble at high speeds, and a heavy ski will remain stable as engineers layer its core with sheets of metal: an aluminum alloy called Titanal, to be exact.

But metal has downsides. When combined with dense wood like beech and maple, you can't flex it easily, meaning that nose butter 540 is infinitely harder, and quick changes of direction can be wildly difficult. Inherently, it adds noticeable weight. Skiers have become more nuanced over the years as well. Today's freeriders want something stable and playful. Paradoxical? Yes. But the flawed assumption is that a light material can't absorb vibrations the same as the current, heavier alternatives. Tech like that would allow you to have infinite variability in the materials and shapes you applied to a ski, knowing all the while that it would remain smooth at top speeds.



P_ COLTON JACOBS

"Chatter is just vibrations; it's all measured in waves," Fearon continued. "Muting those waves is how you dampen a ski. From golf clubs to cars, other industries have tried to solve this problem too, so we looked to them for inspiration." Indeed, just like the bumps in a road or the smack of a driver drilling a golf ball off the tee, this concept isn't exclusive to skiing.

The first demos started primitively, when the team concocted bolt-on brass weights in March of 2024 at Crystal Mountain, Washington. That summer at Mount Hood, they upgraded to tire weights strapped to Mindbenders that had been stripped of their damping qualities. Used in variations on Porsches and Honda Civics, alike, (we'll take the Civic any day) tire weights cancel the vibrations, stopping any wobble from traveling to the steering wheel or chassis. Like true mad scientists, Fearon and others in K2's engineering department began prototyping this Frankenstein-adjacent invention and it worked. It wasn't pretty, but it was the right start. Then came the quest to find the right materials.

The team tried the original weights, then tampered with copper, dissected steel and several other prototypes. In the end, they found their winning Dark Matter formula in an injection of Thermal Polyurethane (TPU) and powdered stainless steel. Fearon elaborated that TPU bonded well, while the powdered stainless could be added or detracted easily to adjust the weight. A small puck of this magic serum absorbed vibrations just like a sheet of metal.



P_ COLTON JACOBS

S_ MANON LOSCHI
P_ LESLIE HITTMEIER, NST

The speech made sense and the math seemed to track, but it's a different story when the snow starts to fly. You have to deliver, and that's what the new Mindbenders were shown to do last winter. "I was confused at first," Tristen Lilly recounted when describing his first few laps on the 2027 Mindbender 111 at Alta Ski Area last March. The 2026 King of Corbet's isn't alone, as fellow K2 team members Manon Loschi, Ryan McElmon, Krystin Norman and even Sam Kuch all mentioned their surprise when they were first able to put the new models to work. "I immediately loved the softer flex," continued Lilly, "but when I couldn't get them to chatter and held a pretty fast turn under Collins [Lift], I knew they were special." For context, Lilly's definition of fast is...faster than most, and the pitch under Collins is anything but easy on skied-out hardpack.



S_ KRYSTIN NORMAN
P_ SAM SMOOTHY



*Loschi's NST victory, claimed on the new Mindbender 111

P_ CHAD CHOMLACK; NST



P_ JACK PRICE

For a team like K2's, a ski that packed intuitive flex with incredible stability was needed. And while the previous Mindbender Ti series could rail turns, you weren't buttering those skis if your life depended on it. This was a problem for skiers like Loschi, Kuch and Lilly, who need a versatile weapon for competitions like the Natural Selection Tour (NST) and Kings and Queens of Corbet's. You can grab a different plank to film a different line, but you can't trade out skis as conditions change halfway through your competition run. The results speak for themselves, with Loschi taking the crown at the 2026 NST Ski on a pair of 2027 Mindbender 111s.

"I think a good ski is one that you don't notice," Loschi told me. "Like a lot of skiers these days, I need a ski that's light in the air but won't crumble at speed. It helps me focus on the mountain more. That's exactly what this ski does." K2 couldn't have drafted a better commercial for the new line than Loschi's winning run in this year's NST comp. You could hear the crust in places, yet she hardly had to deviate course. She easily stomped a laid-out double backie, but could still maneuver her skis for a safety grab with minimal effort. It was the perfect ad for lightweight stability. Niches of freeride skiing have long been glued to the idea that burly, heavy skis reign supreme because they deliver supposedly unmatched stability. But thanks to a few strategically placed Dark Matter pucks, a ski that can pop and straightline is now possible.

Optimizing the location of these pucks took time, as all good things do. Before K2's Ski Development Team could deliver such a dreamy tool to skiers like Loschi, they crafted a strict, three-step process for implementing Dark Matter at K2's Advanced Research Collective in Seattle, otherwise known as the famous ARC. Step one: Figure out where the ski vibrates most. As vibrations reverberate through the ski, those waves peak in specific spots. Silencing those peaks is what we commonly know as damping. Step two: Weight, or dampen, that location with Dark Matter inserts. Step three: Fine-tune which of the vibration peaks to silence based on the terrain you want to ride on a particular ski. It's not a one-size-fits-all operation.

Vibrational feedback peaks look different depending on the snow you ski. A groomer delivers consistent feedback. Your ski remains anchored across the even surface. But chopped-up freeride conditions mean you'll encounter more complex vibrations—variable snow here, powder over there. Instead of just placing metal throughout the whole ski and building the rest around that focal point, Dark Matter inserts are placed based on the terrain you'll encounter. So while the Mindbender 88 is built specifically for smooth, more predictable groomer vibrations, the 111 is made to absorb more complicated patterns found off-piste. While you can spot Dark Matter inserts above and below the bindings in every Mindbender ski, it's the minute details that add up to make the difference. Millimeters are miles, and grams are tonnes. It's a detail-oriented process that requires more time and money to get right, but one the company is banking on paying off in the long run.



P_ SAM SMOOTHY

"The change [to Dark Matter] makes it night and day," reiterated Kuch. One of the most enduring faces in freeride, his opinion moves mountains both in and outside of the company. "What really excites me is thinking about the possibilities for creative ski construction in the future. It's inspiring to be with a team that values innovation over complacency." The statement gains worth when you consider that someone like Kuch can't afford to bluff when it comes to practical gear upgrades. When you're trying to snipe a 50-foot transfer and stomp a cork seven in the same run, the risks are already inherently high. Adding a ski you can't trust to the mix is a recipe for disaster.

As Kuch and the rest of the K2 crew know, risks are not something to be feared, but rather a task to be approached methodically. It's clear the engineers think the same way as the athletes, because innovations like Dark Matter are not a sure bet. From appearance to technical results, we skiers are a picky bunch, and we only latch on to what works. "There's inherent danger in changing up norms like this," Fearon noted as we closed out our chat. But his voice was layered with self-assurance, and after several winters spent refining his work on this topic, that only makes sense. It's why, in Fearon's own words, people should feel at ease knowing real nerds are hard at work building their skis.

S_ KRYSTIN NORMAN
P_ SAM SMOOTHY





S_ MANON LOSCHI
P_ LESLIE HITTMEIER, NST

So this fall, as you watch Kuch, Loschi or any of your favorite skiers drop a stunning video part; or the next time you lace that perfect turn after a storm drops two feet of blower, and a life-altering memory is cemented into your brain, you can thank the countless equations that went into crafting your skis. Think of the innovation that's led our tiny corner of the world away from primitive wood to robust tools that make it possible to perform physics-defying feats in the mountains. Dark Matter is the latest in this long line of advancements but it won't be the last. Not as long as talented, dedicated and somewhat crazy skiers have something to say about it.



P_ JACK PRICE