How does Dragon Skin differ from Hexar?

The Hexar and FRAS are comprised of hexagonal tiles adhered on a flexible substrate and then backed by a pack of high strength textiles like polyethylene laminate or Kevlar or other aramid fiber matrices, whereas Dragon Skin uses overlapping ceramic discusses, backed by similar textile backings as the Hexar product. Both are flexible, but the Dragon Skin utilizes a beneficial shape for dissipating energy in a ceramic material, and performs better against BFT (blunt force trauma). Dragon Skin offers more protection from various rounds at higher velocities.

What about the problem with the Military back in 2006, I heard the tiles slipped after being exposed to heat in the environmental test?

The owner of Pinnacle Armor bought the owner of SAS's rights to that patent in 2000 and proceeded to advance Dragon Skin into the military. During first article testing by the Soldier Equipment Program operated by the military, they tested 30 Dragon Skin samples, and after it was exposed to 165 degrees of heat for 24 hours, it did have issues as well as with the petroleum distillates immersion test. The tiles slipped out of place due to not addressing those environmental factors contained in the first article testing specifications.

When testing to a standard it is very important to pay attention to modifying the product, if necessary, to meet the demands of test specification, which were a known commodity prior to submitting samples for testing to this standard. The adhesive used to affix the ceramic tiles back then was only rated at 180F degrees, and the cover was not liquid proof.

These two issues were addressed in 2008 by Pinnacle and by us when SAS was founded, in that, we have a water tight cover that can resist all kinds of liquids including petroleum distillates. Pinnacle was given a second chance in 2008 in a competitive bid that requires submissions to address the M993 or what the end user call the XSAPI.

If that is true then why didn't Pinnacle win that Bid?

Again following instructions of the customer as it pertains to what they require is very important, the military requires modular and scalable systems, and Pinnacle failed to address this and manufactured full coverage level 4+ integrated vests that weighed 45 Lbs each, when all they had to do was make a flex plate that was bigger than the XSAPI sizes and break up the stand alone nature into an in-conjunction-with flex plate when coupled with the soft armor part of the vest, and they would have a great shot at winning. Instead, they made it easy for the Military to decide against the technology.

Pinnacle spent a few years casting a dim view of the agents for the government, and were quoted as calling them corrupt, incompetent, and incapable of understanding the Dragon Skin system.

After the 2008 bid, Pinnacle went bankrupt in 2009, which cast a dim light on the technology, when the major cause for blame was the owner of Pinnacle Armor, who was our ex-joint venture partner in 1997 – 2000 and buyer of the original inventor's patent rights.

So, if Dragon Skin is so good then why the development of Hexar?

That is a great question, basically, it is about cost, the Hexar and other butt to butt tile systems on the market are simply cheaper to make. In 2014 when Hexar was beginning the Dragon Skin product was still very expensive to produce as operations like containing the tile with a rigid substrate and hot bed laminating an adhesive to the fabric the tiles are affixed to required outside vendors. This requires double shipping and two margins that we now recoup by conducting these procedure in house, or as the term is used in manufacturing, we have become vertically integrated!

The net effect is we can now sell Dragon Skin in all it's forms for a lot less, while improving the performance and weight Vs. the Pinnacle offering from the first decade of the new 21st century.

So, you are saying that it's improved and costs less?

Yes, we have made a lot of improvements in the performance and those are reflected in our latest patent filing, and it weighs less than the Dargon Skin made by Pinnacle and NADG.

So, what about the environmental conditioning issues?

We use an adhesive that is proven to withstand heat in excess of 250F degrees. The official rating is 300F.

We use a water proof cover bagging system that eliminates liquids from entering, and potentially losing the grip on the tiles. While water would not cause this immediately, petroleum distillates can, and this is the case with most ballistic materials, and that is why the whole industry has moved towards liquid proof protective covers. This was not the case for Dragon Skin Circa 2000 – 2006.

The Dragon Skin we make now and in the recent past had these improvements including the use of more stable anti-ballistic textile laminates as compared to the Dyneema 2-ply SB31 laminate originally chosen by Pinnacle; our choices are 4Ply and 6 Ply UDPE laminates which are far more durable. In surveillance tests, (old vests brought back in on trade) we have seen where the methods we use even on vests as old as 10 years are still working, and that is not the case for Pinnacle made Dragon Skin.

The environmental issues of the past are squarely in the past. The original inventor of the modern-day scalar high threat armor concept has control of the technology again, and has improved it in all respects including the cost.

So, are you going to continue selling Hexar?

If the success of Dragon Skin continues to grow, we predict that it might spell the end of Hexar, and other hexagonal ceramic tiled flexible systems offered by our competitor in this niche of the market.

Simply put, if Dragon Skin can sell at about the same price, and it performs better than butt-to-butt ceramic tiled systems, why buy Hexar or similar products?

It remains to be seen if this happens, but now that we have mitigated the causes of the expense to make Dragon Skin and improved its performance, this is entirely possible and time will tell.

What are some of the benefits Dragon Skin has over Butt-to-Butt tiled systems like the Hexar and the FRAS?

Dragon Skin is superior to these other systems, in that, the control of BFT (Blunt Force Trauma) is better, and the overlapping contained discs additionally can defeat tougher to defeat bullets. In the Buffman video the M80A1 was defeated convincingly, this is a tough round to stop, and it works on M855A1's as well. While Hexar can defeat the M855A1 to, the margin of safety favors Dragon Skin.

We are about to launch an ICW Dragon Skin, and because of its robust nature we can literally warranty that it will work in front of any NIJ Certified 3-A system, whereas Hexar and the like make notes that it is warrantied only using proprietary 3-A backings. This gives the customer more confidence when using the ICW version if they are using it with another company's level 3-A system.

Versatility is in favor of Dragon Skin, as we can easily design to meet or exceed level 4+. In a Buffman range video our Level 4+ Dragon Skin offering actually defeated a .338 one Lapua Swiss AP, basically a tungsten carbide core at 250Gr and moving at 2750 Ft./Sec...

That is quite a feat, and although we do not rate it for that round, it illustrates just how much more protection you get with Dargon Skin and its various embodiments can achieve. Hexar is not rated for level 4 and although for a while we had one that did, it was just Level 4 not level 4+ and it was heavy, thick, and not really all that flexible.