



Hull Protection

UHMW (polyethylene)

-vs-

K5 (polyuria)

The Short Answer:

K5 polyuria is the stronger of the two substances, even at half the thickness. K5 bonds well to aluminum without mechanical hardware (bolting) which makes it perfect for thinner 100ga hulls where there is not enough metal thickness to get a good thread grip. K5 polyuria doesn't have the lubricity that UHMW does. To combat that, companies like Premium Protective Coatings apply 'Wetlander Super Slick' afterwards. UHMW protects the hull in differently than K5. Making it the perfect application to add durability to thinner aluminum hulls.

UHMW polyethylene has significantly more lubricity than K5 and while it doesn't bond to or add strength to the aluminum, it protects in a unique way. UHMW has the ability to disperse the impact. This doesn't mean it prevents damage; however, it greatly reduces it. Requiring mechanical hardware to fasten it, 1/2" UHMW on 3/16" and 1/4" hulls provide enough thread bite to hold fast. Like K5, UHMW will wear or even tear over time and abuse. In both cases K5, and UHMW, the material is sacrificial and will eventually need replaced in high stress areas. Only with UHMW, no special application equipment is required. Making UHMW [possibly the best solution for thicker hulls

The Long Answer:

Some background first to dispel fact from fiction, hype from reality and sales pitches from spec-sheets. Unfortunately, there is enough misinformation and sales hype out there to muddy up the water. In 1999 I was having a Custom 1760 Center Console boat built here at Snyder Jetboats. Snyder was the first person on the entire East Coast north of Florida to put UHMW on boat hulls. It originated on Air Boats in the Florida Everglades. My first UHMW boat was 20 years and 5 Jet Boats with UHMW ago. I am speaking of first hand experience with 1000's of days on some of the meanest rock filled rivers in the US.

My experience with the Military Grade K5 (polyuria) is much less tenured. In the summer of 2015, I was invited to an SPI facility for a Polyuria Spray Class. The heated 2-Part spray system for this application is involved and for the record, it is not Bed Liner. It was developed for military use to blast protect armored vehicles. So, enough with the bed liner foolishness. At the class we sprayed K5 on cardboard and on the last day, SPI also had sheets 1/8th aluminum sprayed for us.

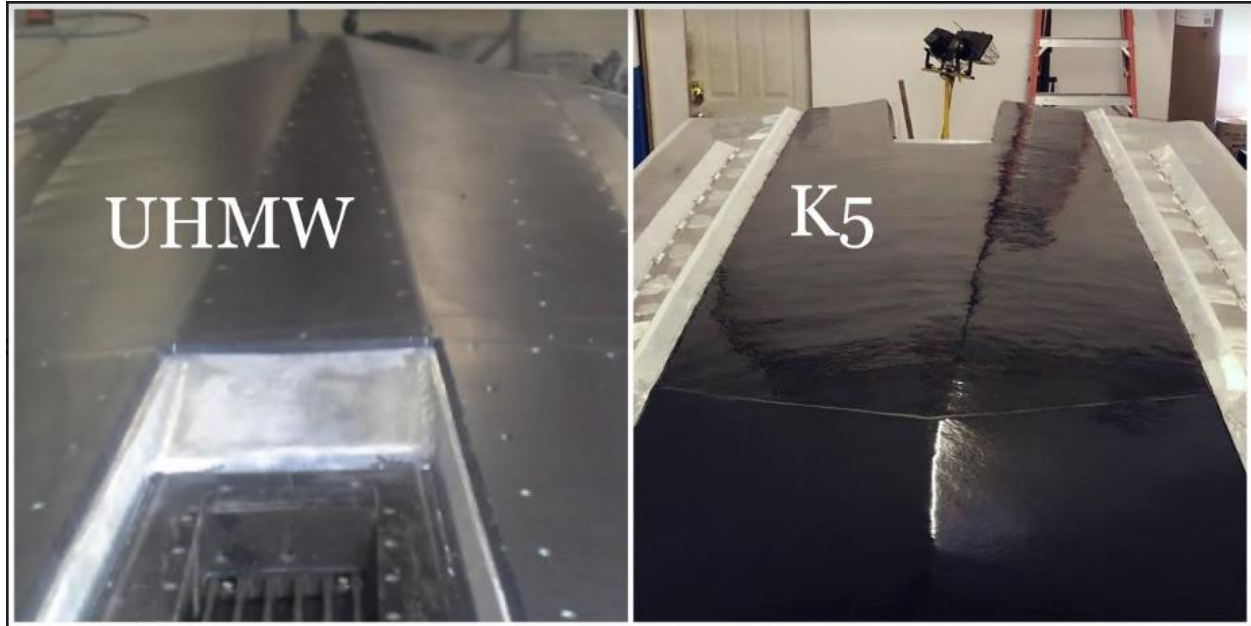
With K5 coated cardboard and aluminum, along with 1/2" UHMW bolted to 1/8" aluminum, I was off to my shooting range in the sand pit behind my house. Five Paces 9MM 115gr jacketed bullets, shots into each one. Here is the results.

For the aluminum with UHMW machine screwed into place, the 9MM slugs passed through the UHMW and the aluminum blowing straight through. You could stick a dowel rod through the holes. With all 3 slugs, the UHMW and aluminum were breached..

For the aluminum coated with K5, the K5 was NOT breached by the 9MM slugs. The aluminum dented and, in a few instances, stretched the aluminum enough to crack through. The best part was that the K5 still sealed around each shot. The hull while damaged, would not have been breached.

For the cardboard coated with the K5, there was enough flex in both materials to completely absorb the shots. While inconclusive, I was impressed that this "blast protective" K5 can do what it says it can.

Further Testing



As a final step to putting my money where my mouth is, I am taking a hull that had UHMW on it and testing it for a year with K5. This is a 3/16" Hull with 4'x15' section of 1/4" aluminum welded to it. A true heavy duty hull coated with K5 and Wetlander. Need to thank the folks at Premium Protective Coatings for assisting me in this test.

Stay Tuned...

Written by Chris Gorsuch