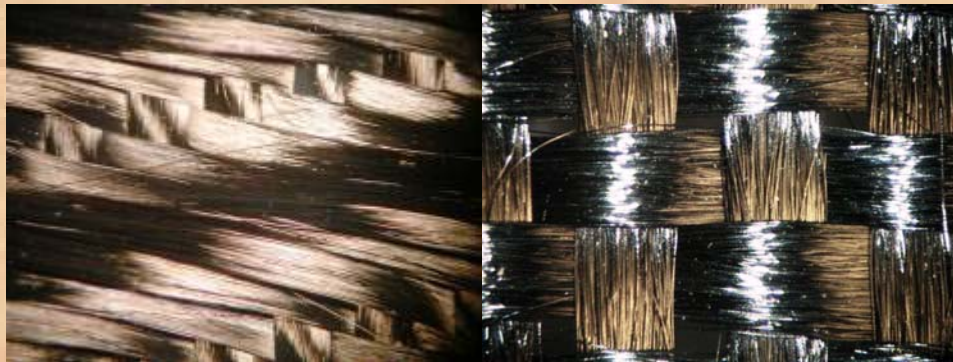




MATECH's GentleWeave™ Ceramic Fiber Weaving Process

Starting in 2011, MATECH developed its own in-house weaving process specifically designed for weaving of **high modulus ceramic fiber tow** into fabric. While MATECH can weave glass, carbon, aramid, and other fiber tow products, MATECH's GentleWeave™ was designed and developed for difficult ceramic fiber tows possessing high elastic modulus that are prone to damage using traditional industrial weaving machines and processes. MATECH has woven high modulus silicon carbide fiber tow into plain weave, 5 harness satin weave (5HSW), and 8 harness satin weave (8HSW) fabrics.

Recently, MATECH wove Sylramic-iBN into 5HSW cloth with very little tow damage or filament breakage observed! Sylramic-iBN is widely believed to be one of the most difficult fiber types to weave without inducing tow damage. Often, this particular fiber type produces cloth with significant “stubble” in the z-direction. The “stubble” is caused by filament breakage and, thus, the cloth can have a “furry” appearance as a consequence. MATECH's woven Sylramic-iBN fabric is “stubble free,” due to the extremely minimal filament breakage imparted by the GentleWeave™ process. Examples can be seen below.



GentleWeave™ 5HSW Sylramic-iBN SiC (left) and Plain Weave SiNC-1400X (right)

“Sylramic-iBN” ceramic fiber tow is a product of ATK/COIC.

“SiNC-1400X” ceramic fiber tow is a product of MATECH.

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