



2011 Wyoming Award Winners:

346	Aug 1, 2011	WyoComp Heath Van Eaton 307.432.4073 Cheyenne, WY 82001	Continuous Fiber Reinforced Biocomposites and Polymers	USDA
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Abstract:

This USDA-SBIR Phase I project will prove the feasibility of WyoComp's innovation for increasing the physical properties of wood plastic composites and all plastic building materials so they can perform in applications that require structural properties similar to traditional wood. The technologies can also be used to reduce additive costs to producers while maintaining or increasing overall physical properties. To date, all wood plastic composites and plastic building materials are restricted to use in only non-structural applications. This research will prove the feasibility of WyoComp's structural technologies using continuous strand inorganic fibers embedded linearly within the body or walls of wood plastic composites and plastic building materials. The research objectives are to model the number, size and types of continuous yarn fiberglass toes necessary to reinforce a typical wood plastic composite decking profile (1.0" x 5.5" cross section) and apply the modeling so some sample composite decking can be produced and tested to verify performance of the physical properties using Southern Yellow Pine as the control to compare against. Anticipated results include proving the feasibility of the modeling system to estimate the continuous fiberglass yarns necessary to achieve targeted physical properties and to estimate overall product and process technology costs.