Affordable Chemical/Biological Resistant Fabric

PROBLEM / OBJECTIVE

The U.S. Army's collective Chemical, Biological, Radiological and Nuclear (CBRN) protection is attained through tent liners placed within general purpose shelters. Eliminating these liners could significantly reduce the logistical costs associated with collective protection. Although a new fabric material that integrates this protection with the shelter material was demonstrated, existing manufacturing processes could not produce the material to meet weight goals of the transition customers.

The objective of this Army ManTech project was to develop a CBRN-resistant fabric manufacturing process that meets the weight goal and enables the material to be produced on a large scale, resulting in the elimination of the need for separate CBRN liners.

ACCOMPLISHMENTS / PAYOFF

Process Improvement: This project incorporated urethane chemistry, pigment technology and coating process to successfully achieve the target material weight goal for the laminate at an affordable cost:

- Demonstrated TRL and MRL 7 for a Warwick Mills TurtleSkinTM "T6" CBRN laminate
- Reduced weight from 14 oz per square yard to 11.6 oz per square yard, meeting the weight goal of the laminate material.

Implementation and Technology Transfer: The process improvements were transitioned to the program office for Joint Expeditionary Collective Protection (JECP) with production starting in FY15.

General Purpose Shelter

Expected Benefits and Warfighter Impact:

The primary benefit to the Warfighter is the elimination of added weight and bulk associated with CBRN shelter liners.

- Reduced the combined mass of general purpose tent laminate and existing CBRN liner laminate, thereby eliminating storage and associated logistics costs.

- Reduced the cost of producing the material from $80 per square yard to $35 per square yard.

TIME LINE / MILESTONE

Start Date:	October 2010
End Date:	January 2015

FUNDING

U.S. Army ManTech	$2.1M

PARTICIPANTS

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