



DEFENDER® Seamless Ballistic Helmet (SBH)

The Ceradyne Diaphorm Seamless Ballistic Helmet presents a dramatic improvement over conventional helmets. The new technology provides increased protection against fragments and small arms, and for the first time protects warfighters by stopping rifle bullets. Ceradyne SBH technology provides maximum lifesaving protection.

Technology

The Ceradyne Diaphorm shell uses Ceradyne Diaphorm's proprietary Seamless Ballistic™ Helmet (SBH) forming and Thermoplastic Composite Helmet (TCH) molding technologies. These manufacturing techniques generate a superior performing helmet in a highly repeatable volume production environment.

SBH technology is used to form the helmet shell geometry from a multi-layered laminate without having to cut or dart any of the individual layers while creating a helmet shell with virtually no folds in the laminate. The resulting molded shell offers performance uniformity and thickness repeatability.

Materials

Many high performance materials are involved in the fabrication of the DEFENDER® Seamless Ballistic Helmet. They were carefully selected during development so that they each contribute to the ability to fulfill superior ballistic requirements.

The use of Thermoplastic Composite as the main helmet shell material enhances ballistic performance of the shell but it also greatly impacts manufacturability. Ceradyne Diaphorm has developed manufacturing techniques specifically for Thermoplastic Composite materials that best take advantage of unique molding characteristics.

Weight

The SBH helmet weight has been verified to meet weight requirements calculated for each size by the U.S. Government.



Retention

A retention / chin strap integrated system is added to the shell using appropriate hardware.

Environmental Conditions

Due to the nature and chemistry of the materials used in the SBH construction, and particularly the Thermoplastic resin and fiber materials that make up the majority of the helmet, it is expected that operational environments such as seawater, temperature shock, high altitude, salt-fog and field agents will not degrade the helmet.

About Ceradyne Diaphorm

Ceradyne Diaphorm offers full engineering, manufacturing, integration and financial capacity to design, test, manufacture and mass produce personal armor protection systems such as helmets and individual body armor systems, in support of U.S. Government and commercial personnel protection programs.



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