ENGINEERING DIRECTORATE

The Engineering Directorate operates under the auspices of the Edgewood Chemical Biological Center (ECBC). The Directorate has over 600 people with the main offices located on the Edgewood Area of Aberdeen Proving Ground, MD with additional personnel stationed at Rock Island, IL. Additionally, Engineering Directorate personnel directly support the Joint Project Managers under the Joint Program Executive Office for Chemical and Biological Defense (JPEO-CBD), as well as numerous other government organizations.

Our Engineering Team drives technology transition from research to engineering development and transitions materiel from engineering development through production, fielding and sustainment. Our highly trained workforce is committed to responsive customer service and is knowledgeable about current and evolving technology and capabilities worldwide. We use our unique infrastructure, engineering expertise and lifecycle services to solve chemical and biological (CB) defense challenges for the Warfighter and Homeland.

MISSION

Provide unique infrastructure, engineering expertise and lifecycle services to solve Chemical and Biological challenges for the Warfighter and the Homeland.

VISION

First Stop for Chemical and Biological Defense Solutions

EDGEWOOD
CHEMICAL BIOLOGICAL CENTER
A U.S. Army RDECOM Laboratory

ECBC is the principal research, development and engineering center for non-medical chemical and biological defense. ECBC is an organizational element of the Army's Research, Development and Engineering Command, which reports to the Army Materiel Command. ECBC develops technology in the areas of detection, protection and decontamination and provides support over the entire materiel lifecycle—from basic research through technology development, engineering design, equipment evaluation, product support, sustainment, field operations and disposal.

ENGINEERING DIRECTORATE
ECBC ENGINEERING
Design→Build→Test→ Support

The Edgewood Chemical Biological Center Engineering Directorate is here and available to assist you with Design, Build, Test & Support Solutions for Chemical and Biological Defense Needs.

Please call 410.436.5600 or e-mail
ecbc.engineering.directorate@conus.army.mil

ENGINEERING DIRECTORATE
ECBC ENGINEERING
Design→Build→Test→ Support

ECBC PROTECTIVE EQUIPMENT TEST BRANCH

PUBLIC RELEASE

RDECOM

EDGEWOOD CHEMICAL BIOLOGICAL CENTER
Since 1917–A Tradition of Solutions

MISSION

The Protective Equipment Test branch (PET) supports our nation's chemical defense mission by conducting first article, production acceptance and surveillance testing, analysis and evaluation of chemical protective items for our soldiers and civilians.

PET is part of the Edgewood Chemical Biological Center's (ECBC) Engineering Test Division. For more than 80 years, PET has conducted critical testing, analysis and evaluation of chemical protective items in order to keep the Warfighter safe.

ABSORBENT & FILTER CHARCOAL TESTING

Carbon testing has been conducted at ECBC for more than 75 years. Due to the threat and use of chemical agents world-wide, testing the integrity of carbon used in protective materials and filters is critical to support our mission and that of ECBC. Samples are analyzed through various techniques including gas chromatography, photoacoustics, and inductively coupled argon plasma emission spectrometry (ICP-MS) against military specifications and American Society for Testing of Materials (ASTM) test standards. The main focus of PET's carbon testing is ASZM-TEDA carbon lot acceptance and Military Standard specification testing on various types of sorbent material and impregnated carbon.

PET also has the capability to test various filters and canisters used for individual and collective protection. The branch tests for the following:

- Production lot and surveillance
- Certification, first article and developmental
- Shelf-life extension

QUALITATIVE & QUANTITATIVE PERMEATION TESTING

Testing of permeable, semi-permeable and impermeable protective materials has been conducted at ECBC for more than 50 years. Team members with over ten years of experience conduct routine operational and developmental testing of commercial, military and unique protective materials through qualitative and quantitative testing. Quantitative testing can be performed over a wide range of environmental conditions and is achieved through the use of a miniature chemical agent monitoring system (MINICAMS®) or a gas chromatograph (GC system). Qualitative testing is performed in accordance with standard methods or military specifications such as MIL-STD-282. Routine testing includes but is not limited to:

- First article and production lot acceptance testing of protective impermeable, permeable and semi-permeable materials
- Chemical agent liquid and vapor challenge testing of chemical protective materials
- Vapor and liquid challenge hose tester using MINICAMS® for agent detection
- Support of Joint Service General Purpose Mask (JSGPM)/Joint Service Aircrew Mask development programs
- Shelf-life extension testing

SIMULANT AGENT RESISTANT TEST MANIKIN (SMARTMAN) AGENT TESTING

Mask testing is an integral part of the PET mission as well as that of ECBC. Given the recent threat scenarios, it is imperative that the safety of soldiers or first responders is verified and ensured.

CAPABILITIES

- The SMARTMAN test system allows for liquid and vapor chemical agent testing on complete respiratory systems simulating a variety of environmental conditions, such as heat and humidity, at a variety of breathing rates.
- Items tested include air purifying respirators, self-contained breathing apparatus, powered air purifying respirator and escape hoods, JSGPM, other Military/ Aircrew masks as well as R&D/prototyping for industry.
- PET's Mask Testing Group works closely with customers to design and validate the certification tests and finalize the Standard Test Protocols and Procedures for both foreign and domestic mask systems.

A2LA ACCREDITED Testing Laboratory CERT# 0298.01

PET is an International Organization of Standardization 17025 accredited testing laboratory. We hold our accreditation for chemical testing with the American Association for Laboratory Accreditation, certificate number 298.01 and have been accredited since September 1992. Additionally, PET is the primary laboratory used by the National Institute for Occupational Safety and Health (NIOSH) to develop testing protocols, and validate and certify respiratory systems used by first responders.

Protecting our Protectors.