

## 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 (JPM) under the Joint Program Executive Office for Chemical and Biological Defense (JPEO-CBD), as well as numerous other government organizations.

Our Engineering Directorate 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

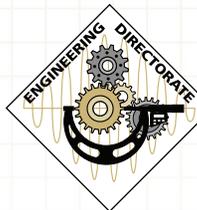
Provide unique infrastructure, engineering expertise and lifecycle services to solve Chemical and Biological challenges for the Warfighter and the Homeland.

## VISION

First Stop for Chemical and Biological Defense Solutions.



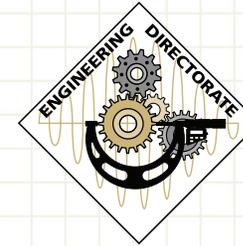
ECBC is the principal research, development and engineering center for non-medical chemical and biological defense. ECBC is an organizational element of the Army's Research, Development and Engineering Command, which reports to the Army Materiel Command. ECBC develops technology in the areas of detection, 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.



**ECBC ENGINEERING**  
Design→Build→Test→Support

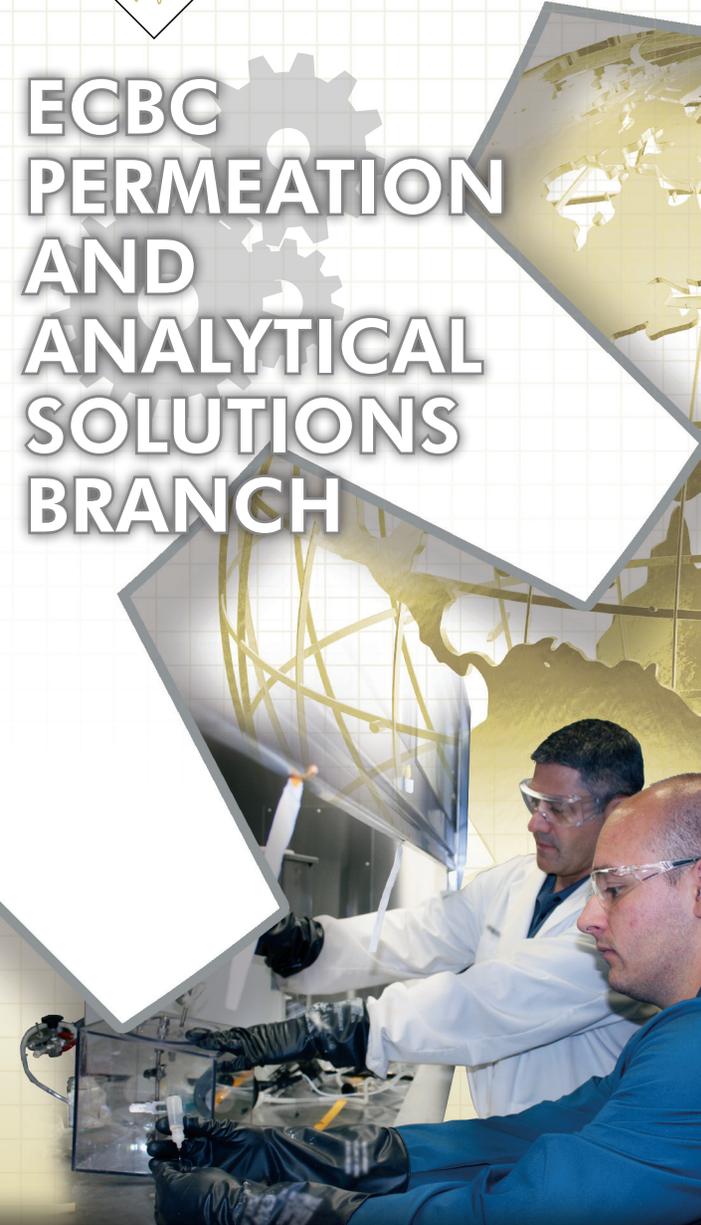
The Edgewood Chemical Biological Center Engineering Directorate is here and available to assist you with Design, Build, Test and Support Solutions for Chemical and Biological Defense Needs.

Please call 410.436.5600 or e-mail [usarmy.APG.ecbc.mbx.engineering-directorate@mail.mil](mailto:usarmy.APG.ecbc.mbx.engineering-directorate@mail.mil)



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# ECBC PERMEATION AND ANALYTICAL SOLUTIONS BRANCH





## MISSION

It is the mission of Permeation and Analytical Solutions Branch to be recognized as the gold standard in permeation testing and analytical methods development for existing and emerging chemical threats. We will provide technical support to assist our customers with problem solving, making technology an asset.

Permeation and Analytical Solutions Branch (PASB) is a part of Edgewood Chemical and Biological Center's Engineering Directorate. PASB conducts a variety of tests using chemical warfare agents, novel threat agents and toxic industrial chemicals on impermeable and semi-permeable materials. Upon test completion a thorough analysis is done and results are presented in a comprehensive report.

In addition to the various types of permeation testing performed, PASB has the capability to design and build unique test fixtures to meet customers needs. Systems are produced from engineered detailed designs developed from customer concepts.

## PASB STRATEGIC VALUES

- Constant improvement through teamwork
- Evolve to capture new markets
- Take controlled risk
- Strategic partnerships to broaden our test capability

## ISO ACCREDITED

All permeation testing complies with military standards and specifications and is ISO 17025-2005 accredited by A2LA .

## SYSTEM DESIGN

PASB has experienced engineers on staff to assist in test fixture design and the capability to validate a test system function.

## TEST CAPABILITIES

PASB has the capability to perform a variety of established test procedures as well as the diversity and dynamics to develop new test methods to meet present and future customer needs.

- Surveillance testing
- Permeation flux testing
- Generate, validate and sustain vapor challenges in controlled environments
- Charcoal and novel sorbent materials
- American Society for Testing & Materials 739



### Environmental Control Chamber:

State-of-the-art test facilities provide unique test capabilities to our customers.

## TEST SYSTEMS

PASB utilizes state of the art test fixtures to ensure the most accurate and precise data is generated in a timely fashion.

- Aerosol vapor liquid assessment group permeation system
- Dawson cups
- 282 flood cells
- Environmental chamber
- Glove boxes



## ANALYTICAL CAPABILITIES

With our Analytical Chemists and Subject Matter Experts (SME) on staff, both routine and complex samples can be efficiently analyzed and accurate data presented to our customers.

- Gas chromatography (GC):
  - Flame ionization detector
  - Flame photometric detector
  - Mass selective detector
  - Electron capture
  - Nitrogen phosphorus detector
- Liquid chromatography (LC):
  - UV
  - Fluorescence
  - MSD
- Ultra violet/visual (UV/VIS)
- Fourier transform infrared spectroscopy
- LC Triple Quad Mass Spectrometry
- Sorbent Tube Analysis:
  - Liquid
  - Thermal

## PROGRAMMING

Process control and data acquisition using Opto 22 products and LabVIEW.