

ECBC ENGINEERING
Design→Build→Test→Support

ENGINEERING BUILD CAPABILITIES

INTRODUCTION

Edgewood Chemical Biological Center (ECBC) Engineering leverages its integrated design capabilities to provide a comprehensive suite of prototyping and manufacturing services including design optimization for manufacturability. Rapid prototype processes are used to obtain human factor inputs, complete design validations and capture initial test data. Functional prototypes provide an effective means to evaluate form, fit and function. Low rate manufacturing processes are employed to test and evaluate developmental items and rapidly provide products for urgent or accelerated requirements. Comprehensive design through manufacturing feedback enhances design maturation and continuous product improvement.



MANUFACTURING

PRECISION MACHINE

Capabilities

- Precision machining and tool making
- RAM Electrical Discharge Machining (EDM)
- Computer Aided Manufacturing (CAM)
- Plastic injection molding
- Low rate initial production
- Small scale production
- Manufacturing and technical problem solving
- Design-for-manufacturing
- Rapid response capability for emergency incidents/requirements



Equipment

- 12 Computer Numerically Controlled (CNC) milling machines
- 17 turning machines
- Five CNC milling machining centers, 3-5 axis
- Two CNC turning centers with live axis
- Two CNC electrical discharge machines



METAL FABRICATION

Capabilities

- Sheet metal processing
- Welding
- Metal punching and water jet cutting
- Flat pattern development
- Custom hood and ductwork development and fabrication
- Manufacturing and technical problem solving
- Design-for-manufacturing
- Low rate initial production and small scale production
- Rapid response capability for emergency incidents and requirements



Equipment

- Two water jet cutting machines
- Four welding machines
- Two CNC turret punching machines
- Two CNC brake presses
- Extensive conventional metal forming tools
- Metal grinding facilities

PATTERNS AND PLASTICS

Capabilities

- Pattern and mold making
- Rapid tooling
- Plastic injection molding
- Custom glove box and chamber development and fabrication
- Custom crate and packaging fabrication
- Painting and finishing
- Packaging and shipping
- Vacuum forming
- Manufacturing and technical problem solving
- Design-for-manufacturing
- Low rate initial production and small scale production
- Rapid response capability for emergency incidents and requirements



Equipment

- Milling and turning
- Vacuum forming machine
- Five injection molding Machines (up to 300 tons)
- Complete wood fabrication facility
- Plastic sheet fabrication resources
- Rubber and gasket
- Paint booth
- Engraving



ELECTRICAL WIRING AND CABLING

Capabilities

- Wire harness development and production
- Vehicle and laboratory integration
- Sensor integration
- Soldering and prototype circuit board production
- Mechanical and electro-mechanical system integration and assembly
- Manufacturing and technical problem solving
- Design-for-manufacturing
- Low rate initial production
- Small scale production
- Rapid response capability for emergency incidents and requirements



Equipment

- 2,400 square foot electronics laboratory

PYROTECHNICS

PYROTECHNICS

ECBC Engineering provides research, development and limited production services on behalf of ECBC to both government and civilian organizations.



Pyrotechnics consists of engineers, chemists and technicians with a wide variety of internal capabilities, such as item design and production, tooling design and fabrication, and modification of standard U.S. and foreign ammunition.

Capabilities

- Tooling design and fabrication
- Experimental item design and fabrication
- Limited production
- Ammunition modification
- Foreign ammunition exploitation

Equipment

- Differential scanning calorimeter
- Parr bomb oxygen calorimeter
- Drop sensitivity testers
- Friction sensitivity testers
- Electrostatic sensitivity testers
- Performance oriented packaging
- Burn rate test chamber
- Low ambient pressure test chamber
- One ton to 100 ton hydraulic presses
- Hobart blenders
- Glatt blenders
- Specialty molds for loading
- Laboratory fume hoods
- Acoustic octave band acoustic analyzer
- Multiband spectrophotometers



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

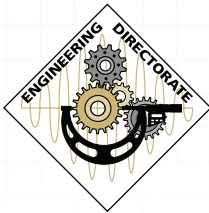
Provide unique infrastructure, engineering expertise and lifecycle services to solve Chemical and Biological challenges for the Warfighter and the Homeland.

VISION

First Stop for Chemical and Biological Defense Solutions.



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

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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

