



# ABS Group

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ADVANCED ENGINEERING

# EXPLOSIVES SAFETY AND QUANTITY DISTANCE SITING SERVICES

ABS Group specializes in explosives safety quantity distance (ESQD) siting and structural design to provide the maximum possible protection to people and property from the potential damaging effects of U.S. Department of Defense (DoD) military munitions. Our Advanced Engineering division is recognized within the blast design community for our experience and expertise providing ESQD and blast resistant design solutions in accordance with government criteria.

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Explosives safety standards are designed to manage risks associated with ammunition and explosives by providing protection criteria to minimize serious injury, loss of life, damage to property and loss of mission.

We have a long history of explosion effects analysis and design of protective structures. Recognized for our expertise in explosion hazards modeling and blast resistant design, the Advanced Engineering division uses advanced analysis techniques and software to help clients minimize exposure of personnel to blast, fragmentation and heat flux, consistent with safe and efficient operations as required by the DoD Explosives Safety Board.

# EXPLOSIVES SAFETY AND QUANTITY DISTANCE SITING

"ABS Group evaluates explosives operations for compliance with the U.S. DoD explosives safety standards and security requirements."

ABS Group has designed new DoD facilities to comply with DoD 6055.09-M, Air Force AFMAN 91-201 and US Navy NAVSEA OP 5 standards. These are Hazard / Division (HD) 1.1, 1.2, 1.3, and 1.4 handling facilities, including Remote Operations and Low Hazard Operations.

Our explosive safety and quantity distance siting services include:

## Explosion Hazards Modeling

- TNT Equivalent Modeling
- Propellant Combustion Modeling
- Confined Explosions
- Detonations and Deflagrations
- Hypergolic Propellants
- Blast Contours and Blast Loads on Buildings

## Equivalent Protection Studies

- Overpressure Analysis
- Thermal Contours
- Hazardous Fragment Distance Evaluations
- Separation by Time
- Evaluation of Protective Structures

## Fragment Hazards

- Primary Fragments and Shrapnel from Munitions and Laboratory / Production Equipment
- TP-13 Analysis for Building Debris Throw
- Design of Barricades to Prevent Perforation by Hazardous Debris and Protect Personnel

## Thermal Hazards

- Propellant Burn Modeling
- Thermal Radiation Contours
- Thermal Propagation Throughout Facility (Down Corridors, Under Doors, Across Vestibules)

## Structural Design

- Blast Resistant Structural Design
- Containment and Cubicle Design
- Remote Operating Bays
- Blast Doors
- Substantial Dividing Wall (SDW) Application
- Magazines and Magazine Headwalls
- Conventional Structural Design
- Drawing Packages
- Design Build Support



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