

Blast Design Training

COURSE DESCRIPTION

The U.S. Army Corps of Engineers Protective Design Center offers this course to acquaint practicing engineers with the procedures that are used to design structures to resist the effects of detonation of terrorist high-explosive devices. Materials covered serve as an excellent introduction to blast resistant structural design similar to that required by UFC 4-010-01, if required standoff distances cannot be provided. The course is well suited for practicing senior structural engineers who would like to develop their skills in the analysis and design of structures subjected to highly transient dynamic loading from an explosion. The course also provides familiarization with terminology, methodologies, the Single-Degree-of-Freedom Blast Effects Design Spreadsheets (SBEDS) and SBEDS for windows that will aid in the review of consulting engineers' blast resistant designs.

The course content is primarily based on the tri-service documents - "Structures to Resist the Effects of Accidental Explosions" (UFC 3-340-02) and "Design and Analysis of Hardened Structures to Conventional Weapons Effects" (UFC 3-340-01). Additional sources are used when they represent the best state of the art practices.

MAJOR TOPICS

Major topics include Blast Loads on Structures; Principals of Structural Dynamics; Dynamic Material Properties; Allowable Response Criteria; Design of Steel Structures; Reinforced Concrete Structures; Masonry Structures; Glazing; Doors; Building Systems; Frames; SBEDS; and Special Considerations. A majority of this material is focused on the Single-Degree-of-Freedom methodology.

CLASS TIME

Time during the five day course is equally split between lectures that provide the theoretical basis of the design process and hands-on utilization of government and commercially developed software specifically for blast analysis and design. High-speed test video and post-test photography is provided to compliment the course material. Typical example design problems and their solutions will be presented. The course also offers opportunities to discuss specific design considerations that individuals may be facing in the near future. An electronic reference library as well as established-practical design software related to blast resistant design is provided to attendees.

WHO SHOULD ATTEND?

The contents of this class contain information that is For Official Use Only. Therefore, attendees are limited to representatives of US government agencies. The class is intended for structural engineers that have a good grasp of traditional structural engineer design principles.

LOCATION AND REGISTRATION

One open-registration class is presented each year. Contact the Blast Design Class Registrar at:

Phone: (402) 995-2393
Email: PDC.Web@usace.army.mil

Additionally, Mobile Training Teams (MTTs) can teach the Blast Design class at the sponsor's location. The sponsor is responsible for all expenses related to bringing the class to their location. The sponsor manages the student registration and is responsible for providing the training facility. For other questions, or to host a class, contact the Training Program Manager at:

Phone: (402) 995-2930
email: PDC.Web@usace.army.mil



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