

BLASTSHIELD Model D4 Specifications – Division 13

Part 1 – GENERAL

1.01 Scope:

- A. Supplier** – Furnish and install all product and accessories for BlastShield Model D4, manufactured by PROTECH, an Armor Holdings Company, 158 Hubbard Avenue, Pittsfield, MA 01201 USA. Phone (413)684-3104, Fax (413)684-4166, blastshield@armorholdings.com e-mail.
- B. Structural Support and Mounting** to be approved by PROTECH on each project.
 - 1. BlastShield Model D4** vertical supports and anchoring supports must be securely and permanently fastened to the structure of the building, preferably the floor and ceiling concrete slabs. The capacity of the brackets and structural members shall be equal to, or in excess of, the capacity of the BlastShield system to withstand designed blast loads.
 - 2. Other structural supports** as approved by the manufacturer may be required on a case by case basis.

1.02 References:

- A. BlastShield Model D4** shall meet or exceed the criteria of providing a Condition 3 protection rating when subjected to blast overpressures of 15 psi and impulses of 130 psi*ms as designated by the United States Department of State. Higher blast overpressures and impulses are achievable on a case by case analysis.
- B. A Test Report** from an independent, government certified blast testing facility verifying that this standard is met shall be required.

1.03 Submittals:

- A. Product Data** shall be submitted, including manufacturer's descriptive literature indicating materials, finishes, installation instructions and test data verifying that BlastShield Model D4 meets blast and vision requirements specified. Include manufacturer's recommendations for maintenance and cleaning.
- B. Shop Drawings** shall indicate fasteners, installation methods and clearance at head, jamb and sill for each mounting condition.
- C. Samples** of materials and accessories for complete installation shall be submitted to the Architect for approval. Fabric swatch samples, 8" x 10", shall be submitted for approval of both color and openness of weave.
- D. A Mock-up Unit** of BlastShield Model D4 shall be submitted for Architect approval if requested. Approved mock-up unit shall be included in the final project.

1.04 Quality Assurance:

- A. Responsibility** – PROTECH shall furnish BlastShield Model D4 and all related accessories, and shall supervise installation or properly train certified installation crews for single source responsibility.
- B. Supplier** shall be manufacturer, subsidiary, licensed dealer or agent approved to supply and install the products specified by PROTECH.
- C. Installer** shall be qualified to install the specified products by factory certification from PROTECH as a licensed installer of BlastShield products, having demonstrated performance and acceptance of any requirement of PROTECH. The installer shall be responsible for the correct measuring and acceptable installation of the product.

1.05 Delivery, Storage and Handling:

- A. Deliver** to project site in manufacturer's original packaging.
- B. Handle and store** to prevent damage to materials and finishes.

1.06 Job Conditions: Building is to be enclosed and all necessary related trade work completed prior to installation.

Part 2 – PRODUCTS

2.01 Manufacturer: PROTECH

158 Hubbard Avenue
Pittsfield, MA 01201 USA
Phone (413)684-3104, Fax (413)684-4166
blastshield@armorholdings.com e-mail

2.02 Product: BlastShield Model D4 affords superior protection from exploding glass fragmentation and flying debris while preserving the view and natural lighting that exterior windows provide. BlastShield Model D4 is used in conjunction with daylight antifracture film or other hardened glass. When a blast occurs, the BlastShield Model D4 captures the flying glass panel and debris at or near the window, thus mitigating injuries to personnel and damage to property, and allowing return to daily operations in blast affected areas in a more timely manner. Glass fragmentation on the flooring, furnishings, and in the ventilation system is greatly reduced. As a solar shading system, BlastShields also reduce glare, preserve natural day lighting, permit see-through visibility, provide daytime privacy to the occupant, and control unwanted heat gain. BlastShields are appropriate wherever a secure, protected environment is required.

2.03 BlastShield Fabric:

- A. PhiferShield** fabric is used exclusively in the BlastShield Model D4. PhiferShield is woven from an extrusion coated Spectra Type 900 polyethylene fiber having a tenacity of greater than 28 grams per denier. The coating is a proprietary PVC polymer formulated with performance additives that withstand mildew, fading, and soiling. The coated fiber is woven into a double strand mesh, 22x18, and is heat treated to retain dimensional stability.
- B. PhiferShield** is available in widths up to 96". The standard openness factor is 20%. The standard color is Ebony. Custom widths, openness factors, and colors are available.
- C. Optimal protection** is afforded the building occupant by having one BlastShield Model D4 unit for each glazing unit. Independent deformation is required for optimal protection.

2.04 Components:

- A. Steel flatbars**, typically 1" x 1/4", run continuously floor to ceiling on both sides (as side vertical supports) and in the center of the window (as a middle vertical support), and are bent at the ends for anchoring to the concrete slabs of the ceiling and floor. Steel flatbars, typically 1" x 1/4", are used for the anchoring supports. Steel flatbars, typically 1" x 1/4", run continuously along the length of the BlastShield fabric on the side vertical supports (as vertical retaining straps), and run continuously along the width of the BlastShield fabric between the vertical supports (as horizontal retaining straps). The BlastShield fabric is wrapped twice around the vertical retaining straps

and the horizontal retaining straps, secured by double sided tape, and is then bolted in place. Holes are punched into the side vertical supports, the vertical retaining straps, the horizontal retaining straps, and the anchoring supports for attachment.

- B. Fasteners** secure the side vertical supports, the middle vertical supports, and the anchoring supports to the concrete ceiling and floor slabs. These fasteners are Hilti HSL M 16/25 Heavy Duty Expansion Anchors, with washers. Minimum embedment into the concrete of 4" is essential. Fasteners are evaluated based on particular structural conditions of the project, and may be recommended by the manufacturer on a case by case basis.
- C. Fasteners** secure the vertical retaining straps and horizontal retaining straps to the side vertical supports. These fasteners are 3/8" x 1" hex head bolts with nuts and two washers.
- D. Optional painted metal fascia or plastic flatbar covers** are available. These do not contribute to the blast mitigation qualities of the product, but are decorative in nature.

2.05 Colors and Finishes:

- A. PhiferShield** is available in the standard color of Ebony. Custom colors, including Alabaster, Chalk, Pebblestone, Greystone, Pewter, Ash, and Tobacco, are available.
- B. Steel flatbar** is available in standard black finish. Custom colors are available.

Part 3 – EXECUTION

3.01 Inspection and Preparation:

- A. Certified technicians or installers** are required for proper measuring of BlastShield Model D4. The technician/installer is responsible for inspecting the jobsite for mounting conditions and for proper measuring of the product.
- B. Other Affected Trades** shall receive relevant submittal drawings and installation instructions as required.

3.02 Installation and Maintenance:

- A. Certified installers** are required to ensure proper installation of BlastShield Model D4. Installation must be in strict accordance with the manufacturer's instructions and approved shop drawings.
- B. The BlastShield Model D4** should be installed typically within 1-1/4" of the inside surface of the wall.
- C. Clean** the area around the product after installation, and remove all related trash from the site.
- D. Maintenance:** The BlastShield Model D4 requires a minimum of maintenance. The fabric can be periodically vacuumed, brushed in place, or cleaned with soapy water or a mild detergent and a soft brush, followed by a thorough rinsing with clean water. The glazing can be cleaned by accessing the window from the side of the BlastShield Model D4 with a brush on a handle. Should the BlastShield unit need to be removed for any reason, it must be reinstalled in strict accordance with the manufacturer's instructions.

- 3.03 Technical Services:** Contact PROTECH as required.