

Blast Resistant Doors

Introduction

European EMC Products Ltd was established in July 1996 to supply high quality products and services to the Electro-Magnetic Compatibility (EMC) market.

Quality

European EMC Products are registered to BS EN ISO 9000:2008, certificate No. FS 38901. License scope: The design, assembly, servicing and testing of RF Shielded structures and equipment including EMI shielding and thermal management materials; Gas tight doors; and specialised mobile electromagnetic pulse protected (EMPP) containers.

Blast Resistant Doors

Unlike most other doors, a Blast Resistant Door is supplied as a complete assembly by EEP. Parts include the door, frame, anchors, hardware, and accessories. This must be done because items such as the door, frame, latches, and hinges are of bespoke manufacture and are independent parts of Blast Resistance. To facilitate the specification of individual door assemblies, the door type, blast effects, rebound, deformation limits, operating forces, hardware, and accessories for each door are brought together under a Blast Door assembly specification.

Structural steel doors shall be flush mounted into frames, or surface mounted. Reinforced concrete doors shall be surface mounted. Doors can be manually operated, side hinged, swinging type.

Frames and anchors shall be capable of transferring blast and rebound reactions to the adjacent supporting structure. Resistance to blast shall be demonstrated either by design calculations or tests on prototype design assemblies.

Design Requirements

EEP design Blast Resistant Doors for a wide range of applications, particularly for EMPP (Electro-Magnetic Pulse Protection).

Careful design is required to take into consideration the following:

- Static Material Strength
- Dynamic Material Strength
- Structural Member Design
- Blast Effects



- Dynamic Analysis and Deformation
Rebound Resistance
- Overpressure
- Overpressure Direction
- Fragment Resistance

Surface Treatment

The frames are primed for a high level of corrosion protection.

Construction

Blast Doors are constructed using steel box section and steel sheet which is fully welded as per the design specification. The frame is designed for casting into the door opening.

It is recommended that blast door frames are cast into the building fabric. This provides a stronger mounting and means no drilling, or unnecessary penetrations through the host building wall around the opening.

Installation

European EMC Products offer a complete or supervised installation service for all of our doors.

Standard Specification

Blast Resistant Doors are to be designed to resist the effects of a cased 500lb charge, standard US MK117 Bomb at 100ft standoff. 25psi. In the absence of further detailed information, this has been interpreted as a standard general purpose bomb. Class A fragment penetration.

Total charge weight (H-6/Tritonal) = 734lb (334kgs)

Equivalent TNT = 488lb (222kgs)

Peak Reflected Pressure, P_r = 99.1kPa

Reflected Impulse, I_r = 752.9kPa-ms

Idealised Triangular-decay duration, t = 15.2ms

LPG weapon direct hit

