

Deansteel Manufacturing Company has been a leading manufacturer of commercial fire rated hollow metal doors and frames since 1958, and USCG fire rated doors, frames, and windows for the marine/offshore industry since 1969. While Deansteel has offered ballistic doors and frames for over ten years, due to increased security demands around the world we have expanded our line of security products and are proudly including Blast Resistant Doors and Frames in our Deansteel BRP division (Bullet & Blast Resistant Products). Our low level blast doors, frames, and windows comply with the requirements of UFC 4-010-01 DOD Minimum Anti-Terrorism Standards for Buildings. In addition, our Research and Development department is currently developing and testing mid-level blast resistant doors, frames, and windows with an anticipated completion time frame of summer 2008.

The example below exemplifies an analysis conclusion from BakerRisk that states the doors will provide a Category III or better protection.

Category III as defined by BakerRisk: "Non-catastrophic failure. No structural failure occurs to the specimen that prevents the specimen from providing a barrier to blast wave propagation. However, the specimen is permanently deformed and the door panel is inoperable."

Deansteel Manufacturing, Inc.
Blast Capacity Assessment of DSLB-3 Doors, Final Report

BakerRisk Project No. 01-1628-002-07
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6.0 CONCLUSIONS

BakerRisk has completed an evaluation of the Deansteel DSLB-3 door design for four door panel sizes for use in single and paired doors. P-i diagrams were produced to allow determination of panel response to any applied blast load. These P-i diagrams, along with the supporting calculations attached in Appendix C, should be adequate in proving adequate performance of the door systems as described in Section 4.0 of this report.

The door design as evaluated will provide Category III or better protection against low level blast loads commonly seen in petrochemical related projects and for commonly specified low level blast loads for anti-terrorism projects.

The table below illustrates Deansteel's Blast Resistant door models. The chart clearly lists the door opening widths & heights available and their respective static pressure.

Deansteel Model	Seated Static Pressure *	Single Door Width x Height	Pair of Doors Width x Height
DSLБ-1	Up to 1.0	4'0 x 8'0	8'0 x 8'0
DSLБ-3	1.4 & 1.8 *	4'0 x 8'0	8'0 x 8'0
DSLБ-3	1.6 & 2.1 *	4'0 x 7'0	8'0 x 7'0
DSLБ-3	2.5 *	3'0 x 8'0	6'0 x 8'0
DSLБ-3	3.1 *	3'0 x 7'0	6'0 x 7'0

* At 50% to 100% Unseated/Rebound capacity a three point lock must be used. A single point lock is acceptable when a 0% Unseated/Rebound pressure rating is specified.

Safety Compliance

Deansteel Manufacturing's Blast Resistant door & frame products were analyzed and certified by an independent laboratory. Test reports and supporting data are available upon request.

Testing Agencies

Deansteel's DSLB-1 1.0 psi door was analyzed by Architectural Testing utilizing a Linear - Elastic Static Structural method.

Deansteel's DSLB-3 1.0 to 3.1 psi doors were analyzed by Baker Engineering & Risk Consultants. BakerRisk is an internationally recognized firm that specializes in predicting, preventing, and mitigating hazards from fires, explosions, and toxic releases.

Fire Protection

Deansteel's Door & Frame assemblies are certifiable under the Underwriters Laboratories - 10b & 10c Positive Pressure Fire test.

Door Design & Frame Profile

Door designs with full glass openings are available on our DSLB-1 door and with a 10"x10" vision on our DSLB-3 doors. Frame profiles can be custom engineered to suit your architectural needs and required anchorage.