

International Materials Inc.

History of the Development and Testing to Certify *Sure-Board® Series 200B for use as an affordable BLAST/BALLISTIC AND FORCED ENTRY SHEATHING*

July 2005 Kirtland AFB, New Mexico

An article was a front page editorial in the LGSEA monthly publication authored by Mr. Russell Norris P.E. with the U.S. Department of State, referencing the use of *Sure-Board® Series 200* to control the "launch" of gypsum board debris within a structure that would certainly cause mortal injury to occupants from any unexpected blast load from outside. This particular blast test program was performed at Kirtland AFB in New Mexico under a DOS continuing *blast resistant structure* program that began after the bombing attacks at the Beirut and Kuwait embassies.

August 2005

A follow-up article in the August Structure Magazine, also authored by Mr. Norris described utilizing the same test assembly used at Kirtland AFB. The photographs from this blast test demonstrate the total destruction of the exterior sheathing and finishes even with the incorporation of a 1/4" plate welded to the exterior of the building curtain wall. There needed to be a better way to protect our US citizens from attack.

November 2005 Eglin AFB, Florida

U.S. DOS invited **Intermat** to witness this blast test at Eglin AFB in Florida to see close up the performance of our *Sure-Board® Series 200*. The test facility was designed as follows:

- 1.) *Sure-Board® Series 200* utilizing 22 gage sheet steel backing in one room.
- 2.) Several rows of CFS **Blocking** within the wall framing studs to help resist the deflection and sheeting the wall with only 5/8" gypsum drywall in the other room.

In addition to these two interior wall systems, the Team from the DOS along with the K & C Engineering team tested many other samplings in different structures as well.

The results of the two interior wall sheathings tests was obvious. The drywall would have been lethal to any occupants and the occupants in the *Sure-Board®* side would have been saved from any lethal flying debris. But even with the debris being controlled the **Blast Pressure** needed to be controlled as well. That is how we

progressed to develop our "Blast and Ballistic" ***Sure-Board® Series 200B*** for Blast and Ballistic Protection. Follow along and I think you'll see what I mean.

May 2006 UL 752 Ballistic

Another front page article in the May 2006 LGSEA monthly publication explained the value of ***Sure-Board® Series 200B*** combined with granular fill can resist the penetration of ballistic projectiles and how it will make the construction of the typical safe room or secure facility easy and economical to build. We developed our revolutionary and patented Kevlar® Ballistic Bag System (**BBS®**) approach that is very easy to use.

Important Fact: Our BBS® Kevlar bag system performs flawlessly for UL752 Standards for Level 3 utilizing a 1 1/4" Rigid Foam filler and may be increased to the Level 8 by just the addition of a dry granular fill. The cost of the system materials is the same for both with the exception of the fill for Level 4 thru 8.

July 2007 Preparation for Blast Test Kirtland AFB

We were invited by the DOS to participate in their Blast test at Kirtland AFB in July 2007. We designed and built 3 wall panels utilizing our new Series 200B Panels on both wall surfaces along with 1/4" granite tiles attached to the exterior with Laticrete® adhesive and grout. Two of the walls were tested empty and one was filled to test the difference under very large blast loads. We performed beyond our expectations. We realized at that time that the GSA standard for protection from domestic blast loads were a very simple task when utilizing our ***Sure-Board® Series 200B System***. Actual before and after photos are available upon request.

September 2007 EMRTC Socorro, New Mexico

We were invited to participate in the Free Standing Building Test with the DOS at EMRTC facility in New Mexico. We supplied ***Sure-Board® Series 200B*** panels and they were installed by the contractor on the inside of the potential *second* wall to be blast tested, if the building survived the first blast. The AVI high speed digital film of the tests that we have available show the results. ***Sure-Board® Series 200B*** was a success.

January 2009

Another follow up article was written by Swartz and Kulpa Engineering and Intermat Inc. that described the results of our testing that was performed at Kirtland AFB, New Mexico test with the DOS.

February 2009

An additional Press Release was written by Laticrete to emphasize the advantages using the *Sure-Board® Series 200B* Blast panels along with their Global Network of approved waterproof and adhesive products together create a complete waterproof blast wall finish.

February 2010 Finalized UL752 Testing and Passed Level 3/8

The Research and Development department of **Intermat** and **Cemco** have performing ongoing UL 752 approved Ballistic Testing for many years. We believe that we have developed the best and most importantly Affordable blast protection system for all your Ballistic Resistance needs. Let *Sure-Board® Series 200B* be the best choice for your design team and All of your New and Retrofit Structures.

March 2011

We completed our Blast Simulator Tests with the University of California, San Diego in conjunction with PTG-Protective Technologies Group to demonstrate the use of our *Sure-Board® Series 200B* panels with generic 16 gage CFS or expanded foam insulated wall assemblies that will withstand the current GSA, U.S. DOS and U.S. Army Corp required standards for all levels of Blast Resistance for new and retrofit building construction Today.

February 2012

We completed an additional Blast Test Program using the Blast Simulator at UCSD in conjunction with the U.S. Army and SGH Engineering. We tested many wall assemblies to compare the improved performance when using our *Sure-Board® Series 200B* panels attached to High Strength Vanadium Steel Framing Materials.

June 2012

We supplied three wall assemblies to the U.S. Air Force at the Tyndall AFRL Blast Facility in Florida to validate the UCSD Blast Simulator. The Test program yielded many significant results, as well as the validation of the earlier results at the UCSD Simulator. After the successful AFRL Blast test program, we launched our new research and development program referred to as the **BRM** (Blast Resistant Module) Program. These Modular Units were developed for Military and Commercial use to protect our troops and employees from Natural as well as unexpected Terrorist blast events. **Important Note:** These prefabricated units will also fit the Safe Room needs for the Tornado Alley Residents. They are a very cost effective solution to insure life protection in our Public and Charter Schools for our Children in these very dangerous geographical locations.

June 2012 Ballistic Level 8 Testing

We also tested our *Sure-Board*® *Series 200B* Ballistic Panels at Tyndall AFB Ballistic Laboratory with 50 caliber *fragmented rounds* for Military Standard Level 8. Our Ballistic Panels and **BBS**® System demonstrated exceptional results. This test program moved our team to the development of our **UL 752 Level 10** (50 Caliber) Protection System later in September, 2012.

October 2012

We continued with our **UL 752 Level 10** (50 Caliber) Program and passed not only the single shot test required under UL 752. We also passed this level with 14 shots in the same 24” x 24” Ballistic Test Panel to demonstrate how effective our system is for our customers. Please contact Technical Support with any questions and requests for copies of our test program.

November 2012

We built and tested our New **BRM** units at the ARA/ RTC Blast Facility in Pecos, Texas. Our phase I units were exposed to 9,500# Anfo blast pressures equivalent to 8,000 lbs. of TNT at 150 foot setback.

May 2013

We continued our BRM testing with expanded instrumentation in the first week of May, 2013. We instrumented our **BRM** units with Phantom High Speed Video Cameras and all standard exterior accelerometers along with interior pressure measuring equipment to validate life safety within our lightweight CFS modular units. Our Test report and Stellar Results will be available upon request at the end of **June of 2013**.

Completed October 2014

We successfully completed required Ballistic as well as the required 1 hour forced entry testing for the "Forced Entry of Structural Systems Standards" per U.S. Department of State, Bureau of Diplomatic Security, SD-STD-01.01, Revision G (Amended) April 30, 1993, at the OBL Test Facility in Salem, Oregon. This certified the use of our panels in High Security Private Sector/Military and Law Enforcement Facilities for Blast/Ballistic and Forced Entry Protection at a very affordable cost.

Please stay connected with Sure-Board® and our Future Products Line through our website **www.blastballistic.com** together with our technical staff at our email address: **support@sureboard.com** for our NEW and UPDATED certifications for your specific needs.

Current Projects Specifying Sure-Board® Blast/Ballistic Protection

Our Sure-Board® Series 200B Panels have been utilized for **Blast Protection** at the newly reconstructed U.S. Border Crossing at San Ysidro, California. Other projects utilizing *Sure-Board® Series 200B* Panels and **BBS®** system for **Ballistic Protection** are the Long Beach California Port Authority Headquarters in Long Beach, a new Casino Cash Count Room in Albuquerque, New Mexico along with the Daniel Moynihan Courthouse remodel in New York City. Let us help you with your needs today.

Your may also contact our Research / Development Department with any of your specific design questions at our Technical Support Line Toll free : (866) 469-7432

Thank You for Choosing Sure-Board® Today for your
Buildings of Tomorrow