

**Standard from CSI Part Section Format.**

**05160 For Metal Framing  
09226 For Gypsum Sheathing**

**Specifications for SURE-BOARD® Series 200B Panel for Blast/Ballistic Resistance**

**SURE-BOARD® Series 200B is available in the following Specific Types:**

- A.) \*200BB-Ballistic Resistant Panels/Ballistic Kevlar Bag BBS®**
- B.) 200BI-Interior Blast Resistant Panels**
- C.) 200BX-Exterior Blast Resistant Panels**

**PART 1.0 GENERAL**

**1.01 WORK INCLUDED**

**A. Inclusion:**

1. The extent of SURE-BOARD® Series 200B panel is shown on the drawings, including basic layout, gypsum, non-combustible or combustible sheathing materials to be laminated to our steel sheet, fastener type, spacing for attachment of Series 200B Sure-Board® that may be required to resist Blast/Ballistic Attack for interior and exterior use.

**1.02 RELATED WORK SPECIFIED ELSEWHERE.**

**A. Related Sections:**

1. Structural Steel Framing: Section 05400.
2. Gypsum Board: Section 09226.

**1.03 CODE COMPLIANCE**

**A. Codes and standards:**

1. AISI, North American Specifications for the Design of Cold-Formed Steel Structural Members, 2007 Edition.
2. 2009 IBC/2009 IRC/ASCE/SEI 7-05/2010 CBC/2011 LABC.
3. ASTM, designations as specified.
4. IAPMO-ES Evaluation Report Number ER-0126 for Steel framing.
5. UL-752 Equivalent Ballistic Standards.
6. UCSD Blast Center Approval (Dated March 22, 2011)
7. DOS/GSA Blast Resistant Standards.

**1.04 QUALITY ASSURANCE**

**A. Annually Inspected/Approved Manufacturing:**

1. Sure-Board® Panel IAPMO Quality Assurance Manual.

## **1.05 PERFORMANCE REQUIREMENTS**

### **A. Blast/Ballistic Wall Design:**

1. The gage for framing and required attachment of the Sure-Board® Series 200B panel must be designed by the EOR .
2. Alternate methods of attachment or framing other than those tested for Sure-Board® Series 200B Panels may be acceptable provided the changes are approved by the Designers and EOR and Accepted on Stamped Construction Drawings.
3. No other similar sheathing materials, using the Sure-Board® stated blast/ballistic resistant capacities, testing performance or methods of attachment to framing studs/track other than those actually tested and reported in section 1.03 under Code Compliant approvals for Sure-Board® Series 200B products can be acceptable as an equal.

### **B. Fire Rated Use:**

1. Sure-Board® Series 200B Sure-Board® panels have been fire tested by ITS Intertek Testing Laboratory to be used on 1 and 2 hour fire rated, load bearing and non-load bearing assemblies for interior and exterior use.

## **1.06 SUBMITTALS**

### **A. Shop drawings:**

1. Blast/Ballistic wall layout, framing and supports, with dimensions and sections.
2. Blast/Ballistic tables using Sure-Board® Series 200B panels contain gage of steel sheet, type of sheathing, fastener size/type, stud gage and size with required on center spacing of each for all Blast/Ballistic Resistant Wall on plans.
3. Details of proprietary or non-proprietary components will also be included in plans.

## **1.07 PRODUCT DELIVERY, STORAGE AND HANDLING**

### **A. Sure-Board® Series 200B panel:**

1. All Sure-Board® Series 200B panels shall be packaged and handled to prevent damage during shipping and unloading.
2. Cover Sure-Board® Series 200B panels with waterproof material and ventilate to avoid condensation before installation.
3. Store Sure-Board® Series 200B off ground with one end elevated for moisture drainage.
4. Do not bend sheet steel or break/mar gypsum board sheet while handling. If damage to panel should occur, repair of panel may be approved by manufacturer.

## **PART 2.0 PRODUCTS**

### **2.01 MATERIALS, FASTENERS, ADHESIVE, KEVLAR BAGS AND FINISHED PANELS**

#### **A. Galvanized Steel:**

1. **200BI** - No.22 gage 0.027 inch (0.686mm) base-metal thickness minimum per ASTM A 653 CS Grade 33/hot dipped galvanized G40 minimum per ASTM A 924.
2. **200BB/200BX** – No.14 gage 0.068 inch (1.732mm) base metal thickness minimum per ASTM A 653 SS Grade 50/hot dipped galvanized G60 minimum per ASTM A 924.

## **B. Wallboard Compliance:**

1. Wallboard complies with ASTM C 1369, C 1177 and C 1278.

## **C. Fasteners:**

1. The fasteners used to fasten the Sure-Board® **Series 200BB/200BI** Panels to the steel framing are self-drilling/self-tapping pilot point bugle head screws, #8 minimum diameter 0.138-inch (3.5 mm), with a minimum 0.3145-inch (8.0 mm) head diameter, 1.5-inch (31.7 mm) long, and a **3/8-inch minimum drill tip**, complying with SAE J78 and ASTM C 954. ER 5280 by John Grabber & Assoc. or equal. **Series 200BX** Panels when fastened to steel framing are attached with #12 X 1 1/2" minimum self-Drilling / self-tapping bugle-head screws.

## **D. Adhesives:**

1. The non-structural adhesive used to attach the steel to the non-structural sheathing shall be a water soluble, non-combustible type adhesive.

## **E. Kevlar® Bags within the BBS® Ballistic Bag System:**

1. Tailored Kevlar® Ballistic Bags® are measured and manufactured to be attached within each stud cavity utilizing **BGF Industries Model #5745 Fabric** (Data Sheet available at BGF website: [www.bgf.com](http://www.bgf.com)) for Ballistic Resistance using the UL 752 Ballistic Standards and tested for Level 3 to Level 8. Quad layered Kevlar® bag system is filled with minimum 2 inch rigid foam for insulation and to retain shape for Level 3 and Ballistic Granular Fill is required for Level 8 Resistance. Design of all Ballistic Walls utilizing the BBS® system is the responsibility of the EOR. The required Sure-Board® Series 200B panels must be as described below in Section 2.01 E as **200BB** and must be installed on each side of all ballistic protected walls up to the required ballistic protected height.

## **E. Finished Sure-Board® Sheet Steel Panels: A) 200BB-(2.) B) 200BI-(1.) C) 200BX-(2.)**

1. **B)** The sheet steel is No. 22 gage /0.027 inch (0.686 mm) minimum base-metal thickness complying with ASTM A 653 CS, Grade 33, and is provided with a G40 minimum hot-dipped galvanized coating conforming to ASTM A 924.
2. **A)/C)** The sheet steel is No.14 gage 0.068 inch (1.732mm) base metal thickness Minimum per ASTM A 653 SS Grade 50 and is provided with a G60 minimum hot dipped galvanized coating conforming to ASTM A 924. Both steel sheets are available in width of 48 inches (1219 mm) and lengths of 8 feet (2438 mm).

## **F. Finished Sure-Board® Panels: A) 200BB B) 200BI C) 200BX**

1. Sure-Board® Series 200B Panels:

Each panel consist of 1/2, 5/8 or 3/4 inch (12.7, 15.9 or 19.1 mm) thick square or tapered-edge Type X or Type C Fire Rated gypsum wallboard or water resistant core sheathing complying with ASTM C 1369 as well as glassmat gypsum substrate complying with ASTM C 1177 and fiber reinforced gypsum panels complying with ASTM C 1278, laminated with water soluble adhesive to steel sheet. **B)**-The steel sheet Is No. 22 gage /0.027 inch (0.686 mm) minimum base-metal thickness, complying with ASTM A 653 CS, Grade 33, and is provided with G40 minimum hot-dipped galvanized coating conforming with ASTM A 924. **A)/C)**-The sheet steel is No.14 gage 0.068 inch (1.732mm) base metal thickness minimum per ASTM A 653 SS Grade 50 and is provided with a G60 minimum hot dipped galvanized coating conforming to ASTM A

924. Both finished panels are available in width of 48 inches (1219 mm) and standard lengths of 8 feet (2438 mm).

## **PART 3.0 INSTALLATION/CUTTING/REPAIRING SURE-BOARD®**

### **3.01 Installation and Cutting Sure-Board® Series 200B**

#### **A. Condition of Material Pre-Installation Sure-Board® Series 200B**

1. Always install Sure-Board® Series 200B when conditions and material are dry. If the Sure-Board® Series 200B panels are not covered or stored in a dry location, and should get wet due to inclement weather conditions, allow them to air dry before installing. We suggest, as with all gypsum products, you keep materials dry at all times, before installation. All gypsum panels are different in their physical composition and are manufactured for specific uses. Follow all appropriate manufacturers recommendations for storage, handling and installation of your Sure-Board®. The steel sheet is always attached against the framing studs to accomplish blast/ballistic resistance.

#### **A. Tools, Fasteners and Application for installing Sure-Board® Series 200B Panels**

1. Installing Sure-Board® Series 200B only requires the use of standard electric gypsum screw guns, if you intend to use hand fed screws. If you choose to use a collated screw gun, which can be very cost effective, due to the large quantity of fasteners required for some Sure-Board® panel installation, that is acceptable as well. **Note:** We have noticed over the years, that when contractors are field installing Sure-Board®, instead of building walls using panelization or a prefabricated system in a factory controlled environment, the Sure-Board® panels are commonly cut and tacked in place by the more experienced or journeyman installers, and then the actual “screwing off” process is commonly performed by an apprentice worker at a lower cost per hour to the contractor. With the collated screw gun application, this method can be very cost effective.
2. One very important requirement when installing Sure-Board® Series 200B, is to install the screws into the studs at the approved spacing, per your stamped construction drawings, and use our suggested #8 or #12 diameter screw which are readily available, in the required length (per your specific conditions and approved plans). **The screws must have a longer drill tip (minimum 3/8” long), to avoid the “jacking” of the sheet steel from the stud and track during installation.** The longer drill tip screws and a list of many other important tools and fasteners that are suggested for use with Sure-Board® may be attached to this installation letter. If not attached, they are also available on our website at [www.sureboard.com](http://www.sureboard.com) and at [www.sureboardtools.com](http://www.sureboardtools.com). The depth of the head of the bugle head screws into the gypsum, that occurs during the installation of the fasteners, is adjustable on all standard gypsum screw guns used today. We suggest that the fastener heads be installed flush to the panel face material or just below the surface at the field and perimeter edges, and a minimum of 3/8” setback from all edges of the panel. Sometimes this edge spacing will vary, but as long as the majority of the screws are within 1/4” from the edge of the panel, the structural integrity is not compromised. Unlike wood based products (plywood and OSB), Sure-Board® may have screws added where necessary, if some of the fasteners are over-screwed below the surface of the panel or even have some fasteners installed closer than the recommended 3/8” to center of fastener from the perimeter

edge, without compromising the structural integrity of the panel. Note: If unintentional over-screwing occurs in excess as defined by EOR, additional screws between the existing screws may be added, with no adverse affect to the structural performance of the Sure-Board® panel.

## **B. Repairs on Field Damaged Gypsum on Sure-Board® Series 200B Panels**

1. There are isolated situations where the gypsum panel is damaged during construction by field staff, weather conditions, etc. In those cases, the repair of the damaged Sure-Board® panels may be completed using the following method: **1.)** Identify the damaged piece of gypsum. **2.)** Score the gypsum panel with a drywall knife or router (set to depth of gypsum sheet). **3.)** Remove existing bugle-head fasteners in the damaged portion and re-fasten the sheet steel at the prescribed spacing with a minimum #8 x 3/4” self tapping pan-head fasteners into **new** holes in the Sure-Board® sheet steel and the studs. **4.)** After completing this operation, the Sure-Board® panel is secure. Reinstall gypsum board patch and screw off only as necessary to accommodate the taping process. The gypsum patch need only be screwed to the sheet steel of the Sure-Board® to accommodate this process.

### **\*Important Variation when Installing Panels for Blast and Ballistic “Combined” Walls Construction:**

When Series **200BB** Panels are used for *Blast and Ballistic* Protection, the first row of Panels on Exterior and Interior sides of the Wall, from the **Floor** level up (On All Required Levels), typically 4’ wide x 8’ long Panels, must be installed with the long axis in the **Vertical** orientation **only**, since Interior Series **200BB** and the Exterior Panels Series **200BX** are both 14 gage 0.068 inch (1.732mm) base metal thickness minimum steel sheet. Because the panels have an additional steel thickness there is no tab on the Interior Panel Series **200BI** on the long axis edge. If a tab were added, the two steel thicknesses may be troublesome, if installed horizontally and fasten to the upper Panels at these horizontal joints. This **Recommended Method** of Installation and Attachment using our Sure-Board® Series **200BI** Panels from all tested Blast Resistant Walls is manufactured using 22 gage 0.027 inch (0.686mm) base-metal thickness minimum steel sheet, and is referenced in our literature for Blast Resistance only. This vertical installation of the **200BB** Panels will eliminate the need for additional blocking or backing to be added to the wall up to the 8 foot level and will reduce unwanted bumps in the finish wall surface. Panels above that level may be installed horizontally if desirable to do so by the Contractor with no additional blocking or backing needs to be added to wall for *Blast* or *Ballistic* Protection using Sure-Board® Panels.

## **PART 4.0 FIRE RATED SURE-BOARD® ASSEMBLIES**

### **4.01 1 and 2-Hour Firewall Conditions and Sure-Board® Series 200B Panels**

#### **A. Important Cost Saving Application**

1. (Single and Double layer 2-Hour condition) You may take advantage of the tested application of the 2<sup>nd</sup> layer of gypsum in a 2-hour firewall condition, where Sure-Board® Series 200B panels are the first layer. After inspection of the shear wall attachment, you may screw the 2<sup>nd</sup> layer of gypsum into the 22 or 14 gage sheet steel. This is considerably easier than attaching the 2<sup>nd</sup> layer of gypsum to the heavier gage studs. When using this method, the two important requirements are to stagger the joints of each layer of gypsum, and use a minimum #6 x 2” laminating screw at the required spacing into the 22 or #8 x 2” self tapping screw into the 14 gage sheet steel. This will save the contractor many man hours for the typical 2-hour firewall assembly or any double layer gypsum wall assembly. Note: If there is not, however, a first layer of Sure-Board® on the 1 and 2-hour assembly, unfortunately you have no other choice, you must screw into the studs on each layer.

## **PART 5.0 RECOMMENDED TOOLS FOR SURE-BOARD® SERIES 200B**

### **5.01 Recommended Tools and Cutting of Sure-Board® Series 200B**

## **A. Cutting Sure-Board® is Simple**

1. Cutting Sure-Board® Series 200B is achieved very efficiently with the use of a ferrous metal cutting blade in a typical “sidewinder” type skilsaw. There are also several specifically designed metal cutting saws with a selection of metal cutting blades, described on our Sure-Board® Tools list, for cutting up to 3/8” thick steel plate. They significantly reduce the metal fragments exiting from the guard area with their revolutionary design, keeping in mind that all metal cutting tools require the use of eye and hand protection for the Safety of the operator. Refer to our website for our available list for recommended tools, blades and fasteners used today to make the installation of Sure-Board® efficient and ultimately more profitable for the contractor.

### **SAFETY FIRST**

**Be sure to wear proper eye and hand protection when cutting the Sure-Board® Series 200B Panels. Series 200B is best cut from the backside. Please contact manufacturer with any questions you might have. Contact Technical Support at (866) 469-7432 or send email to: [support@sureboard.com](mailto:support@sureboard.com)**

#### **Type of Cut Required for Sure-Board® Series 200B Panels:**

##### **Full length or width cutting:**

- 1.) Set blade depth to maximum 1/8” depth and score steel only.
- 2.) Cut steel sheet for required length or width with skilsaw.
- 3.) Score gypsum with razor knife, bend over to score paper on face side.
- 4.) Snap cut-off piece and clean up edge with rasp if necessary.
- 5.) Hang Sure-Board® as you would regular gypsum and screw off.

##### **Partial length or width, outlets and opening cuts:**

- 1.) Set blade depth to maximum 1/8” depth and score steel only.
- 2.) Cut steel where necessary, minimal over-cutting may be required to allow for routing and at corners.
- 3.) Peel off steel in required areas and hang Sure-Board® Series 200B panel as you would a regular gypsum panel, and tack to studs.
- 4.) Use router to cut off unwanted gypsum at opening or outlet, and complete the screwing of the Sure-Board® at the prescribed spacing.

**All cutting of Sure-Board® may be viewed on our Website: [www.sureboard.com](http://www.sureboard.com) or we would be pleased to send you a copy of our installation video upon request.**

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