

Standard from CSI Part Section Format.

- 06 21 00 For Structural Panels**
- 05 16 00 For Metal Framing**
- 06 16 23 Subflooring**
- 06 16 63 Cementitious Sheathing**
- 07 41 43 Composite Roof Panels**
- 07 44 33 Metal faced Panels**

Specifications for SURE-BOARD® Series 200/200W/200S Panel for shear and sheathing

PART 1.0 GENERAL

1.01 WORK INCLUDED

A. Inclusion:

1. The extent of SURE-BOARD® shear panel/sheathing 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 200/200W** and **Series 200S** Sure-Board® that may be required for interior and exterior use.

1.02 RELATED WORK SPECIFIED ELSEWHERE.

A. Related Sections:

1. Structural Steel Framing: Section 05400.
2. Wood framing: Section 06000.
3. Rigid insulation: Section 07240.
4. Sheet Metal: Section 07600.
5. Acoustical Batts: Section 07500.
6. 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, 2010 Edition.
2. 2009/2012/2015/2018 **IBC**/2009/2012/2015/2018 **IRC**/ASCE/SEI 7/2013/2016/2019 **CBC** 2014/2017/2020 **LABC**.
3. ASTM, designations as specified.
4. IAPMO-ES Evaluation Report Number ER-0126 for Steel and Wood framing
5. MEA New York City Building Department
6. Florida State/Miami-Dade Building Department and Codes

1.04 QUALITY ASSURANCE

A. Annually Inspected/Approved Manufacturing:

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

1.05 PERFORMANCE REQUIREMENTS

A. Shear wall shear capacity:

1. The gage for framing and attachment of the Sure-Board® Shear panel is designed by the EOR (engineer of record) to provide a panel shear capacity in accordance with IAPMO-ES evaluation report number ER-0126/DSA IR A-5/Los Angeles City Research Reports 25461/Miami-Dade/City of New York and State of Florida. Whichever should apply to the specific project and Geographical or Seismic Zone or Wind Zone location.

2. No other similar materials, stated load capacities or methods of attachment to framing studs/track/plates other than those stated on these approvals for Sure-Board® products will be acceptable as an equal.

B. Fire Rated Use:

1. Sure-Board® **Series 200/200W and 200S** Sure-Board® panels have been fire tested/reported by ITS Intertek Testing Laboratories and Fire-Stance certified to be used on 1 and 2 hour fire rated, load bearing and non-load bearing CFS/Wood Framed assemblies for interior and exterior use.

1.06 SUBMITTALS

A. Shop drawings:

1. Shear wall layout, framing and supports, with dimensions and sections.
2. Shear wall/Diaphragm load tables using Sure-Board® **Series 200/200W/200S** panels, fastener size/type and spacing will be attached to designed shear walls that define the size of required collector posts for shear, along with required wall framing hardware, size or gage and on center stud/joist spacing for Vertical/Diaphragm and Concentrated loads as well as lateral load resistance that have been engineered.
3. Details of proprietary or non-proprietary components if included.

1.07 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Sure-Board® panel:

1. All Sure-Board® panels shall be packaged and handled to prevent damage during shipping and unloading.
2. Cover Sure-Board® panels with waterproof material and ventilate to avoid condensation before installation.
3. Store Sure-Board® 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 AND FINISHED PANELS

A. Galvanized Steel:

1. 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.

B. Wallboard/Fiber Cement Sheathing Compliance:

1. Wallboard complies with ASTM C 1325, C 1369, C 1177, C 1278, C 1288, C 1185 and C 1186 including MgO/Fiber Cement Sheathing.

C. Fasteners:

1. The fasteners used to fasten the Sure-Board® **Series 200/200S** Structural Panels to the steel framing are self-drilling/self-tapping pilot point flat 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, ASTM C 1513 and ASTM C 954. ESR-1271 by John Grabber & Assoc. or equal. **Series 200S** should use #8 X 1-5/8" lg. Winged Driller Grabber Super Drive LOX drive screws or equal. See ICC-ES Report ESR-1271. **Series 200W** Structural Panels when fastened to steel framing are attached with #10 X 3/4" minimum self-drilling/self-tapping pan-head screws. For wood framing the Sure-Board® **Series 200** Structural Panels are fastened with #8 X 2" minimum wood screws. Sure-Board® **Series 200W** Structural Panels when attached to wood framing are fastened with 10d X 1 1/4" minimum smooth plywood nails.

D. Adhesives:

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

E. Finished Sure-Board® Sheet Steel Panels:

1. 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. Available width of 48 inches (1219 mm) and lengths of 4feet through 12 feet (2438 through 3658 mm). Note: Special cut lengths are available upon request.

F. Finished Sure-Board® Panels:

1. Sure-Board® **Series 200** Structural 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, fiber reinforced cement board complying with ASTM C 1325 as well as glass mat 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. 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. Available width of 48 inches (1219 mm) and standard lengths of 8 through 12 feet (2438 through 3658 mm).
2. Sure-Board® **Series 200W** Structural Panels: Each panel consist of a minimum 1/8 inch (3.18 mm) thick sheet of medium density fiberboard or non-combustible substrate, laminated with water based adhesive to sheet steel. **Series 200S** Sheathing Panels: Each panel consists of a minimum .46 inch thick non combustible sheathing laminated with water based adhesive to steel sheet. The sheet steel is No. 20 gage/ 0.33 inch (0.838 mm) minimum base metal thickness for Floor Sheathing and No. 20 gage /0.033 inch (0.838 mm) minimum base metal thickness for Roof Sheathing complying with ASTM A 653 CS, Grade 33, and provided with a G40 minimum hot-dipped galvanized coating conforming to ASTM A 924. Available width of 48 inches (1219 mm) and standard lengths of 4 feet through 4 feet (1219 mm). Note: Custom lengths of 8 through 12 feet (2438 through 3658 mm) available on request.

Part 3.0 INSTALLATION/FASTENERS/CUTTING/REPAIRING SURE-BOARD®

3.01 Installation and Cutting Sure-Board® Series 200/200W/200S

A. Condition of Material Pre-Installation Sure-Board® Series 200/200W and 200S

1. Always install Sure-Board® Series 200 when conditions and material are dry. If the Sure-Board® Series 200 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 resistance capacities stated in Manufacturers tables for lateral force resistance.

B. Fasteners and Application for installing Sure-Board® Series 200/200W and 200S

1. Installing Sure-Board® Series 200 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® panels, 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 200/200W and 200S**, is to install the screws into the studs/joist or rafters at the approved spacing, per your stamped construction drawings using our suggested #8 minimum diameter screw which are readily available, in the required length (per your specific conditions and approved plans).

Important Note: The spacing of the Floor Joist (FJ) or the Roof Rafters (RR) have maximum spacing requirements. 1.) The Series **200S-F** ¾” floor sheathing may be installed on FJ/RR at 24” O.C. **maximum** spacing. **Exception:** Where FJ do not receive topping such as Gypcrete/Level Rock, the FJ should be installed at 16” O.C. to accommodate all soft and rigid floor materials 2.) The Series **200S-P** ½” roof sheathing must be installed on RR at 16” O.C. **maximum** spacing. *All Series 200S Panels should be installed with staggered joints in each row on Floors and Roofs, as is the practice currently used with Wood Panels. Exceptions at the end of the row at the overhang or rim joist still apply. Occasionally minor cracking may occur in Fiber Cement Sheathing due to handling or excessive weather conditions during assembly and construction. These cracks do not cause any adverse condition to be of concern.*

The Series **200** 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 and at 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 ¼” 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.

C. Installation of Series 200/200W Panels in Vertical and Horizontal Orientation

Recommended Installation of Structural Strapping on the Surface of the Sure-Board®

Series 200/200W Panels instead of beneath the Sure-Board® Steel Sheet

1. For installation of Sure-Board® **Series 200 and 200W** in the Perpendicular or Horizontal Orientation to the framing you **must** include either blocking or a minimum 1 ½ inch wide flat strapping that is the same gage as the framing materials field studs and track or field studs if heavier track material is used, at all horizontal or vertical joints of all panels. **Note: When Panels are installed either in the Vertical or Horizontal Orientation to the framing studs, there is No Structural Requirement that the “Butt End” joints of the Sure-Board® Panels Must be Staggered in each Adjoining row to maintain Stated Structural Capacities in our Evaluation Report. The Straight Line Installed Joint of these stacked Panels will allow for a much more efficient framing and finishing process.** There are also specific conditions where the engineer may require nail or screw attached surface applied vertical floor to floor strapping. We recommend that those vertical straps be applied **over** the Sure-Board® **Series 200** sheet steel, instead of behind the Sure-Board® directly to the studs. The installation of the straps and fasteners under the Sure-Board® **Series 200** panels may cause unsightly bulges in the finish surface. Note: The standard in the industry for wood construction is for the straps to be applied over the wood shear panels. This method allows the inspector to see the fasteners into the strap during the required inspections. With Sure-Board®, it is preferable for the Sure-Board® sheet steel to be installed flush to the stud surface whenever possible to allow for an even and undisturbed finish to the wall. Installing the straps over the Sure-Board® **Series 200** steel panels may be accomplished by first hanging and fastening the Sure-Board® **Series 200** panels to the studs. After installation is complete, through the use of a drywall knife or router, score the drywall and remove the screws in the Sure-Board® panels as necessary to allow for the removal of the unwanted gypsum where the strap is to be installed. Attach the strap over the Sure-Board® sheet steel and re-attach the sheet steel of the Sure-Board® panel into new holes with the appropriate self tapping **pan head** fasteners into the provided studs or backing through the Sure-Board® sheet steel. Now the Sure-Board® panel is ready for inspection. This method allows the Sure-Board® **Series 200** panel to be attached flush and the strap to be recessed into the gypsum panel and attached directly to the stud flange surface with no visual effect to the finish. After the inspection, the gypsum patch is easily installed and finished. (**Note:** The gypsum sheet is not a structural component, once the Sure-Board® **Series 200** panel has been installed.) When using **Series 200W** the strapping may be applied over the substrate sheathing without causing unwanted surface irregularities any different than wood panels. The MDF Sheathing is not a structural component. (**Note:** If during installation and fastening of the panels to the Wood or CFS Framed walls, the nail heads or screw heads should be embedded into the MDF sheathing, below the surface of the MDF “deeper” than we recommend in our literature, will not adversely affect the structural performance of the Sure-Board® **Series 200W** Panels.)

2. There are also situations where the structural engineers use horizontal strapping to tie walls together and transfer loads. When this occurs, the same method of gypsum removal is acceptable. In certain situations, the Sure-Board® 22 gage (.027) sheet steel panel may be adequate for the horizontal drag attachment alone. In that case no strapping will be required at all. These conditions are ultimately the decision of the engineer of record and the existing governing agencies.
3. Installation of the **Series 200S** sheathing is intended to have the extended steel tab projected toward the next row of sheathing and covered and used as a support member for the sheathing material between the floor joists and roof rafters to eliminate the need for additional blocking or backing. This method was demonstrated as very effective in testing when screwed into at each horizontal row and should be the standard installation procedure. If you have any installation or cutting questions please contact us at the Sure-Board® Technical Support Hotline in California at our toll free number: (866) 469-7432 or email at: support@sureboard.com.

D. Repairs on Field Damaged Gypsum on Sure-Board® Series 200

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 ¾” 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.

PART 4.0 FIRE RATED SURE-BOARD® ASSEMBLIES

4.01 1 and 2-Hour Firewall Conditions and Sure-Board® Series 200/200W

A. Important Cost Saving Application

1. (Double layer 2-Hour condition) You may take advantage of the tested application of the 2nd layer of gypsum in a 2-hour firewall condition, where Sure-Board® **Series 200 or 200W** are the first layer. After inspection of the shear wall attachment, you may screw the 2nd layer of gypsum into the 22 gage sheet steel. This is considerably easier than attaching the 2nd 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 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 200/200W

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

A. Cutting Sure-Board® is Simple

1. Cutting Sure-Board® **Series 200/200W and 200S** 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.

Type of Cut Required for Sure-Board® Series 200/200S Panels:

A. Series 200 Full length or width cutting:

1. Set blade depth to maximum 1/4” depth and cut 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.
6. Always wear Dust and Eye Protection when Cutting all Sure-Board® Products.

B. Series 200/200S Partial length or width, outlets and opening cuts:

1. **Series 200** - Set blade depth to maximum 1/4” depth and cut steel only.
2. **Series 200 only**-Cut steel where necessary, minimal over cutting may be required to allow for routing gypsum at the corners.
3. **Series 200 only**-Peel off steel in required areas and hang Sure-Board® **Series 200** panel as you would a regular gypsum panel, and tack to studs.
4. **Series 200 only**-Use router to cut off unwanted gypsum at opening or outlet, and complete the screwing of the Sure-Board® at the prescribed spacing.
5. **Series 200S** – Cut through Steel sheet and MgO Fiber Cement at the same time from **Top Side** of Panel while wearing dust mask and safety glasses.

Cutting: Sure-Board® Series 200W Panels:

C. All Types of Cuts on Sure-Board® Series 200W Panels:

1. Cutting Sure-Board® Series 200W should be cut from the front side of the panel, through non-structural sheathing and steel sheet at the same time using the recommended ferrous metal blades. Process is typical for cutting plywood/OSB panels with only a different type of blade installed in any typical electric circular saw.

SAFETY FIRST

Be sure to wear proper eye, dust and hand protection when cutting the Sure-Board® Series 200, 200W and 200S Panels.

Sure-Board® Series 200 is best cut from the steel backside, while our Series 200W/200S are best cut from the MDF/MgO Fiber Cement from frontside.

Please contact manufacturer with any questions you might have.

**Contact Technical Support at (866) 469-7432 or send email to:
support@sureboard.com**

All cutting of Sure-Board® may be viewed on our Website:

**www.sureboard.com or we would be pleased to send you a copy
of our installation video upon request.**

Technical Support Department (866) 469-7432