



SURE-BOARD®



SURE-BOARD®

...FOR SHEAR
FLOORS
BLAST
BALLISTIC

MARINO ★ **WARE**®

www.MarinoWARE.com



Improve the quality of your next framing project with **Sure-Board®**

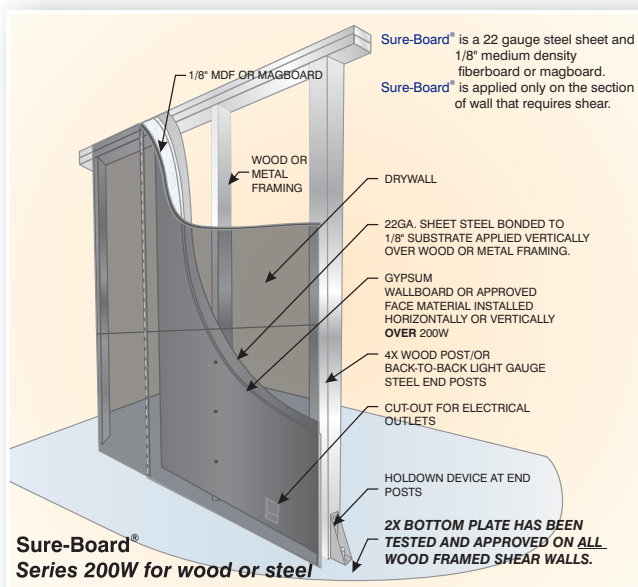
Sure-Board® Series 200

The Sure-Board® Series 200 Structural Shear Panels are Patented, IAPMO, ICC, DSA and City of Los Angeles approved products. The Series 200 is manufactured with a single 22 gage galvanized sheet of steel laminated to any manufactured version of gypsum panel with a water based EVA adhesive to create an incredibly STRONG shear panel that is 1 and 2 hour fire approved. Series 200W is also a Structural Shear Panel with one Dynamic difference. Since 200W is laminated to 1/8" MDF (medium density fiberboard) the attachment can be with nails or screws. This allows 200W to be attached to WOOD or STEEL framing members with exceptional results. 200W is used as a substrate shear panel and can be installed in the field or in a panelized process, saving even more time in the field. And as we all agree, TIME is MONEY.

Replace your Present Shear Panels with Sure-Board® Today

The use of cross bracing, brace frames and plywood sheathing are the commonly used methods of our time. For the first time you can reduce your INSTALLED COSTS relating to lateral shear by as much as 30%. Don't hesitate, you need to make the change TODAY.

The revolutionary **Sure-Board®** improves quality and successfully eliminates shear wall problems often encountered in the framing and construction process.



Sure-Board® 200 and 200W require no additional furring of the interior and exterior surfaces. The Series 200W when used as shear panels on Wood framing, require only a 1 1/2" thick bottom plate per the tested and approved assemblies. This item alone reduces the cost of cutting all of the studs and posts and reduces the labor time of framing on the first floor shear walls.



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REVOLUTIONARY "SURE-BOARD"® IMPROVES THE QUALITY AND ELIMINATES SHEAR WALL PROBLEMS IN FRAMING AND CONSTRUCTION

SUGGESTED COMMERCIAL APPLICATIONS, LOW RISE AND MIX USE CONSTRUCTION:

- WIND AND SEISMIC DESIGN
- 1-HOUR & 2-HOUR FIRE RESISTANT ASSEMBLY
- HIGH TRAFFIC AREAS
- SECURITY
- NON-COMBUSTIBLE CONSTRUCTION
- BACKING (Attaching Displays, Cabinetry, Etc.)
- HEALTH CLUBS (Light Gauge Metal Applications/Basketball courts, etc.)
- IDEAL WHEN USED IN PANELIZATION

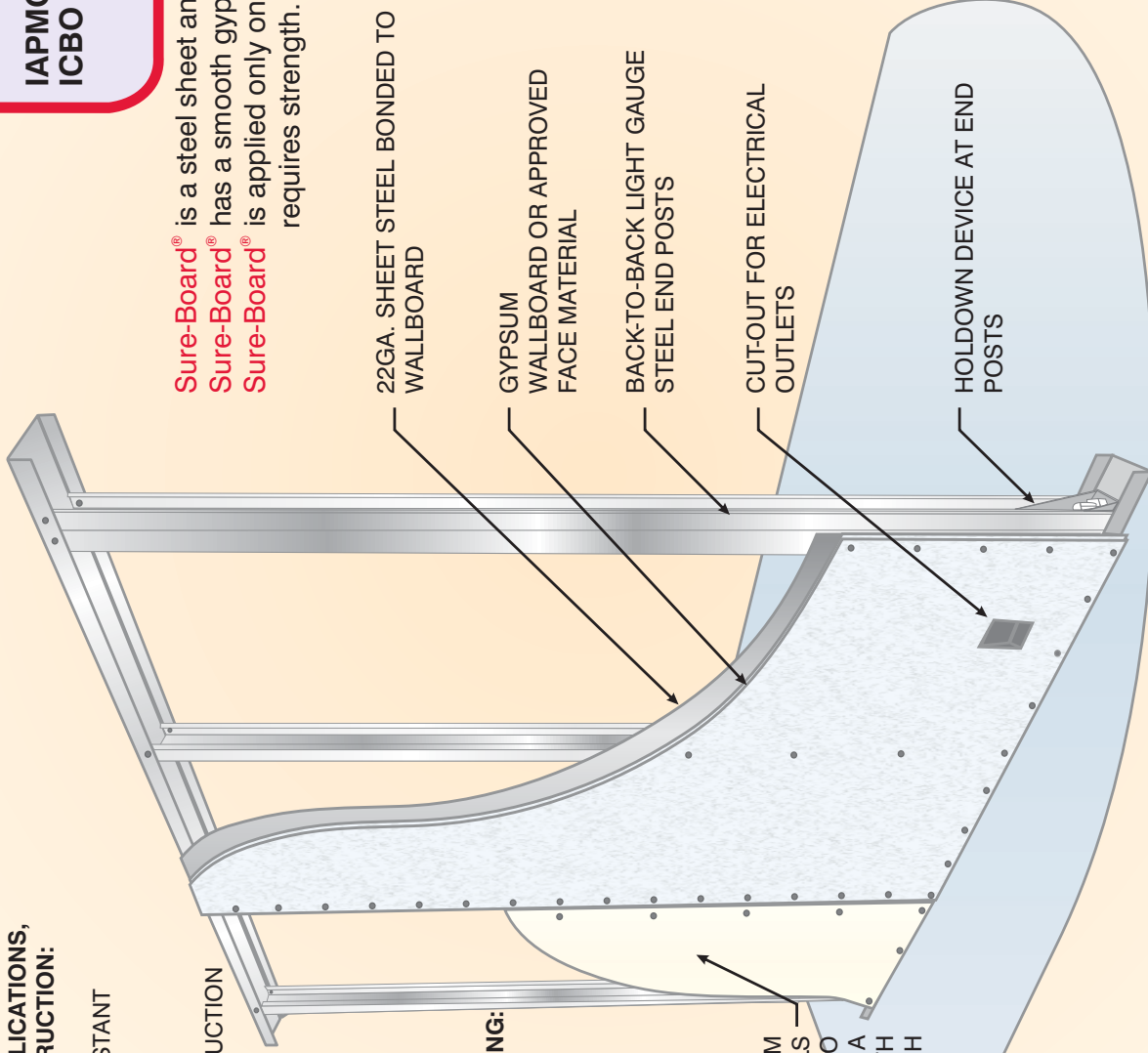
SERIES 200

BENEFITS OVER WOOD SHEATHING:

- SIMPLE TO SCREW ON TO STEEL STUDS
- HIGHER SHEAR VALUE THAN PLYWOOD
- SIGNIFICANT STRUCTURAL VALUE
- ELIMINATES ADDITIONAL PLYWOOD

STANDARD GYPSUM WALLBOARD INSTALLS ADJACENT TO SURE-BOARD® FOR A SMOOTH UNINTERRUPTED FINISH

ALSO AVAILABLE
Sure-Board® Series 200W
For Wood Frame Walls



Sure-Board® is a steel sheet and gypsum or cement board composite. Sure-Board® has a smooth gypsum board facing. Sure-Board® is applied only on the section of wall that requires strength.

- Exterior and interior wood sheathings require as much as 30% more material to eliminate the offset surface left by the sheathings used on shear walls. Sure-Board® integrates normal gypsum board products and requires no leveling.
- Eliminates additional labor costs of installing gypsum board on interior shear wall surfaces. Sure-Board's® gypsum board facing is ready for finishes.
- Straps and gusset plates on shear walls are labor intensive and leave surface irregularities (2 layers of steel and hex head screws) that often result in deformities on interior walls. Sure-Board® leaves no surface irregularities.
- Tension straps and cross bracing are difficult to install without sagging or loose fit. Shear walls require a tight and flat application. Sure-Board® lays flat on the studs surface with no sagging.

MARINO WARE

SURE-BOARD® ELIMINATES USE OF EXCESS MATERIALS AND LABOR. LOWERS YOUR COST AND INCREASES YOUR PERFORMANCES, SURE-BOARD® IS A CLEAR WINNER.

SURE-BOARD®
FOR SHEAR
Series 200

IAPMO ES ER-0126 LARR #25461
ICBO ER-5762 LA FAB #2109

DSA IR A-5
Miami-Dade Approval 14-1030.12

REVOLUTIONARY **SURE-BOARD® SERIES 200B** IMPROVES THE QUALITY / SAVES TIME WHILE DELIVERING THE HIGHEST QUALITY SHEATHING TO RESIST ALL BLAST AND BALLISTIC APPROVED DESIGNS UTILIZED TODAY.

SUGGESTED COMMERCIAL APPLICATIONS,
MILITARY/CIVILIAN FACILITIES, AIRPORTS,
HOSPITALS, SCHOOLS, HIGH-SECURITY

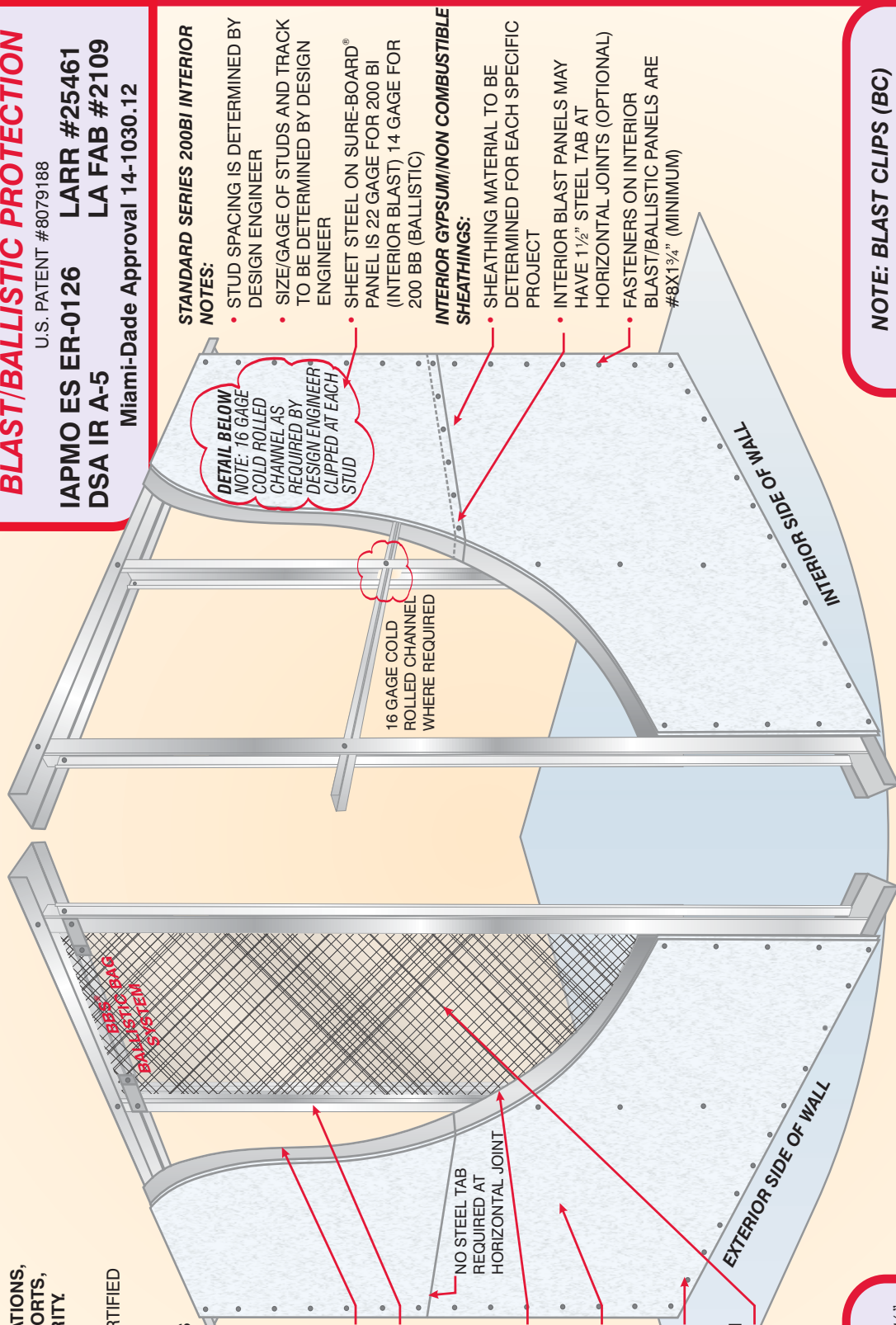
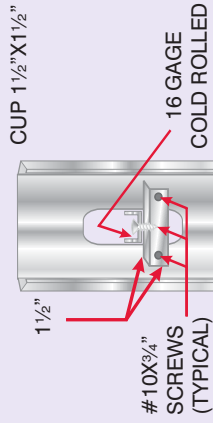
PRACTICAL APPROVALS:

- DOD/UCSD BLAST TESTED AND CERTIFIED
- SIMPLE CONVENTIONAL INSTALLATION
- PASSED ALL GSA BLAST STANDARDS
- UL752 CERTIFIED FOR LEVELS 3 THROUGH 8
- 1 & 2 HOUR NON-COMBUSTIBLE

STANDARD SERIES 200BX EXTERIOR NOTES:

- STUD SPACING IS DETERMINED BY DESIGN ENGINEER
- SIZE/GAGE OF STUDS AND TRACK TO BE DETERMINED BY DESIGN ENGINEER
- STEEL SHEET AT EXTERIOR SERIES 200 BX (EXTREME BLAST) OR 200 BALLISTIC PANELS TO BE 14 GAGE UNLESS DESIGN ENGINEER SHOULD REQUIRE LESS OR MORE PROTECTION
- SHEATHING MATERIAL TO BE DETERMINED FOR EACH SPECIFIC PROJECT
- FASTENERS ON EXTERIOR
 - A) BLAST PANEL #12X2" SERIES 200 BX B) BALLISTIC-PANEL #8X1 $\frac{3}{4}$ " SERIES 200 BB (MINIMUM)
- FOR BALLISTIC ONLY PROTECTION PROPRIETARY BBS (BALLISTIC BAG SYSTEM) KEVLAR BAG IS REQUIRED IN EACH STUD BAY

BLAST WALL DETAIL



STANDARD SERIES 200BI INTERIOR NOTES:

- STUD SPACING IS DETERMINED BY DESIGN ENGINEER
 - SIZE/GAGE OF STUDS AND TRACK TO BE DETERMINED BY DESIGN ENGINEER
 - SHEET STEEL ON SURE-BOARD® PANEL IS 22 GAGE FOR 200 BI (INTERIOR BLAST) 14 GAGE FOR 200 BB (BALLISTIC)
- INTERIOR GYPSUM/NON COMBUSTIBLE SHEATHINGS:**
- SHEATHING MATERIAL TO BE DETERMINED FOR EACH SPECIFIC PROJECT
 - INTERIOR BLAST PANELS MAY HAVE 1 $\frac{1}{2}$ " STEEL TAB AT HORIZONTAL JOINTS (OPTIONAL)
 - FASTENERS ON INTERIOR BLAST/BALLISTIC PANELS ARE #8X1 $\frac{3}{4}$ " (MINIMUM)

NOTE: BLAST CLIPS (BC) AND BLAST WASHERS (BW) ARE AVAILABLE FROM MANUFACTURER OF SURE-BOARD® WHEN ORDERING PANELS.



FOR BLAST AND BALLISTIC PERSONNEL PROTECTION SURE-BOARD® IS A CLEAR WINNER.
TECHNICAL SUPPORT (866) 469-7432

SURE-BOARD®
Series 200B
FOR
BLAST/BALLISTIC PROTECTION

U.S. PATENT #8079188

IAPMO ES ER-0126 LARR #25461
DSA IR A-5 LA FAB #2109

Miami-Dade Approval 14-1030.12

For assistance, please contact MarinoWARE at 800-627-4661 or visit www.MarinoWARE.com. MarinoWARE is licensed by Intermat to manufacture Sure Board and this information is used with permission. This guide reflects the most current information available and supersedes any and all previous publications, effective December 14, 2018. | CAT_SB_REV_4_06072018 | © WARE Industries, Inc. 2018

REVOLUTIONARY "SURE-BOARD"® IMPROVES THE QUALITY AND ELIMINATES SHEAR WALL PROBLEMS IN FRAMING AND CONSTRUCTION

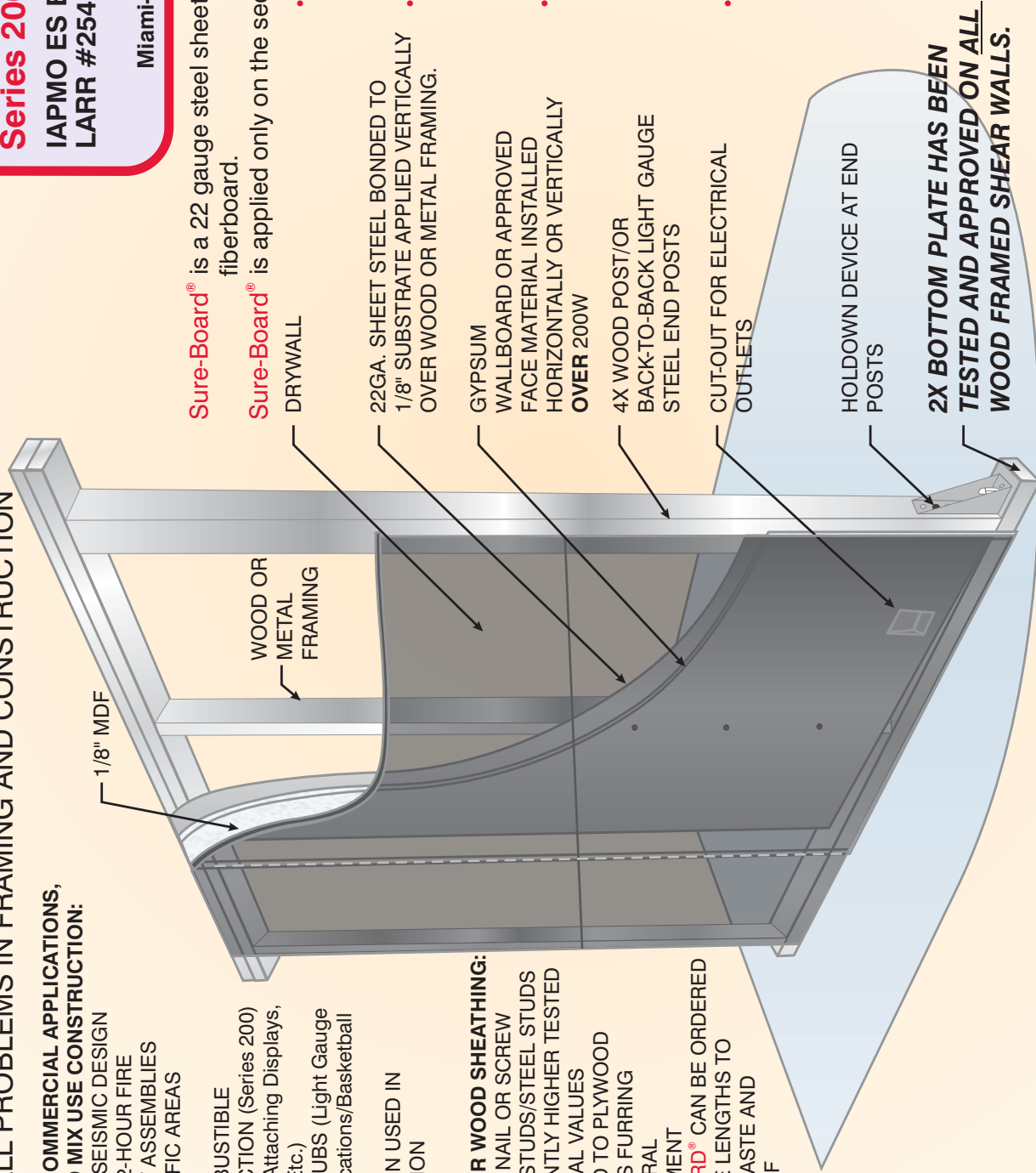
SUGGESTED COMMERCIAL APPLICATIONS, LOW RISE AND MIX USE CONSTRUCTION:

- WIND AND SEISMIC DESIGN
- 1-HOUR & 2-HOUR FIRE RESISTANT ASSEMBLIES
- HIGH TRAFFIC AREAS
- SECURITY
- NON-COMBUSTIBLE CONSTRUCTION (Series 200)
- BACKING (Attaching Displays, Cabinetry, Etc.)
- HEALTH CLUBS (Light Gauge Metal Applications/Basketball courts, etc.)
- IDEAL WHEN USED IN PANELIZATION

SERIES 200W

BENEFITS OVER WOOD SHEATHING:

- SIMPLE TO NAIL OR SCREW TO WOOD STUDS/STEEL STUDS
- CONSISTENTLY HIGHER TESTED STRUCTURAL VALUES COMPARED TO PLYWOOD
- ELIMINATES FURRING
- LESS LATERAL DISPLACEMENT
- SURE-BOARD® CAN BE ORDERED IN PRECISE LENGTHS TO REDUCE WASTE AND AMOUNT OF CUTTING.



Sure-Board® is a 22 gauge steel sheet and 1/8" medium density fiberboard.

Sure-Board® is applied only on the section of wall that requires shear.

- All testing for Sure-Board® Series 200W was performed using ASTM E 2126 SPD reverse cyclic test protocol.
- Lateral and elastic displacement at allowable values are significantly less using Sure-Board® Series 200W for wood frame construction.
- Exterior and Interior wood sheathings require as much as 30% more material/labor to eliminate the offset surface left by the sheathings used on shear walls – Sure-Board® Series 200W does not.
- On exterior walls, the use of Sure-Board® Series 200W guarantees your exterior plaster will maintain a consistent thickness without additional furring.

SURE-BOARD® FOR SHEAR

Series 200W

IAPMO ES ER-0126
LARR #25461

LA FAB #2109
DSA IR A-5

Patent # 8056301
Miami-Dade Approval 14-1030.12



2X BOTTOM PLATE HAS BEEN TESTED AND APPROVED ON ALL WOOD FRAMED SHEAR WALLS.

SURE-BOARD® ELIMINATES USE OF EXCESS MATERIALS AND LABOR. LOWERS YOUR COST AND INCREASES YOUR PERFORMANCES, SURE-BOARD® IS A CLEAR WINNER.

ALL TABLES INCLUDE ASD DESIGN LOAD CAPACITIES FOR USE WITH ALL ACCEPTED VERSIONS OF THE 2010 AISI LATERAL STANDARDS / 2015 IBC / 2015 IRC / 2015 CBC / AND THE ASCE/SEI 7-10 CODES

SURE-BOARD® For Shear
Series 200W

WOOD Framing

IAPMO ES ER-0126
LARR #25461 / DSA IR A-5

SURE-BOARD® For Shear
Series 200W

IAPMO ES ER-0126
LARR #25461 / DSA IR A-5

STEEL Framing

TABLE 4 - NOMINAL AND ALLOWABLE SHEAR RESISTANCE TO WIND OR EARTHQUAKE FORCES AND DISPLACEMENT (INCHES) FOR SHEAR WALLS WITH SURE-BOARD® SERIES 200W STRUCTURAL PANELS ATTACHED TO DF STUDS AT 16" O.C. WITH 10D NAILS¹

| FRAMING | 10d (2.25" min X .148) NAIL SPACING AT PANEL EDGES AND FIELD, INCHES ON CENTER ² | | | |
|-------------------------|---|--------------------------|--------------------------|--------------------------|
| | 4/6 | 3/6 | 2/6 | 2/6 Two Sided* |
| 2x4 stud grade DF | Vn 2,453 (plf) | Vn 2,357 (plf) | Vn 2,357 (plf) | Vn 2,453 (plf) |
| Entire post | ΔVasd 2,357 (inch) | ΔVasd 2,357 (inch) | ΔVasd 2,357 (inch) | ΔVasd 2,357 (inch) |
| 4 x 4 No. 1 grade DF | Vn 2,453 (plf) | Vn 2,357 (plf) | Vn 2,357 (plf) | Vn 2,453 (plf) |
| *4x6 No. 1 grade DF | Vn 2,453 (plf) | Vn 2,357 (plf) | Vn 2,357 (plf) | Vn 2,453 (plf) |
| Sill and top plate: | ΔVasd 2,357 (inch) | ΔVasd 2,357 (inch) | ΔVasd 2,357 (inch) | ΔVasd 2,357 (inch) |
| 2 x 4 standard grade DF | Vn 1,453 (plf) | Vn 583 (plf) | Vn 2,357 (plf) | Vn 1,827 (plf) |
| | ΔVasd 0.18 (inch) | ΔVasd 0.23 (inch) | ΔVasd 0.23 (inch) | ΔVasd 0.24 (inch) |

For S1: 1 inch = 25.4 mm, 1 plf = 0.0146 N/mm.
¹ These values are for short term loads due to wind or earthquake.
² The nails are described in Section 3.2.5 and are installed in accordance with Section 4.2.3.2 in IAPMO ES ER-0126.
³ All panel edges must be blocked. Panels are installed vertically or horizontally. Fasteners must be spaced a minimum of 6 inches on center along field framing members.
⁴ ΔVasd = Deflection at Vasd design Load.
⁵ Vn = Nominal Strength.
⁶ Vsd = ASD Design Load.
⁷ ΔVasd = Deflection at Vsd design Load.

SURE-BOARD® For Shear
Series 200

IAPMO ES ER-0126 / ICBO ES ER-5762
LARR #25461 / DSA IR A-5

STEEL Framing

TABLE 1/1A - NOMINAL AND ALLOWABLE SHEAR RESISTANCE TO WIND OR EARTHQUAKE FORCES AND DISPLACEMENT (INCHES) FOR SHEAR WALLS WITH SURE-BOARD® SERIES 200 STRUCTURAL PANELS ATTACHED TO LIGHT GAGE STEEL C-STUDS AT 24" O.C. WITH SCREWS (pounds per foot)¹

| FRAMING | FASTENER SPACING AT PANEL EDGES, INCHES ON CENTER ² | | | | | | | |
|---|--|-------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|
| | 6 | 4 | 3 | 2 | 2 | 2 | 2 | 2 |
| Minimum Gauge ³ | Vn 2,453 (plf) | Vn 2,453 (plf) | Vn 2,453 (plf) | Vn 2,453 (plf) | Vn 2,453 (plf) | Vn 2,453 (plf) | Vn 2,453 (plf) | Vn 2,453 (plf) |
| 20 (0.033 in) | ΔVasd 0.21 (inch) | ΔVasd 0.21 (inch) | ΔVasd 0.21 (inch) | ΔVasd 0.21 (inch) | ΔVasd 0.21 (inch) | ΔVasd 0.21 (inch) | ΔVasd 0.21 (inch) | ΔVasd 0.21 (inch) |
| 18 (0.043 in) | Vn 1,085 (plf) | Vn 1,545 (plf) | Vn 1,730 (plf) | Vn 1,915 (plf) | Vn 1,915 (plf) | Vn 1,915 (plf) | Vn 1,915 (plf) | Vn 1,915 (plf) |
| 16 (0.054 in) | ΔVasd 0.17 (inch) | ΔVasd 0.22 (inch) | ΔVasd 0.22 (inch) | ΔVasd 0.22 (inch) | ΔVasd 0.22 (inch) | ΔVasd 0.22 (inch) | ΔVasd 0.22 (inch) | ΔVasd 0.22 (inch) |
| 2-Sided ⁴ | Vn 562 (plf) | Vn 770 (plf) | Vn 2,821 ¹⁰ (plf) | Vn 2,989 ¹⁰ (plf) | Vn 2,989 ¹⁰ (plf) | Vn 2,989 ¹⁰ (plf) | Vn 2,989 ¹⁰ (plf) | Vn 2,989 ¹⁰ (plf) |
| 14-Ga. (0.071 in) | ΔVasd 0.25 (inch) | ΔVasd 0.25 (inch) | ΔVasd 0.26 (inch) | ΔVasd 0.26 (inch) | ΔVasd 0.26 (inch) | ΔVasd 0.26 (inch) | ΔVasd 0.26 (inch) | ΔVasd 0.26 (inch) |
| 14-Ga. (0.071 in) 2-Sided - 16" O.C. Stud Framing | Vn 1,697 (plf) | Vn 2,306 (plf) | Vn 2,957 ¹⁰ (plf) | Vn 3,647 ¹⁰ (plf) | Vn 3,647 ¹⁰ (plf) | Vn 3,647 ¹⁰ (plf) | Vn 3,647 ¹⁰ (plf) | Vn 3,647 ¹⁰ (plf) |
| | ΔVasd 0.25 (inch) | ΔVasd 0.25 (inch) | ΔVasd 0.26 (inch) | ΔVasd 0.26 (inch) | ΔVasd 0.26 (inch) | ΔVasd 0.26 (inch) | ΔVasd 0.26 (inch) | ΔVasd 0.26 (inch) |

For S1: 1 inch = 25.4 mm, 1 lb/linear = 0.0146 N/mm.
¹ These values are for short term loads due to wind or earthquake.
² The screws are described in Section 3.2.1 and are installed in accordance with Section 4.2.2.2 of IAPMO ES ER-0126.
³ Tabulated values are for panels applied to one side or two sides of a wall.
⁴ For load and resistance factor design (LRFD) loads, the tabulated Vn load values must be multiplied by the resistance factor φ = 0.60 for Seismic / 0.65 for Wind.
⁵ Section 3.3.1 in IAPMO ES ER-0126 describes minimum base metal thickness associated with gages.
⁶ Vn = Nominal Strength.
⁷ Vsd = ASD Design Load.
⁸ ΔVasd = Deflection at Vsd design Load.
⁹ Nominal strength is based on double c-stud collector to be designed using one gage thicker than the framing material used in shear wall.
¹⁰ Note: Sure-Board® Series 200 may be installed on Wood Framing. Refer to IAPMO ES ER-0126 Evaluation Report, Table 5 on page 9 in report, for requirements of use.

TABLE 2 - NOMINAL AND ALLOWABLE SHEAR RESISTANCE TO WIND OR EARTHQUAKE FORCES AND DISPLACEMENT (INCHES) FOR SHEAR WALLS WITH SUREBOARD® SERIES 200W STRUCTURAL PANELS ATTACHED TO LIGHT GAGE C-STUDS AT 16" O.C. WITH #10 SCREWS¹

| STEEL FRAMING | #10 SCREW SPACING AT PANEL EDGES AND FIELD 2/6, INCHES ON CENTER ² | | | |
|----------------------------|---|--------------------------------|-------------------------------|------------------------------|
| | Minimum Gauge ³ | Vn ^{2,3,4,7} (plf) | Vsd ^{2,3,8} (plf) | ΔVasd ⁹ (inch) |
| 18-Ga. (0.043 in.) | Vn 2,168 (plf) | Vn 703 (plf) | Vn 2,168 (plf) | ΔVasd 0.14 (inch) |
| 16-Ga. (0.054 in.) | Vn 2,704 (plf) | Vn 923 (plf) | Vn 2,704 (plf) | ΔVasd 0.18 (inch) |
| 14-Ga. (0.071 in.) | Vn 2,755 (plf) | Vn 934 (plf) | Vn 2,755 (plf) | ΔVasd 0.15 (inch) |
| 14-Ga. (0.071 in.) 2-Sided | Vn 5,091 (plf) | Vn 1,922 (plf) | Vn 5,091 (plf) | ΔVasd 0.29 (inch) |

For S1: 1 inch = 25.4 mm, 1 plf = 0.0146 N/mm.
¹ These values are for short term loads due to wind or earthquake.
² The screws as described in Section 3.2.2 and installed in accordance with Section 4.2.2.2 of IAPMO ES ER-0126.
³ Tabulated values are for panels applied to one or two sides of a wall.
⁴ For load and resistance factor design (LRFD) loads, the tabulated Vn load values must be multiplied by the resistance factor φ = 0.60 for Seismic / 0.65 for Wind.
⁵ Section 3.3.1 in evaluation report IAPMO ES ER-0126 describes minimum base metal thickness associated with gages.
⁶ All panel edges must be blocked. Panels are installed vertically or horizontally. Fasteners must be spaced a minimum of 6 inches on center along intermediate framing members.
⁷ Vn = Nominal Strength.
⁸ Vsd = ASD Design Load.
⁹ ΔVasd = Deflection at Vsd design Load.
¹⁰ Note: Series 200W may be installed on 24" O.C. CFS framing. Refer to IAPMO ES ER-0126 Table 3 on page 8 in report, for requirements of use.

Sure-Board® Series 200 & 200W Information Table

SURE-BOARD® STANDARDS & SPECIFICATIONS
 The Sure-Board® Series 200 Structural Panel is fabricated using all thicknesses of cement or Type X gypsum board complying with ASTM C1396, or Exterior Gypsum Sheathing having an exterior water repellent paper and water resistant treated core gypsum sheathing, complying with ASTM C79-97, also approved glassmat gypsum substrate ASTM C1177, fiber reinforced gypsum panels ASTM C1278 and cement board ASTM C1325. Our Series 200W is fabricated using non-combustible sheathing or composite MDF, laminated with water soluble adhesive to sheet steel. The sheet steel is No. 22 gauge (0.027", 27 mil) minimum base metal thickness complying with ASTM A653, Grade 33 minimum, hot-dipped galvanized coating conforming to ASTM A653 and A924. Panel is available in standard 8, 10, and 12 ft. lengths. The Sure-Board® panel is identified with a label located on top right or bottom left hand corner on the metal facing. Sure-Board® shear panel is also available cut to special lengths upon request.

FASTENERS SPECIFICATIONS
 Fasteners used to attach the Sure-Board® Series 200 Panel to steel framing are self-drilling (3/4" long drill-tip) bugle head screws having a minimum #8 shank diameter (0.138"), minimum 0.3145" head diameter and 1 1/4" long, complying with SAE J78 and ASTM C954. 200W Panel on steel studs require the use of #10 pan head self-drilling screws, as tested. Screw fastener head may be flush with the panel surface and must penetrate into the cold-formed steel framing member a minimum of three exposed threads. Fastener must be installed at a minimum 3/8" edge distance. Sure-Board® Series 200W panels on wood framing are fastened with 10D smooth ply nails, as tested.

STEEL AND WOOD STUD SPECIFICATION
 Steel studs used for shear walls are C-shaped, with a minimum 1 5/8-inch flange and 3/8-inch return lip. Steel track shall have a minimum 1 1/4-inch flange. Steel studs are fabricated from 14 gauge (0.071"), 16 gauge (0.054") steel complying with ASTM C653 Grade 50, 18 gauge (0.043") and 20 gauge (0.033") steel complying with ASTM C653 Grade 33. Wood studs are 2x4 stud grade D.F., end posts 4x4 / 4x6 #1 D.F., as tested (actual shear wall to be specifically engineered).

Full scale reverse cyclic testing demonstrates strengths well in excess of those achieved with plywood or sheet metal only diaphragms, using identical test assemblies.

Sure-Board®
 IAPMO ES ER-0126 Series 200/200W • ICC ES ER-5762 Series 200



www.MarinoWare.com



SURE-BOARD®

NON-COMBUSTIBLE

SURE-BOARD®

SERIES 200S-F/200S-P

FLOOR/ROOF SHEATHING



SURE-BOARD®
...FOR ROOF & FLOOR SHEATHING

MARINO WARE®

www.MarinoWARE.com

Improve the quality of your next framing project with *Sure-Board® Series 200S Floor Sheathing*

Our revolutionary non-combustible floorsheathing panels will improve the quality and increase the efficiency during the installation on your next residential or midrise load bearing project.

When you incorporate Sure-Board Series 200S floor sheathing, the ® finish product will prevent the need to work over uneven corrugated deck or have to bear the delay of pouring and finishing each level if you have been using a deep pandeck system.

These delays may be eliminated and production increased at no additional cost.

The installation of our series 200S panels do not require any new installation techniques for the field staff. Since the current methods and practices for installation are the same as those used for decades for plywood and OSB panels, we have the huge advantage of eliminating blocking and creating a great non-combustible structure for the future.

The Big One

Scan this QR to view the Seismic Tests Conducted at UCSD's Shake Table



Sure-Board was put to the "Real Test" at the world's largest outdoor shake table at UCSD.

The First Revolutionary 6 Story CFS Shake Table Test

Several industry partners along with H.U.D. and the California Seismic Safety Commission worked together on this program. DCI Engineering and the UCSD Engineering staff performed the first ever shake table test utilizing current code required lateral and diaphragm methods. Sure-Board sheathing demonstrated amazing resilience with no measurable damage. The test program included 13 pretests of increased magnitude to finally reach the MCE or 150% of the 1994 Northridge 6.7 magnitude seismic event. There was no structural damage and this structure was totally intact and ready for use. Imagine if it were a medical facility or one of our children's schools where the occupants must be kept safe at all costs. SureBoard is the best solution.

Sure-Board® Series 200S has proven results to make your building better and cost you less.



Sure-Board Series 200S is the non-combustible alternative for any CFS® sheathing application both large and small.

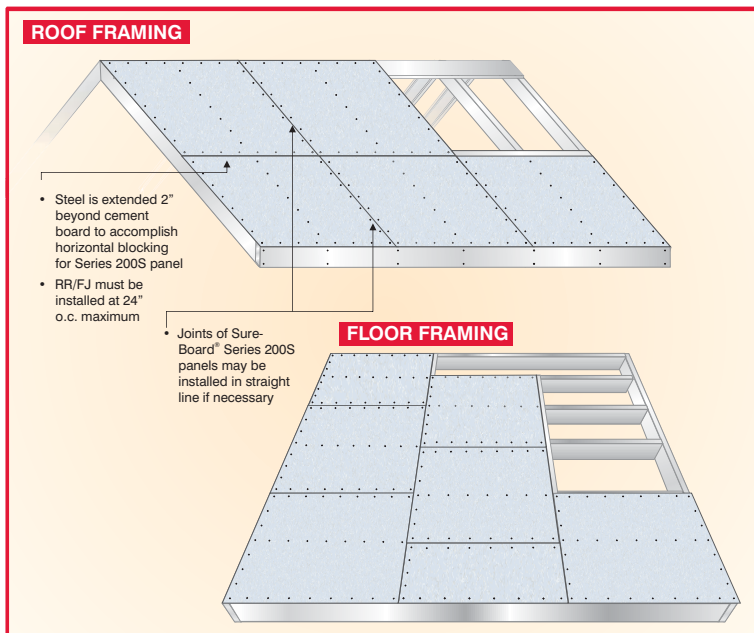


Sure-Board® Series 200S is UL-listed in 1 and 2-hour assemblies with standard C-Joints or JoistRite, per UL H503

Sure-Board® Series 200S is Approved Nationwide

Sure-Board® Series 200S is certified using all national building codes. That includes the current IBC, IRC, CBC, DSA, GSA, Army Corp of Engineers, City of New York, City of Los Angeles, and LARR 26040 to mention a few. IAPMO UES EC-012 and ER-185 certify our panels' performance through our extensive test program, for use on any CFS project nationwide.

Sure-Board® Series 200S is the best investment in non-combustible sheathing for your building.
"OUR STEEL IS THE REAL DEAL."



Sure-Board® Series 200S Floor/Roof Cross Sections

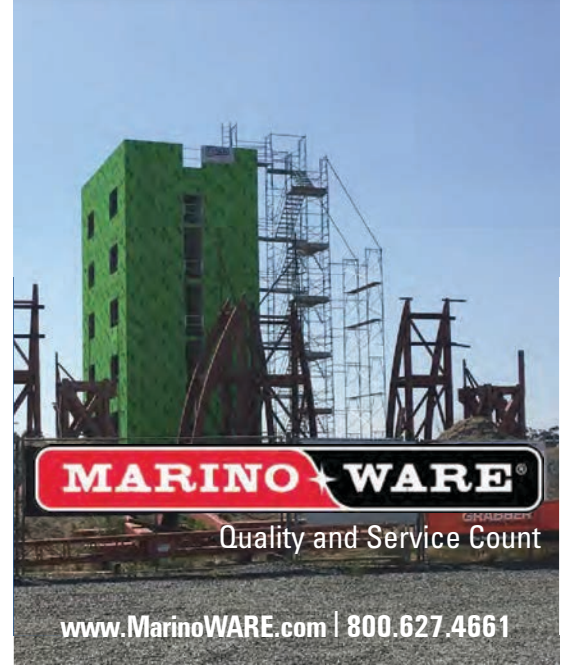
Sure-Board® Series 200S

is available Nationwide through thousands of distributors in all 50 states.

About Marino\WARE®

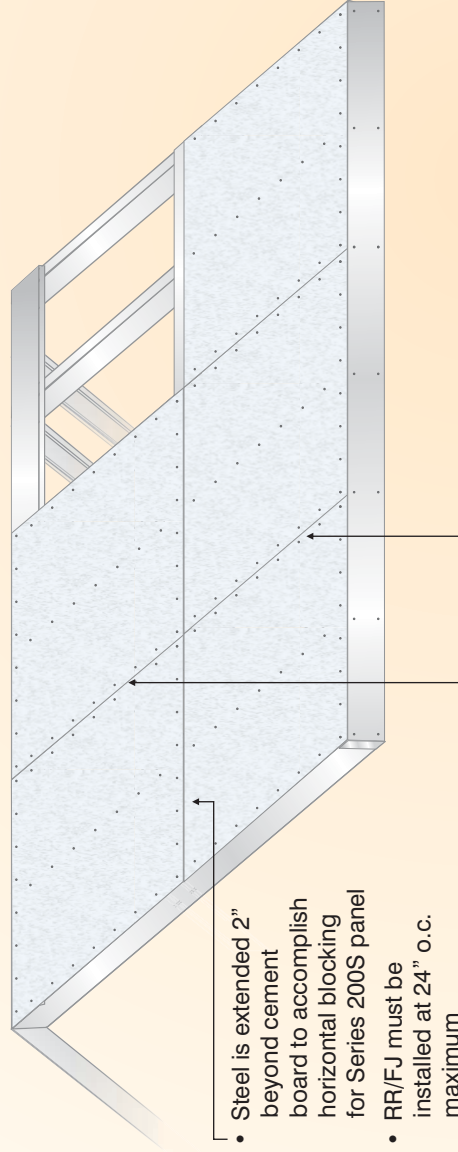
Marino\WARE offers a complete line of cold-formed steel framing products. Our metal framing product line includes: ViperStud® drywall framing studs, structural stud and track, FrameRite® clips and connectors, JoistRite, StudRite, ShaftWall products, plastering steel, and drywall finishing products all under one roof.

Our four locations (South Plainfield, NJ; Griffin, GA; East Chicago, IN, and Pasadena, TX) are mega-plants – large, self-sufficient facilities with equipment to produce everything we sell. We carry a huge inventory of finished goods so that you can get anything you need without waiting, including custom orders for quick shipment. Our own in-house carrier, Norbet Trucking, ensures that delivery service is never compromised. We also offer in house technical support and shop drawings through Marino\WARE® Design Group.



REVOLUTIONARY "SURE-BOARD"® SERIES 200S IS THE NON-COMBUSTIBLE FLOOR/ROOF SHEATHING THAT WILL IMPROVE THE FIRE RESISTANCE OF YOUR BUILDING USING STANDARD CONSTRUCTION METHODS AND PRACTICES.

ROOF FRAMING



- Steel is extended 2" beyond cement board to accomplish horizontal blocking for Series 200S panel
- RR/FJ must be installed at 24" o.c. maximum
- Joints of Sure-Board® Series 200S panels may be installed in straight line if necessary

ADDITIONAL CERTIFICATIONS:

SOUND:

- Improves Sound/Impact Results on Typical CFS Framed Assembly.

FIRE:

- UL Listed Fire Rating using Single Layer of 5/8" Type C and RC Channel (1 HR Assembly)
- 2 HR assembly with 2 layers of 5/8" Type C and RC Channel
- Conventional Steel Joists or JoistRite
- See UL H503 for complete assembly instructions



SURE-BOARD® SERIES 200S NON-COMBUSTIBLE SHEATHING WILL IMPROVE THE PERFORMANCE OF YOUR CFS STRUCTURE, WHILE REDUCING THE CONSTRUCTION COSTS TO YOU. SURE-BOARD® IS A CLEAR WINNER.

**SURE-BOARD®
Series 200S**

For Floor/Roof Non-Combustible Sheathing

U.S. PATENT #7,770,346

IAPMO ES ER-185 LARR #26040

DSA IR A-5 LA FAB #2109

SAVINGS TO CONTRACTOR:

- Cost for labor and materials is approximately 20% less than any existing non-combustible sheathing currently available today.
- Panel size is 48" x 48" dimension and can be laid in place by one installer.

FLOOR FRAMING

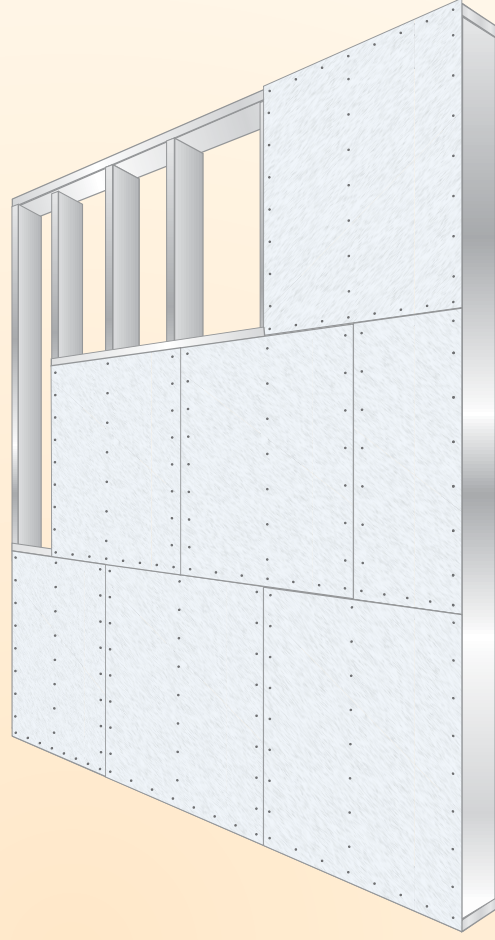


TABLE 1
NOMINAL DESIGN STRENGTHS FOR SURE-BOARD® SERIES 200S STRUCTURAL PANELS
- FLOOR AND ROOF SHEATHING CONTINUOUS OVER TWO OR MORE SPANS

| Span Rating, (inches) (o.c.) | Nominal Strength (PSF) | Allowable Strength (ASD) (psf) | Factored Resistance (LRFD) (psf) | Allowable Concentrated Load, LBF |
|---------------------------------|------------------------------|--------------------------------------|--|--|
| 24 maximum | 435 | 215 | 260 | 2,000 |

For S1: 1 inch = 25.4 mm, 1 psf = 47.88 Pa, 1 lbf = 4.448 N

¹ Maximum allowable strength for panels supported at 24 inches on center is 100 PSF for a deflection limit of L/360.
² Panels are capable of supporting an allowable concentrated load of 2,000 lbs. within the deflection limit of L/360 on properly designed and constructed framing members.

³ Series 200S panels installed for floors shall include minimum No. 20 gauge (0.033 inch) thick steel sheets.
Series 200S panels installed for roofs shall include minimum No. 20 gauge (0.033 inch) thick steel sheets.

TABLE 2
NOMINAL SHEAR STRENGTH FOR BLOCKED HORIZONTAL DIAPHRAGMS, LBS/FT
SURE-BOARD® SERIES 200S STRUCTURAL PANELS

| Screw Spacing, inches | Nominal Strength, (Fn) | | Allowable Strength, (ASD) | | Factored Resistance (LRFD) | |
|-----------------------|---------------------------|---------|---------------------------|---------|----------------------------|---------|
| | Field | Seismic | Wind/All Others | Seismic | Wind/All Others | Seismic |
| 2 | 6 | 2,770 | 1,110 | 1,380 | 1,660 | 1,800 |
| 3 | 6 | 2,730 | 1,090 | 1,360 | 1,640 | 1,770 |
| 4 | 6 | 1,980 | 790 | 990 | 1,190 | 1,290 |
| 6 | 6 | 1,320 | 530 | 660 | 790 | 860 |

For S1: 1 inch = 25.4 mm, 1 lb/ft = 14.5939 N/mm.

The equation Eq. (1) within the IAPMO Evaluation Report ER-185 shall be used to estimate the mid-span deflection of SURE-BOARD's MgO and fiber-cement simple span diaphragms:

TABLE 3
ALLOWABLE WIND UPLIFT LOADS FOR
SURE-BOARD® SERIES 200S STRUCTURAL PANELS^{1,2}

| CFS Specifications | | Allowable Wind Uplift, (ASD) (psf) | | | | Allowable Wind Uplift, (ASD) (psf) | | | | | |
|----------------------------------|-----------------------------|---------------------------------------|-----------|------------------------------------|-------|---------------------------------------|-------|------------|-------|--------|--------|
| Designated Thickness mills | Design Thickness, In. | Fy ksi | Fu ksi | 24 (inch) (o.c.), Joist Spacing | | 16 (inch) (o.c.), Joist Spacing | | Screw Size | | | |
| | | | | No. 6 | No. 8 | No. 6 | No. 8 | No. 6 | No. 8 | No. 10 | No. 12 |
| 33 | 0.0346 | 33 | 45 | 30.5 | 36.2 | 41.9 | 47.6 | 45.8 | 54.3 | 62.9 | 71.5 |
| 43 | 0.0451 | 33 | 45 | 39.5 | 47.2 | 54.6 | 62.1 | 59.3 | 70.7 | 81.9 | 93.2 |
| 54 | 0.0566 | 50 | 65 | 63.5 | 63.5 | 79.4 | 79.4 | 95.3 | 95.3 | 119.1 | 119.1 |
| 68 | 0.0713 | 50 | 65 | 63.5 | 63.5 | 79.4 | 79.4 | 95.3 | 95.3 | 119.1 | 119.1 |
| 97 | 0.1017 | 50 | 65 | 63.5 | 63.5 | 79.4 | 79.4 | 95.3 | 95.3 | 119.1 | 119.1 |
| 118 | 0.1242 | 50 | 65 | 63.5 | 63.5 | 79.4 | 79.4 | 95.3 | 95.3 | 119.1 | 119.1 |

For S1: 1 inch = 25.4 mm, 1 lbf = 4.448 N, 1 psf = 47.88 Pa, 1 psi = 6.89 kPa

¹ Allowable wind uplift based on screw spacings of 6 inches on center maximum at all panel edges and 12 inches on center maximum in the field/interior of the panels.

² If field/interior spacing is reduced from 12 inches on center, wind uplift may be proportionally increased.

Sure-Board® Series 200S FLOOR/ROOF Sheathing Information Table

SURE-BOARD® STANDARDS & SPECIFICATIONS:

The Sure-Board® Series 200S Structural Sheathing Panels laminated with water soluble adhesive to 1 1/16" fiber cement panels listed under ASTM C1325 and others. The steel sheet is 20 gauge (0.033 inch / 0.838 mm) minimum base-metal thickness complying with ASTM A653 CS/GR43 minimum, and ASTM A1003/A1003M. The sheets are provided with a G-40 hot dipped galvanized coating conforming to ASTM A924.

SERIES 200S FLOOR SHEATHING:

1 1/2" Thick Fiber Cement Sheathing is laminated to 20 gauge (0.033 inch / 0.838 mm) steel sheet for use as typical floor sheathing with framing members at 24" o.c. maximum spacing.

SERIES 200S ROOF SHEATHING:

1/2" Thick Fiber Cement Sheathing is laminated to 20 gauge (0.033 inch / 0.838 mm) steel sheet for use as typical roof sheathing with framing members at 24" o.c. maximum spacing.

Both floor and roof sheathing are manufactured in 48" x 48" panels for easy installation.

FASTENERS SPECIFICATIONS:

Fasteners to attach the Sure-Board® Series 200S panels to CFS members are self drilling/self tapping pilot point bugle head screws, #8 x 1 5/8" long winged drillers by grabber super drive LOX drive screws or equal. Screws must have cutting nubs under screw head to seat into fiber cement sheathing properly.

DESIGN OF FLOOR/ROOF SYSTEM:

All floor and roof members and the installation of these members are responsibility of EOR and contractors.

Sure-Board®
IAPMO ES ER-185 Series 200S



www.MarinoWare.com

MARINO WARE®

Recommended Tools / Screws and Staples for Installing Sureboard® Series 200 / 200W “for shear” / 200S for Sheathing

Any questions please call Technical Support (866) 545-1545

Always wear Eye Protection when Cutting SURE-BOARD®

Grabber & TyRex Collated Screwgun and Standard Handfed Installation

- A) (14 gage or heavier stud/track)
2500 rpm Model 4025 with CW75F/7525 IT (Grabber) or DS325AC (TyRex) Super Drive Feed Track
- B) (lighter than 14 gage stud/track)
4000 rpm Model 4063 with CW75F/7540 IT (Grabber) or DS325AC (TyRex) Super Drive Feed Track
- C) Standard Screwgun (handfed) using long drill-tip Dart Screws (or equal)

Screws for Collated Screwgun and Handfed Screw Installation

- A) 200 Series (gypsum laminate)
#8 x 1¾” Bugle Head screw with long drill tip
Part Number: CM175SDZJBW (Grabber) or 08G200CKLFPS (TyRex) Steel Framing Only
- B) 200W Series (1/8” MDF laminate) Steel Framing Only
#10 x ¾” Panhead screw - self tapping
Part Number: CFP101875LYZ (Grabber) or 10M075CTMFDS (TyRex) Steel Framing Only
- C) 200 Series use Prime Source/Dart hand screw #PP2 #8X2” w/quadrex tip Steel Framing Only
- D) 200S Series (7/16” / 9/16” Fiber Cement laminate) Grabber #8 x 1 5/8” winged drill
Part Number: CHS8158JBWG2 Steel Framing Only
- E) 200W Series (1/8” MDF) Standard #10 x 2¼” plywood gun nails Wood Framing Only
- F) 200 Series (Drywall laminate) #8 x 2” “A-point” CS8200JBWYZ (Grabber) Wood Framing Only

Metal Cutting Circular Saws for Cutting Sureboard® Series 200W and 200

(Watch Video Clips on website for reference and demonstration of cutting)

- A) Milwaukee 8” Circular Saw Model #6370-20, Blade only #48-40-4515
- B) Milwaukee 6 ¾” 28 Volt Cordless Model #0740-22, Blade only #48-40-4016
- C) Morse Evolution 180 7¼” Saw Blade CSM768TSC 7” carbide blade
- D) Champion RS725 7¼” Saw
- E) Standard Skilsaw with Carbide tip blade, 7¼” Ferrous metal blade Diablo MDL #D0748F

Lath Stapler and 14 Gage Staples/Nailgun for 200W Wood Framing Only

- A) Paslode Model #4150/38 W14
- B) Staples 7/8” #GSW1478 mfg. by Master Fasteners Inc., (14 Gage Staples)
- C) Standard Pneumatic Nailgun (using 10d smooth plywood nails)

MARINO WARE®

Recommended Tools / Screws / Saws / Blades for Installing Sureboard® Series *200 B / BX / BI for Ballistic / Blast

Any questions please call Technical Support (866) 545-1545

Always wear Eye Protection when Cutting SURE-BOARD®

Definition of Series *200 B / 200 BX / 200 BI Panels

- 1) *200 B – Ballistic panels with 14 gage steel sheet
- 2) *200 BX – Blast (EXTERIOR SIDE) panel with 14 gage steel sheet
- 3) *200 BI – Blast (INTERIOR SIDE) panel with 22 gage steel sheet

Grabber & TyRex/Senco Collated Screwgun and Standard Handfed Installation

- A) (14 gage or heavier framing studs/track)
2500 rpm Model 4025 with CW75F/7525 IT (Grabber) or DS325AC (TyRex/Senco)
Super Drive Feed Track
- B) (lighter than 14 gage framing studs/track)
4000 rpm Model 4063 with CW75F/7540 IT (Grabber) or DS325AC (TyRex/Senco)
Super Drive Feed Track
- C) Standard Screwgun (handfed) using long drill-tip Dart Screws (or equal)

Screws for Collated Screwguns and Handfed Screw Installation

- A) Series *200 B/BI Panels
#8 x 1¾" Bugle Head screw with long drill tip Collated Bugle Head Screws
Part Number: CM175SDZJBW (Grabber) or 08G200CKLFPS (TyRex/Senco)
Steel Framing Only
- B) Series *200 BX Panels
#10 x 2" (Grabber), #12 x 2" (Grabber), #14 x 2⅜" (Simpson), or #12 x 2" (TyRex/Senco)
Collated Bugle Head Screws
Part Number: C10200L3YZE (Grabber), CC12200LYZ (Grabber), TB1460S (Simpson) or 12G200YKLF CX (TyRex/Senco)
- C) Series *200 B/BI Panels use Prime Source/Dart hand screw #PP2 #8X2" w/quadrex tip
Steel Framing Only

Metal Cutting Circular Saws for Cutting Sureboard® Series *200 B/BX/BI

(Watch Video Clips on website for reference and demonstration of cutting)

- A) Milwaukee 8" Circular Saw Model #6370-20, Blade only #48-40-4515
- B) Milwaukee 6¾" 28 Volt Cordless Model #0740-22, Blade only #48-40-4016
- C) Morse Evolution 180 7¼" Saw Blade CSM768TSC 7" carbide blade
- D) Champion RS725 7¼" Saw
- E) Standard Skilsaw with Carbide tip blade, 7¼" Ferrous metal blade Diablo MDL #D0748F