**NOTICE TO BIDDERS**
**ADDENDUM #6**
**Bid 103-22 Athletics Stadiums Re-bid Project**

**Palomar Community College District**

The following changes, additions, deletions, clarifications, or corrections shall become part of the Bid & Contract Documents for the above listed project. This Addendum #6 forms a part of the contract document and modifies the original bidding documents. Acknowledge receipt of Addendum #6 in the space provided on the bid form. Failure to do so may subject bidder to disqualification.

**SUBSITITION REQUETS**

A) Metal Roof Panels
B) Dugout Furnishings

**REQUESTS FOR INFORMATION - QUESTIONS AND RESPONSES**

(1) QUESTION: The Addendum 3 NV5 Geotechnical Report (11/5/21) for the Phase 2 area recommends the contractor excavate the existing soils to 3 feet under the footings. (See section 8.2) The contractor does not have footing dimensions for the future building in Phase 2. Section EE/C1.21 in Addendum 3 shows a dotted line for Over-Excavation Limit. Please provide an elevation for the Over-Excavation Limit in this Phase 2 area since we don't have information to determine that elevation relative to building footings.

*RESPONSE: Contractor to assume over-excavations elevation of 6' below pad elevation which would be 573.2-6'=567.2'*

(2) QUESTION: Addenda 3 Keynote 28/C1.21 directs the contractor to provide "Temporary" shoring as necessary per Phase 2 Geotechnical Report. Please confirm the "temporary" shoring will remain in place after this contract in order to support the access road at approximately 9' above the pad elevation of 573.2'. Please confirm the contractor is to install OSHA approved railing to remain to avoid potential fall hazards.

*RESPONSE: Shoring must be installed as to allow for the construction of the permanent wall and is to be removed per this contract once the permanent construction is in place. Furthermore, an OSHA approved temporary railing shall be installed and remain in place as required to mitigate fall hazards until permanent construction is complete.*

(3) QUESTION: The NV5 Geotechnical Reports Section 1.0 describes the report as "prepared for the exclusive use of the client and their consultants in the design of the proposed new structure and appurtenant improvements." It goes on to state "this report has not been prepared from the perspective of a construction bid preparation instrument and should be considered by prospective construction bidders only as a source of general information …". Section 1.0 goes on to state "Contract requirements as set forth by the project plans and specifications will supersede any

general observations and specific recommendations presented in this report." Specification Section 31 20 00 Earth Moving, 3.1.A indicates Earthwork/Earth Moving shall be in accordance with Greenbook as recommended by the Project Geotechnical report (Specifically Section 8.0 Conclusions and Design Recommendations). Paragraph 3.1.A indicates "the more restrictive or conservative requirement shall control" in case of a conflict. Specification 31 20 00 and the verbiage in the Geotechnical Report seem to conflict with on another as it relates to what requirement shall supersede or control. Additionally, the plans & specifications reference the Geotechnical Report for the grading requirements when the Geotechnical Report seems to indicate it is only prepared as recommendation for design. Therefore, we need clarification of what is required by the District and its Consultants relative to grading on the project and if there is a conflict, what governs so we can bid the work as desired by the designers based upon the design of the structures and improvements shown in the plans & specifications.

*RESPONSE: Grading to follow Greenbook as specified and as recommended in the Geotechnical Report. Where Greenbook may conflict with specific recommendations of the Geotechnical Report the more conservative requirement shall control.*

(4) QUESTION: As a follow-on to the more general question (7, 8, and 9), please clarify the following specific items in the Documents:

(a) Please confirm that 5' of existing soils at building foundations will be excavated/exported and imported fill will be used to construct building pad.

*RESPONSE: Fill materials are not required to be imported, but backfill material does need to meet all criteria described in the NV5 Geotechnical Report. Fill material needs to have an EI < 50.*

(b) Section 31 20 00 2.1.B indicates Select Materials to have an expansion index less than 30. The NV5 report indicates on Page 11 indicates expansion index shall not exceed 20. Please clarify the requirements for import fill material at the building pads.

*RESPONSE: Geotechnical recommendation supersedes the specifications and expansion index shall not exceed 20.*

(c) Please confirm the site and turf field areas will be over-excavated to 2' and recompacted utilizing existing soils to sub-grade. 3) Section 31 23 00 Excavation, Backfilling, and Compacting 2.01.C indicates Native Backfill shall be acceptable soil material excavated from the project site. 3.04.B and 3.04.C indicates trench backfill with initial backfill being "Select Backfill materials" and "Native backfill material shall be used for final backfill, unless otherwise noted." The NV5 report (Page 11) indicates onsite soils are not considered suitable for reuse as compacted fills in utility trenches. Please clarify utility trench backfill requirements as the documents seem to be conflicting and each document says the other supersedes which is very confusing.

*RESPONSE: There is no specific prohibition generally against native materials as backfill in trenches as long as the material meets other specified requirements of the geotechnical report. Native materials are NOT suitable for use specifically within the pipe zone (6" below – 12" above). Native materials are NOT suitable anywhere below the building pad or footing.*

(d) Please clarify requirements for retaining wall backfill on the project. NV5 reports indicates onsite soils are not suitable for retaining wall backfill. If on-site soils are not considered suitable to backfill retaining walls, please clarify how much select material is required to be

provided behind the retaining walls and what is required below footings for site retaining walls.

*RESPONSE: Native material is acceptable for site walls that are un-drained at 2-ft high or shorter. At other backfill conditions, properly compacted granular low EI soils are required.*

(e) Section 8.2 Page 10 of the NV5 report seems to indicate 2 foot overex & recompact of existing site soils after moisture conditioning of 2 percent over optimum. Page 18 of NV5 report seems to indicate 2' of engineered fill but it says per Section 8.2. Section 8.2 does not call for "engineered fill" under the turf fields. Please clarify requirements for turf field subgrade.

*RESPONSE: "Engineered fill," as used on page 18 is intended to indicate the moisture-conditioned fill as described in Section 8.2. Material treated in this fashion is suitable to be used for the turf field subgrade material.*

(5) QUESTION: Bid Documents, page 11, Information for Bidders, paragraph 13, Additive and Deductive Items: Method of Determining Lowest Bid, part (a), "The lowest bid shall be the lowest bid price based on the base bid only without consideration of the prices on the additive or deductive items." Bid Documents, page 64, Bid Form, has a Base Bid line item and (2) alternate line items. Please confirm that the basis of award is the Total Base Bid including the Base Bid, (2) Alternates and Owner's Allowances.

*RESPONSE: The basis of award will be based upon the Total Base Bid including the Base bid, 2 break out prices (they are NOT alternates) and Owner's Allowances.*

(6) QUESTION: Bid Documents, page 66, Bid Form, requires bidders to submit with the Bid Form a "List of Construction of athletic fields/venues". Please confirm that this requirement has been waived and bidders will not be required to submit a List of Construction of athletic fields/venues with the Bid Form.

*RESPONSE: The requirement has not been waived. The list of projects can be in MS Word or pdf format of the bidders choosing. There is not a specific, required format.*

(7) QUESTION: Spec Section, 04 22 00 CONCRETE UNIT MASONRY, Part 1.4, paragraph B, instructs bidders to "provide a mock-up as necessary". Please confirm that approved masonry mock-ups can be incorporated the work.

*RESPONSE: Confirmed. Masonry mock-ups can be incorporated in the work.*

(8) QUESTION: Spec Section, 07 46 45 FIBER REINFORCED HYBRID RAINSCREEN SIDING, Part 1.05, paragraph A, instructs bidders to "Provide a mock-up for evaluation of surface preparation techniques and application of workmanship." Please confirm that approved fiber reinforced hybrid rainscreen siding mock-ups can be incorporated the work.

*RESPONSE: Confirmed. Hybrid rainscreen siding mock-ups can be incorporated in the work.*

(9) QUESTION: Spec Section, 32 14 13 PRECAST CONCRETE UNIT PAVING, Part 1.04, paragraph A, instructs bidders to "Provide up to 3 (three) 10-foot square (minimum) paver mockups for

review and approval by Landscape Architect and Owner." Please confirm that approved paver mock-ups can be incorporated the work.

*RESPONSE: Confirmed. Paver mock-ups can be incorporated in the work.*

(10) QUESTION: Please confirm that only the work labeled "by others" on sheet A1.41-A1.52 (Sothern Bleacher Company plans) is the responsibility of the bidding contractor.

*RESPONSE: Sheets A1.41-A1.52 are for reference only. These reference drawings do not delineate scope responsibilities. Items not designated "by others" in the Southern Bleacher Company drawings are being provided by SBC as indicated and directly contracted by the District. See Addendum #5 for clarification of bleacher scope. This work shall be coordinated by the bidding contractor for sequencing of construction.*

(11) QUESTION: Please confirm which detail is correct for the Montage II fence. Detail G/AT8.1 calls for a 2 ½" x 2 ½" x 12 GA Line/End/Corner post and B/AT8.1 calls for 2" x 2" x ¼" Line/End/Corner post.

*RESPONSE: Use detail G/AT8.1 (2-1/2" x 2-1/2" x 12 GA)*

(12) QUESTION: Please confirm which detail is the correct gate post sizes for the Montage II fence, detail 12/A10.01 calls for 6" x 6" x 3/16" gate posts and 7/A10.01 calls for a 4" x 4" x 12 GA post.

*RESPONSE: The schedule on 12/A10.01 is correct. Gate posts are to be 6"x6"x3/16".*

(13) QUESTION: Please verify End/Corner/Gate/Line posts at batting cages. AT8.1/B has two separate lines for the chain link fence batting cage w/ windscreen. One line lists only the line posts at 4" Dia. Std. The other lists 8" Dia. Std. for Line/Corner/End post.

*RESPONSE: The only posts along the perimeter that are 4" diameter are the gate latch posts, all other perimeter posts / corner posts at the batting cages are 8" diameter.*

(14) QUESTION: Please confirm that all fence post footings will require rebar cages.

*RESPONSE: Confirmed. All post footings are to have rebar cages per detail 7/S0.13.*

(15) QUESTION: Please confirm that the Owner's Allowances are inclusive of subcontractor and prime contractor overhead and profit.

*RESPONSE: The Owner's Allowances are inclusive of subcontractor and prime contractor O&P in that if the Allowances are approved for use by the District, the subcontractor and prime contractor will be allowed to include overhead and profit per the general conditions stipulation for Change Orders as the added work will be considered as a change in scope.*

(16) QUESTION: Per sheet L0.12, Transplant Responsibility Notes, note 1, states the contractor is to transplant, store and maintain all plant material larger than 4" caliber. However, note 2 states, all plant material smaller than 4" caliber to be handled by owner/college. Please confirm that contractors are responsible for all the quantities called out on sheet L0.11, for both the Overall Tree & Shrub Inventory schedule.

*RESPONSE: Disregard Transplant Responsibility Notes; Contractor is responsible for ALL plant material shown in plan and listed on L0.11 Tree and Shrub Inventory. Contractor to transplant and relocate plant material to campus nursery; campus nursery located per map, as provided to bidder. Contractor to provide drip irrigation tubing, and tie into existing campus irrigation system, for automatic irrigation per College.*

(17) QUESTION: Please provide model for Master Valve.

*RESPONSE: MANUF/MODEL: Superior 3200 - 3" Master Valve – Normally Closed (or approved equal)*

(18) QUESTION: Per L2.00/ Irrigation legend/ Ball valve model is NT-58570, the maximum size for this type is 3". However, there is a ball valve at 4" mainline. Please provide model for ball valve 4".

*RESPONSE: MANUF/MODEL: Nibco T-585HP-4-LF 4" Threaded, Full Port, Bronze (or approved equal)*

(19) QUESTION: There is no Air relief valve shown in the legend as well as drip details C, B. However, there is a detail D specified for air relief valve installation. Please confirm that no air relief valve is required in this project. If Air relief valve is required, please provide a model for Air relief valve.

*RESPONSE: Provide (1) air relief valve per drip zone. Locate at highest point. MANUF/MODEL: Netafim Guardian ¾" (or approved equal)*

(20) QUESTION: L2.00/ Irrigation shows symbol of backflow Preventer without model. Please provide model for this one.

*RESPONSE: MANUF/MODEL: Zurn 375 3" (or approved equal)*

(21) QUESTION: Sheet L2.51 shows detail H for Basket strainer, however, there is no basket strainer shown in legend & plans. Please confirm no basket strainer is required in this project.

*RESPONSE: Provide basket strainer. MANUF/MODEL: Watts 97FB-CSSIB 3 (or approved equal)*

(22) QUESTION: The soil preparation shown in section 329000/3.03.A is different from sheet L3.00/ Planting note 4. Please clarify.

*RESPONSE: Drawings take precedence. L3.00 Planting Notes, Note 5: Soil Preparation Materials/Process listed is for bidding purposes. Contractor shall have a qualified Soils Laboratory perform agricultural soils tests and shall follow Soils Laboratory soil prep recommendations.*

(23) QUESTION: Sheet L2.00/ Irrigation legend shows Bronze ball valve, however specs section 328400-9/2.02.C.A shows PVC ball valve. Please clarify.

*RESPONSE: Drawings take precedence. Ball Valve to be bronze.*

(24) QUESTION: The irrigation plans already showed the permanent irrigation system for palm trees and all boxed tree 24". Why the specs section 328400-11/3.02 is requires provide the temporary irrigation system for them. Please confirm no temporary irrigation is required in this project.

*RESPONSE: Drawings take precedence. No temporary irrigation.*

(25) QUESTION: Please provide the size for Rosa SPP. as shown on sheet L3.00 Planting Legend: Shrubs & Groundcovers.

*RESPONSE: 15-gallon.*

(26) QUESTION: Refer to sheet L3.00 Planting legend: Shrubs & Groundcovers shows Mulch shall be Gorilla Hair. Sheet L3.00/ planting note19, which states that all shrub and groundcover areas shall be applied forest floor bark mulch. Besides, section 329600/ 2.01/ E & detail C/C2.10 - Biofiltration basin show mulch shall be shredded hardwood bark. Please clarify mulch materials at each planting areas and biofiltration basin.

*RESPONSE: Drawings take precedence. Slope area east of softball field to receive 3" MIN. layer of Gorilla Hair mulch, as indicated in plan. All other planting areas, including biofiltration basins to receive 3" MIN. layer of forest floor bark mulch, per planting notes.*

(27) QUESTION: Refer to sheet L2.01/ Irrigation Plan. There is a note called-out that the contractor shall replace existing irrigation heads and manifold valves along the existing running track. Assume quantity of 20 each. Please specify the quantity that should be applied to heads and valves due to the large difference in cost between both.

*RESPONSE: Disregard. NO new heads to be provided; NO new valves to be provided. Provide new conduit/wiring from valve locations to new controller.*

(28) QUESTION: Refer to sheet L2.01/ Irrigation Plan. There is a note called-out that the contractor shall replace existing irrigation heads and manifold valves along the existing running track. Assume quantity of 20 each. Please provide the model for the heads, and the size and model for the valves that need to be replaced.

*RESPONSE: Disregard. NO new heads to be provided; NO new valves to be provided. Provide new conduit/wiring from valve locations to new controller.*

(29) QUESTION: Please provide As-built plans.

*RESPONSE: As-Builts for the irrigation system are not available.*

(30) QUESTION: Refer to sheet L2.02. There is a call-out at controller C that shows "New controller to service the existing football practice field irrigation system to the west." contractor to provide a new wire connection to the existing valves". Can you provide the location of the existing controller which serves existing valves at the football practice field?

*RESPONSE: Existing controller is located within existing athletic shed, adjacent to Well Water Controller.*

(31) QUESTION: Refer to sheet L2.02. There is a call-out at controller C shows "New controller to service the existing football practice field irrigation system to the west. contractor to provide a new wire connection to the existing valves". Where is the location of the existing valves that need to be provided with new wires? Is it replaced with a new controller C?

*RESPONSE: Existing valves located at east end of existing running track. Yes, existing controller to be replaced w/ new Controller C.*

(32) QUESTION: Refer to sheet L3.51, detail D/ Palm Planting, Note 4 shows 3" stabilized D.G granite at 6' Dia at bottom of pit. However, there is the words show that 4' at D.G planter, therefore the note 5 should also be D.G. Please clarify where D.G should be installed.

*RESPONSE: Disregard note for D.G.; no D.G. at palm planting.*

(33) QUESTION: Please provide material for D.G at Palm which is shown in detail D/L3.51.

*RESPONSE: Disregard note for D.G.; no D.G. at palm planting.*

(34) QUESTION: Refer to sheet L2.01/ L2.01 A - Water well point of connection #1 shows reclaim water meter location see construction note #1 on sheet L2.10. However, sheet L2.00/ Irrigation legend/ P.O.C #1 legend shows Domestic water meter location see irrigation construction note #1 on sheet L2.51. Please clarify which one is correct.

*RESPONSE: Landscape Irrigation System to utilize existing Well Water Meter as shown in plans. No new water meter to be purchased/installed. Site system utilizes Well Water, as indicated in Irrigation Legend.*

(35) QUESTION: Sheet L2.00/ irrigation legend shows Existing water well meter see Civil engineer plans for additional information. However, Irrigation note/ P.O.C 1 note shows landscape contractor shall purchase and install one 2" domestic water meter located per civil engineer's sewer & water plan. Please clarify.

*RESPONSE: Landscape Irrigation System to utilize existing Well Water Meter as shown in plans. No new water meter to be purchased/installed. Site system utilizes Well Water, as indicated in Irrigation Legend.*

(36) QUESTION: Please provide model and detail for water meter, which is shown in sheet L2.00/ Irrigation construction notes 1.

*RESPONSE: Landscape Irrigation System to utilize existing Well Water Meter as shown in plans. No new water meter to be purchased/installed. Site system utilizes Well Water, as indicated in Irrigation Legend.*

(37) QUESTION: Sheet L2.00/ irrigation construction notes shows install one 2" domestic water meter. However irrigation legend shows Domestic water point of connection equipment size shows water meter is 4" size. Please clarify.

*RESPONSE: Landscape Irrigation System to utilize existing Well Water Meter as shown in plans. No new water meter to be purchased/installed. Site system utilizes Well Water, as indicated in Irrigation Legend.*

(38) QUESTION: Refer to section 329300/ 3.05-C, the planting soil shall be used for backfill. Refer to the same section, 2.05-D, the planting soil is existing, native surface topsoil, existing, in-place surface soil per 2.05-E or imported topsoil per 2.05-F. However, refer to sheet L3.00/Planting notes, backfill soil is mixed following the specified rates. Please clarify which backfill rate is applied for this project.

*RESPONSE: Drawings take precedence. L3.00 Planting Notes, Note 5: Soil Preparation Materials/Process listed is for bidding purposes. Contractor shall have a qualified Soils Laboratory perform agricultural soils tests and shall follow Soils Laboratory soil prep recommendations.*

(39) QUESTION: Refer to section 328000/ 2.02, mainline pipe 2" and smaller shall be sch.40 PVC pipe, 2-1/2" and larger shall be class 200 PVC pipe. However, refer to section 328400/ 2.01,

pressure mainline pipe sizes 3" and smaller shall be sch.40 PVC, sizes 4" and larger shall be class 200 PVC pipe. Refer to L2.00/ Irrigation Legend, PVC Sch.40 for mainline sizes 1" to 1- 1/2", PVC class 315 for mainline sizes 2" to 4". Please clarify.

*RESPONSE: Drawings take precedence. Refer to Irrigation Legend, Sheet L2.00:*

| | |
|---|---|
| Mainline | Irrigation Mainline - PVC SCH. 40 IPS purple pipe.<br>PVC SCH. 40 IPS for mainline sizes 1" to 1 1/2".<br>PVC Class 315 IPS for mainline sizes 2" to 4". Fitting shall be SCH 40 size per plan.<br>CLASS C900 for mainline sizes 6" & above. Sleeve mainline per notes and details. |
| Potable Water Mainline | Potable Water Irrigation Mainline - Connect to Potable Water System.<br>PVC SCH. 40 IPS for mainline sizes 1" to 1 1/2".<br>PVC Class 315 IPS for mainline sizes 2" to 4". Fitting shall be SCH 40 size per plan.<br>CLASS C900 for mainline sizes 6" & above. Sleeve mainline per notes and details. |
| Lateral Line | Lateral Pipe - (PVC SCH. 40 IPS purple pipe for water well source).<br>Non-pressure line minimum pipe size shall be 3/4" - size laterals per plan.<br>PVC SCH. 40 IPS for sizes 3/4" to 2 1/2"<br>PVC Class 315 IPS for sizes 3" and larger |
| PVC Sleeves | PVC SCH. 40 IPS purple pipe - sleeves shall be installed for any mainline, lateral, or wires crossing under hardscape per irrigation construction notes. Size to be two times the pipe diameter or wire bundle. |

(40) QUESTION: Please provide size for transplanted plants.

*RESPONSE: Sizing of transplanted plants is not available. Note: Site is available for site observation. Contact Dennis Astl (Manager, Construction & Facilities Planning Palomar Community College) at 760-744-7750 ext. 2772*

(41) QUESTION: Which contractor shall be responsible for existing tree removal, boxing and transplanting to the Nursery yard. If it is handled by Landscape Contractor, please provide location of Nursery yard

*RESPONSE: Responsibility to be determined by bidding general contractor. Campus nursery located per map, as provided to bidder.*

(42) QUESTION: Please provide a drawing detail for 18" high weed barrier between the Carex Panza Grass and the rest of plants. Noted on plan pages L3.01 through L3.03. Unsure as to installation detail, none shown.

*RESPONSE: Root Barrier at Carex location(s) to be MANUF/MODEL: "DeepRoot WB 18/30-100 Barier Roll" (or approved equal). Install per MANUF. details.*

(43) QUESTION: In an effort to clarify the quantity of transplanted trees. Please provide the quantity of existing trees that are 4" or larger caliber, per plan pages L0.11 & L0.12. Planting plans, L3.00, shows eight (8) trees to be transplanted, confirm that this quantity coincides with the 4" and larger caliber plants.

*RESPONSE: Sizing of transplanted plants is not available. Note: Site is available for site observation. Contact Dennis Astl (Manager, Construction & Facilities Planning Palomar Community College) at 760-744-7750 ext. 2772. Contractor is responsible for ALL plant material shown in plan and listed on L0.11 Tree and Shrub Inventory. Contractor to transplant and relocate plant material to campus nursery; for nursery location, see page 31 of 73 of 103-22 Athletics Stadiums Rebid documents. Contractor to provide drip irrigation tubing, and tie into existing, campus irrigation system, for automatic irrigation per College.*

(44) QUESTION: Confirm that College personnel is removing, boxing, and maintaining all 4" and smaller trees/plants, etc… per transplanting responsibility note on L0.12.

*RESPONSE: Disregard Transplant Responsibility Notes; Contractor is responsible for ALL plant material shown in plan and listed on L0.11 Tree and Shrub Inventory. Contractor to transplant and relocate plant material to campus nursery; campus nursery located per map, as provided to bidder. Contractor to provide drip irrigation tubing, and tie into existing, campus irrigation system, for automatic irrigation per College.*

(45) QUESTION: Spec section 282300 section 1.3.B states the Contractor must be authorized factory trained and certified. This requirement is usually for the sub-contractor not the Contractor. Please clarify this requirement.

*RESPONSE: Requirement is for the contractor performing the work.*

(46) QUESTION: Section 282300 section 1.3.B.2 is asking for a list of Video surveillance projects to be provided with the proposal. Please clarify this requirement is not required at bid time.

*RESPONSE: This is a submittal requirement. Not required at bid time.*

(47) QUESTION: This same spec (Section 282300) has listed equipment that has not been available for 10 years. Please provide a current list of hardware and software for this section.

*RESPONSE: Per Addendum 03, cameras are OFCI, and VMS is to be owner furnished and installed as part of the FFE scope.*

(48) QUESTION: Submit the following RFI on the Building Automation/DDC Systems at Palomar. Addendum 4 provided spec section 230900 for Building Automation Controls. Is this spec meant to replace section 23000 DDC Controls?

*RESPONSE: 23 09 00 is to replace 23 09 23.*

(49) QUESTION: Regarding Spec 23 09 23 (.19, .23, .27), the only acceptable contractor is Johnson Controls. Per Addendum 4 Spec 23 09 00, there are multiple vendors listed that must utilize Delta Controls. Please confirm that the addendum 4 spec is to replace 23 09 23 (in its entirety) or clarify if Johnson Controls is also an approved vendor.

*RESPONSE: 23 09 00 is to replace 23 09 23.*

(50) QUESTION: The Addendum 3 NV5 Geotechnical Report (11/5/21) for the Phase 2 area recommends the contractor excavate the existing soils to 3 feet under the footings. (See section 8.2) The contractor does not have footing dimensions for the future building in Phase 2. Section EE/C1.21 in Addendum 3 shows a dotted line for Over-Excavation Limit. Please provide an elevation for the Over-Excavation Limit in this Phase 2 area since we don't have information to determine that elevation relative to building footings.

*RESPONSE: Contractor to assume over-excavations elevation of 6' below pad elevation which would be 573.2-6'=567.2'*

(51) QUESTION: The synthetic turf legend on sheet AT4.2 calls out G/AT7 (turf over base) for the turf in the batting cages. The batting cage concrete edge band detail O/AT7 describes turf over

base/concrete/tile. Which detail (G/AT7 or O/AT7) should be used for the synthetic turf section inside the batting cages?

*RESPONSE: Use O/AT7 for turf in batting cages.*

(52) QUESTION: Do you think they (the District) will push the bid date just a little?

*RESPONSE: No, The District will not be adjusting the bid date.*

**END OF ADDENDUM #6**

Date Issued: May 20, 2022

Nancy Lane (May 20, 2022 17:47 PDT)

Nancy Lane, Acting Asst. Supt./V.P. Finance & Administrative Services
Palomar Community College District

# SUBSTITUTION REQUEST FORM

Project: Palomar College Athletics Ph 1 Rebid
Substitution Request Number: _____

To: HMC Architects, Inc.
From: _____

Re: _____
Date: 5/9/22

Architect's Project Number: _____
Contract For: _____

Specification Title: Metal Roof Panels
Description: _____

Section: 07 41 13
Page: 4 Article/Paragraph: 2.01

Proposed Substitution: MS 200 18 GAUGE

Manufacturer: TAYLOR METAL PRODUCTS
Address: 4880 FELSPAR ST. RIVERSIDE, CA

Trade Name: MECHANICAL SEAMED METAL ROOF PANELS

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Attached data shall include: product description, specifications, drawings, photographs, and performance and test data adequate for evaluation of the request; applicable portions of the date are clearly identified.
Attached data also includes a description of changes to the Contract Documents that the proposed substitutions will require for its proper installation, at no cost to the Owner.
The Undersigned Certifies:

- Proposed substitution has been fully investigated and determined shall be equal or superior in respects to specified product.
- Same warranty will be furnished for proposed substitution as for specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Proposed substitution does not affect dimensions and functional clearances.
- Payment will be made for changes to building design, including A/E design, detailing and construction costs caused by the substitutions.
- Reason(s) why substitution is being submitted.
  - ☐ Specified product or material is not available. Explain in detail as attachment.
  - ☐ Cost savings to Owner. Indicate comparative cost analysis as attachment.
  - ☐ Other. Explain:

Submitted by: TAYLOR METAL PRODUCTS STEVE Tetreault
Signed by: Steve Tetreault
Firm: _____
Address: 4880 FELSPAR ST. RIVERSIDE, CA

Telephone: 602-206-2796

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A/E's REVIEW AND ACTION

☐ Substitution Approved
☐ Substitution Rejected as marked below:
  - ☐ Insufficient information submitted
  - ☐ Submitted late.
  - ☐ Information not clearly marked.
  - ☐ Full line product information (Binder not provided).
  - ☐ Does not meet performance / design requirements of Paragraph _____
  - ☐ Comparisons not properly identified on product data sheets.

Signed by: _____ Date: _____

Substantiating Data Required:

| | |
|---|---|
| ☐ Drawings | ☐ Tests if required in individual sections |
| ☒ Product Data | ☐ Reports if required in individual sections |
| ☒ Samples | ☐ Other: _____ |

9-10-2019

To: Whom it May Concern

From: Steven Tetreault
Sales Manager

Subject: Reference Projects for MS200 panel

1) Bachelor Enlisted Quarters 8 and 9
   Location – Camp Pendleton
   Size 130,000 sf
   Product – MS-200 22 ga 16" Kynar 500 color Colonial Red
   Date of Installation – January 2016

2) Stauffer Elementary School
   Location – Downey CA
   Size – 15,000 sf
   Product – MS-200 22 ga 16" Kynar 500 Special Color – Lions Mane
   Date if Installation – April 2019

3) Bartow Fine Arts Academy
   Location – Barstow CA
   Size – 140,000 sf
   Product – Versa Span 22 ga 16" Kynar 500 color Silver Metallic
   Date of Installation – July 2019

4) Fort Huachuca Unmanned Aerial Drone Hangar
   Location – Ft Huachuca AZ
   Size 50,000 sf
   Product – MS200 18" 24 ga Kynar color Glacier White
   Date of installation – January 2017

**COMPARISON CHART**
**Morin Snap Seam/Taylor MS-200**

| | Morin | Taylor |
|---|---|---|
| | SLR | **MS-200** |
| Plant Location | Fontana | **Riverside CA** |
| Standard Coverage | 18”/16” | 18”/ 16” |
| Seam Height | 2” | 2” |
| Single and Double Seam | Yes | Yes |
| Stiffening Ribs/Striations | Yes | Yes |
| Clip Gauge | 18 ga | 18 ga |
| Standard Color Choices | 22 ea | 22 ea |
| Custom Colors | Yes | Yes |
| **30-Year Paint Warranty** | No | **Yes** |
| **Code Compliance Report** | **NONE** | **UL ESR 25913 w ICC Acceptance Criteria** |
| **Project Slope 1 3/8:12** | **YES** | **Meets Slope Requirement** |
| **DSA apprpved** | **Yes** | **YES** |
| ASTM 1592 Test | Yes | Yes |
| Air Infiltration Test ASTM E283-84/1680 14 CFM/LFT at 20 PSI | Yes | Yes |
| Water Infiltration Test ASTM E330/1646 | Yes | Yes |
| **UL Constructions** | 90 **176** **180**<br>238 **238B** **435**<br>435A | **90** **176** **180** **238**<br>**238A** **238B** 238C **435**<br>**435A** 437 449 451<br>452 487 **506** **506A**<br>**506B** **576** **577** **583**<br>312 335 403 608<br>610 |
| Fire | Class A | Class A |
| Impact Resistance | Class 4 | Class 4 |
| Steel Strength | 50 KSI | 50 KSI |

Metal Wall & Roof Systems
North America

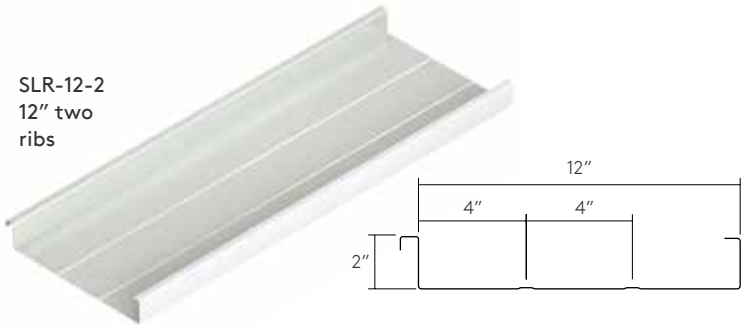
**BASIS OF DESIGN**

# SLR Roof Series

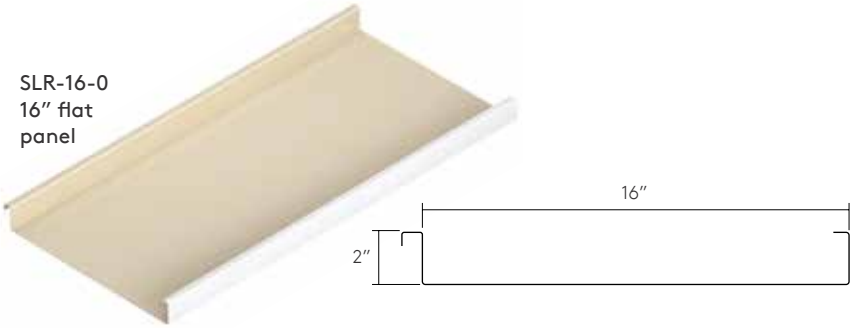
This profile is one of our oldest and most used structural roofing panels, designed for use with a variety of slopes and can wrap from roof to wall for dynamic impact.

Morin®
A Kingspan Group Company

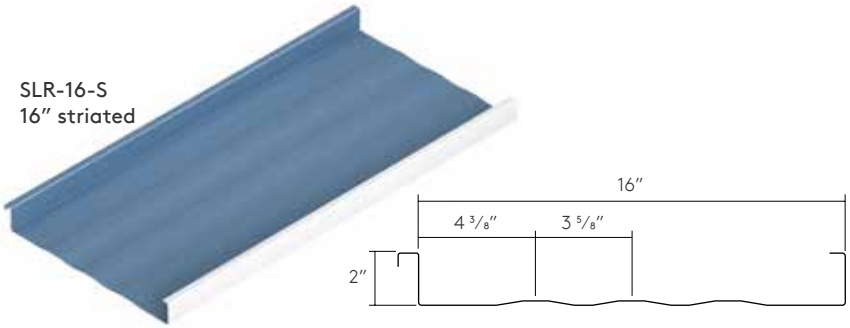
SLR-12-2
12″ two
ribs



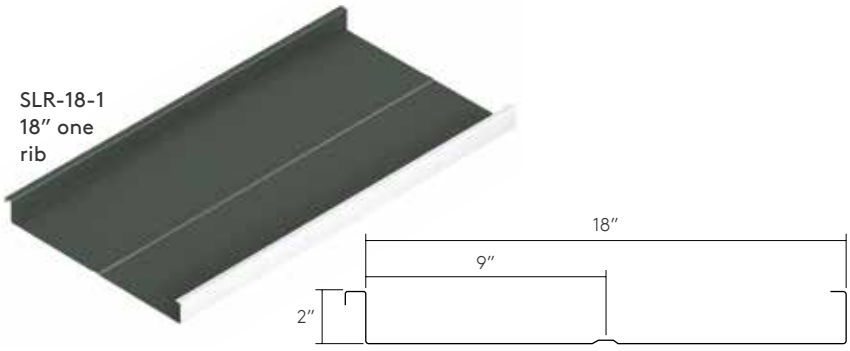

SLR-16-0
16″ flat
panel




SLR-16-S
16″ striated




SLR-18-1
18″ one
rib




## The SLR Profile is a seamed standing seam panel that can be applied to roof or wall and are available in a variety of profiles, gauges and widths.

It is available in a variety of widths, rib, striations, and embossing options with a tight seam joinery makeing it strong and durable and ideal for environmentally challenging areas.

The SLR panel also works well in curved applications, metal walls or a low slope roof. This flexible panel can offer solutions to many project needs.

- All PVDF finishes available
- Factory caulking is standard

**Panel Depth:**
2″ (51mm)

**Cover Width:**
12″ (305mm) – 18″ (457mm)

**Lengths:**
5′ (1.52m) to 30′ (9.14m) standard.
Shorter and longer lengths available

**Galvalume / Zincalume Painted Steel Options:**
22 GA (.76mm) / 24 GA (.60mm)

**Aluminum Options:**
.040 GA (1mm) / .032 GA (0.813mm)

**Special Notes:**
Copper and Zinc options available dependent on the profile / gauge.

Jobsite roll forming is available.

Images are representative and are just a sample of a large variety of options.

**HQ / East** 685 Middle Street, Bristol, CT 06010 T: 1-800-640-9501
**West** 10707 Commerce Way, Fontana, CA 92337 T: 1-800-700-6140
**South** 1975 Eidson Drive, DeLand, FL 32724 T: 1-800-640-9501

**www.morincorp.com**

Morin®
A Kingspan Group Company

TAYLOR METAL PRODUCTS

# MS-200™ & MS-200™ NL

## MECHANICALLY SEAMED

## Key Features

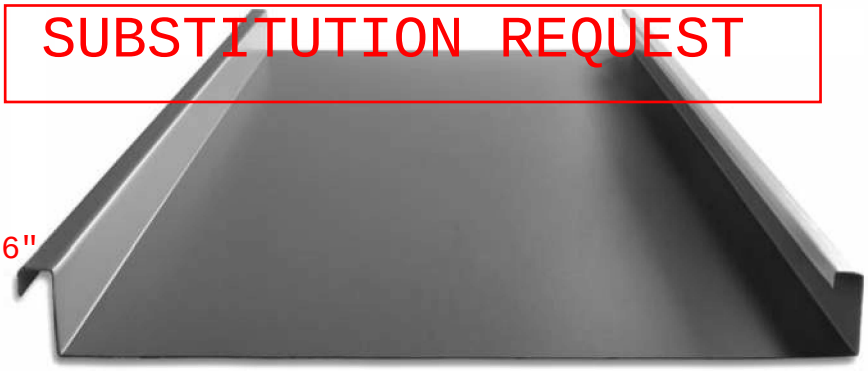
- 12″ to 18″ options available
- 24, 22, 18 and .032 Aluminum
- Floating clip system: allows for expansion/contraction of panels in longer lengths
- 2″ Mechanical seam rib, 90° or 180° Factory notching available
- Factory injected Butyl sealant
- Structural panel that will span up to 5'
- Concealed fasteners: fasteners cannot leak
- Manufactured in Sacramento, CA & Salem, OR
- UL - Code compliance UL Evaluation Report UL ER 25913-01
- UL580 Class 90 wind uplift, UL Class A fire rated
- UL Construction No. 90, 176, 180, 238, and 238A
- ASTM E-1592-Structural uniform static air pressure
  ASTM 1646- Water infiltration
  ASTM 2140- Water infiltration
  ASTM 1680- Air infiltration
- Weather tightness warranty available
  *(Contact TMP representative for details)*
- ½:12 minimum pitch recommended:
  For lower pitches please inquire
- Standard panel lengths 2' to 65':
  For longer pitches please inquire
- Onsite roll forming available for long lengths
- Pan options: Flat pan, Accent ribs, Striations
- Retro-fit systems available


- Prevents crowning
- No visible screws required
- Sharp, professional appearance

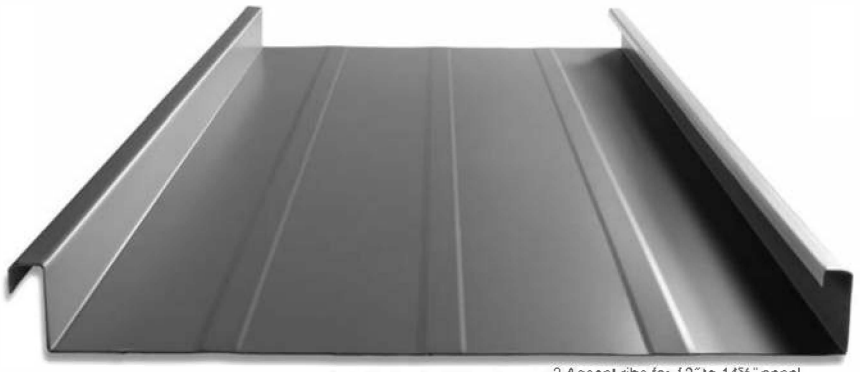
## Panel Profiles

SUBSTITUTION REQUEST

Will provide 16" as specified



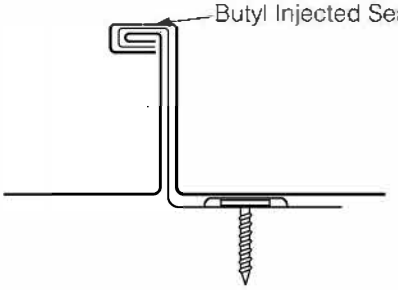
FLAT PAN
12″ to 18″ options available



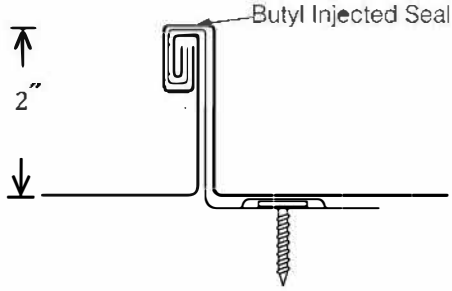
ACCENT RIBS
2 Accent ribs for 12″ to 14¾″ panel
3 Accent ribs for 16″ to 18″ panel

STRIATED

## 90° Seam Detail




## 180° Seam Detail



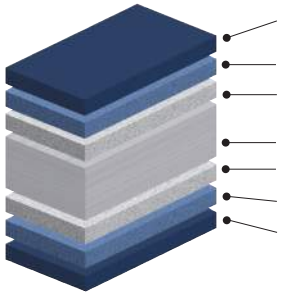
TAYLOR METAL PRODUCTS

## MATERIAL SPECIFICATIONS

- 24 gauge Kynar 500® Painted Steel .0236" (Thickness prior to painting) Galvanized G-90 or AZ-50
- 24 gauge bare Zincalume® Plus AZ-55 *(No finish warranty – 25 yr. perforation warranty)*
- ▲ 22 gauge Kynar 500® Painted Steel .029" (Thickness prior to painting)
- ✦ .032" Kynar 500® Painted Aluminum
- 22 gauge Rusteel Plus™ (A606)
- 16 and 20 ounce Copper *(Please inquire)*
- Kynar 500® and substrate testing data available *(See website)*
- "Oil canning" is an inherent characteristic of roof and wall products, and not a defect, which is not a cause for panel rejection

## KEY FEATURES

- 21 Standard Colors, 5 Metallic Colors and 4 Specialized Colors
- Kynar 500® Paint System - the ultimate in exterior durability and color retention
- "Cool" color pigments are specially designed to reflect infrared light, reducing heat gain to dwelling, and conform with ENERGY STAR® criteria
- Superior Quality, two coat, 70% resin finish, applied at a 1 mil. thickness
- 40 year residential paint warranty
- 20 and 30 year commercial paint warranty: Contact TMP for warranty specifications




**40-Year Residential / 20 and 30 Year Commercial Manufacturer's Limited Warranty**

## STANDARD COOL KYNAR 500® COLORS

Glacier White SRI-85 — 1,2 ▲
Sierra Tan SRI-60 — 1,2
Parchment SRI-58 — 2
Sterling Grey SRI-44 — 1,2 ✦
Zinc Grey SRI-39 — 1,2 ▲✦
Charcoal Grey SRI-25 — 1,2 ▲✦
Saddle Tan SRI-37 — 1,2
Medium Bronze SRI-36 — 1,2 ▲✦
Musket SRI-31
Dark Bronze SRI-22 — 1,2 ▲✦

Tahoe Blue SRI-31 — 2
Pacific Blue SRI-26 — 1,2
Hemlock Green SRI-36 — 1,2
Forest Green SRI-24 — 1,2
Pine Green SRI-25 — 1,2
Terra Cotta SRI-43 — 1,2
Tile Red SRI-35 — 1,2
Colonial Red SRI-37 — 2
Retro Red SRI-42 — 2
Graphite Black SRI-26 (formerly: Black) — 1,2
Matte Black SRI-23 — 1,2

## PREMIUM METALLIC COOL KYNAR® COLORS

Metallic Silver SRI-60 — 1,2 ▲
Champagne SRI-48 — 1
Antique Patina SRI-40 — 1
Copper Penny SRI-50 — 1,2
Weathered Zinc SRI-39 — 1,2 ▲✦

## SPECIALIZED MATERIAL

16 oz. and 20 oz. Copper *please inquire* Pure copper has no warranty
Zincalume® Plus No finish warranty – 25 yr. perforation warranty — 1,2 ▲
Vintage® SRI-19 Vintage® has a color range that can vary from batch-to-batch. See TMP website for more info
Rusteel Plus™ (A606) Rusteel Plus™ has no metallic coating, is unpainted and has no warranty — ▲

These printed chips provide a close representation of the colors.

Metal samples are available upon request. Coatings are low gloss 10-15% sheen.
*SRI = Solar Reflective Index. SRI values listed above are in accordance with ASTM E 1980 and are based on actual testing.***Oil canning is not a cause for material rejection****

steelscape

| Standard Panels | | | | |
|---|---|---|---|---|
| **Width** | **Gauge** | **Color** | **LBS SQFT** | **LBS LF** |
| 14-5/8" | 24 | 1 | 1.36 | 1.65 |
| 18" | 24 | 2 | 1.28 | 1.93 |
| 18" | 22 | | 1.61 | 2.42 |
| 15-3/8" | .032 Alum | | 0.6 | 0.9 |

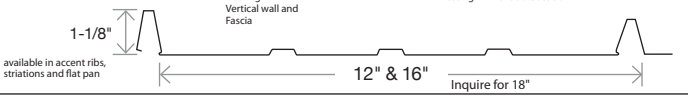
# Taylor Metal Products Cool Kynar 500®

All Taylor Metal Products Kynar 500® coatings utilize pigments that are specifically designed to reflect infrared light, help reduce the heat gain of a dwelling, and conform with ENERGY STAR® criteria for steep slope cool roofing products.

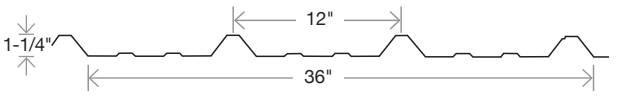
PVDF is a fluoropolymer that is manufactured under the trademarked name Kynar 500®. Paint finishes containing a **minimum** 70% PVDF resin meet the high-performance weathering criteria established by the American Architectural Manufacturing Association and are allowed to carry the Kynar 500® trademarked name.

## Profile

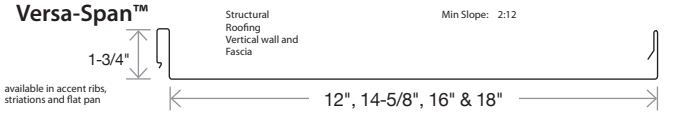
### Easy-Lock™



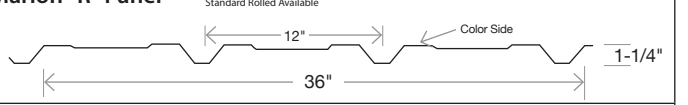

### PBR



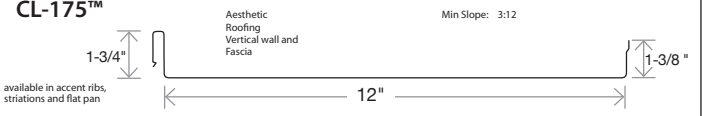

### Versa-Span™



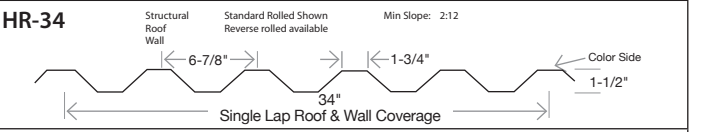

### Marion "R" Panel™



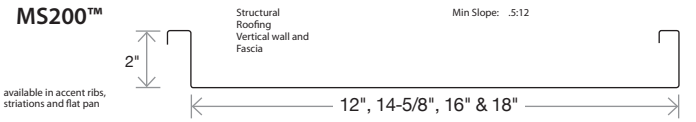

### CL-175™



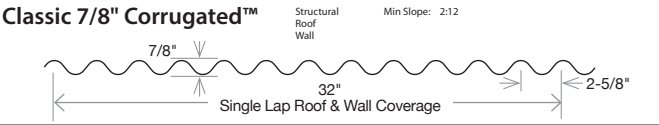

### HR-34



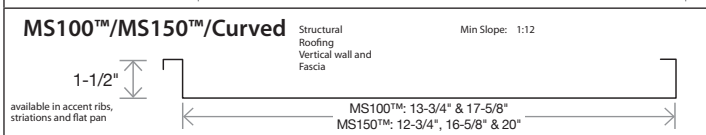

### MS200™



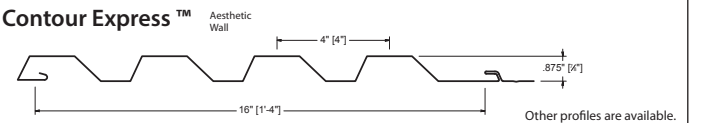

### Classic 7/8" Corrugated™




### MS100™/MS150™/Curved

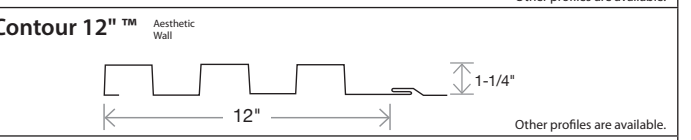



### Contour Express ™

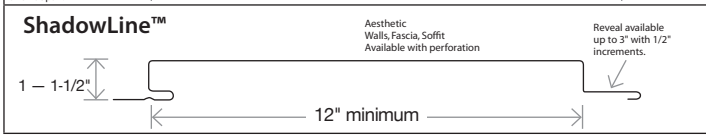



### Smoothwall™/Lifetime Soffit™

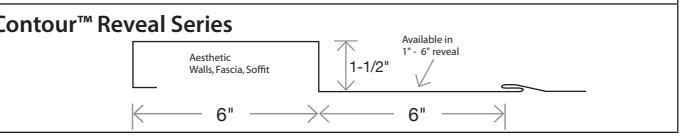

### Contour 12" ™




### ShadowLine™




### Contour™ Reveal Series




| Coil Width | OR/WA Panels listed below are standard size, please inquire for other sizes. | Gauge | Glacier White | Sierra Tan | Parchment | Sterling Grey | Zinc Grey | Charcoal Grey | Saddle Tan | Medium Bronze | Tahoe Blue | Pacific Blue | Hemlock Green | Forest Green | Pine Green | Dark Bronze | Black | Burgundy | Musket | Terra Cotta | Tile Red | Vintage® | Zincalume® Plus | 16 oz. Copper 20 oz. Copper please inquire | Colonial Red | Retro Red | Metallic Silver | Champagne | Antique Patina | Copper Penny | Weathered Zinc |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 16.75" | 12" Easy-Lock<br>12.75" MS150<br>13.75" MS100<br>12" CL-175<br>1" SmoothWall/Lifetime Soffit/ ShadowLine | 24 | x | | x | x | x | x | | x | x | x | | x | x | x | x | | | | | * | | * | | | | | | x | x |
| | | 26 | x | x | | x | x | x | x | x | x | | x | x | x | x | x | x | | | | x | | | | x | | | | | | x |
| 20.625" | 16" Easy-Lock<br>16.625" MS150<br>17.625" MS100<br>12" Versa-Span<br>12" MS200<br>14.625" Versa-Span<br>14.625" MS200<br>12" Reveal<br>1-1/2" SmoothWall/Lifetime Soffit /ShadowLine:*(Aluminum not available)* | 24 | x | x | | x | x | x | x | x | | x | x | x | x | x | x | | x | x | x | * | x | * | | | x | x | x | x | x |
| | | 22 | * | | | | * | * | | * | | | | | | * | * | | | | | | | | | | * | | | | | * |
| | | Aluminum | | | | x | x | x | | x | | | | | | x | | | | | | | | | | | | | | | | x |
| 24" | 18" Easy-Lock<br>18" Versa-Span<br>18" MS200<br>16" Versa-Span<br>16" MS200<br>20" MS150<br>16" Contour<br>12" Contour | 24 | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | | x | x | x | x | x | * | x | x | x | * | * | * | x |
| | | 22 | x | | | | x | x | | x | | | | | | x | x | | | | | | x | | | | x | | | | x |
| 43" | 7/8" Corrugated<br>PBR<br>Marion "R" Panel<br>HR-34 | 24 | x | x | * | x | x | x | x | x | * | * | * | x | x | x | x | | x | x | x | x | x | | * | * | x | x | x | x | x |
| | | 22 | x | | | | x | x | | x | | | | | | x | x | | | | | | * | | | | x | | | | x |
| | | .032 Aluminum | | | | x | x | x | | x | | | | | | x | | | | | | | | | | | | | | | | x |
| 48" | Flat Sheet<br>48"W x 120"L | 24 | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | | x | x | x | x | x | | x | x | x | * | * | * | x |
| | | 22 | x | | | | x | x | | x | | | | | | x | x | | | | | | x | | | | x | | | | x |

Testing information is available on panel specification sheets on TMP website

Zincalume & Zincalume® Plus are registered trademarks of Bluescope Ltd. Galvalume® is a registered trademark of BIEC International, Inc. Vintage® is a registered trademark of Steelscape, Inc. Kynar 500® is a registered trademark of Arkema, Inc. Residential: 40 year, Transferable, Non-Prorated, Limited Manufacturer's Warranty. Commercial: 30 year, Non-Transferable, Non-Prorated, Limited Manufacturer's Warranty

**22 Gauge material available, please call to inquire**

*** Please inquire for availability**

August 2019

TAYLOR METAL PRODUCTS

# KYNAR 500®

## PRODUCT DATA

| **KYNAR 500® SPECIFICATIONS** - Polyvinylidene Fluoride (PVDF)* | | |
|---|---|---|
| | **Aluminum Substrate** | **Coated Steel[1] Substrate** |
| **Dry Film Thickness (nominal)**<br>ASTM D1400 | <br>0.20 – 0.30 mil primer<br>0.70 – 0.80 mil topcoat | <br>0.20 mil primer<br>0.75 mil topcoat |
| **Gloss**<br>ASTM D523<br>Standard @ 60°<br>DURANAR LG @ 85° | <br><br>25 - 35<br><10 | <br><br>25 - 35<br><10 |
| **Pencil Hardness**<br>ASTM D3363 | <br>F-2H | <br>F-2H |
| **Flexibility[2]**<br>T-bend, ASTM D4145 | <br>0-2 T-bend; No pick-off | <br>2 T-bend; No pick-off |
| **Adhesion**<br>ASTM D3359<br>Reverse impact 1/16" crosshatch | <br>No adhesion loss | <br>No adhesion loss |
| **Reverse Impact**<br>ASTM D2794<br>1.5 x metal thickness (aluminum)<br>3.0 x metal thickness (coated steel) | <br><br>No cracking or adhesion loss<br>No cracking or adhesion loss | <br><br>No cracking or adhesion loss<br>No cracking or adhesion loss |
| **Acid Resistance**<br>ASTM D1308<br>10% muriatic acid — 24 hrs.<br>20% sulfuric acid — 18 hrs. | <br><br>No effect<br>No effect | <br><br>No effect<br>No effect |
| **Acid Rain Test**<br>Kesternich $SO_2$, DIN 50018 | <br>15 cycles min.<br>No objectionable color change | <br>15 cycles min.<br>No objectionable color change |
| **Alkali Resistance**<br>ASTM D1308<br>10%, 25% NaOH, 1 hr. | <br>No effect | <br>No effect |
| **Salt Spray Resistance**<br>ASTM B117<br>5% salt fog @ 95°F | <br>Passes 4000 hrs.<br>Less than 1/16" avg. creepage from scribe;<br>None or few #8 blisters | <br>Passes 1000 hrs.<br>Less than 1/8" avg. creepage from scribe;<br>None or few #8 blisters |
| **Humidity Resistance**<br>ASTM D714,<br>ASTM D2247<br>100% relative humidity @ 95°F | <br>Passes 4000 hrs.<br>No #8 blisters | <br>Passes 1500 hrs.<br>No #8 blisters |
| **Exterior Exposure**<br>10 yrs. @ 45°, south Florida<br>ASTM D2244<br>ASTM D4214 | <br><br>Max. 5 fade<br>Max. 8 chalk | <br><br>Max. 5 fade<br>Max. 8 chalk |

[1] Coated Steel includes the following types of steel: G90 hot dip galvanized, Galfan, Galvalume, and Zincalume.

[2] Fracturing or rupturing of substrate will rupture coatings. Heavy gauge and clad steel substrates impose limitations on formability. DURANAR coatings are generally flexible beyond the point of substrate rupture.

*PVDF is a fluoropolymer that is manufactured under the trademark names Duranar (PPG) and Kynar 500®. Paint finishes containing a minimum 70% PVDF resin meet the high-performance weathering criteria established by the American Architectural Manufacturing Association.


Taylor Metal Products (OR)
4566 Ridge Dr. NE
Salem, OR 97301
(503) 581-8338
Fax: (503) 581-6877
www.taylormetal.com

Taylor Metal Products (CA)
5711 Perrin Ave.
McClellan, CA 95652
(916) 318-8844
Fax: (916) 993-4123
www.taylormetal.com

Taylor Metal Products (WA)
710 A St. NW Suite 101
Auburn, WA 98002
(206) 900-9923
www.taylormetal.com

TAYLOR METAL PRODUCTS

# Kynar 500® REGISTERED WARRANTY

## 30 Year, Non-Prorated Limited Warranty

Subject to the conditions and exclusions set forth in this warranty, **TAYLOR METAL , INC.** (hereinafter referred to as TMP) provides the following express limited warranty with regard to Kynar 500®/Hylar 5000® coated galvanized steel products of its manufacture for use as an exterior roofing or sidewall building product (hereinafter referred to as Product).

**Registration:** Within 45 days after installation of the Product has been completed, the Original Property Owner(s) must complete a Warranty Registration Card in full and mail it to TMP. Upon receipt, TMP will forward, by mail, to the Owner(s) the Registered Warranty complete with registration number. The Owner(s) should keep this Registered Warranty in a safe place for future reference. Failure to notify TMP of the registration shall relieve TMP of all obligations hereunder. In addition, the warranty does not and will not take effect until the project has been paid in full.

**Performance:** Although it is recognized by all parties to this Warranty that all coatings, including Kynar 500®/Hylar 5000®, will fade and change in appearance to some degree over a period of time in outdoor installations, and that such changes may not be uniform between surfaces not equally exposed, TMP warrants for a period of 30 years from the date of installation that when exposed to normal atmospheric conditions and conditions of ordinary wear the Product will not:

A. Peel, check, flake or crack (except for slight crazing or cracking as may occur with normal roll-forming or brake bending and which is accepted as standard);
B. Chalk in excess of a numerical rating of 6, as measured using the procedures of ASTM D-4214-89 (Method D-659); nor
C. Fade or change color more than 8 E units (Hunter Color Difference), as measured using the procedure of ASTM D-2244-85, comparing an unexposed retain panel to the exposed panel after removal of dirt and chalk.

**TMP's liability under this Warranty is limited as follows:** If TMP determines the Product to be defective according to the terms of this Warranty, TMP shall, at its sole option, repair or refinish the defective Product, replace the defective Product from current stock or refund the original purchase price of the defective Product. In no event shall TMP's liability exceed the original material costs of the Product.

TMP shall not be liable for any expenses connected with the labor for the replacement of the defective Product or any incidental or consequential damages. The Warranty for any repaired or replaced Product shall be for the remainder of the warranty period applicable to the original Product. Delivery charges, installation costs and taxes are not covered by this Warranty.

**Conditions and Exclusions:** This Warranty is Subject to the Following Exclusions, Limitations and Conditions:

a. The Warranty covers only Product erected in the continental United States, Alaska and Hawaii which are exposed to normal weather and atmospheric conditions.
b. This warranty shall not apply to product located 3,280 feet or fewer from a salt-water, salt spray or marine environment. For installation locations between 3,280 feet to within 1,320 feet the warranty is reduced to 15 years. Site specific warranties are available upon request.
c. This warranty shall not apply to Product that has been painted or whose surface has been altered in any way without written authorization from TMP. Repair attempts or damage caused by such acts prior to TMP's inspection or written authorization shall void any and all protection under this warranty.
d. The Product must be installed to prevent standing water and condensation. When used as roofing panels, the Product must be installed with a minimum pitch of 1/2" per foot for MS200™ Panel roofs, 1" per foot for MS150™ Panel roofs, and 2" per foot minimum pitch for Versa Span™ roofs.
e. The Product must be washed annually with either a fresh water rinse or with a 5% solution of fresh water and mild detergent to prevent the accumulation of concentrated deposits. Fresh water rinses must be documented. Product may be pressure washed, however, settings must not exceed 1,000 PSI and 4 GPM. Any use of abrasive materials or chemical cleaners of any sort will void any and all coverage under this warranty.
f. The warranty shall not cover failures or damage which arise out of any of the following:
   1. The formation of rust on cut panel edges, commonly referred to as cut end or cut edge corrosion/exposure.
   2. Direct or effective exposure to corrosive chemicals, fumes or materials including, but not limited to dissimilar metals, treated lumber, creosote or ash.
   3. Failure to routinely remove any debris accumulations from the Product including, but not limited to, pine needles, leaves or other accumulations of foreign substances.
   4. Use of any patina enhancing/modifying agents, chemical protectors/sealants of any kind, or any other materials placed on the Product other than those stated in "e" above.
   5. Occurrences beyond TMP's control such as acts of God, falling or wind blown objects, explosions, fires, vandalism, civil disturbances, external forces, improper handling, improper installation, modification or misuse of the product.
g. In no event is TMP liable for any incidental or consequential damages, including, but not limited to: personal injury, property damage or lost income.
h. TMP reserves the right to discontinue or change any design or color of the Product. If, for any reason, Product of the type originally installed are no longer available from TMP at the time the defect is discovered, TMP, in fulfillment of its warranty obligation hereunder, shall have the right to substitute another Product determined by TMP, in its sole discretion, to be of comparable quality and price.

**Transfer:** This warranty is non-transferrable .

**Claims Procedure:** Any claim must be presented in writing to TMP within the warranty period and within 45 days of time after the defect is discovered. The claim must describe the claimed defect, the date the defect was discovered, and include pictures that clearly show the defect. The claim must reference the Warranty Registration Number and the original date of installation, and shall include the owner(s) name, address and phone number. TMP shall be given a reasonable opportunity to inspect the Product in question. Notice shall be sent by registered mail to: ATTN: Warranty Claims, Taylor Commercial Products, 4566 Ridge Dr. NE, Salem, OR 97301.

**THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, WHICH EXTEND BEYOND THE DESCRIPTION AS STATED HEREIN, INCLUDING ANY WARRANTIES OF MERCHANTABILITY OR FITNESS OF PURPOSE. TMP SHALL NOT BE RESPONSIBLE FOR ANY INDIRECT OR CONSEQUENTIAL DAMAGES OR FOR ANY KIND OF LOSS WHATSOEVER. UNDER NO CIRCUMSTANCE SHALL TMP'S LIABILITY UNDER THIS WARRANTY EXTEND BEYOND THE PRODUCT'S ORIGINAL MATERIAL COSTS.**

Original Property Owner(s): _____

Installation Address: _____

Purchaser: _____

Purchase Date: _____ Invoice #: _____

Issued by **TAYLOR METAL, INC.**

Signature: _____

Title: _____ Name: _____

Registration #: _____ Date_____

Revised 4/12

4566 RIDGE DR. NE • SALEM, OR 97301 • PHONE: 503-581-8338 OR 1-800-574-1388 • FAX: 503-581-6877

TAYLOR METAL PRODUCTS

4566 RIDGE DRIVE NE
SALEM, OR 97301
PHONE 503.581.8338
800.574.1388
FAX 503.581.6877

# MS200 (Double Lock) ROOF PANEL (Negative Load Chart)

| SECTION PROPERTIES | | | | | | | | | | ALLOWABLE UNIFORM LOADS, psf For various clip spacings (i.e. span values) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Width, in. | Gauge | Yield ksi | Weight psf | Top in Compression | | | Bottom in Compression | | | Outward Load | | | | | | | | |
| | | | | $I_{xx}$ $in^4/ft.$ | $I_{xx\ (eff)}$ $in^4/ft.$ | $S_{xx}$ $in^3/ft$ | $I_{xx}$ $in^4/ft.$ | $I_{xx\ (eff)}$ $in^4/ft.$ | $S_{xx}$ $in^3/ft$ | 1' | 1.5' | 2' | 2.5' | 3' | 3.5' | 4' | 4.5' | 5' |
| **16** | 24 | 50 | 1.36 | 0.1549 | 0.1370 | 0.0789 | 0.0925 | 0.1106 | 0.0908 | 161.3 | 147.6 | 134.0 | 120.3 | 106.7 | 93.0 | 79.4 | 67.7 | 52.1 |
| **16** | 22 | 50 | 1.71 | 0.2040 | 0.1800 | 0.1010 | 0.1210 | 0.1451 | 0.1213 | 163.9 | 150.9 | 137.9 | 124.9 | 111.9 | 98.9 | 85.9 | 72.9 | 59.9 |
| **18** | 24 | 50 | 1.28 | 0.1400 | 0.1230 | 0.0708 | 0.0820 | 0.0988 | 0.0809 | 109.3 | 101.1 | 93.0 | 84.9 | 76.7 | 68.6 | 60.5 | 52.3 | 44.2 |
| **18** | 22 | 50 | 1.61 | 0.1850 | 0.1620 | 0.0880 | 0.1070 | 0.1296 | 0.1079 | 156.1 | 143.4 | 130.7 | 118.0 | 105.4 | 92.7 | 80.0 | 67.3 | 54.7 |
| **18** | 0.032 | 19 | 0.62 | 0.2070 | 0.2070 | 0.1220 | 0.2070 | 0.2070 | 0.5696 | 83.3 | 77.4 | 71.5 | 65.7 | 59.8 | 54.0 | 48.1 | 42.3 | 36.4 |

1a. Theoretical section properties for steel panels have been calculated per AISI S100 Specification for the Design of Cold-Formed Steel Structural Members.

1b. Theoretical section properties for aluminum panels have been calculated per the latest edition of the Aluminum Association Design Manual.

2. $I_{xx\ (eff)}$ values are "effective" stiffness properties for positive (downward) load induced deflection determination.

3. $S_{xx}$ values are to be used for flexural (bending) stress determination.

4. Charted Load/Span values are based on ASTM E1592-02 / ASTM E1592-05 testing protocol.

5. Charted Load/Span values above are based on Allowable Stress Design (ASD).....Load **R**esistance **F**actor **D**esign (LRFD) technique not recommended for charted values.

6. Charted Allowable Uniform Loads are based on the Ultimate Uniform Load (per ASTM E1592 testing) divided by a 2.00 Factor-of-Safety.

7. Charted Allowable Uniform Loads do not consider panel weight (Dead Load) or clip-to-substrate (structure) fastener connection strength.

8. Clip-to-substrate (structure) fastener evaluation must consider the Pry Effect applied to the fastener by the clip base and the analysis should be performed by a **licensed structural engineer.**

9. Minimum recommended substrate (structure) recommendations:

   a. Open-framing (i.e. purlins) - 16 ga. (design thickness = 0.0566")

   b. Plywood/OSB - 5/8" (nominal).....this recommended thickness assures an effective degree of fastener thread engagement

   c. Metal deck - 22 ga. (design thickness = 0.0283")

10. Deflection limit consideration for **positive** (downward) loading is limited to a deflection ratio of **L/180** of the span....where "L" is the span in inches.

11. Charted Allowable Uniform Loads **cannot** be increased by 1/3.

TAYLOR METAL PRODUCTS

# MS-200 (single lock) ROOF PANEL

| SECTION PROPERTIES | | | | | | | | ALLOWABLE UNIFORM LOADS, psf For various clip spacings (i.e. span values) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gauge | Width, in. | Yield ksi | Weight psf | Top in Compression | | Bottom in Compression | | Inward Load | | | | | | | | | |
| | | | | $I_{xx}$ in$^4$/ft. | $S_{xx}$ in$^3$/ft | $I_{xx}$ in$^4$/ft. | $S_{xx}$ in$^3$/ft | 2' | 2.5' | 3' | 3.5 | 4' | 4.5' | 5' | 5.5' | 6' | 8' |
| 0.032 | 12 | 19 | 0.700 | 0.3290 | 0.2102 | 0.3290 | 0.6599 | 182.9 | 117.0 | 81.3 | 59.7 | 45.7 | 36.1 | 29.3 | 24.2 | 20.3 | 11.4 |
| 0.040 | 12 | 19 | 0.855 | 0.4050 | 0.2582 | 0.4050 | 0.8133 | 283.0 | 181.1 | 125.8 | 92.4 | 70.7 | 55.9 | 45.3 | 37.4 | 31.4 | 17.7 |
| 0.032 | 16 | 19 | 0.640 | 0.2660 | 0.1610 | 0.2660 | 0.6450 | 133.0 | 85.1 | 59.1 | 43.4 | 33.3 | 26.3 | 21.3 | 17.6 | 14.8 | 8.3 |
| 0.040 | 16 | 19 | 0.790 | 0.3270 | 0.1980 | 0.3270 | 0.7940 | 206.8 | 132.3 | 91.9 | 57.5 | 51.7 | 40.8 | 33.1 | 27.3 | 23.0 | 12.9 |
| 0.032 | 18 | 19 | 0.620 | 0.2420 | 0.1430 | 0.2420 | 0.1430 | 116.8 | 74.7 | 51.9 | 38.1 | 29.2 | 23.1 | 18.7 | 15.4 | 13.0 | 7.3 |
| 0.040 | 18 | 19 | 0.760 | 0.2970 | 0.1764 | 0.2970 | 0.7840 | 181.3 | 116.0 | 80.6 | 59.2 | 45.3 | 35.8 | 29.0 | 24.0 | 20.1 | 11.3 |

1. Theoretical section properties have been calculated per the latest edition of the Aluminum Association's Design Manual. $I_{xx}$ and $S_{xx}$ are effective section properties for deflection and bending.
2. Allowable load is calculated in accordance with the latest edition of the Aluminum Association's Design Manual considering bending, shear, combined bending and shear and deflection. Allowable load considers a 3 or more equal span condition.
3. Allowable load does not address panel weight, fasteners, connection strength or support material.
4. Allowable load includes web crippling.
5. Load/Span values are based on theoretical computations and not load testing.
6. Deflection is not considered.
7. Allowable loads do not include a 1/3 stress increase for wind.

| SECTION PROPERTIES | | | | | | | | ALLOWABLE UNIFORM LOADS, psf For various clip spacings (i.e. span values) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gauge | Width, in. | Yield ksi | Weight psf | Top in Compression | | Bottom in Compression | | Inward Load | | | | | | | | | |
| | | | | $I_{xx}$ in$^4$/ft. | $S_{xx}$ in$^3$/ft | $I_{xx}$ in$^4$/ft. | $S_{xx}$ in$^3$/ft | 2' | 2.5' | 3' | 3.5 | 4' | 4.5' | 5' | 5.5' | 6' | 8' |
| 0.032 | 12 | 19 | 0.700 | 0.3290 | 0.2102 | 0.3290 | 0.6599 | 182.9 | 117.0 | 81.3 | 59.7 | 45.7 | 36.1 | 29.3 | 24.2 | 20.3 | 11.4 |
| 0.040 | 12 | 19 | 0.855 | 0.4050 | 0.2582 | 0.4050 | 0.8133 | 283.0 | 181.1 | 125.8 | 92.4 | 70.7 | 55.9 | 45.3 | 37.4 | 31.4 | 17.7 |
| 0.032 | 16 | 19 | 0.640 | 0.2660 | 0.1610 | 0.2660 | 0.6450 | 133.0 | 85.1 | 59.1 | 43.4 | 33.3 | 26.3 | 21.3 | 17.6 | 14.8 | 8.3 |
| 0.040 | 16 | 19 | 0.790 | 0.3270 | 0.1980 | 0.3270 | 0.7940 | 206.8 | 132.3 | 91.9 | 57.5 | 51.7 | 40.8 | 33.1 | 27.3 | 23.0 | 12.9 |
| 0.032 | 18 | 19 | 0.620 | 0.2420 | 0.1430 | 0.2420 | 0.1430 | 116.8 | 74.7 | 51.9 | 38.1 | 29.2 | 23.1 | 18.7 | 15.4 | 13.0 | 7.3 |
| 0.040 | 18 | 19 | 0.760 | 0.2970 | 0.1764 | 0.2970 | 0.7840 | 181.3 | 116.0 | 80.6 | 59.2 | 45.3 | 35.8 | 29.0 | 24.0 | 20.1 | 11.3 |

1. Theoretical section properties have been calculated per the latest edition of the Aluminum Association's Design Manual. $I_{xx}$ and $S_{xx}$ are effective section properties for deflection and bending.
2. Allowable load is calculated in accordance with the latest edition of the Aluminum Association's Design Manual considering bending, shear, combined bending and shear and deflection. Allowable load considers a 3 or more equal span condition.
3. Allowable load does not address panel weight, fasteners, connection strength or support material.
4. Allowable load includes web crippling.
5. Load/Span values are based on theoretical computations and not load testing.
6. Deflection consideration is limited by a maximum deflection ratio of L/120.
7. Allowable loads do not include a 1/3 stress increase for wind.

| SECTION PROPERTIES | | | | | | | | ALLOWABLE UNIFORM LOADS, psf For various clip spacings (i.e. span values) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Width, in. | Gauge | Yield ksi | Weight psf | Top in Compression | | Bottom in Compression | | Inward Load | | | | | | | | | |
| | | | | $I_{xx}$ in$^4$/ft. | $S_{xx}$ in$^3$/ft | $I_{xx}$ in$^4$/ft. | $S_{xx}$ in$^3$/ft | 2' | 2.5' | 3' | 3.5 | 4' | 4.5' | 5' | 5.5' | 6' | 8' |
| 0.032 | 12 | 19 | 0.700 | 0.3290 | 0.2102 | 0.3290 | 0.6599 | 182.9 | 117.0 | 81.3 | 59.7 | 45.7 | 36.1 | 29.3 | 24.2 | 20.3 | 11.4 |
| 0.040 | 12 | 19 | 0.855 | 0.4050 | 0.2582 | 0.4050 | 0.8133 | 283.0 | 181.1 | 125.8 | 92.4 | 70.7 | 55.9 | 45.3 | 37.4 | 31.4 | 17.7 |
| 0.032 | 16 | 19 | 0.640 | 0.2660 | 0.1610 | 0.2660 | 0.6450 | 133.0 | 85.1 | 59.1 | 43.4 | 33.3 | 26.3 | 21.3 | 17.6 | 14.8 | 8.3 |
| 0.040 | 16 | 19 | 0.790 | 0.3270 | 0.1980 | 0.3270 | 0.7940 | 206.8 | 132.3 | 91.9 | 57.5 | 51.7 | 40.8 | 33.1 | 27.3 | 23.0 | 12.9 |
| 0.032 | 18 | 19 | 0.620 | 0.2420 | 0.1430 | 0.2420 | 0.1430 | 116.8 | 74.7 | 51.9 | 38.1 | 29.2 | 23.1 | 18.7 | 15.4 | 13.0 | 7.3 |
| 0.040 | 18 | 19 | 0.760 | 0.2970 | 0.1764 | 0.2970 | 0.7840 | 181.3 | 116.0 | 80.6 | 59.2 | 45.3 | 35.8 | 29.0 | 24.0 | 20.1 | 11.3 |

1. Theoretical section properties have been calculated per the latest edition of the Aluminum Association's Design Manual. $I_{xx}$ and $S_{xx}$ are effective section properties for deflection and bending.
2. Allowable load is calculated in accordance with the latest edition of the Aluminum Association's Design Manual considering bending, shear, combined bending and shear and deflection. Allowable load considers a 3 or more equal span condition.
3. Allowable load does not address panel weight, fasteners, connection strength or support material.
4. Allowable load includes web crippling.
5. Load/Span values are based on theoretical computations and not load testing.
6. Deflection consideration is limited by a maximum deflection ratio of L/180.
7. Allowable loads do not include a 1/3 stress increase for wind.

STRUCTURAL ONLY

REGISTERED PROFESSIONAL ENGINEER
CHANDER P. VERMA
C26786
Exp. 03/31/2019
7/25/2018
CIVIL
STATE OF CALIFORNIA

TAYLOR METAL PRODUCTS

# MS-200 (double lock) ROOF PANEL

| SECTION PROPERTIES | | | | | | | | ALLOWABLE UNIFORM LOADS, psf For various clip spacings (i.e. span values) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Top in Compression | | Bottom in Compression | | Inward Load | | | | | | | | | |
| Gauge | Width, in. | Yield ksi | Weight psf | $I_{xx}$ $in^4/ft.$ | $S_{xx}$ $in^3/ft$ | $I_{xx}$ $in^4/ft.$ | $S_{xx}$ $in^3/ft$ | 2' | 2.5' | 3' | 3.5 | 4' | 4.5' | 5' | 5.5' | 6' | 8' |
| 0.032 | 12 | 19 | 0.700 | 0.2810 | 0.1767 | 0.2810 | 0.5885 | 163.1 | 104.4 | 72.5 | 53.3 | 40.8 | 32.2 | 26.1 | 21.6 | 18.1 | 10.2 |
| 0.040 | 12 | 19 | 0.855 | 0.3460 | 0.2178 | 0.3460 | 0.7260 | 252.6 | 161.7 | 112.3 | 82.5 | 63.2 | 49.9 | 40.4 | 33.4 | 28.1 | 15.8 |
| 0.032 | 16 | 19 | 0.640 | 0.2280 | 0.1360 | 0.2280 | 0.5760 | 118.8 | 76.0 | 52.8 | 38.8 | 29.7 | 23.5 | 19.0 | 15.7 | 13.2 | 7.4 |
| 0.040 | 16 | 19 | 0.790 | 0.2810 | 0.1680 | 0.2810 | 0.7100 | 184.9 | 118.3 | 82.2 | 60.4 | 46.2 | 36.5 | 29.6 | 24.5 | 20.5 | 11.6 |
| 0.032 | 18 | 19 | 0.620 | 0.2070 | 0.1220 | 0.2070 | 0.5696 | 104.4 | 66.8 | 46.4 | 34.1 | 26.1 | 20.6 | 16.7 | 13.8 | 11.6 | 6.5 |
| 0.040 | 18 | 19 | 0.760 | 0.2560 | 0.1510 | 0.2560 | 0.7010 | 162.1 | 103.8 | 72.1 | 52.9 | 40.5 | 32.0 | 25.9 | 21.4 | 18.0 | 10.1 |

1. Theoretical section properties have been calculated per the latest edition of the Aluminum Association's Design Manual. $I_{xx}$ and $S_{xx}$ are effective section properties for deflection and bending.
2. Allowable load is calculated in accordance with the latest edition of the Aluminum Association's Design Manual considering bending, shear, combined bending and shear and deflection. Allowable load considers a 3 or more equal span condition.
3. Allowable load does not address panel weight, fasteners, connection strength or support material.
4. Allowable load includes web crippling.
5. Load/Span values are based on theoretical computations and not load testing.
6. Deflection is not considered.
7. Allowable loads do not include a 1/3 stress increase for wind.

| SECTION PROPERTIES | | | | | | | | ALLOWABLE UNIFORM LOADS, psf For various clip spacings (i.e. span values) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Top in Compression | | Bottom in Compression | | Inward Load | | | | | | | | | |
| Width, in. | Gauge | Yield ksi | Weight psf | $I_{xx}$ $in^4/ft.$ | $S_{xx}$ $in^3/ft$ | $I_{xx}$ $in^4/ft.$ | $S_{xx}$ $in^3/ft$ | 2' | 2.5' | 3' | 3.5 | 4' | 4.5' | 5' | 5.5' | 6' | 8' |
| 0.032 | 12 | 19 | 0.700 | 0.2810 | 0.1767 | 0.2810 | 0.5885 | 163.1 | 104.4 | 72.5 | 53.3 | 40.8 | 32.2 | 26.1 | 21.6 | 18.1 | 10.2 |
| 0.040 | 12 | 19 | 0.855 | 0.3460 | 0.2178 | 0.3460 | 0.7260 | 252.6 | 161.7 | 112.3 | 82.5 | 63.2 | 49.9 | 40.4 | 33.4 | 28.1 | 15.8 |
| 0.032 | 16 | 19 | 0.640 | 0.2280 | 0.1360 | 0.2280 | 0.5760 | 118.8 | 76.0 | 52.8 | 38.8 | 29.7 | 23.5 | 19.0 | 15.7 | 13.2 | 7.4 |
| 0.040 | 16 | 19 | 0.790 | 0.2810 | 0.1680 | 0.2810 | 0.7100 | 184.9 | 118.3 | 82.2 | 60.4 | 46.2 | 36.5 | 29.6 | 24.5 | 20.5 | 11.6 |
| 0.032 | 18 | 19 | 0.620 | 0.2070 | 0.1220 | 0.2070 | 0.5696 | 104.4 | 66.8 | 46.4 | 34.1 | 26.1 | 20.6 | 16.7 | 13.8 | 11.6 | 6.5 |
| 0.040 | 18 | 19 | 0.760 | 0.2560 | 0.1510 | 0.2560 | 0.7010 | 162.1 | 103.8 | 72.1 | 52.9 | 40.5 | 32.0 | 25.9 | 21.4 | 18.0 | 10.1 |

1. Theoretical section properties have been calculated per the latest edition of the Aluminum Association's Design Manual. $I_{xx}$ and $S_{xx}$ are effective section properties for deflection and bending.
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3. Allowable load does not address panel weight, fasteners, connection strength or support material.
4. Allowable load includes web crippling.
5. Load/Span values are based on theoretical computations and not load testing.
6. Deflection consideration is limited by a maximum deflection ratio of L/120.
7. Allowable loads do not include a 1/3 stress increase for wind.

| SECTION PROPERTIES | | | | | | | | ALLOWABLE UNIFORM LOADS, psf For various clip spacings (i.e. span values) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Top in Compression | | Bottom in Compression | | Inward Load | | | | | | | | | |
| Width, in. | Gauge | Yield ksi | Weight psf | $I_{xx}$ $in^4/ft.$ | $S_{xx}$ $in^3/ft$ | $I_{xx}$ $in^4/ft.$ | $S_{xx}$ $in^3/ft$ | 2' | 2.5' | 3' | 3.5 | 4' | 4.5' | 5' | 5.5' | 6' | 8' |
| 0.032 | 12 | 19 | 0.700 | 0.2810 | 0.1767 | 0.2810 | 0.5885 | 163.1 | 104.4 | 72.5 | 53.3 | 40.8 | 32.2 | 26.1 | 21.6 | 18.1 | 10.2 |
| 0.040 | 12 | 19 | 0.855 | 0.3460 | 0.2178 | 0.3460 | 0.7260 | 252.6 | 161.7 | 112.3 | 82.5 | 63.2 | 49.9 | 40.4 | 33.4 | 28.1 | 15.8 |
| 0.032 | 16 | 19 | 0.640 | 0.2280 | 0.1360 | 0.2280 | 0.5760 | 118.8 | 76.0 | 52.8 | 38.8 | 29.7 | 23.5 | 19.0 | 15.7 | 13.2 | 7.4 |
| 0.040 | 16 | 19 | 0.790 | 0.2810 | 0.1680 | 0.2810 | 0.7100 | 184.9 | 118.3 | 82.2 | 60.4 | 46.2 | 36.5 | 29.6 | 24.5 | 20.5 | 11.6 |
| 0.032 | 18 | 19 | 0.620 | 0.2070 | 0.1220 | 0.2070 | 0.5696 | 104.4 | 66.8 | 46.4 | 34.1 | 26.1 | 20.6 | 16.7 | 13.8 | 11.6 | 6.5 |
| 0.040 | 18 | 19 | 0.760 | 0.2560 | 0.1510 | 0.2560 | 0.7010 | 162.1 | 103.8 | 72.1 | 52.9 | 40.5 | 32.0 | 25.9 | 21.4 | 18.0 | 10.1 |

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2. Allowable load is calculated in accordance with the latest edition of the Aluminum Association's Design Manual considering bending, shear, combined bending and shear and deflection. Allowable load considers a 3 or more equal span condition.
3. Allowable load does not address panel weight, fasteners, connection strength or support material.
4. Allowable load includes web crippling.
5. Load/Span values are based on theoretical computations and not load testing.
6. Deflection consideration is limited by a maximum deflection ratio of L/180.
7. Allowable loads do not include a 1/3 stress increase for wind.

STRUCTURAL ONLY

REGISTERED PROFESSIONAL ENGINEER
CHANDEN P. PATEL
C26786
Exp. 03/31/2019
7/25/2018
CIVIL
STATE OF CALIFORNIA

TAYLOR METAL PRODUCTS

5711 PERRIN AVE.
MCCLELLAN, CA 95652
PHONE 916.318.8844
TOLLFREE 1 800.574.1388
FAX 916.993.4123

# UL Online Certifications Directory

## TJPV.R25913
## Metal Roof Deck Panels

See General Information for Metal Roof Deck Panels

**TAYLOR METAL INC, DBA TAYLOR METAL PRODUCTS**
4566 RIDGE DR NE
SALEM, OR 97301-6992 USA

R25913

Coated steel panels identified as "EASY LOCK" for use in Construction No. 529.

Coated steel or aluminum panels identified as "MS200" for use in Construction Nos. 90, 176, 180, 238, 238A, 238B, 238C, 435, 435A, 437, 449, 451, 452, 487, 506, 506A, 506B.

Coated steel or aluminum panels identified as "Versa Span" for use in Construction Nos. 254, 255, 261, 303, 342, 343, 414, 436, 445, 447, 448, 486, 508, 508A, 543, 544.

Coated steel panels identified as "MS150" for use in Construction No. 554.

Copper panels identified as "MS100" for use in Construction No. 575.

Coated steel panels identified as "MS100" for use in Construction No. 602.

Coated steel panels identified as "Premier-Lock 100" for use in Construction No. 600.

Coated steel panels identified as "Premier-Lock 150" for use in Construction Nos. 587 and 601.

Coated steel panels identified as "Clip-Lock 150" for use in Construction No. 589.

TAYLOR METAL PRODUCTS

5711 PERRIN AVE.
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Coated steel panels identified as "MS200-90C" for use in Construction Nos. 576, 577, 583.

Coated steel or aluminum panels identified as "MS200-S" for use in Construction No. 312, 335, 403, 608, 610.

Copper panels identified as "MS150-S" for use in Construction No. 605.

Coated steel panels identified as "MS150-S" for use in Construction No. 588.

Aluminum panels identified as "MS150-S" for use in Construction No. 603.

Zinc panels identified as "MS150-S" for use in Construction no. 604.

Coated steel panels identified as "T-Panel Narrow Panel" for use in Construction Nos. 344, 397, 397A.

# UL Evaluation Report

## UL ER25913-01

**Issued: March 31, 2016**
**Revised: March 29, 2022**

**Visit UL,LLC's** Product iQ™ database **for status of Report.**

**UL Category Code: ULEZ**

**CSI MasterFormat®**

**DIVISION: 07 00 00 - THERMAL AND MOISTURE PROTECTION**
**Sub-level 2: 07 40 00 - Roofing and Siding Panels**
**Sub-level 3: 07 41 00 - Roof Panels**
**Sub-level 4: 07 41 13 – Metal Roof Panels**

**COMPANY:**

**TAYLOR METAL INC, DBA TAYLOR METAL PRODUCTS**
**4566 RIDGE DRIVE NE**
**SALEM, OR 97301-6992**
**(503) 581-8338**
www.taylormetal.com

**1. SUBJECT:**

**EASY-LOCK, VERSA-SPAN, MS-100, MS-150, MS-200, PREMIER-LOCK-100, PREMIER-LOCK-150, CLIP-LOCK-150, T-PANEL NARROW BATTEN, PBR/MARION R, CLASSIC ⅞" CORRUGATED, HR-34, AND BR-36 METAL ROOFING PANELS**

**2. SCOPE OF EVALUATION:**

- 2021, 2018, 2015, and 2012 *International Building Code*® (IBC)
- 2021, 2018, 2015, and 2012 *International Residential Code*® (IRC)
- 2019, 2016, and 2013 California Building Code
- 2019, 2016, and 2013 California Residential Code
- ICC-ES Acceptance Criteria for Quality Documentation (AC10)
- ICC-ES Acceptance Criteria for Metal Roof Coverings (AC166)



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333 Pfingsten Road, Northbrook, IL 60062-2096 USA
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**The products were evaluated for the following properties:**

- Roofing Systems for Exterior Fire Exposure (UL790, ASTM E108)
- Wind Uplift Resistance for Roof Assemblies (UL 580, ASTM E1592, FM 4471)
- Impact Resistance of Roofing Systems (UL 2218A)
- Corrosion Resistance (ASTM A653, ASTM A792)
- Corrosion Resistance (ASTM B370)

## 3. REFERENCED DOCUMENTS

- ICC-ES:
  - ICC-ES Acceptance Criteria for Metal Roof Coverings (AC166)
  - ICC-ES Acceptance Criteria for Quality Documentation (AC10)
- UL:
  - UL 580 Standard for Tests for Uplift Resistance of Roof Assemblies
  - UL 790 (ASTM E108) Standard Test Methods for Fire Tests of Roof Coverings
  - UL 2218A Impact Resistance of Roofing Systems
- AISI:
  - AISI S100, North American Specification for the Design of Cold-Formed Steel Structural Members
- ASTM:
  - ASTM A653/A653M, Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
  - ASTM A792/A792M, Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process
  - ASTM B370, Standard Specification for Copper Sheet and Strip for Building Construction
  - ASTM E1592, Standard Test Method for Structural Performance of Sheet Metal Roof and Siding Systems by Uniform Static Air Pressure Difference
  - ASTM G154, Practice for Operating Xenon Arc Light Apparatus for Exposure of Nonmetallic Materials
- Factory Mutual Approvals:
  - FM 4471, Approval Standard for Class 1 Panel Roofs

## 4. USES

Easy-Lock, MS-200, Versa-Span, MS-100, MS-150, Premier-Lock 100, Premier-Lock-150, Clip-Lock-150, T-Panel Narrow Batten, PBR/Marion R, Classic ⅞" Corrugated, HR-34, and BR-36 metal roofing panels are used as roof covering materials in Class A roofing systems installed on roof decks and spaced supports having slopes ½:12 or greater, in accordance with this report, and the manufacturer's published installation instructions.

## 5. PRODUCT DESCRIPTION

Taylor Metal Products' metal roofing panels described in this report are either coated or painted metal formed from ASTM A653 G90, ASTM A792 AZ50 hot-dip coated sheet steel, or from ASTM B370 cold-rolled copper sheet.

Steel Easy-Lock panels are manufactured to have a base metal thickness not less than 26 gauge [0.0179 in. (0.455 mm)]. Steel MS-100, MS-150, MS-200, Versa-Span, Premier-Lock 100, Premier-Lock-150, Clip-Lock-150, T-Panel Narrow Batten, PBR/Marion R, Classic ⅞" Corrugated, HR-34, and BR-36 panels are manufactured to have a base metal thickness not less than 25 gauge [0.0209 in. (0.531 mm)]. Copper Easy-Lock, MS-100, MS-150, MS-200, Versa Span, Premier-Lock 100, Premier-Lock 150, and Clip-Lock 150 panels are manufactured to a finished weight not less than 16 ounces per square foot having a thickness of [0.0216 in. (0.549 mm)], with the allowable tolerances.

The panels are metal roof coverings complying with Section 1507.4 of the IBC and California Building Code and Section R905.10 of the IRC and California Residential Code.

**Fire Certification:** Taylor Metal Products' metal roofing panels covered under this report are UL Classified for Class A fire performance in accordance with UL790 (ASTM E108), which qualifies them for use under Section 1505.1 of the IBC, and Section R902.1 of the IRC and California Residential Code. Refer to Table 1, Table 2, Table 3, and Table 4.

See the Listing under TGFU.R25913 which includes T-3, Tuff-Rib, PBR/Marion R, Classic ⅞" Corrugated, HR-34, and BR-36 profiles.

**Wind Resistance:** Roofing assemblies shall be designed to resist the design wind load pressures for components and cladding in accordance with Section 1609.5 and Section 1507.4 of the IBC, the California Building Code, and Section R905.10 of the IRC and California Residential Code.

**Wind Uplift Resistance:** Taylor Metal Products' metal roofing panels covered under this report have been tested for wind uplift resistance in accordance with UL 580 or ASTM E1592 complying with Section 1504.4 of the 2021 IBC, and Section 1504.3 of the 2018, 2015, and 2012 IBC and the California Building Code. Refer to Tables 1 through 6.

**Wind-Driven Rain Resistance:** The metal roofing panels covered under this report are not intended for installation in High-Velocity Hurricane Zones. Therefore, the wind-driven rain test specified in AC166 was not conducted under this evaluation report.

**Corrosion Resistance:** Taylor metal roofing panels covered under this report comply with the material properties and performance requirements for metal panel roof coverings as outlined in Section 1507.4.3 of the IBC and California Building Code, Section 905.10.3 of the IRC and California Residential Code, and meet the requirements for resistance to corrosion in accordance with ASTM A792.

## 6. INSTALLATION

### 6.1 General

Taylor metal roofing panels must be installed in accordance with Section 1507.4 of the IBC, the California Building Code, Section R905.10 of the IRC and California Residential Code, except as noted in this report and the manufacturer's published installation instructions. The manufacturer's published installation instructions must be available at all times on the jobsite during installation. The metal roofing panels must be attached to the decked sheathing in a manner that will secure the panels in place.

### 6.2 Slope

MS-100, MS-150, , BR-36, Classic Corrugated, HR-34, and PBR/Marion R metal roofing panels are not to be installed on roof decks having slopes less than 1:12. MS-200 metal roofing panels are not to be installed on roof decks having slopes less than ½:12. Versa-Span metal roofing panels are not to be installed on roof decks having slopes less than 2:12. All other products covered in this report are intended for roof decks having 3:12 slope or greater. Installation of Taylor metal roofing panels covered in this report are to be installed in accordance with Section 507.4.2 of the IBC and the California Building Code, or Section R905.10.2 of the IRC and the 2019 California Residential Code.

### 6.3 Roof Deck

Roof decking is to be as described in Section 1507.4.1 of the IBC and the 2019 California Building Code, Section R905.10.1 of the IRC and the California Residential Code. Roof deck must be code-compliant, minimum nominal ½ inch-thick (11.9 mm) exterior sheathing complying with Section 2304.8.2 of the 2021 and 2018 IBC, Section 2304.7.2 of the 2015 and 2012 IBC and 2019 California Building Code, or Section R803 of the IRC and the 2019 California Residential Code, or minimum No. 22 gauge [0.030 inch thick (0.76 mm)] steel complying with Section 2210.1.1.2 of the IBC and the California Building Code. The sheathing must be structurally sound and adequately fastened to resist wind loads for components and cladding as specified in Section 1609 of the IBC, the California Building Code, or Section R301.6 of the IRC and the California Residential Code.

### 6.4 Underlayment

An ice barrier must be installed along the eaves in locations historically prone to ice in accordance with Section 1507.7.4 of the IBC and the California Building Code, the 2019 California Residential Code, or Section R905.5.3.1 of the IRC. In addition to the ice barrier, an underlayment must be installed over the entire roof deck in accordance with Section 1507.1.1 of the IBC, the California Building Code, and Section R905.6.3 of the IRC and California Residential Code.

Underlayments installed on roofs in locations prone to high winds must be installed in accordance with Section 1507.4.5 of the IBC and the 2019 California Building Code, or Section R905.6.3 of the IRC and the 2019 California Residential Code.

### 6.5 Flashing and Coping

Flashing materials are to be installed in accordance with Section 1503.2 of the IBC and California Building Code and Section R903.2 IRC and the California Residential Code, as applicable.

Coping materials are to be installed in accordance with Section 1503.3 of the and California Building Code and Section R903.3 of the IRC and California Residential Code, as applicable.

### 6.6 Hips and Ridges

Hips and ridges must be installed in accordance with Taylor Metal, Inc.'s published installation instructions for exposure dimension and fastener type.

### 6.7 Fasteners and Attachment

Attachment of the roof panels must be in accordance with Section 1507.4.4 of the IBC and the California Building Code. Cold-formed steel used as the substrate for the attachment of the metal panels covered in this report must be identified in accordance with AISI S100.

### 6.8 Reroofing

Existing roof covering materials detrimental to performance of the roofing assembly are to be completely removed and replaced prior to installation of the Taylor metal roofing panels. Installation is to be performed for new construction as described in Section 6 of this report.

The existing roof shall be inspected in accordance with the provisions and limitations of Section 1512 of the 2021 IBC, Section 1511 of the 2018 and 2015 IBC and 2019 California Building Code, Section 1510 of the 2012, and Section R908 of the 2021, 2018, and 2015 IRC and California Residential Code, or Section R907 of the 2012 IRC, as applicable. Prior to the reroofing, hip and ridge coverings must be removed.

Flashing and edging must comply with Section 6.6 of this report and with Section 1512.6 of the 2021 IBC, Section 1511.6 of the 2018 and 2015 IBC, Sections 1510.5 and 1510.6 of the 2012 IBC and 2019 California Building Code, and Section R908.6 of the 2021, 2018, and 2015 IRC, and Section R907.6 of the 2012 IRC, and California Residential Code, as applicable.

Taylor Metal Products' (TMP) metal roof panels may be installed over existing Class A asphalt glass fiber mat shingles or any Class A UL Listed roof system as described in the UL Certification Category for Prepared Roof-covering Materials, Formed or Molded Metal, Fiber-Cement, Plastic or Fire-retardant-treated Wood (TFXX), for applicable coverage and details of the roof assembly.

## 7. CONDITIONS OF USE

The metal roofing panels described in this report comply with, or are suitable alternatives to, what is specified in those codes listed in Section 2 of this report, subject to the following conditions:

**7.1** Materials and methods of installation must comply with this report and the manufacturer's published installation instructions. In the event of a conflict between the installation instructions and this report, this report governs.

**7.2** Only TMP specified fasteners shall be used in the installation of the roof covering system.

**7.3** See UL's Product iQ™ database for Metal Roof Deck Panels (TJPV), Roofing Systems (TGFU), and Roof-covering Materials, Impact Resistance (TGAM), respectively.

**7.4** Wind uplift pressures on any roof area, including edges and corner zones shall not exceed the allowable wind pressure for the roof covering installed in that particular area. The allowable wind uplift pressure for the roof assembly shall be based on a minimum factor of safety of 2.0. The allowable wind uplift pressure is for the roof system only. The deck and framing to which the roofing system is attached shall be designed for the applicable components and cladding wind loads in accordance with the applicable code.

**7.5** The metal roofing panels covered under this report are produced under the UL LLC Listing/Certification and Follow-Up Service Program, which includes audits in accordance with quality elements of ICC-ES Acceptance Criteria for Quality Documentation, AC10.

## 8. SUPPORTING EVIDENCE

**8.1** Data in accordance with ICC-ES Acceptance Criteria for Metal Roof Coverings (AC166).

**8.2** Manufacturer's descriptive product literature, including installation instructions.

**8.3** UL Certification reports in accordance with UL 580, UL 790, and UL 2218A. See UL Product Certification Categories (TJPV), (TGFU), and (TGAM), File R25913.

**8.4** Documentation of quality system elements described in ICC-ES Acceptance Criteria for Quality Documentation (AC10).

## 9. IDENTIFICATION

Taylor Metal Products' metal roofing panels described in this evaluation report are identified by a marking bearing the report holder's name (Taylor, Inc.) and address, the product name, the UL Certification Mark, and the evaluation report number UL ER25913-01. The validity of the evaluation report is contingent upon this identification appearing on the product or UL Certification Mark certificate.

## 10. USE OF UL EVALUATION REPORT

**10.1** The approval of building products, materials, or systems is the responsibility of the applicable authorities having jurisdiction.

**10.2** UL Evaluation Reports shall not be used in any manner that implies an endorsement of the product, material or system by UL.

**10.3** The status of this report, as well as a complete directory of UL Evaluation Reports may be found at UL.com via the Product iQ™ database.

## TABLE 1: WIND UPLIFT ASSEMBLIES[1]

| System Number | Combustible Deck | | Barrier Product | Metal Panel[4] Attachment | Allowable Uplift Pressure UL 580 |
|---|---|---|---|---|---|
| | Wood Sheathing[2] | Attachment[3] | | | |
| **Minimum 29 Gauge Steel Easy-Lock[5], Maximum 18 inches wide** | | | | | **Class 90** |
| **1** | Minimum nominal ⅝ inch APA Span-Rated plywood | Minimum #6 x 1-⅞ inch bugle head screws or #8d annular ring shank nails spaced 6 inches oc at board edge and 12 inches oc into framing members | Georgia Pacific ¼ inch minimum DensDeck board or ¼ inch minimum United States Gypsum Co SECUROCK Glass-Mat Roof Board (Type SGMRX), National Gypsum DEXcell Glass Mat Roof Board or DEXcell FV Glass Mat Roof Board, CertainTeed Gypsum GlasRoc or ½ inch minimum UL Certified gypsum board with all joints staggered a minimum of 6 inches from the plywood joints, or one layer Versashield® SOLO™ Fire Resistant Slip Sheet | (1) Minimum No. 10 x 1 inch pancake head screws spaced 12 inches oc in slotted fastener flange | **-52.5** |
| **Minimum 24 Gauge Steel Easy-Lock[5], Maximum 18 inches wide** | | | | | **Class 90** |
| **2** | Minimum $^{19}/_{32}$ inch APA Span-Rated plywood | #6 x 1-⅞ inch bugle head screws or #8d annular ring shank nails spaced 6 inches oc at board edge and 12 inches oc into framing members[5] | Georgia Pacific ¼ inch minimum DensDeck board or ¼ inch minimum United States Gypsum Co SECUROCK Glass-Mat Roof Board (Type SGMRX), National Gypsum DEXcell Glass Mat Roof Board or DEXcell FV Glass Mat Roof Board, CertainTeed Gypsum GlasRoc or ½ inch minimum UL Certified gypsum board with all joints staggered a minimum of 6 inches from the plywood joints, or one layer Versashield® SOLO™ Fire Resistant Slip Sheet | (2) Minimum No. 10-12 x 1 inch pancake head screws spaced 36 inches oc | **-52.5** |

[1]These assemblies comply with UL790 (ASTM E108) for Class A fire performance at an unlimited slope
[2]All side and butt joints to be sealed with urethane caulk
[3]Structural members spaced maximum 24 inches oc
[4]Any UL Certified Type G1, G2 or G3 base or ply sheet, Type 15 or 30 felt or Prepared Roofing Accessory may be used directly below the metal roof cover[5]Classified as Class 4 Impact

## TABLE 1: WIND UPLIFT ASSEMBLIES[1] (continued)

| System Number | Combustible Deck | | Barrier Product | Metal Panel[4] Attachment | Allowable Uplift Pressure UL 580 |
|---|---|---|---|---|---|
| | Wood Sheathing[2] | Attachment[3] | | | |
| **Minimum 24 Gauge Steel Versa Span[5], Maximum 18 inches wide** | | | | | **Class 90** |
| **3** | Minimum $^{19}/_{32}$ inch APA Span-Rated plywood | Minimum #6 x 1-⅞ inch bugle head screws or #8d annular ring shank nails spaced 6 inches oc at board edge and 12 inches oc into framing members | Georgia Pacific ¼ inch minimum DensDeck board or ¼ inch minimum United States Gypsum Co SECUROCK Glass-Mat Roof Board (Type SGMRX), National Gypsum DEXcell Glass Mat Roof Board or DEXcell FV Glass Mat Roof Board, CertainTeed Gypsum GlasRoc or ½ inch minimum UL Certified gypsum board with all joints staggered a minimum of 6 inches from the plywood joints, or one layer Versashield® SOLO™ Fire Resistant Slip Sheet | (2) Minimum No. 10-12 x 1 inch pancake head screws spaced 36 inches oc | **-52.5** |
| **4** | | | | (2) Minimum No. 10-12 x 1 inch pancake head screws spaced 36 inches oc | **-52.5** |

[1]These assemblies comply with UL790 (ASTM E108) for Class A fire performance at an unlimited slope
[2]All side and butt joints to be sealed with urethane caulk
[3]Structural members spaced maximum 24 inches oc
[4]Any UL Certified Type G1, G2 or G3 base or ply sheet, Type 15 or 30 felt or Prepared Roofing Accessory may be used directly below the metal roof cover
[5]Meets Class 4 Impact Rating

## TABLE 1: WIND UPLIFT ASSEMBLIES[1] (continued)

| System Number | Combustible Deck | | Barrier Product | Metal Panel[4] Attachment | Allowable Uplift Pressure UL 580 |
|---|---|---|---|---|---|
| | Wood Sheathing[2] | Attachment[3] | | | |
| **Minimum .032 Aluminum Versa Span[5], Maximum 16 inches wide** | | | | | **Class 90** |
| **5** | Minimum $^{19}/_{32}$ inch APA Span-Rated plywood | No. 8 x 1-⅞ inch bugle head screws or #8d annular ring shank nails spaced 6 inches oc at board edge and 12 inches oc into framing members | Georgia Pacific ¼ inch minimum DensDeck board or ¼ inch minimum United States Gypsum Co SECUROCK Glass-Mat Roof Board (Type SGMRX), National Gypsum DEXcell Glass Mat Roof Board or DEXcell FV Glass Mat Roof Board, CertainTeed Gypsum GlasRoc or ½ inch minimum UL Certified gypsum board with all joints staggered a minimum of 6 inches from the plywood joints, or one layer GAF-Elk VersaShield Solo Underlayment or Firestone Building Products CLAD-GARD SA FR Underlayment | (2) Minimum No. 10-12 pancake head screws spaced 18 inches oc | **-52.5** |
| **Minimum 24 Gauge Steel T-Panel Narrow Batten[5], Maximum 21-¼ inches wide** | | | | | **Class 90** |
| **6** | Minimum $^{19}/_{32}$ inch APA Span-Rated plywood | No. 8 x 1-⅞ inch bugle head screws or #8d annular ring shank nails spaced 6 inches oc at board edge and 12 inches oc into framing members | Georgia Pacific ¼ inch min DensDeck board or ¼ inch min United States Gypsum Co SECUROCK Glass-Mat Roof Board (Type SGMRX), National Gypsum DEXcell Glass Mat Roof Board or DEXcell FV Glass Mat Roof Board, CertainTeed Gypsum GlasRoc or ½ inch min UL Certified gypsum board with all joints staggered a min of 6 in. from the plywood joints, or one layer Versashield® SOLO™ Fire Resistant Slip Sheet | (2) Minimum No. 10-12 x 1 inch pancake head screws spaced 36 inches oc | **-52.5** |

[1]These assemblies comply with UL790 (ASTM E108) for Class A fire performance at an unlimited slope
[2]All side and butt joints to be sealed with urethane caulk
[3]Structural members spaced maximum 24 inches oc
[4]Any UL Certified Type G1, G2 or G3 base or ply sheet, Type 15 or 30 felt or Prepared Roofing Accessory may be used directly below the metal roof cover
[5]Meets Class 4 Impact Rating

## TABLE 1: WIND UPLIFT ASSEMBLIES[1] (continued)

| System Number | Combustible Deck | | Barrier Product | Metal Panel[4] Attachment | Allowable Uplift Pressure UL 580 |
|---|---|---|---|---|---|
| | Wood Sheathing[2] | Attachment[3] | | | |
| **Minimum 24 Gauge Steel T-Panel Narrow Batten[5], Maximum 21-¼ inches wide** | | | | | **Class 90** |
| **7** | Minimum $^{19}/_{32}$ inch APA Span-Rated plywood | No. 8 x 1-⅞ inch bugle head screws or #8d annular ring shank nails spaced 6 inches oc at board edge and 12 inches oc into framing members | Georgia Pacific ¼ inch min DensDeck board or ¼ inch min United States Gypsum Co SECUROCK Glass-Mat Roof Board (Type SGMRX), National Gypsum DEXcell Glass Mat Roof Board or DEXcell FV Glass Mat Roof Board, CertainTeed Gypsum GlasRoc or ½ inch min UL Certified gypsum board with all joints staggered a min of 6 in. from the plywood joints, or one layer Versashield® SOLO™ Fire Resistant Slip Sheet | (1) Minimum No. 10-12 x 1 inch pancake head screws spaced 24 inches oc | **-52.5** |
| **Minimum 24 Gauge Steel T-Panel Narrow Batten[5], Maximum 20 inches wide** | | | | | **Class 90** |
| **8** | Minimum $^{19}/_{32}$ inch APA Span-Rated plywood | No. 8 x 1-⅞ inch bugle head screws or #8d annular ring shank nails spaced 6 inches oc at board edge and 12 inches oc into framing members | Georgia Pacific ¼ inch minimum DensDeck board or ¼ inch minimum United States Gypsum Co SECUROCK Glass-Mat Roof Board (Type SGMRX), National Gypsum DEXcell Glass Mat Roof Board or DEXcell FV Glass Mat Roof Board, CertainTeed Gypsum GlasRoc or ½ inch minimum UL Certified gypsum board with all joints staggered a minimum of 6 inches from the plywood joints, or one layer Versashield® SOLO™ Fire Resistant Slip Sheet | (2) Minimum No. 10-12 pancake head screws spaced 18 inches oc | **-52.5** |

[1]These assemblies comply with UL790 (ASTM E108) for Class A fire performance at an unlimited slope
[2]All side and butt joints to be sealed with urethane caulk
[3]Structural members spaced maximum 24 inches oc
[4]Any UL Certified Type G1, G2 or G3 base or ply sheet, Type 15 or 30 felt or Prepared Roofing Accessory may be used directly below the metal roof cover
[5]Meets Class 4 Impact Rating

## TABLE 1: WIND UPLIFT ASSEMBLIES[1] (continued)

| System Number | Combustible Deck | | Barrier Product | Metal Panel[4] Attachment | Allowable Uplift Pressure UL 580 |
|---|---|---|---|---|---|
| | Wood Sheathing[2] | Attachment[3] | | | |
| **16 Oz. Copper MS-100[5], Maximum 17 inches wide** | | | | | **Class 90** |
| **9** | Minimum $^{19}/_{32}$ inch APA Span-Rated plywood | #6 x 1-⅞ inch bugle head screws or #8d annular ring shank nails spaced 6 inches oc at board edge and 12 inches oc into framing members | Georgia Pacific ¼ inch minimum DensDeck board or ¼ inch minimum United States Gypsum Co SECUROCK Glass-Mat Roof Board (Type SGMRX), National Gypsum DEXcell Glass Mat Roof Board or DEXcell FV Glass Mat Roof Board, CertainTeed Gypsum GlasRoc or ½ inch minimum UL Certified gypsum board with all joints staggered a minimum of 6 inches from the plywood joints, or one layer GAF-Elk VersaShield Solo Underlayment or Firestone Building Products CLAD-GARD SA FR Underlayment | (2) Minimum No. 10-12 x 1 inch pancake head screws spaced 18 | **-52.5** |
| **Minimum 24 Gauge Steel MS-100[5], Maximum 18 inches wide** | | | | | **Class 90** |
| **10** | Minimum nominal ⅝ inch APA Span-Rated plywood | No. 8 x 2-½ inch bugle head screws or #8d annular ring shank nails spaced 6 inches oc at board edge and 12 inches oc into framing members | Georgia Pacific ¼ inch minimum DensDeck board or ¼ inch minimum United States Gypsum Co SECUROCK Glass-Mat Roof Board (Type SGMRX), National Gypsum DEXcell Glass Mat Roof Board or DEXcell FV Glass Mat Roof Board, CertainTeed Gypsum GlasRoc or ½ inch minimum UL Certified gypsum board with all joints staggered a minimum of 6 inches from the plywood joints, or one layer Versashield® SOLO™ Fire Resistant Slip Sheet | (2) Minimum No. 10-12 x 1 inch pancake head screws spaced 24 | **-52.5** |

[1]These assemblies comply with UL790 (ASTM E108) for Class A fire performance at an unlimited slope
[2]All side and butt joints to be sealed with urethane caulk
[3]Structural members spaced maximum 24 inches oc
[4]Any UL Certified Type G1, G2 or G3 base or ply sheet, Type 15 or 30 felt or Prepared Roofing Accessory may be used directly below the metal roof cover
[5]Meets Class 4 Impact Rating

## TABLE 1: WIND UPLIFT ASSEMBLIES[1] (continued)

| System Number | Combustible Deck | | Barrier Product | Metal Panel[4] Attachment | Allowable Uplift Pressure UL 580 |
|---|---|---|---|---|---|
| | Wood Sheathing[2] | Attachment[3] | | | |
| **Minimum 24 Gauge Steel MS-150[5], Maximum 16 inches wide** | | | | | **Class 90** |
| **11** | Minimum nominal ½ inch APA Span-Rated plywood | #7-6 x 1-⅝ inch bugle head screws or #8d annular ring shank nails spaced 6 inches oc at board edge and 12 inches oc into framing members[5] | Georgia Pacific ¼ inch minimum DensDeck board or ¼ inch minimum United States Gypsum Co SECUROCK Glass-Mat Roof Board (Type SGMRX), National Gypsum DEXcell Glass Mat Roof Board or DEXcell FV Glass Mat Roof Board, CertainTeed Gypsum GlasRoc or ½ inch minimum UL Certified gypsum board with all joints staggered a min of 6 in. from the plywood joints, or one layer GAF-Elk VersaShield Underlayment or Firestone Building Products CLAD-GARD SA FR Underlayment | (4) Minimum No. 10-12 x 1 inch pancake head screws spaced 48 inches oc | **-52.5** |
| **12** | Minimum nominal ⅝ inch APA Span-Rated plywood | No. 8 x 2-½ inch bugle head screws spaced 6 inches oc at board edge and 12 inches oc into framing members | Georgia Pacific ¼ inch minimum DensDeck board or ¼ inch minimum United States Gypsum Co SECUROCK Glass-Mat Roof Board (Type SGMRX), National Gypsum DEXcell Glass Mat Roof Board or DEXcell FV Glass Mat Roof Board, CertainTeed Gypsum GlasRoc or ½ inch minimum UL Certified gypsum board with all joints staggered a min of 6 in. from the plywood joints, or one layer GAF-Elk VersaShield Underlayment or Firestone Building Products CLAD-GARD SA FR Underlayment | (2) Minimum ¼-13 x 1-⅝ inch truss head screws spaced 36 inches oc | **-52.5** |

[1]These assemblies comply with UL790 (ASTM E108) for Class A fire performance at an unlimited slope
[2]All side and butt joints to be sealed with urethane caulk
[3]Structural members spaced maximum 24 inches oc
[4]Any UL Certified Type G1, G2 or G3 base or ply sheet, Type 15 or 30 felt or Prepared Roofing Accessory may be used directly below the metal roof cover
[5]Meets Class 4 Impact Rating

## TABLE 1: WIND UPLIFT ASSEMBLIES[1] (continued)

| System Number | Combustible Deck | | Barrier Product | Metal Panel[4] Attachment | Allowable Uplift Pressure UL 580 |
|---|---|---|---|---|---|
| | Wood Sheathing[2] | Attachment[3] | | | |
| **Minimum .032 Aluminum MS-150[5], Maximum 20 inches wide** | | | | | **Class 90** |
| **13** | Minimum nominal ⅝ inch APA Span-Rated plywood | No. 8 x 2-½ inch bugle head screws spaced 6 inches oc at board edge and 12 inches oc into framing members | Georgia Pacific ¼ inch minimum DensDeck board or ¼ inch minimum United States Gypsum Co SECUROCK Glass-Mat Roof Board (Type SGMRX), National Gypsum DEXcell Glass Mat Roof Board or DEXcell FV Glass Mat Roof Board, CertainTeed Gypsum GlasRoc or ½ inch minimum UL Certified gypsum board with all joints staggered a minimum of 6 inches from the plywood joints, or one layer GAF-Elk VersaShield Solo Underlayment or Firestone Building Products CLAD-GARD SA FR Underlayment | (2) Minimum ¼-13 x 1-⅝ inch truss head screws spaced 36 inches oc | **-52.5** |
| **Minimum .032 Zinc MS-150[5], Maximum 16 inches wide** | | | | | **Class 90** |
| **14** | Minimum nominal ⅝ inch APA Span-Rated plywood | No. 8 x 2-½ inch bugle head screws spaced 6 inches oc at board edge and 12 inches oc into framing members | Georgia Pacific ¼ inch minimum DensDeck board or ¼ inch minimum United States Gypsum Co SECUROCK Glass-Mat Roof Board (Type SGMRX), National Gypsum DEXcell Glass Mat Roof Board or DEXcell FV Glass Mat Roof Board, CertainTeed Gypsum GlasRoc or ½ inch minimum UL Certified gypsum board with all joints staggered a min of 6 in. from the plywood joints, or one layer GAF-Elk VersaShield Solo Underlayment or Firestone Building Products CLAD-GARD SA FR Underlayment | (2) Minimum ¼-13 x 1-⅝ inch truss head screws spaced 36 inches oc | **-52.5** |

[1]These assemblies comply with UL790 (ASTM E108) for Class A fire performance at an unlimited slope
[2]All side and butt joints to be sealed with urethane caulk
[3]Structural members spaced maximum 24 inches oc
[4]Any UL Certified Type G1, G2 or G3 base or ply sheet, Type 15 or 30 felt or Prepared Roofing Accessory may be used directly below the metal roof cover
[5]Meets Class 4 Impact Rating

## TABLE 1: WIND UPLIFT ASSEMBLIES[1] (continued)

| System Number | Combustible Deck | | Barrier Product | Metal Panel[4] Attachment | Allowable Uplift Pressure UL 580 |
|---|---|---|---|---|---|
| | Wood Sheathing[2] | Attachment[3] | | | |
| **Minimum 24 Gauge Steel Premier-Lock 100[5], Maximum 16 inches wide** | | | | | **Class 90** |
| **15** | Minimum nominal ⅝ inch APA Span-Rated plywood | No. 8 x 2-½ inch bugle head screws or #8d annular ring shank nails spaced 6 inches oc at board edge and 12 inches oc into framing members[5] | Georgia Pacific ¼ in. min DensDeck board or ¼ inch minimum United States Gypsum Co SECUROCK Glass-Mat Roof Board (Type SGMRX), National Gypsum DEXcell Glass Mat Roof Board or DEXcell FV Glass Mat Roof Board, CertainTeed Gypsum GlasRoc or ½ inch minimum UL Certified gypsum board with all joints staggered a min of 6 in. from the plywood joints, or one layer Versashield® SOLO™ Fire Resistant Slip Sheet | (1) Minimum No. 10-12 x 1 inch pancake head screws spaced 16 inches oc | **-52.5** |
| **16 oz. Copper MS-150[5], Maximum 16 inches wide** | | | | | **Class 90** |
| **16** | Minimum nominal ⅝ inch APA Span-Rated plywood | No. 8 x 2-½ inch bugle head screws spaced 6 inches oc at board edge and 12 inches oc into framing members[5] | Georgia Pacific ¼ inch minimum DensDeck board or ¼ inch minimum United States Gypsum Co SECUROCK Glass-Mat Roof Board (Type SGMRX), National Gypsum DEXcell Glass Mat Roof Board or DEXcell FV Glass Mat Roof Board, CertainTeed Gypsum GlasRoc or ½ inch minimum UL Certified gypsum board with all joints staggered a min of 6 in. from the plywood joints, or one layer GAF-Elk VersaShield Solo Underlayment or Firestone Building Products CLAD-GARD SA FR Underlayment | (2) Minimum ¼-13 x 1-⅝ inch truss head screws spaced 36 inches oc | **-52.5** |

[1]These assemblies comply with UL790 (ASTM E108) for Class A fire performance at an unlimited slope
[2]All side and butt joints to be sealed with urethane caulk
[3]Structural members spaced maximum 24 inches oc
[4]Any UL Certified Type G1, G2 or G3 base or ply sheet, Type 15 or 30 felt or Prepared Roofing Accessory may be used directly below the metal roof cover
[5]Meets Class 4 Impact Rating

## TABLE 1: WIND UPLIFT ASSEMBLIES[1] (continued)

| System Number | Combustible Deck | | Barrier Product Configuration | Metal Panel[4] Attachment | Allowable Uplift Pressure UL 580 |
|---|---|---|---|---|---|
| | Wood Sheathing[2] | Attachment[3] | | | |
| **Minimum 24 Gauge Steel Premier-Lock 150[5], Maximum 14-½ inches wide** | | | | | **Class 90** |
| **17** | Minimum nominal ⅝ inch APA Span-Rated plywood | No. 8 x 2-½ inch bugle head screws or #8d annular ring shank nails spaced 6 inches oc at board edge and 12 inches oc into framing members | Georgia Pacific ¼ inch minimum DensDeck board or ¼ inch minimum United States Gypsum Co SECUROCK Glass-Mat Roof Board (Type SGMRX), National Gypsum DEXcell Glass Mat Roof Board or DEXcell FV Glass Mat Roof Board, CertainTeed Gypsum GlasRoc or ½ inch minimum UL Certified gypsum board with all joints staggered a min of 6 in. from the plywood joints, or one layer GAF-Elk VersaShield Underlayment or Firestone Building Products CLAD-GARD SA FR Underlayment | (4) Minimum No. 10-12 x 1 inch pancake head screws spaced 18 inches oc | **-52.5** |
| **Minimum 22 Gauge Steel Premier-Lock 150[5], Maximum 16-¼ inches wide** | | | | | **Class 90** |
| **18** | Minimum nominal ⅝ inch thick APA Span-Rated plywood | No. 8 x 2-½ inch bugle head screws or #8d annular ring shank nails spaced 6 inches oc at board edge and 12 inches oc into framing members | Georgia Pacific ¼ inch minimum DensDeck board or ¼ inch minimum United States Gypsum Co SECUROCK Glass-Mat Roof Board (Type SGMRX), National Gypsum DEXcell Glass Mat Roof Board or DEXcell FV Glass Mat Roof Board, CertainTeed Gypsum GlasRoc or ½ inch minimum UL Certified gypsum board with all joints staggered a min of 6 in. from the plywood joints, or one layer Versashield® SOLO™ Fire Resistant Slip Sheet | (1) Minimum No. 10 x 1 inch pancake head screws spaced 20-$^{3}/_{4}$ inches oc | **-52.5** |

[1]These assemblies comply with UL790 (ASTM E108) for Class A fire performance at an unlimited slope
[2]All side and butt joints to be sealed with urethane caulk
[3]Structural members spaced maximum 24 inches oc
[4]Any UL Certified Type G1, G2 or G3 base or ply sheet, Type 15 or 30 felt or Prepared Roofing Accessory may be used directly below the metal roof cover
[5]Meets Class 4 Impact Rating

## TABLE 1: WIND UPLIFT ASSEMBLIES[1] (continued)

| System Number | Combustible Deck | | Barrier Product Configuration[5] | Metal Panel[4] Attachment | Allowable Uplift Pressure UL 580 |
|---|---|---|---|---|---|
| | Wood Sheathing[2] | Attachment[3] | | | |
| **Minimum 24 Gauge Steel Clip-Lock 150[5], Maximum 16 inches wide** | | | | | **Class 90** |
| **19** | Minimum nominal ⅝ inch thick APA Span-Rated plywood | No. 8 x 2-½ inch bugle head screws or #8d annular ring shank nails spaced 6 inches oc at board edge and 12 inches oc into framing members | Georgia Pacific ¼ inch minimum DensDeck board or ¼ inch minimum United States Gypsum Co SECUROCK Glass-Mat Roof Board (Type SGMRX), National Gypsum DEXcell Glass Mat Roof Board or DEXcell FV Glass Mat Roof Board, CertainTeed Gypsum GlasRoc or ½ inch minimum UL Certified gypsum board with all joints staggered a min of 6 in. from the plywood joints, or one layer Versashield® SOLO™ Fire Resistant Slip Sheet | (2) Minimum No. 10-12 x 1 inch pancake head screws spaced 36 inches oc | **-52.5** |
| **20** | Minimum nominal ½ inch thick APA Span-Rated plywood | No. 7-6 coarse thread, No. 1 Phillips drive, bugle-head, coated steel wood screws. | Georgia Pacific ¼ inch minimum DensDeck board or ¼ inch minimum United States Gypsum Co SECUROCK Glass-Mat Roof Board (Type SGMRX), National Gypsum DEXcell Glass Mat Roof Board or DEXcell FV Glass Mat Roof Board, CertainTeed Gypsum GlasRoc or ½ inch minimum UL Certified gypsum board with all joints staggered a min of 6 in. from the plywood joints, or one layer Versashield® SOLO™ Fire Resistant Slip Sheet | (2) Minimum No. 10-12 x 1 inch pancake head screws spaced 36 inches oc | **-52.5** |

[1]These assemblies comply with UL790 (ASTM E108) for Class A fire performance at an unlimited slope
[2]All side and butt joints to be sealed with urethane caulk
[3]Structural members spaced maximum 24 inches oc
[4]Any UL Certified Type G1, G2 or G3 base or ply sheet, Type 15 or 30 felt or Prepared Roofing Accessory may be used directly below the metal roof cover
[5]Meets Class 4 Impact Rating

## TABLE 1: WIND UPLIFT ASSEMBLIES[1] (continued)

| System Number | Combustible Deck | | Barrier Product Configuration | Metal Panel[4] Attachment | Allowable Uplift Pressure UL 580 |
|---|---|---|---|---|---|
| | Wood Sheathing[2] | Attachment[3] | | | |
| **Minimum 24 Gauge Steel MS-200[5,6], Maximum 16 inches wide** | | | | | **Class 90** |
| **21** | Minimum nominal ⅝ inch thick APA Span-Rated plywood or OSB | No. 8 x 1-⅞ inch bugle head screws or #8d annular ring shank nails spaced 6 inches oc at board edge and 12 inches oc into framing members | Georgia Pacific ¼ inch minimum DensDeck board or ¼ inch minimum United States Gypsum Co SECUROCK Glass-Mat Roof Board (Type SGMRX), National Gypsum DEXcell Glass Mat Roof Board or DEXcell FV Glass Mat Roof Board, CertainTeed Gypsum GlasRoc or ½ inch minimum UL Certified gypsum board with all joints staggered a min of 6 in. from the plywood joints, or one layer Versashield® SOLO™ Fire Resistant Slip Sheet | (2) Minimum No. 10-12 x 1 inch pancake head screws spaced 60 inches oc | **-52.5** |
| **Minimum 24 Gauge Steel MS-200[5,6], Maximum 16 inches wide** | | | | | **Class 90** |
| **22** | Minimum nominal ⅝ inch thick APA Span-Rated plywood | No. 8 x 1-⅞ inch bugle head screws or #8d annular ring shank nails spaced 6 inches oc at board edge and 12 inches oc into framing members | Georgia Pacific ¼ inch minimum DensDeck board or ¼ inch minimum United States Gypsum Co SECUROCK Glass-Mat Roof Board (Type SGMRX), National Gypsum DEXcell Glass Mat Roof Board or DEXcell FV Glass Mat Roof Board, CertainTeed Gypsum GlasRoc or ½ inch minimum UL Certified gypsum board with all joints staggered a min of 6 in. from the plywood joints, or one layer Versashield® SOLO™ Fire Resistant Slip Sheet | (2) Minimum No. 12-8 flat head screws spaced 30 inches oc | **-52.5** |

[1]These assemblies comply with UL790 (ASTM E108) for Class A fire performance at an unlimited slope
[2]All side and butt joints to be sealed with urethane caulk
[3]Structural members spaced maximum 24 inches oc
[4]Any UL Certified Type G1, G2 or G3 base or ply sheet, Type 15 or 30 felt or Prepared Roofing Accessory may be used directly below the metal roof cover
[5]Meets Class 4 Impact Rating
[6]Panel side laps may be rolled to 90º or 180º

## TABLE 1: WIND UPLIFT ASSEMBLIES[1] (continued)

| System Number | Combustible Deck | | Barrier Product Configuration | Metal Panel[4] Attachment | Allowable Uplift Pressure UL 580 |
|---|---|---|---|---|---|
| | Wood Sheathing[2] | Attachment[3] | | | |
| **Minimum 24 Gauge Steel MS-200[5,6], Maximum 16 inches wide** | | | | | **Class 90** |
| **23** | Minimum nominal 2 inch thick dimensional lumber planks | No. 8 x 1-⅞ inch bugle head screws or #8d annular ring shank nails | Georgia Pacific ¼ inch minimum DensDeck board or ¼ inch minimum United States Gypsum Co SECUROCK Glass-Mat Roof Board (Type SGMRX), National Gypsum DEXcell Glass Mat Roof Board or DEXcell FV Glass Mat Roof Board, CertainTeed Gypsum GlasRoc or ½ inch minimum UL Certified gypsum board with all joints staggered a min of 6 in. from the plywood joints, or one layer Versashield® SOLO™ Fire Resistant Slip Sheet | (2) No. 14 pancake head screws spaced 24 inches oc | **-52.5** |
| **Minimum 24 Gauge Steel MS-200[5,6], Maximum 16 inches wide** | | | | | **Class 90** |
| **24** | Minimum nominal ⅝ inch thick APA Span-Rated plywood or minimum nominal 2 inch thick dimensional lumber planks | No. 8 x 1-⅞ inch bugle head screws or #8d annular ring shank nails spaced 6 inches oc at board edge and 12 inches oc into framing members | Georgia Pacific ¼ inch minimum DensDeck board or ¼ inch minimum United States Gypsum Co SECUROCK Glass-Mat Roof Board (Type SGMRX), National Gypsum DEXcell Glass Mat Roof Board or DEXcell FV Glass Mat Roof Board, CertainTeed Gypsum GlasRoc or ½ inch minimum UL Certified gypsum board with all joints staggered a min of 6 in. from the plywood joints, or one layer Versashield® SOLO™ Fire Resistant Slip Sheet | (2) Minimum No. 10-12 x 1 inch pancake head screws spaced 36 inches oc | **-52.5** |

[1]These assemblies comply with UL790 (ASTM E108) for Class A fire performance at an unlimited slope
[2]All side and butt joints to be sealed with urethane caulk
[3]Structural members spaced maximum 24 inches oc
[4]Any UL Certified Type G1, G2 or G3 base or ply sheet, Type 15 or 30 felt or Prepared Roofing Accessory may be used directly below the metal roof cover
[5]Meets Class 4 Impact Rating
[6]Panel side laps may be rolled to 90º or 180º

## TABLE 1: WIND UPLIFT ASSEMBLIES[1] (continued)

| System Number | Combustible Deck | | Barrier Product Configuration | Metal Panel[4] Attachment | Allowable Uplift Pressure UL 580 |
|---|---|---|---|---|---|
| | Wood Sheathing[2] | Attachment[3] | | | |
| **Minimum 24 Gauge Steel BR-36[5,6], Maximum 36 inches wide** | | | | | **Class 90** |
| **25** | Minimum nominal ⅝ inch thick APA Span-Rated plywood | No. 8 x 1-⅞ inch bugle head screws spaced 12 inches oc into framing members | Georgia Pacific ¼ inch minimum DensDeck board or ¼ inch minimum United States Gypsum Co SECUROCK Glass-Mat Roof Board (Type SGMRX), National Gypsum DEXcell Glass Mat Roof Board or DEXcell FV Glass Mat Roof Board, CertainTeed Gypsum GlasRoc or ½ inch minimum UL Certified gypsum board with all joints staggered a min of 6 in. from the plywood joints, or one layer Versashield® SOLO™ Fire Resistant Slip Sheet | No. 14 by 1-½ inch long Type A $^{5}/_{16}$ inch hex head steel screw with $^{9}/_{16}$ diameter metal washer and bonded neoprene rubber seal spaced 30 inches oc in the bottom flute of the roof panel. | **-52.5** |
| **Minimum 24 Gauge Steel BR-36[5,6], Maximum 36 inches wide** | | | | | **Class 30** |
| **26** | Minimum nominal ⅝ inch thick APA Span-Rated plywood | No. 8 x 1-⅞ inch bugle head screws spaced 12 inches oc into framing members | Georgia Pacific ¼ inch minimum DensDeck board or ¼ inch minimum United States Gypsum Co SECUROCK Glass-Mat Roof Board (Type SGMRX), National Gypsum DEXcell Glass Mat Roof Board or DEXcell FV Glass Mat Roof Board, CertainTeed Gypsum GlasRoc or ½ inch minimum UL Certified gypsum board with all joints staggered a min of 6 in. from the plywood joints, or one layer Versashield® SOLO™ Fire Resistant Slip Sheet | No. 14 by 1-½ inch long Type A $^{5}/_{16}$ inch hex head steel screw with $^{9}/_{16}$ diameter metal washer and bonded neoprene rubber seal spaced 60 inches oc in the bottom flute of the roof panel. | **-15** |

[1]These assemblies comply with UL790 (ASTM E108) for Class A fire performance at an unlimited slope
[2]All side and butt joints to be sealed with urethane caulk
[3]Structural members spaced maximum 24 inches oc
[4]Any UL Certified Type G1, G2 or G3 base or ply sheet, Type 15 or 30 felt or Prepared Roofing Accessory may be used directly below the metal roof cover
[5]Meets Class 4 Impact Rating
[6]Panel side laps fastened with No. 14 by ⅞ inch long hex head steel screws spaced 12 inches oc

## TABLE 2: WIND UPLIFT ASSEMBLIES[1]

| System Number | Noncombustible Deck<br>Steel Decking | Insulation[2] | Coverboard or Barrier Product | Ply Sheet | Metal Panel Attachment | Allowable Uplift Pressure UL 580 |
|---|---|---|---|---|---|---|
| **Minimum 24 Gauge Steel BR-36[3], Maximum 36 inches wide** | | | | | | **Class 90** |
| **27** | Minimum 22 MSG, 50 ksi steel[4] | Any UL Listed Polyisocyanurate glass fiber, perlite or wood fiber, maximum 10-inches thick[5] | Minimum ½ inch thick tongue and groove UL Certified gypsum board, butt end joints staggered over top flutes of steel deck. | Any UL Certified Type G1, G2 or G3 base or ply sheet, Type 15 or 30 felt or UL Certified Prepared Roofing Accessory | No. 12-14 T3 flanged hex head steel screws with neoprene rubber seal installed 24 inches oc | **-52.5** |
| **Minimum 24 Gauge Steel BR-36[3,6], Maximum 36 inches wide** | | | | | | **Class 60** |
| **28** | Minimum 22 MSG, 50 ksi steel[4] | Any UL Listed Polyisocyanurate glass fiber, perlite or wood fiber, maximum 10-inches thick[5] | Minimum ½ inch thick tongue and groove UL Certified gypsum board, butt end joints staggered over top flutes of steel deck. | Any UL Certified Type G1, G2 or G3 base or ply sheet, Type 15 or 30 felt or UL Certified Prepared Roofing Accessory | No. 12-14 T3 flanged hex head steel screws with neoprene rubber seal installed 60 inches oc | **-30** |

[1]These assemblies comply with UL790 (ASTM E108) for Class A fire performance at an unlimited slope
[2]6 mil vapor barrier may be used between steel deck and foam plastic insulation
[3]Meets Class 4 Impact Rating
[4]Structural supports to be minimum 16 GA spaced maximum 60 inches oc
[5]Fasteners used to attach insulation layer to steel deck to be minimum No. 11-13 truss head screws and penetrate steel deck by minimum ½ inch
[6]Panel side laps fastened with No. 14 by ⅞ inch long hex head steel screws spaced 12 inches oc

## TABLE 2: WIND UPLIFT ASSEMBLIES[1]

| System Number | Noncombustible Deck<br>Steel Decking | Insulation[2] | Coverboard or Barrier Product | Ply Sheet | Metal Panel Attachment | Allowable Uplift Pressure UL 580 |
|---|---|---|---|---|---|---|
| **Minimum 24 Gauge Steel MS-200[3], Maximum 16 inches wide** | | | | | | **Class 90** |
| **29** | Minimum 22 MSG, 33 ksi steel[4] | Any UL Listed Polyisocyanurate glass fiber, perlite or wood fiber, any thickness[5] | Minimum ½ inch thick tongue and groove UL Certified gypsum board, butt end joints staggered over top flutes of steel deck. | Any UL Certified Type G1, G2 or G3 base or ply sheet, Type 15 or 30 felt or UL Certified Prepared Roofing Accessory | (1) No. 18 hex washer head screws spaced 48 inches oc or (2) No. 14 truss head screws spaced 20 inches oc[6] | **-52.5** |
| **Minimum 24 Gauge Steel MS-200[3,7], Maximum 16 inches wide** | | | | | | **Class 90** |
| **30** | Minimum 22 MSG, 33 ksi steel[4] | Any UL Listed Polyisocyanurate glass fiber, perlite or wood fiber, any thickness[5] | See TGIK Listing for optional components. | Any UL Certified Type G1, G2 or G3 base or ply sheet, Type 15 or 30 felt or UL Certified Prepared Roofing Accessory | (1) No. 11 hex washer head screws spaced 30 inches oc | **-52.5** |
| **Minimum 24 Gauge Steel MS-200[3], Maximum 16 inches wide** | | | | | | **Class 90** |
| **31** | Minimum 22 MSG, 33 ksi steel[8] | Any UL Listed Polyisocyanurate glass fiber, perlite or wood fiber, any thickness[5] | See TGIK Listing for optional components. | Any UL Certified Type G1, G2 or G3 base or ply sheet, Type 15 or 30 felt or UL Certified Prepared Roofing Accessory | (2) No. 14 truss head screws spaced 48 inches oc | **-52.5** |

[1]These assemblies comply with UL790 (ASTM E108) for Class A fire performance at an unlimited slope
[2]6 mil vapor barrier may be used between steel deck and foam plastic insulation
[3]Meets Class 4 Impact Rating
[4]Structural supports spaced maximum 60 inches oc
[5]Fasteners used to attach insulation layer to steel deck to be minimum No. 11-13 truss head screws and penetrate steel deck by minimum ½ inch
[6]Insulation bearing plate not required if coverboard is used
[7]Panel side laps may be rolled to 90º or 180º
[8]Structural supports spaced maximum 72 inches oc

## TABLE 2: WIND UPLIFT ASSEMBLIES[1] (continued)

| System Number | Noncombustible Deck<br>Steel Decking | Insulation[2] | Coverboard or Barrier Product | Ply Sheet | Metal Panel Attachment | Allowable Uplift Pressure UL 580 |
|---|---|---|---|---|---|---|
| **Minimum 24 Gauge Steel MS-200[3], Maximum 16 inches wide** | | | | | | **Class 90** |
| **32** | Minimum 22 MSG, 33 ksi steel[4] | Any UL Listed Polyisocyanurate glass fiber, perlite or wood fiber, any thickness[5] | See TGIK Listing for components. | Any UL Certified Type G1, G2 or G3 base or ply sheet, Type 15 or 30 felt or UL Certified Prepared Roofing Accessory | (2) No. 14 truss head screws spaced 20 inches oc, or (1) with continuous clip fastened 8 inches oc | **-52.5** |
| **Minimum 24 Gauge Steel T-Panel Narrow Batten[5], Maximum 21-¼ inches wide** | | | | | | **Class 90** |
| **33** | Minimum 22 MSG, 33 ksi steel | Any UL Listed Polyisocyanurate glass fiber, perlite or wood fiber, any thickness[5] | Minimum 2.00 pcf extruded polystyrene foamed plastic insulation boards, maximum 4 inches thick. | Any UL Certified Type G1, G2 or G3 base or ply sheet, Type 15 or 30 felt or UL Certified Prepared Roofing Accessory | (1) Minimum No. No. 14 truss head screws spaced 20 inches oc spaced 24 inches oc | **-52.5** |

[1]These assemblies comply with UL790 (ASTM E108) for Class A fire performance at an unlimited slope
[2]6 mil vapor barrier may be used between steel deck and foam plastic insulation
[3]Meets Class 4 Impact Rating
[4]Structural supports spaced maximum 60 inches oc
[5]Fasteners used to attach insulation layer to steel deck to be minimum No. 11-13 truss head screws and penetrate steel deck by minimum ½ inch
[6]Insulation bearing plate not required if coverboard is used

## TABLE 2: WIND UPLIFT ASSEMBLIES[1] (continued)

| System Number | Noncombustible Deck / Steel Decking[2] | Insulation[3] | Coverboard or Barrier Product | Ply Sheet | Metal Panel Attachment | Allowable Uplift Pressure UL 580 |
|---|---|---|---|---|---|---|
| **Minimum 24 Gauge Steel MS-200[4,8], Maximum 16 inches wide** | | | | | | **Class 90** |
| **34** | Minimum 22 MSG steel[5] | Maximum 4 inch thick, any UL Listed rigid foam insulation, minimum 2.25 pcf density | Optional-Min $^{15}/_{32}$ inch plywood, or min $^{7}/_{16}$ inch thick OSB, ½ inch thick gypsum board, ½ inch wood fiberboard, ¼ inch min. thickness G-P Gypsum DensDeck, ¼ inch min thick USG SECUROCK Glass Mat Board or SECUROCK Roof Board applied over steel deck in lieu of Foamed Plastic or over Foamed Plastic[6] | Any UL Certified Type G1, G2 or G3 base or ply sheet, Type 15 or 30 felt or UL Certified prepared | (1) No. 12 washered hex-head self-drilling steel screw maximum 24 inches oc[7] with continuous clip | **-52.5** |
| **Minimum 24 Gauge Steel MS-200[4,8], Maximum 18 inches wide** | | | | | | **Class 90** |
| **35** | Minimum 22 MSG steel[9] | Any UL Listed Polyisocyanurate glass fiber, perlite or wood fiber, any thickness | Optional-Min $^{15}/_{32}$ inch plywood, or min $^{7}/_{16}$ inch thick OSB, ½ inch thick gypsum board, ½ inch wood fiberboard, ¼ inch min. thickness G-P Gypsum DensDeck, ¼ inch min thick USG SECUROCK Glass Mat Board or SECUROCK Roof Board applied over steel deck in lieu of Foamed Plastic or over Foamed Plastic[6] | Any UL Certified Type G1, G2 or G3 base or ply sheet, Type 15 or 30 felt or UL Certified Prepared Roofing Accessory | (2) No. 12 washered hex-head self-drilling steel screw maximum 48 inches oc[7] | **-52.5** |

[1]These assemblies comply with UL790 (ASTM E108) for Class A fire performance at an unlimited slope
[2]Minimum 33 ksi
[3]6 mil vapor barrier may be used between steel deck and foam plastic insulation
[4]Meets Class 4 Impact Rating
[5]Structural supports spaced maximum 48 inches oc
[6]Fasteners used to attach insulation layer to steel deck to be minimum No. 11-13 truss head screws and penetrate steel deck by minimum ½ inch
[7]Insulation bearing plate not required if coverboard is used
[8]Panel side laps may be rolled to 90º or 180º
[9]Structural supports spaced maximum 60 inches oc

## TABLE 2: WIND UPLIFT ASSEMBLIES[1] (continued)

| System Number | Noncombustible Deck / Steel Decking[2] | Insulation[3] | Coverboard or Barrier Product | Ply Sheet | Metal Panel Attachment | Allowable Uplift Pressure UL 580 |
|---|---|---|---|---|---|---|
| **Minimum 24 Gauge Steel MS-200[4, 5], Maximum 18 inches wide** | | | | | | **Class 90** |
| **36** | Minimum 22 MSG steel[6] | Any UL Listed Polyisocyanurate glass fiber, perlite or wood fiber, any thickness | Optional-Min $^{15}/_{32}$ inch plywood, or min $^{7}/_{16}$ inch thick OSB, ½ inch thick gypsum board, ½ inch wood fiberboard, ¼ inch min. thickness G-P Gypsum DensDeck, ¼ inch min thick USG SECUROCK Glass Mat Board or SECUROCK Roof Board applied over steel deck in lieu of Foamed Plastic or over Foamed Plastic[7] | Any UL Certified Type G1, G2 or G3 base or ply sheet, Type 15 or 30 felt or UL Certified Prepared Roofing Accessory | (2) No. 14 truss head screws spaced 48 inches oc through NC3300, NCF-3300, NCF-3300-SS Series Clip with bearing plate[8] | **-52.5** |
| **Minimum 24 Gauge Steel Versa Span[4], Maximum 18 inches wide** | | | | | | **Class 90** |
| **37** | Minimum 22 MSG steel[6] | Any UL Listed Polyisocyanurate glass fiber, perlite or wood fiber, any thickness, or 5 inch composite structural fiber cement with foam plastic core | Optional-Min $^{15}/_{32}$ inch plywood, or min $^{7}/_{16}$ inch thick OSB, ½ inch thick gypsum board, ½ inch wood fiberboard, ¼ inch min. thickness G-P Gypsum DensDeck, ¼ inch min thick USG SECUROCK Glass Mat Board or SECUROCK Roof Board applied over steel deck in lieu of Foamed Plastic or over Foamed Plastic[7] | Any UL Certified Type G1, G2 or G3 base or ply sheet, Type 15 or 30 felt or UL Certified Prepared Roofing Accessory | (2) Minimum No. 10-16 x 1 inch pancake head screws or (2) No. 14 truss head screws spaced 48 inches oc Clip with bearing plate[8] | **-52.5** |

[1]These assemblies comply with UL790 (ASTM E108) for Class A fire performance at an unlimited slope
[2]Minimum 33 ksi
[3]6 mil vapor barrier may be used between steel deck and foam plastic insulation
[4]Meets Class 4 Impact Rating
[5]Structural supports spaced maximum 48 inches oc
[6]Structural supports spaced maximum 60 inches oc
[7]Fasteners used to attach insulation layer to steel deck to be minimum No. 11-13 truss head screws and penetrate steel deck minimum ½ inch
[8]Insulation bearing plate not required if coverboard is used

## TABLE 2: WIND UPLIFT ASSEMBLIES[1] (continued)

| System Number | Noncombustible Deck / Steel Decking[2] | Insulation | Coverboard or Barrier Product | Ply Sheet | Metal Panel Attachment | Allowable Uplift Pressure UL 580 |
|---|---|---|---|---|---|---|
| **24 Gauge Steel Versa Span[3], Maximum 18 inches wide** | | | | | | **Class 90** |
| **38** | Minimum 22 MSG steel[4] | Any UL Listed Polyisocyanurate glass fiber, perlite or wood fiber, any thickness, or 5 inch composite structural fiber cement with foam plastic core | Minimum $^{7}/_{16}$ inch thick APA rated OSB[5] | Any UL Certified Type G1, G2 or G3 base or ply sheet, Type 15 or 30 felt or UL Certified Prepared Roofing Accessory | (2) No. 10-12 hex washer head screws spaced 36 inches oc in NC3300, NCF-3300, NCF-3300-SS Series Clip[6] | **-52.5** |
| **Minimum .032 Aluminum Versa Span[4], Maximum 16 inches wide** | | | | | | **Class 90** |
| **39** | Minimum 22 MSG steel[4] | Optional-Any UL Listed Polyisocyanurate glass fiber, perlite or wood fiber, any thickness, or 5 inch composite structural fiber cement with foam plastic core | Optional-Min 15/32 inch plywood, or min $^{7}/_{16}$ inch thick OSB, ½ inch thick gypsum board, ½ inch wood fiberboard, ¼ inch min. thickness G-P Gypsum DensDeck, ¼ inch min thick USG SECUROCK Glass Mat Board or SECUROCK Roof Board applied over steel deck in lieu of Foamed Plastic or over Foamed Plastic[5] | Any UL Certified Type G1, G2 or G3 base or ply sheet, Type 15 or 30 felt or UL Certified Prepared Roofing Accessory | (2) No. 14 truss head screws spaced *18* inches oc through NC3300, NCF-3300, NCF-3300-SS Series Clip with bearing plate[6] | **-52.5** |

[1]These assemblies comply with UL790 (ASTM E108) for Class A fire performance at an unlimited slope
[2]Minimum 33 ksi
[3]Meets Class 4 Impact Rating
[4]6 mil vapor barrier may be used between steel deck and foam plastic insulation
[5]Fasteners used to attach insulation layer to steel deck to be minimum No. 11-13 truss head screws and penetrate steel deck minimum ½-inch
[6]Insulation bearing plate not required if coverboard is used

## TABLE 3: WIND UPLIFT ASSEMBLIES[1] (continued)

| System Number | Insulation | Metal Panel Attachment | Allowable Uplift Pressure UL 580 |
|---|---|---|---|
| **Minimum 24 Gauge Steel MS-200[2], Maximum 18 inches wide** | | | **Class 90** |
| **40** | Optional- Any compressible blanket insulation 8 in. max thick before compression, or 6 in. max thick when located between supports[3] | (2) Minimum ¼-14 x 1 inch truss head screws | **-52.5** |
| **Minimum 24 Gauge Steel MS-200[2], Maximum 16 inches wide** | | | **Class 90** |
| **41** | Optional- Any compressible blanket insulation 8 in. max thick before compression, or 6 in. max thick when located between supports[3] | (2) Minimum ¼-14 x 1 inch truss head screws | **-52.5** |
| **42** | Optional- Any compressible blanket insulation 8 in. max thick before compression, or 6 in. max thick when located between supports[4] | (2) No. 12 x 1 hex washer head screw when continuous or non-continuous clip is used | **-52.5** |
| **Minimum 24 Gauge Steel Versa Span[2], Maximum 12 inches wide** | | | **Class 90** |
| **43** | Optional- Any UL Listed rigid roofing insulation board; Any compressible blanket insulation 8 in. max thick before compression, or 6 in. max thick when located between supports[3] | (2) Minimum No. 10-16 x 1 inch pancake head screws or No. 14-13 DPI carbon, pancake head screw when rigid insulation is used. | **-52.5** |
| **Minimum 24 Gauge Steel Versa Span[2], Maximum 18 inches wide** | | | **Class 60** |
| **44** | Optional-Any UL Listed rigid roofing insulation board; Any compressible blanket insulation 8 in. max thick before compression, or 6 in. max thick when located between supports[4] | (2) Minimum No. 10-16 x 1 inch pancake head screws or No. 14-13 DPI carbon, pancake head screw when rigid insulation is used. | **-30** |
| **Minimum 24 Gauge Steel Versa Span[2], Maximum 18 inches wide** | | | **Class 90** |
| **45** | Optional-Any compressible blanket insulation 8 in. max thick before compression, or 6 in. max thick when located between supports[3] | (2) Minimum No. 10-16 x 1 inch pancake head or ¼-14 x 1 inch truss head screws. | **-52.5** |

[1]Non-decked, open framing construction
[2]Meets Class 4 Impact Rating
[3]Structural supports spaced maximum 48 inches oc
[4]Structural supports spaced maximum 60 inches oc

## TABLE 3: WIND UPLIFT ASSEMBLIES[1] (continued)

| System Number | Insulation | Metal Panel Attachment | Allowable Uplift Pressure UL 580 |
|---|---|---|---|
| **Minimum 24 Gauge Steel Versa Span[2], Maximum 10-½ inches wide** | | | **Class 90** |
| **46** | Optional- Any UL Listed rigid roofing insulation board; Any compressible blanket insulation 8 in. max thick before compression, or 6 in. max thick when located between supports[3] | (2) Minimum No. 10-16 x 1 inch pancake head screws or No. 14-13 DPI carbon, pancake head screw when rigid insulation is used. | **-52.5** |
| **47** | Optional-Any compressible blanket insulation 8 in. max thick before compression, or 6 in. max thick when located between supports[4] | ¼-14 x 1-¼ inch hex head screws. | **-52.5** |
| **Minimum 22 Gauge Steel Versa Span[2], Maximum 10-½ inches wide** | | | **Class 90** |
| **48** | Optional-Any UL Listed rigid roofing insulation board; Any compressible blanket insulation 8 in. max thick before compression, or 6 in. max thick when located between supports[4] | (2) Minimum No. 10-16 x 1 inch pancake head screws or No. 14-13 DPI carbon, pancake head screw when rigid insulation is used. | **-52.5** |
| **Minimum 22 Gauge Steel Versa Span[2], Maximum 12 inches wide** | | | **Class 90** |
| **49** | Any compressible blanket insulation 8 in. max thick before compression, or 6 in. max thick when located between supports[4] | (2) Minimum No. 10-16 x 1 inch pancake head or ¼-14 x 1 inch truss head screws. | **-52.5** |
| **Minimum .032 Aluminum Versa Span[2], Maximum 10-½ inches wide** | | | **Class 60** |
| **50** | Optional- Any UL Listed rigid roofing insulation board; Any compressible blanket insulation 8 in. max thick before compression, or 6 in. max thick when located between supports[3] | (2) Minimum No. 10-16 x 1 inch pancake head screws or No. 14-13 DPI carbon, pancake head screw when rigid insulation is used. | **-30** |

[1]Non-decked, open framing construction
[2]Meets Class 4 Impact Rating
[3]Structural supports spaced maximum 48 inches oc
[4]Structural supports spaced maximum 60 inches oc

## TABLE 3: WIND UPLIFT ASSEMBLIES[1] (continued)

| System Number | Insulation | Metal Panel Attachment | Allowable Uplift Pressure UL 580 |
|---|---|---|---|
| **Minimum .032 Aluminum Versa Span[2], Maximum 10-½ inches wide** | | | **Class 90** |
| **51** | Optional- Any UL Listed rigid roofing insulation board; Any compressible blanket insulation 8 in. max thick before compression, or 6 in. max thick when located between supports[4] | (2) Minimum No. 10-16 x 1 inch pancake head screws or No. 14-13 DPI carbon, pancake head screw when rigid insulation is used. | **-52.5** |
| **Minimum 24 Gauge Steel Versa Span[2], Maximum 10 inches wide** | | | **Class 90** |
| **52** | Optional-Any compressible blanket insulation 8 in. max thick before compression, or 6 in. max thick when located between supports[3] | (2) Minimum No. 10-16 x 1 inch pancake head screws. | **-52.5** |
| **Minimum 22 Gauge Steel Versa Span[2], Maximum 10 inches wide** | | | **Class 90** |
| **53** | Optional-Any compressible blanket insulation 8 in. max thick before compression, or 6 in. max thick when located between supports[5] | (2) Minimum No. 10-16 x 1 inch pancake head screws. | **-52.5** |
| **Minimum 22 Gauge Steel Versa Span[2], Maximum 21-¼ inches wide** | | | **Class 60** |
| **54** | Optional-Any compressible blanket insulation 8 in. max thick before compression, or 6 in. max thick when located between supports[5] | (2) Minimum No. 10-16 x 1 inch pancake head or ¼-14 x 1 inch truss head screws. | **-30** |
| **Minimum .032 Aluminum Versa Span[2], Maximum 10 inches wide** | | | **Class 90** |
| **55** | Optional-Any compressible blanket insulation 8 in. max thick before compression, or 6 in. max thick when located between supports[4] | (2) Minimum No. 10-16 x 1 inch pancake head screws. | **-52.5** |

[1]Non-decked, open framing construction
[2]Meets Class 4 Impact Rating
[3]Structural supports spaced maximum 48 inches oc
[4]Structural supports spaced maximum 36 inches oc
[5]Structural supports spaced maximum 60 inches oc

## TABLE 4: WIND UPLIFT ASSEMBLIES[1]

| System Number | Insulation | Metal Panel Attachment | Allowable Uplift Pressure UL 580 |
|---|---|---|---|
| **Minimum 24 Gauge Steel MS-200[3], Maximum 18 inches wide** | | | **Class 90** |
| **56** | Minimum 5 inch thick structural cement fiber unit consisting of minimum 0.95 pcf expanded polystyrene foamed plastic core laminated to $^{7}/_{16}$ inch thick OSB structural panels between supports[3] | (2) Minimum ¼-14 x 1 hex washer head screws spaced 24 inches oc | **-52.5** |
| **57** | Minimum 5 inch thick structural cement fiber unit consisting of minimum 0.95 pcf expanded polystyrene foamed plastic core laminated to $^{7}/_{16}$ inch thick OSB structural panels between supports[3] | (2) Minimum No. 10-12 x 1 inch pancake head screws spaced 36 inches oc | **-52.5** |
| **Minimum .032 Aluminum Versa Span[3], Maximum 16 inches wide** | | | **Class 90** |
| **58** | Minimum 5 inch thick structural cement fiber unit consisting of minimum 0.95 pcf expanded polystyrene foamed plastic core laminated to $^{7}/_{16}$ inch thick OSB structural panels between supports[3] | (2) Minimum No. 10-12 x 1 inch pancake head screws spaced 18 inches oc | **-52.5** |

[1]These assemblies comply with UL790 (ASTM E108) for Class A fire performance at an unlimited slope
[2]Meets Class 4 Impact Rating
[3]Rabbeted into truss tees spaced maximum 48 inches oc or over structural supports spaced according to design specifications

## TABLE 5: FACTORY MUTUAL CLASS 1 A FIRE RATED WIND UPLIFT ASSEMBLIES

| System Number | FM Approved Deck | Insulation | Metal Panel/Clip Attachment | Allowable Uplift Pressure FM 4471 |
|---|---|---|---|---|
| **Minimum 24 Gauge Steel MS-200[1], Maximum 16 inches wide** | | | | **Class 1-120** |
| **59** | Minimum 33 ksi steel[2, 3] | Any UL Listed standard density Polyisocyanurate roofing insulation board, minimum 2 inches thick | MS-200 Float Clip 24 inches oc. Clip rows staggered 6 inches oc. Each clip is placed over a MS-200 Bearing Plate secured to the deck with (2) SFS Intec Deckfast DF-#14-PH3 fasteners. | **-60** |

[1]Class A rating for combustibility from above the roof deck at 5 in 12 slope. Severe Hail (SH) rated for hail and Foot Traffic Resistant
[2]Deck side laps fastened with ITW #10 HWH TEKS 1 6 inches oc
[3]Steel deck fastened with ITW #12 HWH TEKS 5 paced 6 inches oc into minimum ¼ inch thick steel supports spaced maximum 60 inches oc

| System Number | Structural Supports | Metal Panel Attachment | Allowable Uplift Pressure FM 4471 |
|---|---|---|---|
| **Minimum 24 Gauge Steel MS-200[1], Maximum 16 inches wide** | | | **Class 1-75** |
| **60** | Minimum 16 gauge 50 ksi steel purlins spaced maximum 60 inches oc | MS-200 Float Clip 60 inches oc. Clip rows staggered 6 inches oc. Each clip secured to the purlin deck with (2) ¼-14 x length Blazer 3, 5/16" HWH Tri-Seal Coated Self-Drilling Tapping Screw. | **-37.5** |

[1]Class A rating for combustibility from above the roof deck at 5 in 12 slope. Severe Hail (SH) rated for hail and Foot Traffic Resistant

# TABLE 6: ASTM E1592 LOAD SPAN DATA

| MS-200 Aluminum, single lock | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Gage Thickness | Panel Width (inches) | Yield Strength (ksi) | Fastener Spacing (feet), Allowable Load | | | | | | |
| | | | 1 | 1.5 | 2 | 2.5 | 3 | 3.5 | 4 |
| 0.032 | 18 | 19 | 36.4 | 32.5 | 28.6 | 24.7 | 20.8 | 16.9 | 13.0 |
| 0.040 | 18 | 19 | 46.9 | 42.6 | 38.2 | 33.4 | 29.5 | 25.2 | 20.8 |

| MS-200 Aluminum, double lock | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Gage Thickness | Panel Width (inches) | Yield Strength (ksi) | Fastener Spacing (feet), Allowable Load (psf) | | | | | | | |
| | | | 1 | 1.5 | 2 | 2.5 | 3 | 3.5 | 4 | 4.5 | 5 |
| 0.032 | 18 | 19 | 83.3 | 77.4 | 71.5 | 65.7 | 59.8 | 54.0 | 48.1 | 42.3 | 36.4 |

| MS-200 Steel, double lock | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Gage Thickness | Panel Width (inches) | Yield Strength (ksi) | Fastener Spacing (feet), Allowable Load | | | | | | | |
| | | | 1 | 1.5 | 2 | 2.5 | 3 | 3.5 | 4 | 4.5 | 5 |
| 24 | 16 | 50 | 161.3 | 147.6 | 134.0 | 120.3 | 106.7 | 93.0 | 79.4 | 67.7 | 52.1 |
| 22 | 16 | 50 | 163.9 | 150.9 | 137.9 | 124.9 | 111.9 | 98.9 | 85.9 | 72.9 | 59.9 |
| 24 | 18 | 50 | 109.3 | 101.1 | 93.0 | 84.9 | 76.7 | 68.6 | 60.5 | 52.3 | 44.2 |
| 22 | 18 | 50 | 156.1 | 143.4 | 130.7 | 118.0 | 105.4 | 92.7 | 80.0 | 67.3 | 54.7 |

| MS-200 Steel, single lock | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Gage Thickness | Panel Width (inches) | Yield Strength (ksi) | Fastener Spacing (feet), Allowable Load (psf) | | | | | | |
| | | | 1 | 1.5 | 2 | 2.5 | 3 | 3.5 | 4 |
| 24 | 18 | 50 | 59.9 | 53.4 | 46.9 | 40.4 | 33.8 | 27.3 | 20.8 |
| 22 | 18 | 50 | 98.9 | 88.1 | 77.2 | 66.4 | 55.5 | 44.7 | 33.8 |

[1]Fasteners specified as per the manufacturer's installation instructions

[2]Load span values derived from ultimate load in ASTM E1592 tests and Allowable Stress Design

[3]Allowable loads employ a safety factor of 2.0 when compared with the tested value

[4]Allowable loads cannot be increased by ⅓ and do not consider self-weight of the panel or clip fastener connection resistance

## TABLE 6: ASTM E1592 LOAD SPAN DATA (continued)

| VersaSpan Aluminum | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Gage Thickness | Panel Width (inches) | Yield Strength (ksi) | Fastener Spacing (feet), Allowable Load (psf) | | | | | | |
| | | | 1 | 1.5 | 2 | 2.5 | 3 | 3.5 | 4 |
| 0.032 | 16 | 19 | 46.8 | 42.4 | 38.1 | 33.8 | 29.4 | 25.1 | 20.8 |
| 0.032 | 18 | 19 | 54.6 | 48.5 | 42.4 | 36.4 | 30.3 | 24.2 | 18.2 |

| VersaSpan Steel | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Gage Thickness | Panel Width (inches) | Yield Strength (ksi) | Fastener Spacing (feet), Allowable Load (psf) | | | | | | |
| | | | 1 | 1.5 | 2 | 2.5 | 3 | 3.5 | 4 |
| 24 | 16 | 50 | 83.2 | 73.6 | 64.1 | 54.6 | 45.0 | 35.5 | 26.0 |
| 22 | 16 | 50 | 93.6 | 87.1 | 78.0 | 68.9 | 59.8 | 50.7 | 41.6 |
| 24 | 18 | 50 | 67.6 | 59.8 | 52.0 | 44.2 | 36.4 | 28.6 | 20.8 |
| 22 | 18 | 50 | 90.1 | 79.8 | 69.6 | 59.3 | 49.1 | 38.8 | 28.6 |

| PBR/Marion R Steel, six screws | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Gage Thickness | Panel Width (inches) | Yield Strength (ksi) | Fastener Spacing (feet), Allowable Load (psf) | | | | | | |
| | | | 2 | 2.5 | 3 | 3.5 | 4 | 4.5 | 5 |
| 26 | 36 | 80 | 100.0 | 92.5 | 85.0 | 77.5 | 70.0 | 62.5 | 55.0 |
| 24 | 36 | 50 | 175.0 | 156.7 | 138.3 | 120.0 | 101.7 | 83.3 | 65.0 |
| 22 | 36 | 50 | 200.0 | 178.3 | 156.7 | 135.0 | 113.3 | 91.7 | 70.0 |

| PBR/Marion R Aluminum, six screws | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Gage Thickness | Panel Width (inches) | Yield Strength (ksi) | Fastener Spacing (feet), Allowable Load (psf) | | | | | | |
| | | | 2 | 2.5 | 3 | 3.5 | 4 | 4.5 | 5 |
| 0.032 | 36 | 19 | 187.5 | 165.5 | 143.3 | 121.3 | 99.2 | 77.1 | 55.0 |

[1]Fasteners specified as per the manufacturer's installation instructions

[2]Load span values derived from ultimate load in ASTM E1592 tests and Allowable Stress Design

[3]Allowable loads employ a safety factor of 2.0 when compared with the tested value

[4]Allowable loads cannot be increased by ⅓ and do not consider self-weight of the panel or fastener resistance

## TABLE 6: ASTM E1592 LOAD SPAN DATA (continued)

| MS-150 Steel, single lock | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Gage Thickness | Panel Width (inches) | Yield Strength (ksi) | Fastener Spacing (feet), Allowable Load | | | | | | |
| | | | 1 | 1.5 | 2 | 2.5 | 3 | 3.5 | 4 |
| 24 | 16¾ | 50 | 13.0 | 12.1 | 11.3 | 10.4 | 9.5 | 8.7 | 7.8 |
| 22 | 16¾ | 50 | 57.3 | 50.4 | 43.4 | 36.5 | 29.5 | 22.6 | 15.6 |

| MS-150 Steel, double lock | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Gage Thickness | Panel Width (inches) | Yield Strength (ksi) | Fastener Spacing (feet), Allowable Load (psf) | | | | | | |
| | | | 1 | 1.5 | 2 | 2.5 | 3 | 3.5 | 4 |
| 24 | 12-⅝ | 50 | 137.9 | 124 | 110.2 | 96.3 | 82.4 | 68.6 | 54.7 |
| 22 | 12 | 50 | 182.2 | 161.8 | 141.4 | 121.1 | 100.7 | 80.3 | 59.9 |
| 24 | 16-⅝ | 50 | 119.7 | 107.1 | 94.5 | 81.9 | 69.4 | 56.8 | 44.2 |
| 22 | 16-⅝ | 50 | 145.7 | 128.8 | 111.9 | 95.0 | 78.0 | 61.1 | 44.2 |
| 24 | 18 | 50 | 109.3 | 97.1 | 85.0 | 72.8 | 60.7 | 48.5 | 36.4 |
| 22 | 18 | 50 | 124.9 | 111.5 | 98.0 | 84.6 | 71.1 | 57.7 | 44.2 |

| MS-150 Aluminum, single lock | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Gage Thickness | Panel Width (inches) | Yield Strength (ksi) | Fastener Spacing (feet), Allowable Load | | | | | | |
| | | | 1 | 1.5 | 2 | 2.5 | 3 | 3.5 | 4 |
| 0.032 | 16¾ | 19 | 36.4 | 32.5 | 28.6 | 24.7 | 20.8 | 16.9 | 13.0 |

| MS-150 Aluminum, double lock | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Gage Thickness | Panel Width (inches) | Yield Strength (ksi) | Fastener Spacing (feet), Allowable Load (psf) | | | | | | |
| | | | 1 | 1.5 | 2 | 2.5 | 3 | 3.5 | 4 |
| 0.032 | 12-⅝ | 19 | 111.9 | 100.1 | 88.4 | 76.7 | 65 | 53.3 | 41.6 |
| 0.032 | 18 | 19 | 83.3 | 73.7 | 64.2 | 54.6 | 45.1 | 35.5 | 26.0 |

[1]Fasteners specified as per the manufacturer's installation instructions

[2]Load span values derived from ultimate load in ASTM E1592 tests and Allowable Stress Design

[3]Allowable loads employ a safety factor of 2.0 when compared with the tested value

[4]Allowable loads cannot be increased by ⅓ and do not consider self-weight of the panel or clip fastener connection resistance

## TABLE 6: ASTM E1592 LOAD SPAN DATA (continued)

| Classic ⅞" Corrugated Steel, seven screws | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Gage Thickness | Panel Width (inches) | Yield Strength (ksi) | Fastener Spacing (feet), Allowable Load (psf) | | | | | | |
| | | | 2 | 2.5 | 3 | 3.5 | 4 | 4.5 | 5 |
| 26 | 36 | 80 | 162.5 | 162.5 | 162.5 | 162.5 | 162.5 | 162.5 | 162.5 |
| 24 | 36 | 50 | 162.5 | 108.3 | 99.2 | 90.0 | 80.8 | 71.7 | 75.0 |
| 22 | 36 | 50 | 175.0 | 135.4 | 120.8 | 106.3 | 91.7 | 77.1 | 75.0 |

| Classic ⅞" Corrugated Aluminum, seven screws | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Gage Thickness | Panel Width (inches) | Yield Strength (ksi) | Fastener Spacing (feet), Allowable Load (psf) | | | | | | |
| | | | 2 | 2.5 | 3 | 3.5 | 4 | 4.5 | 5 |
| 0.032 | 36 | 19 | 175.0 | 155.0 | 135.0 | 115.0 | 95.0 | 75.0 | 55.0 |

| Classic ⅞" Corrugated Steel, five screws | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Gage Thickness | Panel Width (inches) | Yield Strength (ksi) | Fastener Spacing (feet), Allowable Load (psf) | | | | | | |
| | | | 2 | 2.5 | 3 | 3.5 | 4 | 4.5 | 5 |
| 26 | 36 | 80 | 110.0 | 100.4 | 90.8 | 81.3 | 71.7 | 62.1 | 52.5 |
| 24 | 36 | 50 | 117.5 | 108.3 | 99.2 | 90.0 | 80.8 | 71.7 | 62.5 |
| 22 | 36 | 50 | 150.0 | 135.4 | 120.8 | 106.3 | 91.7 | 77.1 | 62.5 |

| Classic ⅞" Corrugated Aluminum, five screws | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Gage Thickness | Panel Width (inches) | Yield Strength (ksi) | Fastener Spacing (feet), Allowable Load (psf) | | | | | | |
| | | | 2 | 2.5 | 3 | 3.5 | 4 | 4.5 | 5 |
| 0.032 | 36 | 19 | 55.0 | 50.8 | 46.7 | 42.5 | 38.3 | 34.2 | 30.0 |

[1]Fasteners specified as per the manufacturer's installation instructions

[2]Load span values derived from ultimate load in ASTM E1592 tests and Allowable Stress Design

[3]Allowable loads employ a safety factor of 2.0 when compared with the tested value

[4]Allowable loads cannot be increased by ⅓ and do not consider self-weight of the panel or fastener resistance

## TABLE 6: ASTM E1592 LOAD SPAN DATA (continued)

| BR-36 Aluminum, five screws | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Gage Thickness | Panel Width (inches) | Yield Strength (ksi) | Fastener Spacing (feet), Allowable Load (psf) | | | | | |
| | | | 2 | 2.5 | 3 | 3.5 | 4 | 4.5 | 5 |
| 0.032 | 36 | 19 | 135.0 | 122.7 | 110.3 | 98.0 | 85.7 | 73.3 | 61.0 |
| 0.040 | 36 | 19 | 171.0 | 150.8 | 130.7 | 110.5 | 90.3 | 70.2 | 50.0 |

| BR-36 Steel, five screws | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Gage Thickness | Panel Width (inches) | Yield Strength (ksi) | Fastener Spacing (feet), Allowable Load (psf) | | | | | |
| | | | 2 | 2.5 | 3 | 3.5 | 4 | 4.5 | 5 |
| 24 | 36 | 50 | 200.0 | 179.2 | 158.3 | 137.5 | 116.7 | 95.8 | 75.0 |
| 22 | 36 | 50 | 200.0 | 180.0 | 160.0 | 140.0 | 120.0 | 100.0 | 80.0 |
| 20 | 36 | 33 | 170.0 | 153.1 | 136.2 | 119.3 | 102.3 | 85.4 | 68.5 |

| BR-36 Steel, three screws | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Gage Thickness | Panel Width (inches) | Yield Strength (ksi) | Fastener Spacing (feet), Allowable Load (psf) | | | | | |
| | | | 2 | 2.5 | 3 | 3.5 | 4 | 4.5 | 5 |
| 24 | 36 | 50 | 137.5 | 122.1 | 106.7 | 91.3 | 75.8 | 60.4 | 45.0 |
| 22 | 36 | 50 | 100.0 | 90.0 | 80.0 | 70.0 | 60.0 | 50.0 | 40.0 |
| 20 | 36 | 33 | 100.0 | 89.8 | 79.7 | 69.5 | 59.3 | 49.2 | 39.0 |

| BR-36 Aluminum, three screws | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Gage Thickness | Panel Width (inches) | Yield Strength (ksi) | Fastener Spacing (feet), Allowable Load (psf) | | | | | |
| | | | 2 | 2.5 | 3 | 3.5 | 4 | 4.5 | 5 |
| 0.032 | 36 | 19 | 55.0 | 51.7 | 48.3 | 45.0 | 41.7 | 38.3 | 35.0 |
| 0.040 | 36 | 19 | 75.0 | 69.2 | 63.3 | 57.5 | 51.7 | 45.8 | 40.0 |

[1]Fasteners specified as per the manufacturer's installation instructions
[2]Load span values derived from ultimate load in ASTM E1592 tests and Allowable Stress Design
[3]Allowable loads employ a safety factor of 2.0 when compared with the tested value
[4]Allowable loads cannot be increased by ⅓ and do not consider self-weight of the panel or fastener resistance

## TABLE 6: ASTM E1592 LOAD SPAN DATA (continued)

| HR34 Steel, five screws | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Gage Thickness | Panel Width (inches) | Yield Strength (ksi) | Fastener Spacing (feet), Allowable Load (psf) | | | | | | |
| | | | 2 | 2.5 | 3 | 3.5 | 4 | 4.5 | 5 |
| 26 | 34 | 80 | 175.0 | 157.5 | 140.0 | 122.5 | 105.0 | 87.5 | 70.0 |
| 24 | 34 | 50 | 200.0 | 180.0 | 160.0 | 140.0 | 120.0 | 100.0 | 80.0 |
| 22 | 34 | 50 | 200.0 | 178.3 | 156.7 | 135.0 | 113.3 | 91.7 | 70.0 |
| 20 | 34 | 33 | 200.0 | 179.2 | 158.3 | 137.5 | 116.7 | 95.8 | 75.0 |

| HR34 Aluminum, five screws | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Gage Thickness | Panel Width (inches) | Yield Strength (ksi) | Fastener Spacing (feet), Allowable Load (psf) | | | | | | |
| | | | 2 | 2.5 | 3 | 3.5 | 4 | 4.5 | 5 |
| 0.032 | 34 | 19 | 120.0 | 108.3 | 96.7 | 85.0 | 73.3 | 61.7 | 50.0 |
| 0.040 | 34 | 19 | 200.0 | 177.1 | 154.2 | 131.3 | 108.3 | 85.4 | 62.5 |

| HR34 Aluminum, three screws | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Gage Thickness | Panel Width (inches) | Yield Strength (ksi) | Fastener Spacing (feet), Allowable Load (psf) | | | | | | |
| | | | 2 | 2.5 | 3 | 3.5 | 4 | 4.5 | 5 |
| 0.032 | 34 | 19 | 112.5 | 100.8 | 89.7 | 78.5 | 67.3 | 56.2 | 45.0 |
| 0.040 | 34 | 19 | 100.0 | 90.0 | 80.0 | 70.0 | 60.0 | 50.0 | 40.0 |

| HR34 Steel, three screws | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Gage Thickness | Panel Width (inches) | Yield Strength (ksi) | Fastener Spacing (feet), Allowable Load (psf) | | | | | | |
| | | | 2 | 2.5 | 3 | 3.5 | 4 | 4.5 | 5 |
| 26 | 34 | 80 | 87.5 | 80.4 | 73.3 | 66.3 | 59.2 | 52.1 | 45.0 |
| 24 | 34 | 50 | 100.0 | 90.8 | 81.7 | 72.5 | 63.3 | 54.2 | 45.0 |
| 22 | 34 | 50 | 100.0 | 90.8 | 81.7 | 72.5 | 63.3 | 54.2 | 45.0 |
| 20 | 34 | 33 | 105.0 | 95.8 | 86.7 | 77.5 | 68.3 | 59.2 | 50.0 |

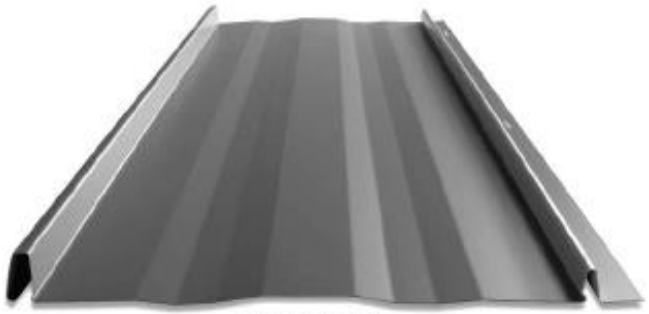
[1]Fasteners specified as per the manufacturer's installation instructions

[2]Load span values derived from ultimate load in ASTM E1592 tests and Allowable Stress Design

[3]Allowable loads employ a safety factor of 2.0 when compared with the tested value

[4]Allowable loads cannot be increased by ⅓ and do not consider self-weight of the panel or fastener resistance

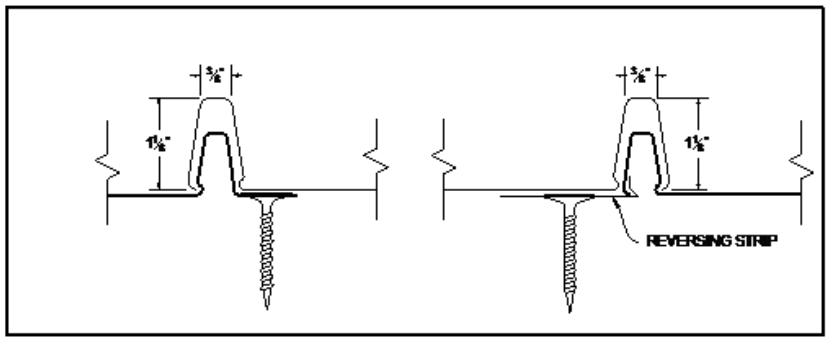
## Easy-Lock Detail



STRIATED

ACCENT RIBS 3 Accent ribs for 12" panel
4 Accent ribs for 16" & 18" panel

FLAT PAN



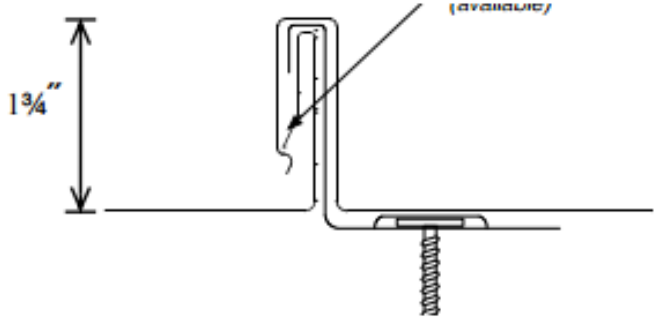
## Versa-Span Detail

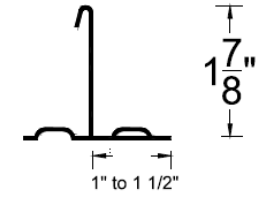
STRIATED

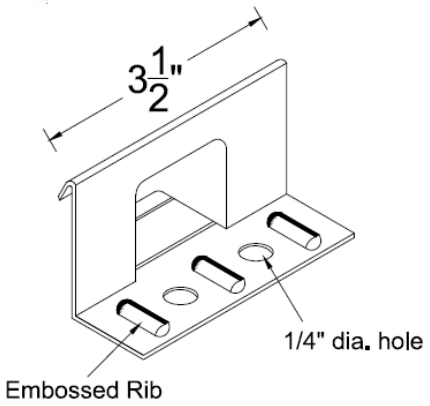
ACCENT RIBS

2 Accent ribs for 12" to 14⅛" panel
3 Accent ribs for 16" to 18" panel

FLAT PAN

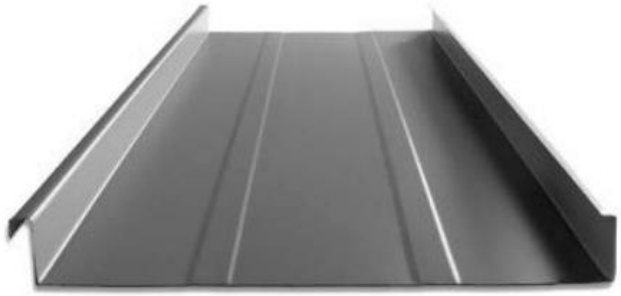


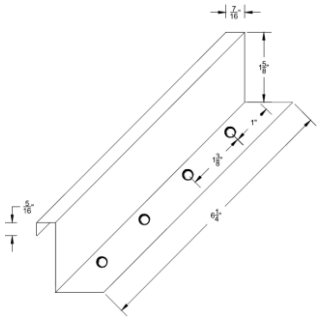
## MS-100, MS-150 Detail

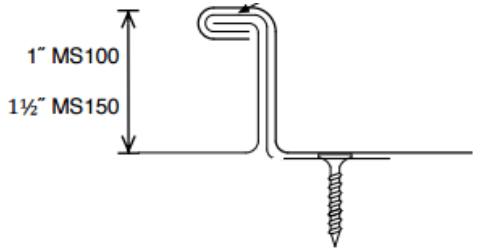
STRIATED

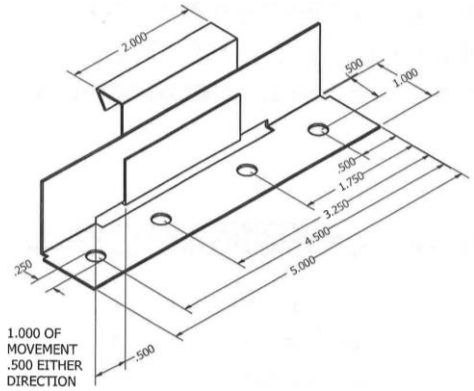


ACCENT RIBS

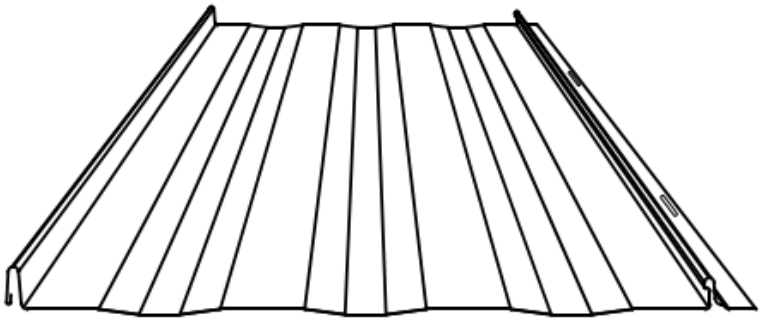

FLAT PAN





**Premier-Lock Detail**



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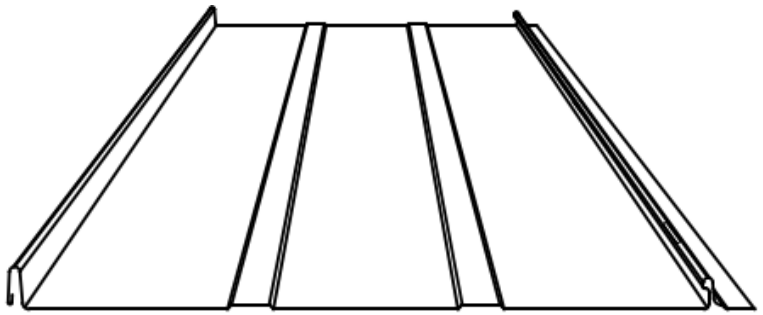
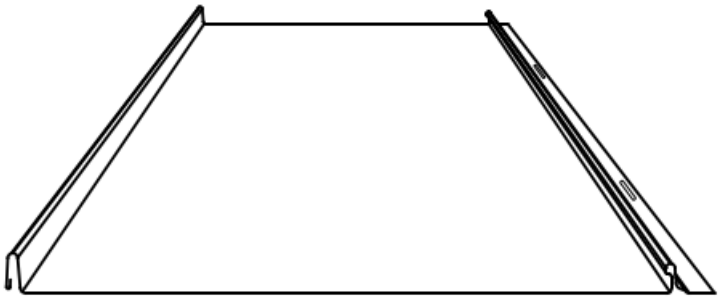
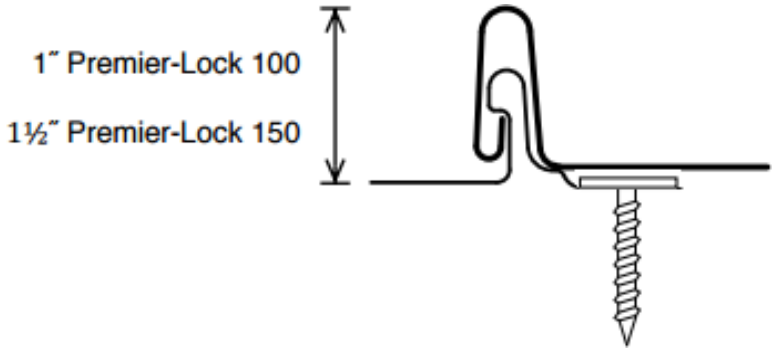


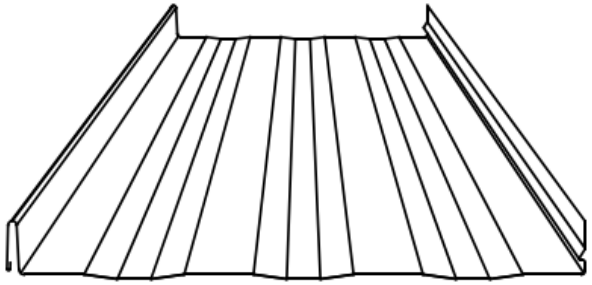
ACCENT RIBS

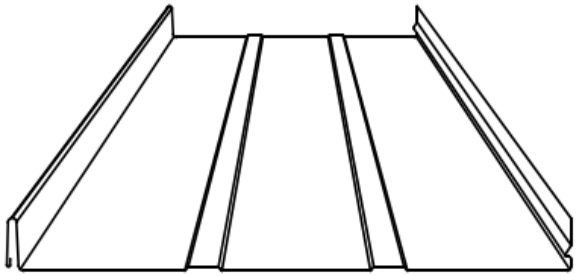


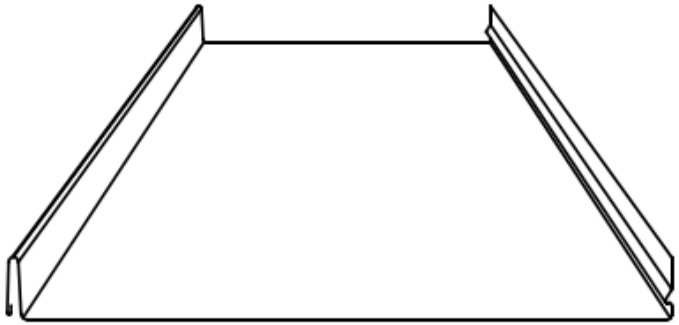
FLAT PAN



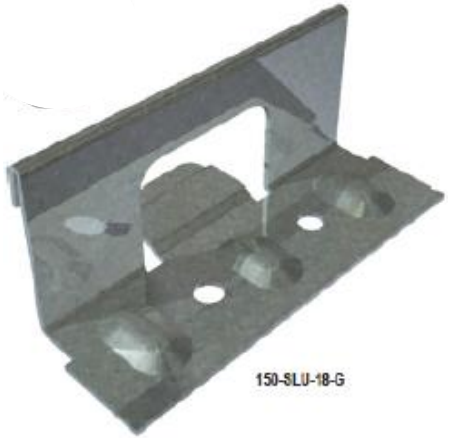
**Clip-Lock Detail**

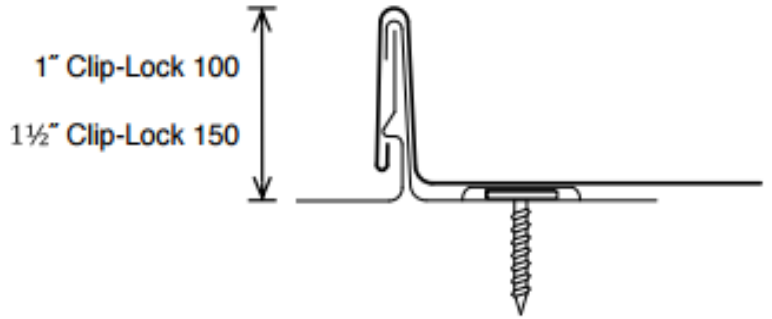






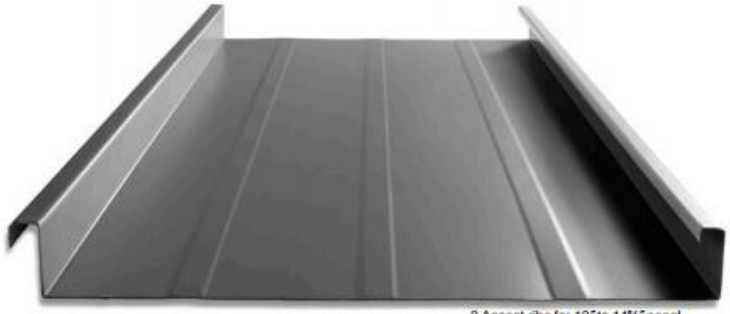
FLAT PAN



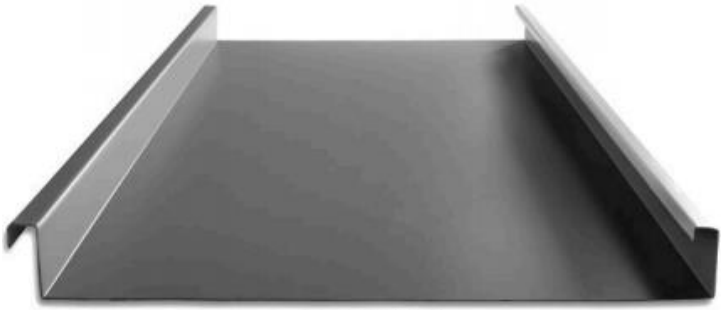



**MS-200 Detail**

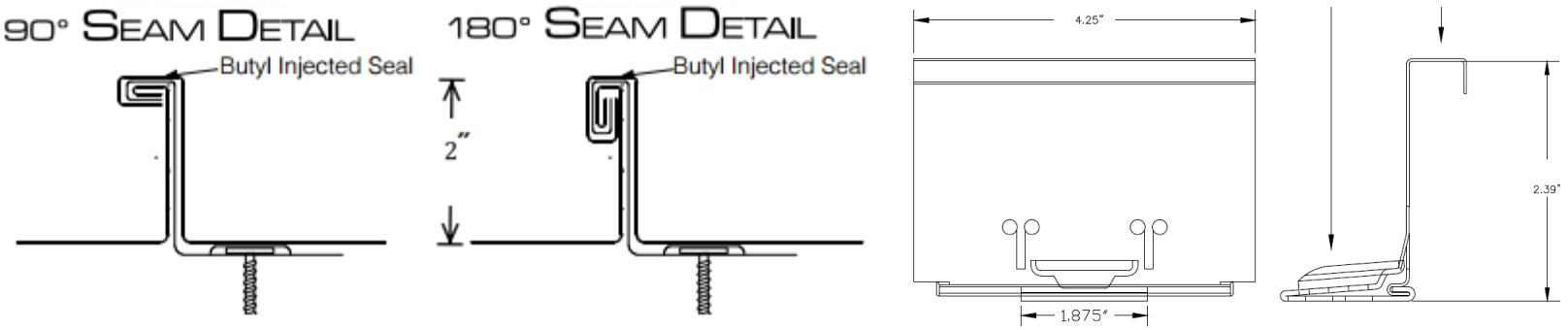
STRIATED



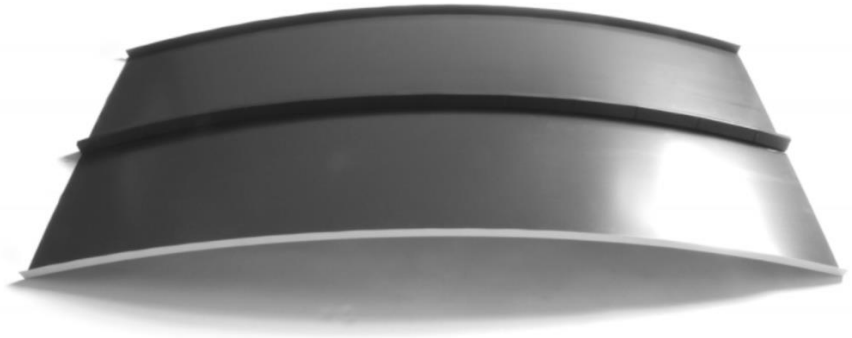
ACCENT RIBS 2 Accent ribs for 12"to 14¾"panel
3 Accent ribs for 16"to 18"panel

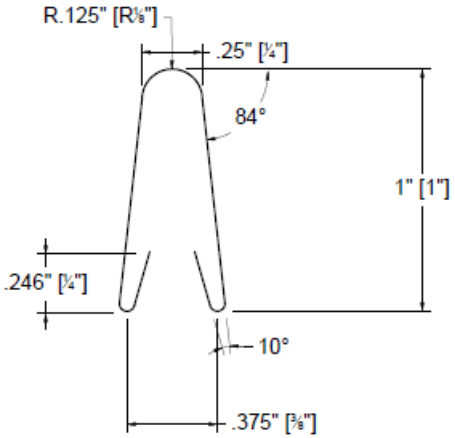


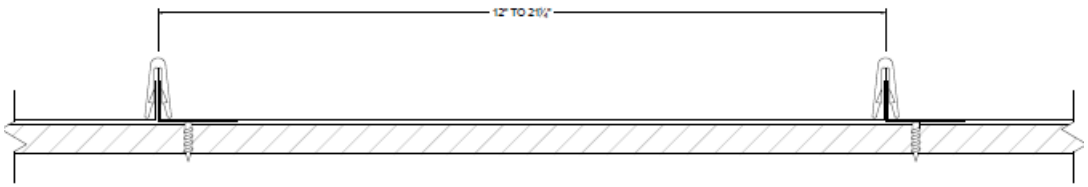
FLAT PAN



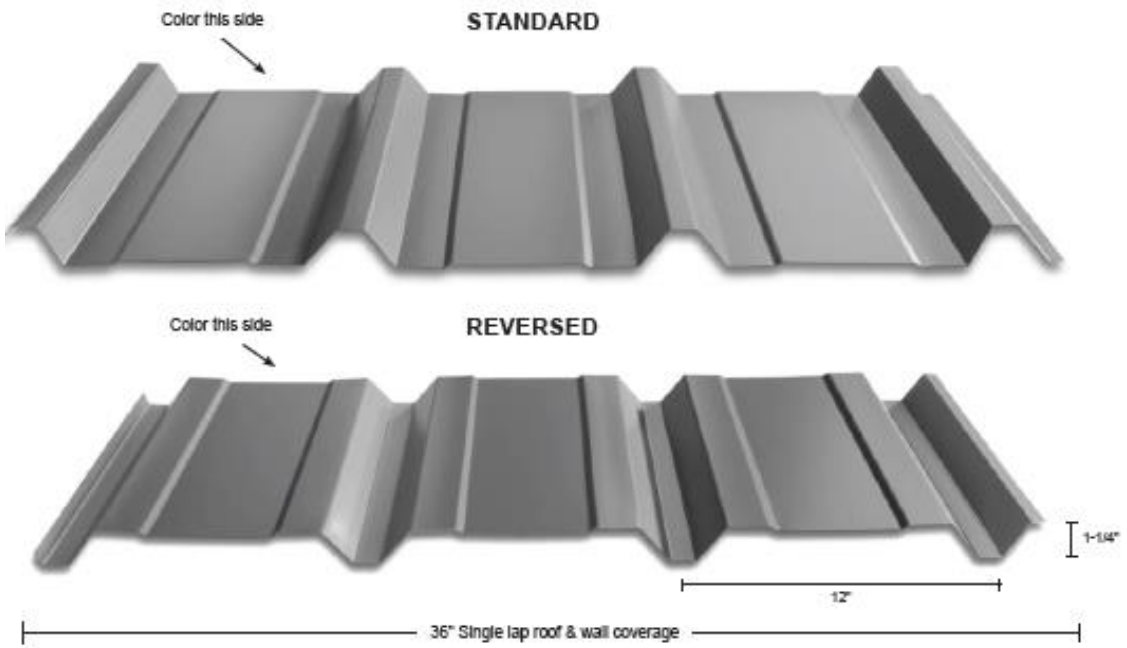
## T Panel Narrow Batten Detail



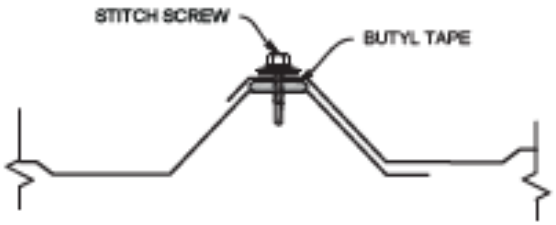


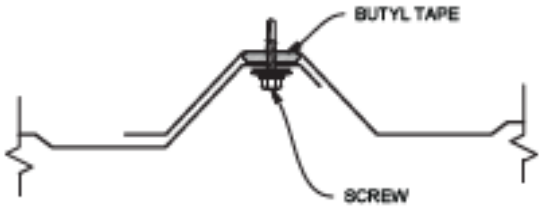
## PBR/Marion R Detail



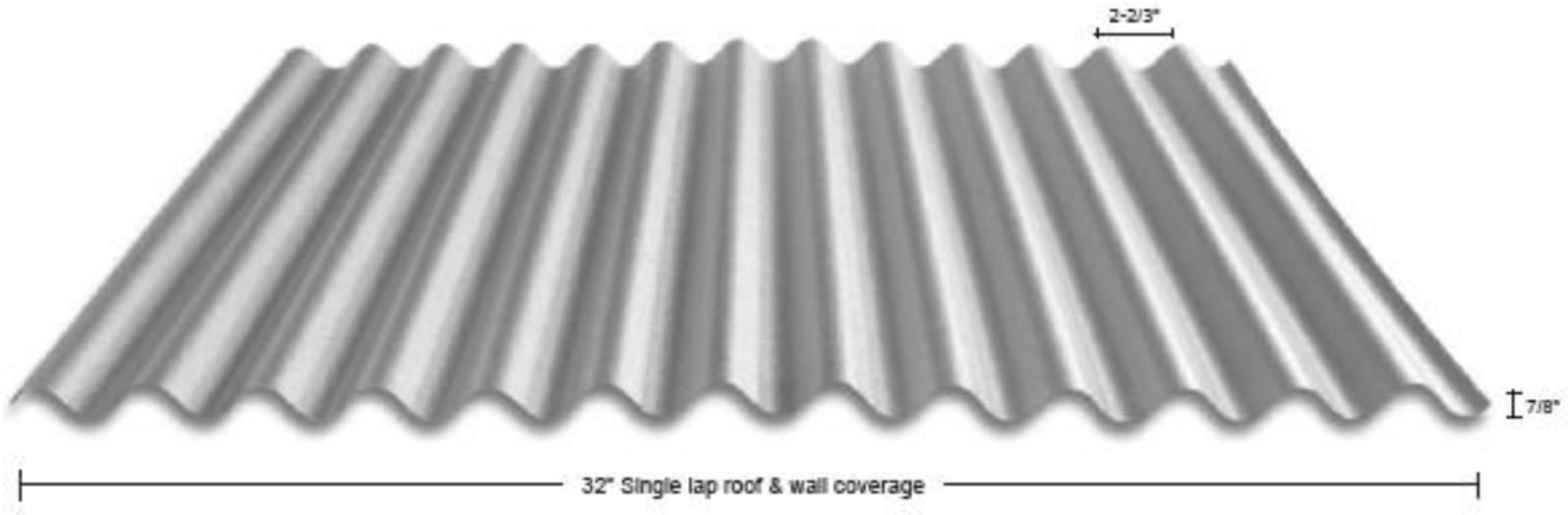

## STANDARD LAP DETAIL

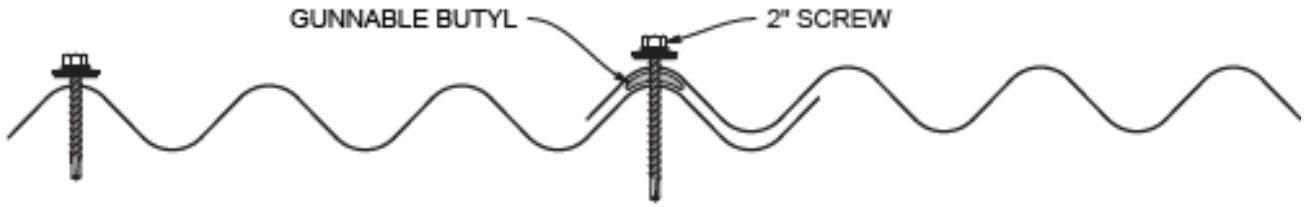



## REVERSE LAP DETAIL

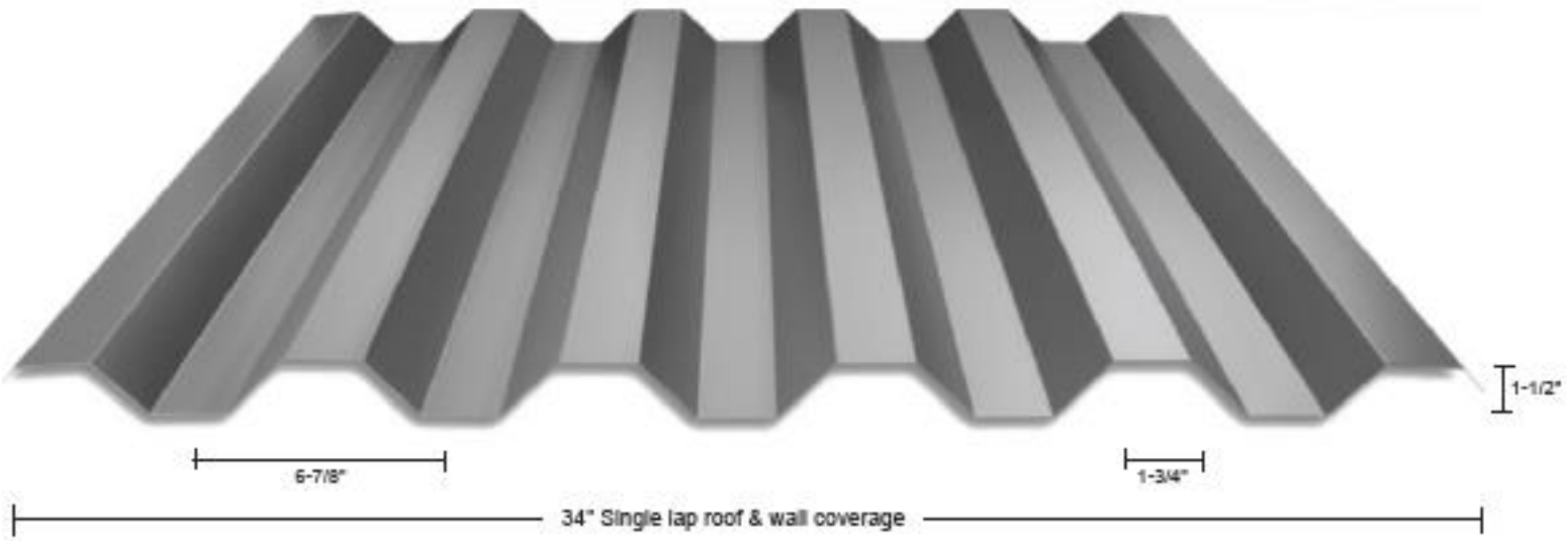


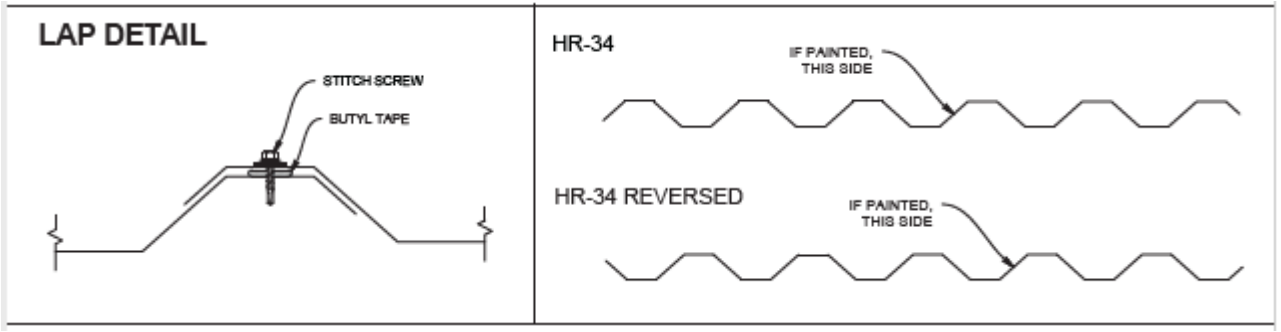
## Classic ⅞” Corrugated Detail



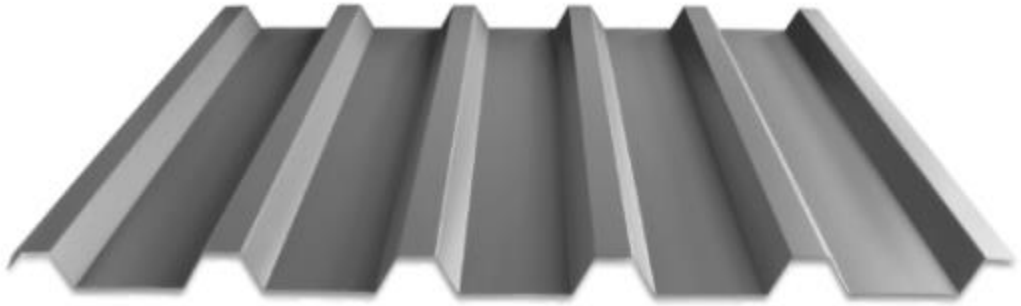



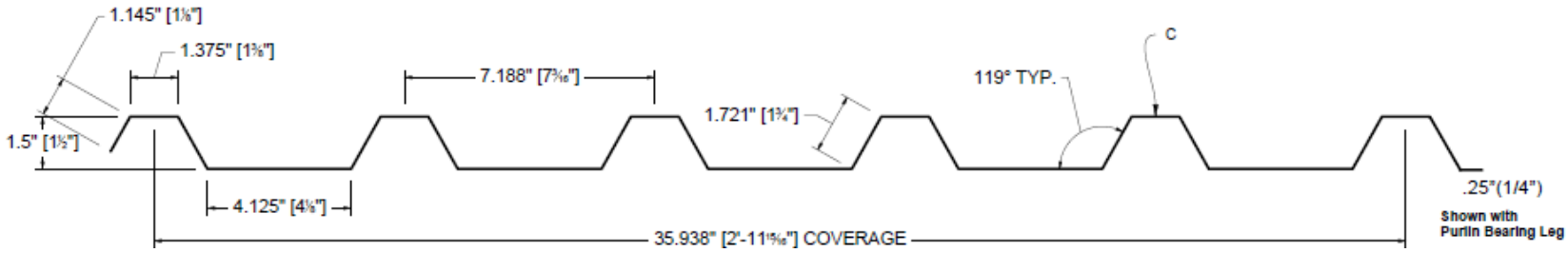
## HR-34 Detail


1-1/2"
6-7/8"
1-3/4"
34" Single lap roof & wall coverage

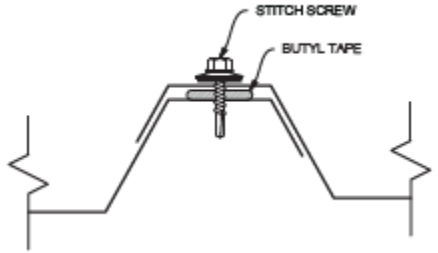

LAP DETAIL
STITCH SCREW
BUTYL TAPE
HR-34
IF PAINTED, THIS SIDE
HR-34 REVERSED
IF PAINTED, THIS SIDE

## BR-36 Detail






### LAP DETAIL



Underwriters Laboratories Inc.
333 Pfingsten Road, Northbrook, IL 60062-2096 USA
T: 847.272.8800 / F: 847.272.8129 / W: UL.com

UL Product iQ™

# TGFU.R25913 - ROOFING SYSTEMS

## Roofing Systems

See General Information for Roofing Systems

**TAYLOR METAL INC, DBA TAYLOR METAL PRODUCTS** R25913
4566 RIDGE DR NE
SALEM, OR 97301-6992 USA

## OTHER SYSTEMS

### Any roof covering system listed for use over a combustible roof deck can be installed over a non-combustible roof deck and achieve the same classification.

**Class A**

1. **Deck:** NC **Incline:** Unlimited **Impact:** 4
**Insulation (Optional): —** Any UL Classified (except EPS), any thickness.
**Surfacing: —** "EASY LOCK", "MS 200", "Versa Span", MS200-90C", "T-Panel Narrow Panel", "MS150-S", "MS200-S", "MS150", "Tuff-Rib", "T-3", "PBR/Marion R", "HR-34", "GR-7", or "Classic 7/8 Corrugated" roofing panels, mechanically fastened. OR: Aluminum or zinc roofing panels designated "Clip-Lock 150", "MS100", "Premier-Lock 100", or "Premier-Lock 150", mechanically fastened.

2. **Deck:** NC **Incline:** Unlimited **Impact:** 4
**Barrier Board: —** 5/8 in. min plywood.
**Ply Sheet (Optional): —** Any UL Classified Type G1, G2 or G3 base/ply sheet, Type 15 or 30 felt or UL Classified prepared roofing accessory.
**Surfacing: —** "EASY LOCK", "MS 200", "Versa Span", "MS200-90C", "T-Panel Narrow Panel", "MS150-S", "MS200-S", "MS150", "Tuff-Rib", "T-3", "PBR/Marion R", "HR-34", "GR-7", or "Classic 7/8 Corrugated" roofing panels, mechanically fastened. OR: Aluminum or zinc roofing panels designated "Clip-Lock 150", "MS100", "Premier-Lock 100", or "Premier-Lock 150", mechanically fastened.

3. **Deck:** NC **Incline:** Unlimited **Impact:** 4
**Barrier Board: —** 7/16 OSB or 5/8 in. plywood over polyisocyanurate insulation board or polyisocyanurate composite board, any thickness.
**Ply Sheet (Optional): —** Any UL Classified Type G1, G2 or G3 base/ply sheet, Type 15 or 30 felt or UL Classified prepared roofing accessory.
**Surfacing: —** "EASY LOCK", "MS 200", "Versa Span", "MS200-90C", "T-Panel Narrow Panel", "MS150-S", "MS200-S," "MS150", "Tuff-Rib", "T-3", "PBR/Marion R", "HR-34", "GR-7", or "Classic 7/8 Corrugated" roofing panels, mechanically fastened. OR: Aluminum or zinc roofing panels designated "Clip-Lock 150", "MS100", "Premier-Lock 100", or "Premier-Lock 150", mechanically fastened.

4. **Deck:** C-15/32 or spaced sheathing **Incline:** Unlimited **Impact:** 4

**Barrier Board: —** Georgia Pacific 1/4 in. min "DensDeck" board or 1/4 in. min United States Gypsum Co SECUROCK® Glass-Mat Roof Board (Type SGMRX), National Gypsum "DEXcell Glass Mat Roof Board" or "DEXcell FV Glass Mat Roof Board", CertainTeed Gypsum "GlasRoc"or 1/2 in. min UL classified gypsum board with all joints staggered a min of 6 in. from the plywood joints.

**Ply Sheet (Optional): —** Any UL Classified Type G1, G2 or G3 base/ply sheet, Type 15 or 30 felt or UL Classified prepared roofing accessory.

**Surfacing: —** "EASY LOCK", "MS 200", "Versa Span", "MS200-90C", "T-Panel Narrow Panel", "MS150-S", "MS200-S," "MS150", "Tuff-Rib", "T-3", "PBR/Marion R", "HR-34", "GR-7, or "Classic 7/8 Corrugated" roofing panels, mechanically fastened. OR: Aluminum or zinc roofing panels designated "Clip-Lock 150", "MS100", "Premier-Lock 100", or "Premier-Lock 150", mechanically fastened.

5. **Deck:** NC **Incline:** Unlimited **Impact:** 4

**Insulation: —** Polyisocyanurate, glass fiber, perlite or wood fiber, any thickness.

**Ply Sheet (Optional): —** Any UL Classified Type G1, G2 or G3 base/ply sheet, Type 15 or 30 felt or UL Classified prepared roofing accessory.

**Surfacing: —** "EASY LOCK", "MS 200", "Versa Span", "MS200-90C", "T-Panel Narrow Panel", "MS150-S", "MS200-S," "MS150", "Tuff-Rib", "T-3", "PBR/Marion R", "HR-34" , "GR-7", or "Classic 7/8 Corrugated" roofing panels, mechanically fastened. OR: Aluminum or zinc roofing panels designated "Clip-Lock 150", "MS100", "Premier-Lock 100", or "Premier-Lock 150", mechanically fastened.

6. **Deck:** NC **Incline:** Unlimited **Impact:** 4

**Barrier Board: —** Georgia Pacific 1/4 in. min "DensDeck" board or 1/4 in. min United States Gypsum Co SECUROCK® Glass-Mat Roof Board (Type SGMRX), National Gypsum "DEXcell Glass Mat Roof Board" or "DEXcell FV Glass Mat Roof Board", CertainTeed Gypsum "GlasRoc"or 1/2 in min UL Classified gypsum board.

**Ply Sheet (Optional): —** Any UL Classified Type G1, G2 or G3 base/ply sheet, Type 15 or 30 felt or UL Classified prepared roofing accessory.

**Surfacing: —** "EASY LOCK", "MS 200", "Versa Span", "MS200-90C", "T-Panel Narrow Panel", "MS150-S", "MS200-S," "MS150", "Tuff-Rib, "T-3", "PBR/Marion R", "HR-34", "GR-7", or "Classic 7/8 Corrugated" roofing panels, mechanically fastened. OR: Aluminum or zinc roofing panels designated "Clip-Lock 150", "MS100", "Premier-Lock 100", or "Premier-Lock 150", mechanically fastened.

7. **Deck:** C-15/32 or spaced sheathing **Incline:** Unlimited **Impact:** 4

**Underlayment: —** One layer GAF "VersaShield® Solo™ Fire-Resistant Slip Sheet", mechanically fastened, or Firestone Building Products Co. LLC "CLAD-GARD SA-FR" self-adhered underlayment.

**Ply Sheet (Optional): —** Any UL Classified Type G1, G2 or G3 base/ply sheet, Type 15 or 30 felt or UL Classified prepared roofing accessory.

**Surfacing: —** "EASY LOCK", "MS 200", "Versa Span", "MS200-90C", "T-Panel Narrow Panel", "MS150-S", "MS200-S", "MS150", "Tuff-Rib, "T-3", "PBR/Marion R", "HR-34", "GR-7", or "Classic 7/8 Corrugated" roofing panels, mechanically fastened. OR: Aluminum or zinc roofing panels designated "Clip-Lock 150", "MS100", "Premier-Lock 100", or "Premier-Lock 150", mechanically fastened.

8. **Deck:** C-15/32 or spaced sheathing **Incline:** Unlimited **Impact:** 4

**Underlayment: —** One layer GAF "VersaShield® Solo™ Fire-Resistant Slip Sheet"", mechanically fastened, or Firestone Building Products Co. LLC "CLAD-GARD SA-FR" self-adhered underlayment.

**Surfacing: —** "EASY LOCK", "MS 200", "Versa Span", "MS200-90C", "T-Panel Narrow Panel", "MS150-S", "MS200-S", "MS150", "Tuff-Rib", "T-3", "PBR/Marion R", "HR-34", "GR-7", or "Classic 7/8 Corrugated" roofing panels, mechanically fastened. OR: Aluminum or zinc roofing panels designated "Clip-Lock 150", "MS100", "Premier-Lock 100", or "Premier-Lock 150", mechanically fastened.

9. **Deck:** NC **Incline:** Unlimited

**Insulation (Optional): —** Any UL Classified (except EPS), any thickness.

**Surfacing: —** "EASY LOCK", "MS 200", "Versa Span", "MS200-90C", "T-Panel Narrow Panel", "MS150-S", "MS200-S", "MS150", "Tuff-Rib", "T-3", "PBR/Marion R", "HR-34", "GR-7", or "Classic 7/8 Corrugated" roofing panels, mechanically fastened. OR: Aluminum or zinc roofing panels designated "Clip-Lock 150", "MS100", "Premier-Lock 100", or "Premier-Lock 150", mechanically fastened.

10. **Deck:** NC **Incline:** Unlimited

**Barrier Board: —** 5/8 in. min plywood.

**Ply Sheet (Optional): —** Any UL Classified Type G1, G2 or G3 base/ply sheet, Type 15 or 30 felt or UL Classified prepared roofing accessory.

**Surfacing: —** "EASY LOCK", "MS 200", "Versa Span", "MS200-90C", "T-Panel Narrow Panel", "MS150-S", "MS200-S", "MS150", "Tuff-Rib", "T-3", "PBR/Marion R", "HR-34", "GR-7", or "Classic 7/8 Corrugated" roofing panels, mechanically fastened. OR: Aluminum or zinc roofing panels designated "Clip-Lock 150", "MS100", "Premier-Lock 100", or "Premier-Lock 150", mechanically fastened.

11. **Deck:** NC **Incline:** Unlimited

**Barrier Board: —** 7/16 OSB or 5/8 in. plywood over polyisocyanurate insulation board or polyisocyanurate composite board, any thickness.

**Ply Sheet (Optional): —** Any UL Classified Type G1, G2 or G3 base/ply sheet, Type 15 or 30 felt or UL Classified prepared roofing accessory.

**Surfacing: —** "EASY LOCK", "MS 200", "Versa Span", "MS200-90C", "T-Panel Narrow Panel", "MS150-S", "MS200-S", "MS150", "Tuff-Rib", "T-3", "PBR/Marion R", "HR-34", "GR-7", or "Classic 7/8 Corrugated" roofing panels, mechanically fastened. OR: Aluminum or zinc roofing panels designated "Clip-Lock 150", "MS100", "Premier-Lock 100", or "Premier-Lock 150", mechanically fastened.

12. **Deck:** C-15/32 or spaced sheathing **Incline:** Unlimited

**Barrier Board: —** Georgia Pacific 1/4 in. min "DensDeck" board or 1/4 in. min United States Gypsum Co SECUROCK® Glass-Mat Roof Board (Type SGMRX), National Gypsum "DEXcell Glass Mat Roof Board" or "DEXcell FV Glass Mat Roof Board", CertainTeed Gypsum "GlasRoc"or 1/2 in. min UL classified gypsum board with all joints staggered a min of 6 in. from the plywood joints.

**Ply Sheet (Optional): —** Any UL Classified Type G1, G2 or G3 base/ply sheet, Type 15 or 30 felt or UL Classified prepared roofing accessory.

**Surfacing: —** "EASY LOCK", "MS 200", "Versa Span", "MS200-90C", "T-Panel Narrow Panel", "MS150-S", "MS200-S," "MS150", "Tuff-Rib", "T-3", "PBR/Marion R", "HR-34", "GR-7", or "Classic 7/8 Corrugated" roofing panels, mechanically fastened. OR: Aluminum or zinc roofing panels designated "Clip-Lock 150", "MS100", "Premier-Lock 100", or "Premier-Lock 150", mechanically fastened.

13. **Deck:** NC **Incline:** Unlimited

**Insulation: —** Polyisocyanurate, glass fiber, perlite or wood fiber, any thickness.

**Ply Sheet (Optional): —** Any UL Classified Type G1, G2 or G3 base/ply sheet, Type 15 or 30 felt or UL Classified prepared roofing accessory.

**Surfacing: —** "EASY LOCK", "MS 200", "Versa Span", "MS200-90C", "T-Panel Narrow Panel", "MS150-S", "MS200-S", MS150", "Tuff-Rib", "T-3", "PBR/Marion R", "HR-34", "GR-7", or "Classic 7/8 Corrugated" roofing panels, mechanically fastened. OR: Aluminum or zinc roofing panels designated "Clip-Lock 150", "MS100", "Premier-Lock 100", or "Premier-Lock 150", mechanically fastened.

14. **Deck:** NC **Incline:** Unlimited

**Barrier Board: —** Georgia Pacific 1/4 in. min "DensDeck" board or 1/4 in. min United States Gypsum Co SECUROCK® Glass-Mat Roof Board (Type SGMRX), National Gypsum "DEXcell Glass Mat Roof Board" or "DEXcell FV Glass Mat Roof Board", CertainTeed Gypsum "GlasRoc"or 1/2 in min UL Classified gypsum board.

**Ply Sheet (Optional): —** Any UL Classified Type G1, G2 or G3 base/ply sheet, Type 15 or 30 felt or UL Classified prepared roofing accessory.

**Surfacing: —** "EASY LOCK", "MS 200", "Versa Span", "MS200-90C", "T-Panel Narrow Panel", "MS150-S", "MS200-S", "MS150", "Tuff-Rib", "T-3", "PBR/Marion R", "HR-34", "GR-7", or "Classic 7/8 Corrugated" roofing panels, mechanically fastened. OR: Aluminum or zinc roofing panels designated "Clip-Lock 150", "MS100", "Premier-Lock 100", or "Premier-Lock 150", mechanically fastened.

15. **Deck:** C-15/32 or spaced sheathing **Incline:** Unlimited

**Underlayment: —** One layer GAF "VersaShield® Solo™ Fire-Resistant Slip Sheet", mechanically fastened, or Firestone Building Products Co. LLC "CLAD-GARD SA-FR" self-adhered underlayment.

**Ply Sheet (Optional): —** Any UL Classified Type G1, G2 or G3 base/ply sheet, Type 15 or 30 felt or UL Classified prepared roofing accessory.

**Surfacing: —** "EASY LOCK", "MS 200", "Versa Span", "MS200-90C", "T-Panel Narrow Panel", "MS150-S", "MS200-S", "MS150", "Tuff-Rib", "T-3", "PBR/Marion R", "HR-34", "GR-7", or "Classic 7/8 Corrugated" roofing panels, mechanically fastened. OR: Aluminum or zinc roofing panels designated "Clip-Lock 150", "MS100", "Premier-Lock 100", or "Premier-Lock 150", mechanically fastened.

16. **Deck:** C-15/32 or spaced sheathing **Incline:** Unlimited

**Underlayment: —** One layer GAF "VersaShield® Solo™ Fire-Resistant Slip Sheet", mechanically fastened, or Firestone Building Products Co. LLC "CLAD-GARD SA-FR" self-adhered underlayment.

**Surfacing: —** "EASY LOCK", "MS 200", "Versa Span", "MS200-90C", "T-Panel Narrow Panel", "MS150-S", "MS200-S", "MS150"", "Tuff-Rib, "T-3", "PBR/Marion R", "HR-34", "GR-7", or "Classic 7/8 Corrugated" roofing panels, mechanically fastened. OR: Aluminum or zinc roofing panels designated "Clip-Lock 150", "MS100", "Premier-Lock 100", or "Premier-Lock 150", mechanically fastened.

## MAINTENANCE AND REPAIR

**Class A**

1. **Deck:** C-15/32 **Incline:** Unlimited **Impact:** 4

**Existing Roof System: —** Any Class A UL Listed shingle.

**Slip Sheet: —** GAF "VersaShield® Solo™ Fire-Resistant Slip Sheet", mechanically fastened, or Firestone Building Products Co. LLC "CLAD-GARD SA-FR" self-adhered underlayment.

**Surfacing: —** "EASY LOCK", "MS 200", "Versa Span", "MS200-90C", "T-Panel Narrow Panel", "MS150-S", "MS200-S", "MS150", "Tuff-Rib", "T-3", "PBR/Marion R", "HR-34", "GR-7", or "Classic 7/8 Corrugated" roofing panels, mechanically fastened. OR: Aluminum or zinc roofing panels designated "Clip-Lock 150", "MS100", "Premier-Lock 100", or "Premier-Lock 150", mechanically fastened.

2. **Deck:** C-15/32 **Incline:** Unlimited

**Existing Roof System: —** Any Class A UL Listed shingle.

**Slip Sheet: —** One layer GAF "VersaShield® Solo™ Fire-Resistant Slip Sheet", mechanically fastened, or Firestone Building Products Co. LLC "CLAD-GARD SA-FR" self-adhered underlayment.

**Surfacing: —** "EASY LOCK", "MS 200", "Versa Span", MS200-90C", "T-Panel Narrow Panel", "MS150-S", "MS200-S", "MS150", "Tuff-Rib", "T-3", "PBR/Marion R", "HR-34", "GR-7", or "Classic 7/8 Corrugated" roofing panels, mechanically fastened. OR: Aluminum or zinc roofing panels designated "Clip-Lock 150", "MS100", "Premier-Lock 100", or "Premier-Lock 150", mechanically fastened.

Last Updated on 2019-12-16

# SUBSTITUTION REQUEST FORM

Project: Palomar Community College
Substitution Request Number: _____

To: HMC Architects, Inc.
From: _____

Re: Dugout Furnishings
Date: 05/17/22

Architect's Project Number: _____
Contract For: _____

Specification Title: Athletic & Playground Equip.
Description: Exterior Equip.

Section: 11 66 00
Page: 2-3
Article/Paragraph: 3.03/A,B,C

Proposed Substitution: Eagle Bench, Geary Storage Rack, Kodiak Bat Box

Manufacturer: PYT Sports, Inc.
Address: Evergreen Park, IL

Trade Name: _____

Attached data shall include: product description, specifications, drawings, photographs, and performance and test data adequate for evaluation of the request; applicable portions of the date are clearly identified.
Attached data also includes a description of changes to the Contract Documents that the proposed substitutions will require for its proper installation, at no cost to the Owner.
The Undersigned Certifies:

- Proposed substitution has been fully investigated and determined shall be equal or superior in respects to specified product.
- Same warranty will be furnished for proposed substitution as for specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Proposed substitution does not affect dimensions and functional clearances.
- Payment will be made for changes to building design, including A/E design, detailing and construction costs caused by the substitutions.
- Reason(s) why substitution is being submitted.
  - ☐ Specified product or material is not available. Explain in detail as attachment.
  - ☒ Cost savings to Owner. Indicate comparative cost analysis as attachment.
  - ☐ Other. Explain:

Submitted by: Linda Christopher
Signed by: Linda Christopher
Firm: PYT Sports, Inc.
Address: 2908 W. 99th Place
Evergreen Park, IL 60805
Telephone: 708-634-2099

A/E's REVIEW AND ACTION

☐ Substitution Approved
☐ Substitution Rejected as marked below:
  - ☐ Insufficient information submitted
  - ☐ Submitted late.
  - ☐ Information not clearly marked.
  - ☐ Full line product information (Binder not provided).
  - ☐ Does not meet performance / design requirements of Paragraph _____
  - ☐ Comparisons not properly identified on product data sheets.

Signed by: _____ Date: _____

Substantiating Data Required:

☐ Drawings
☒ Product Data
☒ Samples
☐ Tests if required in individual sections
☐ Reports if required in individual sections
☐ Other: _____

| | PRICE | QTY | SUBTOTAL |
|---|---|---|---|
|  ELITE BENCHES | $550.00 | 6 | $3,300.00 |
| Remove item | | | |
|  GANDOLFI OPEN PLAYER'S HELMET RACK | $350.00 | 6 | $2,100.00 |
| Remove item | | | |
|  DAVIDSON BAT RACK | $250.00 | 2 | $500.00 |
| Remove item | | | |

ue Shopping | CLEAR SHOPPING CART | UPDATE SHOPPING CART

## SUMMARY

ESTIMATE SHIPPING AND TAX

Enter your destination to get a shipping estim

Country

United States

State/Province

California

Zip/Postal Code

92069

**Best Way**

Table Rate $500.00

| | |
|---|---|
| Subtotal | $5,90 |
| Shipping (Best Way - Table Rate) | $50 |
| Order Total | **$6,40** |

APPLY DISCOUNT CODE

# Addendum #6 Bid 103-22 Athletics Stadiums Re-bid(f)

Final Audit Report 2022-05-21

| | |
|---|---|
| Created: | 2022-05-20 |
| By: | Debbi Claypool (dclaypool@palomar.edu) |
| Status: | Signed |
| Transaction ID: | CBJCHBCAABAAkx0-q7EY_o_16PSPevZmMlf2IOjzGDTZ |

## "Addendum #6 Bid 103-22 Athletics Stadiums Re-bid(f)" History

Document created by Debbi Claypool (dclaypool@palomar.edu)
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Signature Date: 2022-05-21 - 0:47:31 AM GMT - Time Source: server- IP address: 72.197.198.194

Agreement completed.
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