



UNA-CLAD™ Metal Roof Systems Tested Assembly Guide

March 2024

NOTE: The contents of this guide are considered accurate at time of posting. All information contained within should be validated for accuracy as it relates to specific project conditions or requirement. Specific codes, uplifts or other factors may result in changes to the information contained within this document. Validate all specific conditions with a Regional Technical Coordinator prior to its use.

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General

The following guide includes tested assemblies for uplift and fire ratings as they relate to specific testing standards set forth by the following agencies:

Factory Mutual (FM), Underwriters Laboratory (UL), Florida Product Approvals, Miami-Dade County Notice of Acceptance (NOA), Texas Department of Insurance (TDI), ICC Evaluation Service (ICC-ES)

It is the responsibility of the user of this document to verify the included assemblies in the charts below with the associated Firm's (UL, FM, etc.). The listed assemblies in this document may not contain all components of the approved assembly. It is the responsibility of the user to validate all components listed within the tested assembly.

It is the responsibility of the user of this document to verify that all assemblies used meet Holcim Solutions and Products US, LLC warranty requirements. This can be validated by contacting the Regional Building Systems Advisor.

Not all the information required in the assemblies will be listed in the charts below. Verify **ALL** assemblies in this document with the associated Firm's (UL, FM, etc.) database or Holcim Technical Services.

Verify that **ALL** assemblies meet Elevate warranty requirements with Holcim Technical Services.

Codes information is time sensitive and may change without notice. It is the responsibility of the user to complete the above verifications **BEFORE** bidding the project to assure accuracy.

External Fire Ratings

- All regional building codes and most local building code officials require that roofing systems meet min. performance requirements when exposed to external fire sources. The accepted method for measuring external fire resistance is ASTM Standard E-108. This test standard, and closely related standards such as Underwriters Laboratories UL-790 and Uniform Building Code 15-2, is used to determine the ability of a roof system to hinder the horizontal spread or vertical penetration of an external fire source.
 - Noncombustible Roof Decks (Steel, Concrete, and Poured Gypsum) require testing for horizontal spread of flame.
 - Combustible Roof Decks (Wood, Plywood, and Tectum) require testing for both horizontal spread and vertical penetration of flame.
- ASTM E-108, UL-790 and UBC 15-2. All classified roof covering assemblies fall into one of the three following categories:
 - CLASS A: "... includes roof coverings which are effective against **severe** fire exposures..." (See NOTE 1)
 - CLASS B: "... includes roof coverings which are effective against **moderate** fire exposures..." (See NOTE 1)
 - CLASS C: "... includes roof coverings which are effective against **light** fire exposures..." (See NOTE 1)
- The class of roof covering required by each regional building code depends upon many factors, including the use and location of the building and the type of construction. The local building authority should always be consulted as to what the roofing assembly classification will need to be for each roofing project.
- It should be noted that these classifications apply to roofing assemblies, and **NOT the metal roofing panel**. A metal roofing panel that is classified as part of a Class A assembly when installed over a particular insulated or non-insulated construction may not qualify as part of a Class A assembly if you make changes within the insulated or non-insulated construction.

UL Fire Rated Roof Assemblies

The following UL Fire Rated Roof Assemblies can be found and verified using the following hyperlink:

[TGFU.R14751](#) – Roofing Systems

Please utilize the UL website to verify the assembly number associated with each listed assembly.

Underwriters Laboratories (UL) – External Fire Rated Assemblies

Class A

1. Deck: C-15/32

Incline: Unlimited

Impact: 4

Insulation (Optional): — Any thickness "ISO 95+GL", RESISTA, ISOGARD HD, ISOGARD, HD Composite

Barrier Board: — G-P Products "DensDeck®", ¼" thick min., or ½" thick min. UL Classified gypsum board with joints in barrier board offset 6" with joints in deck

Ply Sheet (Optional): — One or more layers CLAD-GARD SA-N, CLAD-GARD SA-S, CLAD-GARD R, CLAD GARD MA (not UL Classified)

Surfacing: — "UC-3", "UC-4", "UC-6", "UC-6 HD", "UC-7", "UC-14", "UC-600", "UC-601", "UC750", "UC-500", "UC-501", "UR", "HR", "VR", 5V Crimp, steel, copper, zinc or aluminum

1A. Deck: C-15/32

Incline: Unlimited

Impact: 4

Barrier Board: — G-P Products "DensDeck®", ¼" thick min., or ½" thick min. UL Classified gypsum board with joints in barrier board offset 6" with joints in deck

Insulation (Optional): — Any thickness "ISO 95+ GL" RESISTA, ISOGARD HD, ISOGARD HD Composite or "HailGard"

Ply Sheet (Optional): — CLAD-GARD SA-N, CLAD-GARD SA-S, CLAD-GARD R, CLAD-GARD MA (not UL Classified) Underlayment

Surfacing: — "UC-3", "UC-4", "UC-6", "UC-6 HD", "UC-7", "UC-14", "UC-600", "UC-601", "UC750", "UC-500", "UC-501", "UR", "HR", "VR", 5V Crimp, steel, copper, zinc or aluminum

1B. Deck: C-15/32

Incline: Unlimited

Impact: 4

Barrier Board: — G-P Products "DensDeck®", ¼" thick min., or ½" thick min. UL Classified gypsum board with joints in barrier board offset 6" with joints in deck

Insulation (Optional): — Any thickness "ISO 95+ GL", RESISTA, ISOGARD HD, ISOGARD HD Composite or "HailGard"

Ply Sheet (Optional): — CLAD-GARD SA-N, CLAD-GARD SA-S, CLAD-GARD R, CLAD-GARD MA (not UL Classified) Underlayment

Surfacing: — "UC-3", "UC-4", "UC-6", "UC-6 HD", "UC-7", "UC-14", "UC-600", "UC-601", "UC750", "UC-500", "UC-501", "UR", "HR", "VR", 5V Crimp, steel, copper

8. Deck: C-15/32

Incline: Unlimited

Impact: 4

Insulation (Optional): — "ISO 95+GL" or RESISTA

Barrier Board: — G-P Products "DensDeck®", ¼" thick min., or ½" thick min. UL Classified gypsum board with joints in barrier board offset 6" with joints in deck, or min. one-layer CLAD-GARD SA-N, CLAD-GARD SA-S, CLAD-GARD R, CLAD-GARD MA (not UL Classified)

Ply Sheet (Optional) — CLAD-GARD SA-N, CLAD-GARD SA-S, CLAD-GARD R, CLAD-GARD MA (not UL Classified)

Surfacing: — "UC-3", "UC-4", "UC-6", "UC-6 HD", "UC-7", "UC-14", "UC-600", "UC-601", "UC750", "UC-500", "UC-501", "UR", "HR", "VR", 5V Crimp, steel, copper or aluminum

15. Deck: NC

Incline: Unlimited

Impact: 4

Insulation (Optional): — Any thickness "ISO 95+GL", Resista, HailGard, Any UL Classified insulation any thickness

Cover Board (Optional): — ISOGARD HD, G-P Products "DensDeck®", ¼" thick min., 7/16" OSB, ½" high density wood fiber board or 15/32" plywood.

Ply Sheet (Optional): — Clad Gard SA-N, Clad-Gard SA-S, Clad Gard R or Clad-Gard MA (not UL Classified).

Surfacing: — "UC-3", "UC-4", "UC-6", "UC-6 HD", "UC-7", "UC-14", "UC-600", "UC-601", "UC750", "UC-500", "UC-501", "UR", "HR", "VR", 5V, Crimp, steel, copper or aluminum

[Last Updated](#) on 2014-12-22

Underwriters Laboratories (UL) – Impact Resistance

[\(TGAM.GuideInfo\)](#)

Testing to UL 2218, "Impact Resistance of Prepared Roof Covering Materials", results in Classifications for impact resistance that are expressed as Class 1, 2, 3 or 4 which relate to a roof covering's ability to withstand impacts from 1¼", 1½", 1¾" and 2" diameter steel balls, respectively. The acceptance criteria to metal roof panels is as follows: withstand the assigned class designation impact without visible evidence of tearing, fracturing, cracking, splitting, rupturing, crazing or other opening of the roof covering layer. Classification is for metal panels placed over solid wood decking (¾" or greater in thickness).

UL Impact Resistance Rated Panels

[TGAM.R14751](#) Roof-covering Materials, Impact Resistance
(only Steel, copper or aluminum, any thickness)

Class 4 ratings were achieved for the following panel designations:

UC-3, UC-4, UC-6, UC-7, UC-14	UC-500, UC-501, UC-600, UC-601	5-V Crimp, UR, HR, VR
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UL – Wind Uplift Ratings

UPLIFT RESISTANCE CLASSIFIED

[TGKX.GuideInfo](#) - Roof Deck Constructions

Roof Deck Constructions Classified for Uplift Resistance have been investigated for damageability from both external and internal pressures on the deck associated with high velocity winds. Uplift Classifications are derived from tests conducted in accordance with the Standard for "Tests For Uplift Resistance of Roof Assemblies", [ANSI/UL 580](#). The [ANSI/UL 580](#) test method subjects a 10'x10' test sample to various static and oscillating air pressures to index performance under uplift loads imposed on roof decks.

The magnitude of the wind velocity across a roof deck and the resulting uplift pressures on a roof deck are dependent upon many factors such as wind gusts, the shape of the roof deck, edge configuration and the landscape surrounding the roof deck installation. A method to calculate the uplift pressures on roof decks is contained in the American Society of Civil Engineers (ASCE) Standard 7-95, Min. Design Loads for Buildings and Other Structures.

The nominal static uplift pressure, the oscillating uplift pressures and the max. static uplift pressure for each Class are:

Uplift Resistance Pressures			
Class	Nominal Static Uplift Pressure PSF	Range of Oscillating Pressure PSF	Max Static Uplift Pressure PSF
15	15	11 to 21	23
30	30	22 to 42	45
60	60	44 to 83	75
90	90	66 to 90	105

The static pressures are maintained for a 5 minute period and the oscillating pressures are applied at a 10 plus or minus 2 second frequency and are maintained for a 60 minute period for each Class. An assembly rated Class 60 has withstood pressures imposed during Class 30 and Class 60 tests. An assembly rated Class 90 has withstood pressures imposed during Class 30, Class 60 and Class 90 tests.

NOTE: Please utilize the UL website to verify the Construction Number associated with each listed assembly. A hyperlink has been embedded in each assembly using the 'Construction No. ###'. By clicking on this text, you can open the hyperlink that will direct you to the current UL construction assembly and details.

UL 580, Class 90 Rated Roof Deck Constructions

The following UL 580, Class 90 Rated Roof Deck Constructions can be found and verified using the following hyperlink:
[TJPV-R14751](#) – Metal Roof Deck Panels

UC-3 Constructions:

UC-3 – Construction No. 512A; Uplift – Class 60*, Class 90		
1.	Panel:	Width 16" max. with 1½" high legs. No. 24 MSG min. thick coated steel, or 0.032" min. thick aluminum. Panels continuous over three or more clips with no end laps. Panel ribs double seamed with an electric seaming tool with seaming operation to include upper tabs of panel clips (Item 2). – "UC-3"
2.	Roof Deck Fasteners* (Panel Clips):	2. Panel Clips: Two-part assembly, base 3" wide, 5⁄8" high, with a 7⁄8" wide base leg having two 3⁄16" embossed guide holes. Upper tab ½" wide folded over base forming two tabs. Both parts fabricated from 0.015" min. thick stainless-steel. Clips spaced 18" o.c. for a Class 90 and 24" o.c. for a Class 60 – "UC-3 Expansion Clip" 2A. Roof Deck Fasteners*: (Panel Clips) – Two-part assembly, base 5" long, 1" wide, 0.42" high. Fabricated from min. 0.0225" thick 304 stainless-steel. Upper tab 3" long, 0.42" wide, 1.786" high. Fabricated from min. 0.0172" thick 304 stainless-steel. Clips spaced max. 24" o.c. – "UC-3 Super Clip"
3.	Fasteners (Screws):	Fasteners used to attach panel clips (Item 2) to substructure (Item 5) to be 10x1" PC PD WOW T17 steel or 10x1" PC T WOW T17 stainless-steel screws. Two screws used per clip inserted into clip guide holes.
4.	Underlayment:	Optional – N/A
5.	Plywood Decking and Insulation Options: NOTE: Foamed Plastic*	5. Plywood or OSB) – Deck to be 7⁄16" OSB, or 15⁄32" plywood, 19⁄32" plywood; Exposure 1, APA rated sheathing (42⁄20) or (32⁄16) respectively, square edged. Roof Deck Panels (Item 1) to be max. 16" wide when fastened into 7⁄16 OSB or 15⁄32 plywood decking, and UC-3 Expansion Clip (Item 2) is to be max. 18" o.c. Roof Deck Panels greater than 16" to follow 12" o.c. spacing noted in Item 2. Butt joints to be located over purlins, side joints not blocked. All butt and side joints to be sealed with a one-part urethane caulk sealant feathered outward from joint (note exception under Item 4 alternate). 5A. Foamed Plastic* – (Rigid Insulation – Optional – Not Shown) – Applied flat or tapered to max. 10" thick combination of Item 5B. Bearing plates required under panel attachment points. – "ISOGARD GL" or "ISOGARD CG" 5B. Foamed Plastic – (Rigid Insulation – Optional – Not Shown) – Placed on top of Item 5A. Max. 10" thick combination of Item 5A. Bearing plates required under panel attachment points. Bearing plates not required if foamed plastic not used (Item 5A or 5B). – "ISOGARD HD" 5C. Roof Deck Fasteners* – (Bearing Plates) – Plates to be 4"x4" by No. 26 MSG min. galvanized steel plate (for use with coated steel panels) or stainless-steel plate (for use with aluminum panels). Two ¼" guide holes located in line with panel clip (Item 2) guide holes. – "UC Bearing Plate" 5D. Cover Board – (Optional – Not Shown) – Min. ½" thick (15⁄32" actual) plywood, DOC PS-1 rated (square edged may be used) or min. 7⁄16" thick OSB, DOC PS-2 rated, ½" thick gypsum board, ½" wood fiberboard, ¼" min. thickness G-P Gypsum "DensDeck", ¼" min. thick USG "SECUROCK Glass Mat Board" or "SECUROCK Roof Board" applied over the plywood decking (Item 5) or Foamed Plastic (Items 5A and/or 5B). When used or used over Foamed Plastic bearing plate not required.
6.	Purlins:	Joists (not shown) – Nominal 2"x10" graded dimensional lumber, No. 2 or better. Spaced 24" o.c. max.
7.	Plywood Fasteners:	Fasteners used to attach wood deck to supports to be used 0.113"x2³⁄8" ring shank nails spaced 6" o.c. along the perimeter and intermediate supports.
* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.		

UC-3 – Construction No. 623 ; Uplift – Class 90

1.	Panel:	Width 16" max. with 1½" high legs. Min. 0.027" thick RHEINZINK (zinc). Panels continuous over three or more clips with no end laps. Panel ribs double seamed with an electric or manual seaming tool with seaming operation to include upper tabs of panel clips (Item 2). – "UC-3"
2.	Roof Deck Fasteners* (Panel Clips):	Two-part assembly, base 5" long, 1" wide, 0.42" high. Fabricated from min. 0.0225" thick 304 stainless-steel. Upper tab 3" long, 0.42" wide, 1.786" high. Fabricated from min. 0.0172" thick 304 stainless-steel. Spaced a max. of 12" o.c. – "UC-3 Super Clip"
3.	Fasteners (Screws):	Fasteners used to attach panel clips (Item 2) to plywood deck (Item 7) to be No. 10 by 1½" long pancake head stainless-steel screws. Two screws used per clip inserted into clip guide holes.
4.	Ventilation Mat:	One-layer Colbond "Enkamat 7010", loose laid.
5.	Underlayment*:	One-layer Elk "VersaShield" with 2" side lap, loose laid.
6.	Underlayment:	One-layer Type 30 organic felt with 2" side lap. Mechanically fastened to the plywood deck (Item 7) per manufacturers recommendations. Spaced 6" o.c. at the perimeter and 12" o.c. staggered in the field.
7.	Plywood Decking:	Deck to be nominal 5⁄8" (19⁄32" actual) or ½" (15⁄32" actual) thickness PS-1 rated plywood.
8.	Purlins – Deck Supports:	Spaced a max. of 2' o.c. Any of the following types may be used: A. No. 16 MSG min. thick coated steel (33,000 psi min. yield strength). B. Graded dimension lumber, No. 2 or better.
9.	Plywood Fasteners:	Fasteners used to attach plywood deck (Item 7) to supports (Item 8) to be as follows: A. For plywood to steel supports, to be No. 8-20 by 1¼" long No. 2 Phillips Drive Bugle Head steel screws with an S-12 TEKS 3 Super Point. B. For plywood to wood supports, to be 8d by 2½" long ring shank common nails or no. 8-18 by 1⅞" long no. 2 Phillips Drive Bugle Head, "Hi Low" thread pattern steel screws with an "S" point. NOTE: Spacing for all fastener types to be 6" o.c. at the edges and 12" o.c. in the interior. Refer to General Information, Roof Deck Constructions for items not evaluated.

*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**

UC-3 – Construction No. 512B; Uplift – Class 60*, Class 90

1.	Panel:	Max. 16" wide with 1½" high legs. Min. No. 24 MSG thick coated steel or 0.032" min. thick aluminum. – "UC-3"
2.	Roof Deck Fasteners* (Panel Clips):	2. Panel Clip – Two-part assembly, base 5" long, 1" wide, 0.42" high. Fabricated from min. 0.0225" thick 304 stainless-steel. Upper tab 3" long, 0.42" wide, 1.786" high. Fabricated from min. 0.0172" thick 304 stainless-steel. Clips spaced 24" o.c. for Class 60, with seaming operation to include upper tabs of panel clips (Item 2) – "UC-3 Super Clip" 2A. Deck Fasteners* (Panel Clip) – Two-part assembly, base 3" wide, 5⁄8" high, with a 7⁄8" wide base leg having two 3⁄16" embossed guide holes. Upper tab ½" wide folded over base forming two tabs. Both parts fabricated from 0.015" min. thick stainless-steel. Clips spaced 18" o.c. for Class 90, with seaming operation to include upper tabs of panel clips (Item 2). – "UC-3 Expansion Clip"
3.	Fasteners (Screws):	Screws – Fasteners used to attach panel clips (Item 2 or 2A) to ISOGARD HG Insulation. (Item 4) to be min. 10x1" PC PD WOW T17 steel or 10x1" PC T WOW T17 stainless-steel screws, two fasteners per clip. Fasteners used to attach ISOGARD HG Insulation into Liner Panel (item 6 below) to be 8 HD ISOGARD HG Fastener screws per 4'x8' cover board.
4.	Insulation*:	Rigid Insulation – ISOGARD HG placed on top of Item 6 is mechanically fastened into Item 6 with 8 ISOGARD HG HD Fasteners per 4'x8' board. Max 10" thick in combination of Item 6. – ISOGARD HG
5.	Foamed Plastic*:	Rigid Insulation – (Optional, Not Shown) – Placed on top of Item 6. Max. 10" thick in combination with Item 5. – "ISOGARD", "ISOGARD HD Composite Board" or "ISOGARD CG"
6.	Liner Panel:	No. 22 MSG min. thick coated steel (33,000 psi min. yield strength). Min. depth 1½", max. pitch 6". Fabricated to various profiles. Fastened to supports 6" o.c.
7.	Purlins:	No. 16 MSG min. coated steel (33,000 psi min. yield strength) spaced max. 5' o.c.

***Indicates such products shall bear UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**

UC-3 - Construction No. 656; Uplift - Class 90

1.	Wood Supports (Joist):	Nominal 2"x10" graded dimensional lumber, No. 2 or better. Spaced 24" o.c. max.
2.	Deck:	Nominal 5/8" (19/32" actual) or 1/2" (15/32" actual) plywood, Grade B-C, PS-1 rated. Fastened to supports (joists) using 8d by 2 1/2" long ring shank nails. Spaced 6" o.c. max. at the butt ends and 6" o.c. max in the field.
3.	Foamed Plastic:	3. (Rigid Insulation) — Applied flat or tapered to max. 10" thick combination of Item 3A. Bearing plates required under panel attachment points. — "ISOGARD GL" 3A. (Rigid Insulation — Optional) — Placed on top of Item 3. Max. 10" thick combination of Item 3. Bearing plates required under panel attachment points. — "ISOGARD HD" or "ISOGARD CG"
4.	Vapor Barrier:	(Optional) — Self-adhered modified bitumen membrane per manufacturer's instructions.
5.	Panel:	Min. 24 MSG steel; width 20" max., 1 1/2" high at the ribs. Panels continuous over three or more clips with no end-laps. A bead of sealant may be used at panel ribs. Panel ribs seamed with an electric seamer with seaming operation to include upper portion of panel clip (Item 5). — "UC-3"
6.	Roof Deck Fasteners* (Panel Clips):	Two-part assembly, base 3" wide, 5/8" high, with a 7/8" wide base leg having two 3/16" embossed guide holes. Upper tab 1/2" wide folded over base forming two tabs. Both parts fabricated from 0.015" min. thick stainless-steel. Clips spaced 24" o.c. with seaming operation to include upper tabs of panel clips. Plates used with panel screw fasteners (Item 6) under panel clip to be 4"x4" min. No. 26-ga. stainless-steel or min. No. 26-ga. galvanized steel. — "UC-3 Expansion Clip" — "UC Bearing Plate"
7.	Panel Fasteners (Screws):	Fasteners used to attach the panel clips to the plywood decking to be No. 12 pancake wafer head steel screws. Length to penetrate plywood decking a min. of 3/4". Two screws are to be used per clip.
8.	Cover Board:	(Optional) — Min. 1/2" thick (15/32" actual) plywood, DOC PS-1 rated (square edged may be used) or min 7/16" thick OSB, DOC PS-2 rated, 1/2" thick gypsum board, 1/2" wood fiberboard, 1/4" min. thickness G-P Gypsum "DensDeck", 1/4" min. thick USG "SECUROCK Glass Mat Board" or "SECUROCK Roof Board" applied over the plywood deck (Item 2) or Foamed Plastic (Items 3 and/or 3A). When used or used over Foamed Plastic bearing plate not required.

*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**

UC-3 - Construction No. 622; Uplift - Class 90

1.	Panel*:	Width 16" max. with 1 1/2" high legs. No. 24 MSG min. thick coated steel. Panels continuous over three or more clips with no end laps. Panel ribs double seamed with an electric or manual seaming tool with seaming operation to include upper tabs of panel clips (Item 2). — "UC-3"
2.	Roof Deck Fasteners*:	2. (Panel Clips) — Two-part assembly, base 5" long, 1" wide, 0.42" high. Fabricated from No. 22 MSG min. thick coated steel. Upper tab 3" long, 0.42" wide, 1.79" high. Fabricated from No. 24 MSG min. thick coated steel. Spaced a max. of 30" o.c. — "UC-3 Super Clip" 2A. Bearing Plate (Not Shown) — Plates used with panel screw fasteners (Item 3) under panel clip (Item 2) to be 4"x4" min. No. 26-ga. stainless-steel or min. No. 26-ga. galvanized steel. — "UC Bearing Plate" 2B. Plywood - (Optional) - (Not Shown) — As an alternate to the bearing plates (Item 2A), 1/2" thick (15/32" actual) thickness plywood, APA rated sheathing, square edged may be used to cover the entire deck.
3.	Fasteners (Screws):	Fasteners used to attach panel clips (Item 2) to liner panel (Item 7) to be No. 12 pancake wafer head steel screws. Length to penetrate liner panel (Item 7) a min. of 3/4". Two screws used per clip inserted into clip guide holes.
4.	Underlayment*:	(Optional) — One-layer Elk "VersaShield" with 2" side lap, loose laid.

UC-3 – Construction No. 622; Uplift – Class 90 Continued

5.	Underlayment:	(Optional) – One-layer Type 30 organic felt with 2" side lap. Mechanically fastened to the liner panel (Item 7) per manufacturers recommendations. As an alternate, a self-adhering modified bitumen waterproofing membrane may be used per manufacturer's installation.
6.	Foamed Plastic*:	6. Rigid Insulation – Applied flat or tapered to max. 10" thick combination of Item 6A. Bearing plates required under panel attachment points. – "ISOGARD GL", "ISOGARD CG" or "HD Board" 6A. Foamed Plastic – (Rigid Insulation – Optional – Not Shown) – Placed on top of Item 6. Max. 10" thick combination of Item 6. Bearing plates required under panel attachment points. – "ISOGARD HD", ISOGARD CG" or "HD Board"
7.	Liner Panel:	7. No. 22 MSG min. thick coated steel (min. yield strength 33,000 psi). Min. depth 1" max pitch 6" fabricated to various profiles. 7A. Liner Panel Fasteners (Not Shown) – Liner panels (Item 7) to be fastened to structural supports (Item 8) with puddle welds at every other valley, 12" o.c.
8.	Supports:	Type K open web steel joists, 4' o.c.
9.	Cover Board:	(Optional – Not Shown) – Min. 1/2" thick (15/32" actual) plywood, DOC PS-1 rated (square edged may be used) or min. 7/16" thick OSB, DOC PS-2 rated, 1/2" thick gypsum board, 1/2" wood fiberboard, 1/4" min. thickness G-P Gypsum "DensDeck", 1/4" min. thick USG "SECUROCK Glass Mat Board" or "SECUROCK Roof Board" applied over the liner panel (Item 7) or Foamed Plastic (Items 6 and/or 6A). When used or used over Foamed Plastic bearing plate not required.
* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.		

UC-3 – Construction No. 512; Uplift – Class 90

1.	Panel:	Width 12" min. to 20" max. with 1 1/2" high legs. No. 24 MSG min. thick coated steel, or 0.032" min. thick aluminum. Width 16" max. with 1 1/2" high legs, min 0.022" (16 oz) copper. Panels continuous over three or more clips with no end laps. Panel ribs double seamed with an electric seaming tool with seaming operation to include upper tabs of panel clips (Item 2). – "UC-3"
2.	Panel Fasteners* (Panel Clips):	Two-part assembly, base 3" wide, 5/8" high, with a 7/8" wide base leg having two 3/16" embossed guide holes. Upper tab 1/2" wide folded over base forming two tabs. Both parts fabricated from 0.015" min. thick stainless-steel. Clips spaced 12" o.c. with seaming operation to include upper tabs of panel clips (Item 2). – "UC-3 Expansion Clip"
3.	Fasteners (Screws):	3. Fasteners used to attach panel clips (Item 2) to liner panels (Item 5) to be No. 12-13, No. 3 Phillips drive, truss-head, coated steel screws with an "S" point or All-Purpose Stainless-Steel Fasteners. Length to be 3/4" longer than overall thickness of roof deck. Two screws used per clip inserted into clip and bearing plate (Item 7) guide holes. 3A. Fasteners used to attach panel clips to plywood or OSB cover board (Item 5A) to be 10x1" PC PD WOW T17 steel or 10x1" PC T WOW T17 stainless-steel screws. 3B. Fasteners used to attach plywood or OSB cover board to Liner Panel (item 5 below) when attaching clips to plywood or OSB to be HD ISOGARD HG Fastener in a pattern of 24 screws per 4'x8' cover board. 3C. Fasteners used to attach panel clips (Item 2) to ISOGARD HG composite insulation board (Item 6B) No. 10, 1" long stainless-steel, two screws used per clip. 3D. Fasteners used to attach ISOGARD HG (Item 6B) composite insulation board to liner panels (Item 5) to be HD ISOGARD HG Fastener in a pattern of 24 screws per 4'x8' board.
4.	Underlayment:	(Optional) – Underlayment attached over foamed plastic (Item 6).
5.	Liner Panel:	5. No. 22 MSG min. thick coated steel (33,000 psi min. yield strength). Min. depth 1 1/2", max. pitch 6". Fabricated to various profiles. Fastened to supports 6" o.c. 5A. Cover Board – (Optional – Not Shown) – Min. 1/2" thick (15/32" actual) plywood, DOC PS-1 rated (square edged may be used) or min. 7/16" thick OSB, DOC PS-2 rated 1/2" thick, 1/2" thick gypsum board, 1/2" wood fiberboard, 1/4" min. thickness G-P Gypsum "DensDeck", 1/4" min. thick USG "SECUROCK Glass Mat Board" or "SECUROCK Roof Board" applied over the liner panel (Item 5) or Foamed Plastic (Items 6 and/or 6A). When used or used over Foamed Plastic bearing plate not required.

UC-3 – Construction No. 512; Uplift – Class 90 Continued

6.	Foamed Plastic Insulation*:	<p>6. (Rigid Insulation)* – Applied flat or tapered to max. 10" thick in combination with Item 6A or 6B. Bearing plates required under panel attachment points. Optional if Cover Board (Item 5A) is used. – "ISOGARD GL", "ISOGARD HD Composite Board" or "ISOGARD CG"</p> <p>6A. Foamed Plastic (Rigid Insulation) – (Optional – Not Shown) – Placed on top of Item 6. Max. 10" thick combination of Item 6. Bearing plates required under panel attachment points. Optional if Cover Board (Item 5A) is used. – ISOGARD HD</p> <p>6B. Foamed Plastic (Composite Board) – (Optional - Not Shown) ---Placed on top of "ISOGARD GL" (Item 6). –ISOGARD HG</p>
7.	Panel Fasteners* (Bearing Plates*):	<p>Plates to be 4"x4" by No. 26 MSG min. thick formed galvanized or stainless-steel. Two ¼" guide holes located in-line with panel clip guide holes. – "UC Bearing Plate"</p>
8.	Purlins:	<p>No. 16 MSG min. coated steel (33,000 psi min. yield strength) spaced max. 24" o.c.</p>
<p>* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.</p>		

UC-3 – Construction No. 624; Uplift – Class 90

1.	Panel*:	<p>Width 16" max. with 1½" high legs. Min. 0.027" thick Rheinzink (zinc). Panels continuous over three or more clips with no end laps. Panel ribs double seamed with an electric or manual seaming tool with seaming operation to include upper tabs of panel clips (Item 2). – "UC-3"</p>
2.	Panel Fasteners*:	<p>(Panel Clips) – Two-part assembly, base 5" long, 1" wide, 0.42" high. Fabricated from min. 0.0225" thick 304 stainless-steel. Upper tab 3" long, 0.42" wide, 1.786" high. Fabricated from min. 0.0172" thick 304 stainless-steel. Spaced a max. of 12" o.c. – "UC-3 Stainless-steel Super Clip"</p> <p>2A. Bearing Plate (Not Shown) – Plates used with panel screw fasteners (Item 3) under panel clip (Item 2) to be 4"x4" min. No. 26-ga. stainless-steel. – "UC Bearing Plate"</p>
3.	Panel Clip fasteners:	<p>Fasteners used to attach panel clips (Item 2) to liner panel (Item 8) to be No. 12 pancake wafer head steel screws. Length to penetrate steel deck a min. of ¾". Two screws used per clip inserted into clip guide holes.</p>
4.	Vent. Mat:	<p>(Optional) – One-layer Colbond "Enkamat 7010", loose laid.</p>
5.	Underlayment*:	<p>(Optional) – One-layer Elk "VersaShield" with 2" side lap, loose laid.</p>
6.	Underlayment:	<p>(Optional) – One-layer Type 30 organic felt with 2" side lap. Mechanically fastened to the liner panel (Item 8) per manufacturers recommendations.</p>
7.	Foamed Plastic*:	<p>7. (Rigid Insulation) – Applied flat or tapered to max. 10" thick combination of Item 7A. Bearing plates required under panel attachment points. – "ISOGARD GL" or "ISOGARD CG"</p> <p>7A. Foamed Plastic – (Rigid Insulation – Optional – Not Shown) – Placed on top of Item 7. Max. 10" thick combination of Item 6 . Bearing plates required under panel attachment points. – "ISOGARD HD"</p> <p>7B. Cover Board – (Optional – Not Shown) – Min. ½" thick (15/32" actual) plywood, DOC PS-1 rated (square edged may be used) or min. 7/16" thick OSB, DOC PS-2 rated, ½" thick gypsum board, ½" wood fiberboard, ¼" min. thickness G-P Gypsum "DensDeck", ¼" min. thick USG "SECUROCK Glass Mat Board" or "SECUROCK Roof Board" applied over the liner panel (Item 8) or Foamed Plastic (Items 7 and/or 7A). When used or used over Foamed Plastic bearing plate not required.</p>
8.	Liner Panel:	<p>8. No. 22 MSG min. thick coated steel (min yield strength 33,000 psi). Min. depth 1½", max. pitch 6" fabricated to various profiles.</p> <p>8A. Liner Panel Fasteners (Not Shown) – Liner panels (Item 8) to be fastened to structural supports (Item 9) with puddle welds at every other valley, 12" o.c.</p>
9.	Supports:	<p>Type K open web steel joists, 4' o.c.</p>
<p>* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.</p>		

UC-3 – Construction No. 658; Uplift – Class 90

1.	Purlin:	Purlins used for liner panel (Item 2) support to be cold formed steel sections. As alternatives, structural components (hot rolled beams, channels, open web joists, etc.) may be used. Min. gauge and yield to depend on design considerations for uplift loading. Purlins spaced max. 6' o.c.
2.	Liner Panel: Optional: Gypsum Board	2. No. 22 MSG min. thick coated steel (33,000 psi min yield strength). Min. depth 1½", max. pitch 6". Fabricated to various profiles. Fastened to supports 6" o.c. 2A. Gypsum Board (Optional not shown) — Max thickness 5⁄8" Fastened to steel deck with same fasteners (Item 6) used to attach the panel clips (Item 5) to the steel decking.
3.	Insulation: Optional: Underlayment	3. (Rigid Insulation) — Applied flat or tapered to max. 10" thick combination of Item 3A. Bearing plates required under panel attachment points. — "ISOGARD GL", "ISOGARD HD Composite Board" or "ISOGARD CG" 3A. Foamed Plastic — (Rigid Insulation — Optional — Not Shown) — Placed on top of Item 6. Max. 10" thick combination of Item 3 Bearing plates required under panel attachment points. — "ISOGARD HD" 3B. Underlayment (Optional not shown) — Underlayment attached over foamed plastic per manufacturer's installation instructions.
4.	Panels*:	Min. 24 MSG steel; width 20" max., 1½" high at the ribs. Panels continuous over three or more clips with no end-laps. A bead of sealant may be used at panel ribs. Panel ribs seamed with an electric seamer with seaming operation to include upper portion of panel clip (Item 5). — "UC-3"
5.	Panel Clips*:	Two-part assembly, base 3" wide, 5⁄8" high, with a 5⁄8" wide base leg having two 3⁄16" embossed guide holes. Upper tab ½" wide folded over base forming two tabs. Both parts fabricated from 0.015" min. thick stainless-steel. Clips spaced 24" o.c. with seaming operation to include upper tabs of panel clips. Bearing plates used with panel screw fasteners (Item 6) under panel clip to be 4"x4" min. No. 26-ga. stainless-steel or min. No. 26-ga. galvanized steel. — "UC-3 Expansion Clip" — "UC Bearing Plate"
6.	Panel Fasteners:	(Screws) — Fasteners used to attach the panel clips to the steel decking to be No. 12 pancake wafer head steel screws. Length to penetrate steel deck a min. of ½". Two screws are to be used per clip.
7.	Cover Board:	(Optional) — Min. ½" thick (15⁄32" actual) plywood, DOC PS-1 rated (square edged may be used) or min. 7⁄16" thick OSB, DOC PS-2 rated, ½" thick gypsum board, ½" wood fiberboard, ¼" min. thickness G-P Gypsum "DensDeck", ¼" min. thick USG "SECUROCK Glass Mat Board" or "SECUROCK Roof Board" applied over the liner panel (Item 2) or Foamed Plastic (Items 63 and/or 3A). When used or used over Foamed Plastic bearing plate not required.

*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**

UC-3 – Construction No. 663; Uplift – Class 90

1.	Panel*:	Width 16" max. with 1½" high legs. No. 24 MSG min. thick coated steel. Panels continuous with no end laps. Panel ribs single seamed with an electric seaming tool with seaming operation to include upper tabs of panel clips (Item 2). — "UC-3"
2.	Fasteners:	(Panel Clips) — Two-part assembly, base 3" wide, 5⁄8" high, with a 7⁄8" wide base leg having two 3⁄16" embossed guide holes. Upper tab ½" wide folded over base forming two tabs. Both parts fabricated from 0.015" min. thick stainless-steel. Clips spaced max. 18" o.c. — "UC-3 Expansion Clip"
3.	Fasteners:	(Screws) — Fasteners used to attach panel clips (Item 2) to plywood decking (Item 5) to be No. 10 by min. 1" long, without insulation and/or cover board, Pancake Type A. Two screws used per clip inserted into clip guide holes.
4.	Underlayment:	(Optional — Not Shown) — Underlayment attached over Foamed Plastic (Item 8 and/or 8A) or Decking (Item 5) or Cover Board (Item 9) Installed per manufacturer's recommendations.
5.	Decking:	Deck to be nominal 5⁄8" (19⁄32" actual) or ½" (15⁄32" actual) thick plywood; Exposure 1, Grade B-C, APA rated sheathing, confirming to requirements of DOC PS-1, with butt joints to be located over wood supports (joist).
6.	Deck Fasteners	Fasteners used to attach plywood deck to supports to be 8d by 2½" long ring shank common nails. Spacing to be 6" o.c. at the edges and 6" o.c. in the interior.

UC-3 – Construction No. 663; Uplift – Class 90 Continued

7.	Support Joist & Fasteners*:	7. Nominal 2"x10" (1½" by 9⅝" actual) 42/20 square edged. No. 2 grade or better S-P-F, Hemlock Fir, Douglas Fir or Southern Yellow Pine or equivalent. Spaced a max of 24" o.c. 7A. Roof Deck Fasteners* – (Bearing Plates) – Plates to be 4"x4" by No. 26 MSG min. galvanized or stainless-steel. Two ¼" guide holes located in line with panel clip (Item 2) guide holes.
8.	Insulation*:	8. (Rigid Insulation – Optional – Not Shown) – Applied flat or tapered to max. 10" thick combination of Item 8A. Bearing plates required under panel attachment points. – "ISOGARD GL" or "ISOGARD CG" 8A. Foamed Plastic – (Rigid Insulation – Optional – Not Shown) – Placed on top of Item 8. Max. 10" thick combination of Item 8. Bearing plates required under panel attachment points. – "ISOGARD HD"
9.	Cover Board:	(Optional – Not Shown) – Min. ½" thick (15/32" actual) plywood, DOC PS-1 rated (square edged may be used) or min. 7/16" thick OSB, DOC PS-2 rated, ½" thick gypsum board, ½" wood fiberboard, ¼" min. thickness G-P Gypsum "DensDeck", ¼" min. thick USG "SECUROCK Glass Mat Board" or "SECUROCK Roof Board" applied over the plywood decking (Item 5) or Foamed Plastic (Items 8 and/or 8A). When used or used over Foamed Plastic bearing plate not required.

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UC-4 Constructions:

UC-4 – Construction No. 376; Uplift – Class 90

1.	Panel*:	Width 12" min. to 18" max with 1½" high female legs; No. 24 MSG min. thickness coated steel. A mounting flange roll formed into male side of panel. Panels continuous over two or more spans with no end laps. – "UC-4"
2.	Panel Fasteners:	Fasteners used to attach the panels to the plywood deck to be No. 10-12 by min. 1" long, without insulation and/or cover board, No. 2 Phillips Drive, wafer-head, coated steel screws. A ⅝" OD nylon or other plastic type washer, 0.030" thick to be used with each panel fastener. Fasteners spaced 18" o.c. with two fasteners used at each location driven through adjacent guide holes in mounting flange.
3.	Underlayment:	(Optional) Underlayment attached over Foamed Plastic (Item 7and/or 7A) or Decking (Item 4) or Cover Board (Item 9). As an alternate, a self-adhering modified bitumen water proofing membrane may be used. Installed per manufacturer's recommendations. When alternate is used, plywood joints need not be sealed.
4.	Decking:	Deck to be min. ⅝" nominal (19/32" actual) thickness plywood; Exposure 1, APA rated sheathing (42/20) square edged. Butt joints to be located over purlins, side joints not blocked. All butt and side joints to be sealed with a one-part urethane caulk sealant - feathered outward from joint (note exception under Item 3 alternate).
5.	Purlins:	Deck Supports – Spaced a max. of 24" o.c. Any of the following types may be used. A. No. 18 MSG min. thickness coated steel. (Min. yield strength 33,000 psi). B. Nominal 2"x6" (1½" by 5¼") No. 2 grade or better S-P-F, Hemlock Fir, Douglas Fir or Southern Yellow Pine or equivalent. C. Wood Trusses with a nominal 2"x4" (1½"x3¼" actual) upper chord of same grade as Item B.
6.	Deck Fasteners:	Fasteners used to attach plywood deck to supports to be used as follows: A. For plywood to steel supports, to be No. 8-20 by 1¼" long No. 2 Phillips Drive Bugle Head Steel screws with a S-12 TEKS 3 Super Point. B. For plywood to wood support to be No. 8-18 by 1⅞" long No. 2 Phillips Drive Bugle Head, "Hi-Low" thread pattern with an "S" point. Spacing for all fastener types to be 6" o.c. at the edges and 12" o.c. in the interior. Refer to General Information, Roof Deck Construction (Roofing Materials and Systems) for Items not evaluated.
7.	Insulation*:	(Rigid Insulation – Optional – Not Shown) – Placed on top of Item 7. Max. 10" thick combination of Item 7. Bearing plates required under panel attachment points. – "ISOGARD HD"

UC-4 – Construction No. 376; Uplift – Class 90 Continued

8.	Cover Board:	(Optional – Not Shown) – Min. 1/2" thick (15/32" actual) plywood, DOC PS-1 rated (square edged may be used) or min. 7/16" thick OSB, DOC PS-2 rated, 1/2" thick gypsum board, 1/2" wood fiberboard, 1/4" min. thickness G-P Gypsum "DensDeck", 1/4" min. thick USG "SECUROCK Glass Mat Board" or "SECUROCK Roof Board" applied over the plywood decking (Item 4) or Foamed Plastic (Items 7 and/or 7A). When used or used over Foamed Plastic bearing plate not required.
9.	Plate Fasteners*:	(Bearing Plates) – Plates to be 4"x4" by No. 26 MSG min. galvanized steel. Two 1/4" guide holes. – "UC Bearing Plate"

*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**

UC-4 – Construction No. 399; Uplift – Class 90 Continued

1.	Panel*:	0.021" thick copper (16 oz), width 12" to 14", 1 1/2" high female leg. A mounting flange roll-formed into male side of panel. Panels continuous with no end laps. – "UC-4"
2.	Panel Fasteners:	(Screws) – Fasteners used to attach the panels to the plywood deck to be No. 10-12 by min. 1" long, without insulation and/or cover board, No. 2 Phillips Drive, wafer-head, stainless-steel screws. A 5/8" OD by 0.030" nylon washer to be used with each panel fastener. Fasteners spaced 9" o.c. with fasteners inserted in guide holes in mounting flange.
3.	Red Rosin Paper:	Rosin paper 9 mil thick. Side lap min. 3" stapled to insulation with random spacing.
4.	Underlayment:	Optional – Underlayment attached over Foamed Plastic (Item 8 and/or 8A) or Decking (Item 5) or Cover Board (Item 9).
5.	Deck:	Deck to be 3/4" nominal (23/32" actual) thickness plywood; Exposure 1, APA rated sheathing (42/20), square edged. Butt joints to be located over purlins, side joints not blocked. All butt and side joints to be sealed with a one-part urethane caulk sealant – feathered outward from joint (note exception under Item 4 alternate).
6.	Purlins:	Deck supports – Spaced a max of 24" o.c. Any of the following types may be used: A. No. 18 MSG min. thickness coated steel (Min. yield strength 33,000 psi). B. Nominal 2"x6" (1 1/2" by 5 1/4" actual) No. 2 grade or better S-P-F, Hemlock Fir, Douglas Fir or Southern Yellow Pine or equivalent. C. Wood trusses with a nominal 2"x4" (1 1/2" by 3 1/4" actual) upper chord of same grade as Item B.
7.	Deck Fasteners:	Plywood Fasteners – Fasteners used to attach plywood deck to supports to be used as follows: A. For plywood to steel supports, No. 8-20 by 1 1/4" long No. 2 Phillips Drive Bugle Head Steel screws with a S-12 TEKS 3 Super Point. B. For plywood to wood supports, No. 8-18 by 1 7/8" long No. 2 Phillips Drive Bugle Head, "Hi-Low" thread pattern with an "S" point. Spacing for all fastener types to be 6" o.c. at the edges and 12" o.c. in the interior. Refer to General Information, Roof Deck Construction (Roofing Materials and Systems) for items not evaluated.
8.	Insulation*:	8. (Rigid Insulation – Optional – Not Shown) – Applied flat or tapered to max. 10" thick combination of Item 8A. Bearing plates required under panel attachment points. – "ISOGARD GL" or "ISOGARD CG" 8A. Foamed Plastic – (Rigid Insulation – Optional – Not Shown) – Placed on top of Item 8. Max. 10" thick combination of Item 8. Bearing plates required under panel attachment points. – "ISOGARD HD"
9.	Cover Board:	(Optional – Not Shown) – Min. 1/2" thick (15/32" actual) plywood, DOC PS-1 rated (square edged may be used) or min. 7/16" thick OSB, DOC PS-2 rated, 1/2" thick gypsum board, 1/2" wood fiberboard, 1/4" min. thickness G-P Gypsum "DensDeck", 1/4" min. thick USG "SECUROCK Glass Mat Board" or "SECUROCK Roof Board" applied over the plywood decking (Item 5) or Foamed Plastic (Items 8 and/or 8A). When used or used over Foamed Plastic bearing plate not required.
10.	Plate Fasteners*:	(Bearing Plates) – Plates to be 4"x4" by No. 26 MSG min. galvanized steel. Two 1/4" guide holes. – "UC Bearing Plate"

*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**

UC-4 – Construction No. 513A; Uplift – Class 60, Class 90

1.	Panel*:	Min. No. 24 MSG thick coated steel or 0.032" thick aluminum max. 18" wide with 1" high legs. A mounting flange is formed into the male side of the panel. Panels continuous over three or more panel screw fastener locations (Item 2) with no end laps. — "UC-4"
2.	Panel Fasteners:	Fasteners used to attach the panels (Item 1) to plywood deck (Item 4) to be 10x1" PC PD NW T17 steel or 10x1" PC T NW T17 stainless-steel. Fasteners spaced max. 18" o.c. for Class 90, 30" o.c. for Class 60 for aluminum panels in Item 1. Fasteners spaced 24" o.c. for Class 90, 30" o.c. for Class 60 for steel panels in Item 1.A total of two fasteners must be used in consecutive slots along fastener flange.
3.	Underlayment:	(Optional) — Underlayment attached over Foamed Plastic (Item 4A and/or 4B) or Decking (Item 4) or Cover Board (Item 4C) —As an alternate, a self-adhering modified bitumen water proofing membrane may be used. Underlayment is to be installed as per manufacturer's recommendations. When alternate is used, plywood joints need not be sealed.
4.	Deck, Insulation* and Fasteners*:	<p>4. Plywood Decking — Min. 7/16" OSB or 15/32" thick plywood; Exposure 1, APA rated sheathing (42/20) or (32/16) respectively, square edged. Butt joints are to be located over purlins (Item 5). Side joints not blocked. All butt and side joints to be sealed with a one-part urethane caulk sealant-feathered outward from joint (note exception under Item 3 alternate).</p> <p>4A. Foamed Plastic* — (Rigid Insulation — Optional — Not Shown) — Applied flat or tapered to max. 10" thick combination of Item 4A. Bearing plates required under panel attachment points. — "ISOGARD GL" or "ISOGARD CG"</p> <p>4B. Foamed Plastic — (Rigid Insulation — Optional — Not Shown) — Placed on top of Item 4A. Max. 10" thick combination of Item 4A. Bearing plates required under panel attachment points. Bearing plates not required if foamed plastic not used (Item 4A or 4B). — "ISOGARD HD"</p> <p>4C. Cover Board — (Optional — Not Shown) — Min. 1/2" thick (15/32" actual) plywood, DOC PS-1 rated (square edged may be used) or min. 7/16" thick OSB, DOC PS-2 rated, 1/2" thick gypsum board, 1/2" wood fiberboard, 1/4" min. thickness G-P Gypsum "DensDeck", 1/4" min. thick USG "SECUROCK Glass Mat Board" or "SECUROCK Roof Board" applied over the plywood decking (Item 4) or Foamed Plastic (Items 4A and/or 4B). When used or used over Foamed Plastic bearing plate not required.</p> <p>4D. Roof Deck Fasteners* — (Bearing Plates) — Plates to be 4"x4" by No. 26 MSG min. galvanized steel plate (for use with coated steel panels) or stainless-steel plate (for use with aluminum panels). Two 1/4" guide holes. — "UC Bearing Plate"</p>
5.	Purlins:	<p>Deck Supports — Spaced a max of 24" o.c. Any of the following types may be used:</p> <p>A. No. 16 MSG min. thick coated steel. (33,000 psi min yield strength).</p> <p>B. Nominal 2"x6" (1 1/2"x5 1/4" actual). No. 2 grade or better S-P-F, Hemlock Fir, Douglas Fir or Southern Yellow Pine or equivalent.</p> <p>C. Wood trusses with a nominal 2"x4" (1 1/2"x3 1/4" actual) upper chord of same grade as Item B.</p>
6.	Deck Fasteners:	<p>Fasteners used to attach plywood deck (Item 4) to supports (Item 5) to be as follows:</p> <p>A. For plywood to steel supports, to be No. 8-20 by 1 1/4" long No. 2 Phillips drive, bugle head steel screws with an S-12 TEKS® 3 Super Point.</p> <p>B. For plywood to wood supports to be No. 8-18 by 1 7/8" long No. 2 Phillips drive, bugle head steel screws with a "Hi-Low" thread pattern and an "S" point. Spacing for all fastener types to be 6" o.c. at the edges and 12" o.c. in the interior.</p> <p>Refer to General Information Roof Deck Construction, for items not evaluated.</p>

*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**

UC-4 – Construction No. 377; Uplift – Class 90

1.	Panels*:	Width 12" min. to 18" max.; with 1½" high female leg. No. 24 MSG min. coated steel. A mounting flange is roll formed into male side of panel. Panels continuous over two or more spans with no end laps. – "UC-4"
2.	Panel Fasteners:	Fasteners used to attach the panels to the steel deck to be No. 12-15 No. 3 Phillips Drive Truss head steel screws with a "S" point. Length to be ¾" longer than overall thickness of roof deck length. A ⅝" OD nylon or other plastic type washer, 0.030" thick to be used with each panel fastener. Fasteners spaced 18" o.c. with two fasteners used at each location. Fasteners used with a bearing plate (Item No. 6).
3.	Underlayment:	(Optional)—Underlayment attached over Foamed Plastic (Item 5 or 5A), Liner Panel (Item 4) or Cover Board (Item 5B).
4.	Deck:	Liner Panel — Min. thickness No. 22 MSG coated steel (33,000 min. yield strength). Min. depth 1½", max. pitch 6". Fabricated to various profiles.
5.	Insulation:	5. Foamed Plastic — (Rigid Insulation) — (Optional, not shown) — Applied flat or tapered to max. 10" thick combination of Item 5A. Bearing plates required under panel attachment points. Optional if Cover Board (Item 5B) is used. – "ISOGARD GL", "ISOGARD HD Composite Board" or "ISOGARD CG" 5A. Foamed Plastic — (Rigid Insulation) — (Optional, not shown) — Placed on top of Item 5. Max. 10" thick combination of Item 5. Bearing plates required under panel attachment points. Optional if Cover Board (Item 5B) is used. – "ISOGARD HD" 5B. Cover Board — (Optional — Not Shown) — Min. ½" thick (15/32" actual) plywood, DOC PS-1 rated (square edged may be used) or min. 7/16" thick OSB, DOC PS-2 rated, ½" thick gypsum board, ½" wood fiberboard, ¼" min. thickness G-P Gypsum "DensDeck", ¼" min. thick USG "SECUROCK Glass Mat Board" or "SECUROCK Roof Board" applied over the liner panel (Item 4) or Foamed Plastic (Items 5 and/or 5A). When used or used over Foamed Plastic bearing plate not required.
6.	Plates*:	(Bearing Plates) — Plates to be 4"x4" by No. 26 MSG min. galvanized steel. Two ¼" guide holes. – "UC Bearing Plate"
7.	Purlins:	No. 18 MSG min. coated steel (min. yield strength 33,000 psi) spaced max. 24" o.c. Refer to General Information, Roof Deck Constructions, (Roofing Materials and Systems Directory) for items not evaluated.
* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.		

UC-4 – Construction No. 657; Uplift – Class 90

1.	Supports:	(Joists, not shown) — Nominal 2"x10" graded dimensional lumber, No. 2 or better. Spaced 24" o.c. max.
2.	Deck:	Nominal ⅝" (19/32" actual) or ½" (15/32" actual) plywood, Grade B-C, APA rated. Fastened to supports (joists) using 8d by 2½" long ring shank nails. Spaced 6" o.c. max. at the butt ends and 6" o.c. max. in the field. As an alternate 7/16" thick PS-2 rated oriented strand board OSB. Fastened to supports (joists) using No. 8 by 2½" long coarse thread steel screws. Spaced 12" o.c. max. at the butt ends and 12" o.c. max. in the field.
3.	Vapor Barrier:	(Optional) — Underlayment attached over Foamed Plastic (Item 6 and/or 6A) or Decking (Item 2) or Cover Board (Item 8).
4.	Panels*:	Min. 26 MSG steel or min. 0.032" thick aluminum; width 9¾" max., 1⅜" high at the ribs. A bead of sealant may be used at panel ribs. – "UC-4"
5.	Panel Fasteners:	(Screws) — Fasteners used to attach the panels to the plywood or OSB decking to be min. 1" long, without insulation and/or cover board, 10x1" PC PD NW T17 steel or 10x1" PC T NW T17 stainless-steel screws used with a ⅝" OD nylon or other plastic washer 0.030" thick. Two screws are to be used at 12" o.c.

UC-4 – Construction No. 657; Uplift – Class 90 Continued

6.	Insulation*:	6. (Rigid Insulation – Optional – Not Shown) – Applied flat or tapered to max. 10" thick combination of Item 6A. Bearing plates required under panel attachment points. – "ISOGARD GL" or "ISOGARD CG" 6A. Foamed Plastic – (Rigid Insulation – Optional – Not Shown) – Placed on top of Item 6. Max. 10" thick combination of Item 6. Bearing plates required under panel attachment points. Bearing plates not required if foamed plastic no used Item 6 or 6A) – "ISOGARD HD"
7.	Bearing Plates*:	(Bearing Plates) – Plates to be 4"x4" No. 26 MSG min. galvanized steel plate (for use with coated Steel panels) or stainless-steel plate (for use with aluminum panels). Two ¼" guide holes. – "UC Bearing Plate"
8.	Cover Board:	(Optional – Not Shown) – Min. ½" thick (15/32" actual) plywood, DOC PS-1 rated (square edged may be used) or min. 7/16" thick OSB, DOC PS-2 rated, ½" thick gypsum board, ½" wood fiberboard, ¼" min. thickness G-P Gypsum "DensDeck", ¼" min. thick USG "SECUROCK Glass Mat Board" or "SECUROCK Roof Board" applied over the decking (Item 2) or Foamed Plastic (Items 6 and/or 6A). When used or used over Foamed Plastic bearing plate not required.
* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.		

UC-4 – Construction No. 513; Uplift – Class 90

1.	Panel*:	Width 12" min. to nominal 18" max. with 1½" high legs. Min. No. 24 MSG thick coated steel or min. 0.032" thick aluminum. A mounting flange is formed into the male side of the panel. Panels continuous over three or more panel screw fastener locations (Item 2) with no end laps. – "UC-4"
2.	Fasteners:	2. (Screws) – Fasteners used to attach the panels (Item 1) to liner panels (Item 4) to be No. 12-15, No. 3 Phillips drive, truss-head, coated steel screws with an "S" point. Length to be ¾" longer than overall thickness of roof deck. A ⅝" OD nylon or other plastic washer 0.030" thick to be used with each screw. Fasteners spaced 12" o.c. with two fasteners used at each location. Fasteners used to attach liner panels to supports (Item 7) to be No. 12-14"x1" long self-drilling, self-tapping, hex-washer-head plated steel screws. Fasteners spaced 6" o.c. 2A. Fasteners (Screws) – Fasteners used to attach the panels (Item 1) to ISOGARD HG Insulation (Item 5B) to be 10x1" PC PD WOW T17 steel or 10x1" PC T WOW T17 stainless-steel screws.
3.	Underlayment & Thermal Barrier:	3. Underlayment – (Optional) – Underlayment attached over Foamed Plastic (Item 5 or 5A), Liner Panel (Item 4) or Cover Board (Item 6A) – Installed per manufacturer's recommendations. 3A. Gypsum Board – (Optional Not Shown) – Max. thickness ⅝" Fastened to steel deck with same panel fasteners used to attach the metal roof deck panels to the steel decking (Item 4).
4.	Deck:	Liner Panel – No. 22 MSG min. thick coated steel (33,000 psi min. yield strength). Min. depth 1½" max. pitch 6" fabricated to various profiles. Fastened to supports 6" o.c.
5.	Insulation*:	5. (Rigid Insulation) – Applied flat or tapered to max. 10" thick combination of Item 5A. Bearing plates required under panel attachment points. Optional if Cover Board (Item 6A) is used. – "ISOGARD GL", "ISOGARD HD Composite Board" or "ISOGARD CG" 5A. Insulation* – (Rigid Insulation) – (Optional, Not Shown) – Placed on top of Item 5. Max 10" thick combination of Item 5. Bearing plates required under panel attachment points. Optional if Cover Board (Item 6A) is used. 5B. Insulation* – (Rigid Insulation) – (Optional, Not Shown) – ISOGARD HG placed on top of Item 4 or Item 5 is mechanically fastened into Item 4 with 8 ISOGARD HG HD Fasteners per 4'x8' board. Max 10" thick in combination of Item 5. – "ISOGARD HD"
6.	Bearing Plates* & Cover Board:	6. (Bearing Plates)* – Plates to be 4"x4" by No. 26 MSG min. galvanized steel plate (for use with coated steel panels) or stainless-steel plate (to be used with aluminum panels). Two ¼" guide holes. Two ¼" guide holes. – "UC Bearing Plate" 6A. Cover Board – (Optional – Not Shown) – Min. ½" thick (15/32" actual) plywood, DOC PS-1 rated (square edged may be used) or min. 7/16" thick OSB, DOC PS-2 rated, ½" thick gypsum board, ½" wood fiberboard, ¼" min. thickness G-P Gypsum "DensDeck", ¼" min. thick USG "SECUROCK Glass Mat Board" or "SECUROCK Roof Board" applied over the plywood decking (Item 4) or Foamed Plastic (Items 5 and/or 5A). When used or used over Foamed Plastic bearing plate not required.
7.	Purlins:	No. 116 MSG min. coated steel (33,000 psi min. yield strength) spaced max. 24" o.c.
* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.		

UC-4 – Construction No. 513A; Uplift – Class 90

1.	Panel*:	Min. No. 24 MSG thick coated steel or 0.032" thick aluminum max. 18" wide with 1½" high legs. A mounting flange is formed into the male side of the panel. Panels continuous over three or more panel screw fastener locations (Item 2) with no end laps. – "UC-4"
2.	Fasteners:	Screws – Fasteners used to attach the panels (Item 1) to substrate (Item 4) to be 10x1" PC PD NW T17 steel or 10x1" PC T NW T17 stainless-steel . Fasteners spaced max. 18" o.c. for Class 90, 24" o.c. for Class 60 for aluminum panels in Item 1. Fasteners spaced 24" o.c. for Class 90, 30" o.c. for Class 60 for steel panels in Item 1. Two fasteners must be used in consecutive slots along fastener flange.
3.	Underlayment:	(Optional) – N/A
4.	Substructure:	4. Plywood or OSB – Min. 7/16" OSB or 15/32" thick plywood; Exposure 1, APA rated sheathing. 4A. Foamed Plastic* – (Rigid Insulation – Optional – Not Shown) – Applied flat or tapered to max. 10" thick combination of Item 4B. Bearing plates required under panel attachment points. – "ISOGARD GL" or "ISOGARD CG" 4B. Foamed Plastic – (Rigid Insulation – Optional – Not Shown) – Placed on top of Item 4A. Max. 10" thick combination of Item 4A . Bearing plates required under panel attachment points. – "ISOGARD HD" 4C. Cover Board – (Optional – Not Shown) – Min. ½" thick (15/32" actual) plywood, DOC PS-1 rated (square edged may be used) or min. 7/16" thick OSB, DOC PS-2 rated, ½" thick gypsum board, ½" wood fiberboard, ¼" min. thickness G-P Gypsum "DensDeck", ¼" min. thick USG "SECUROCK Glass Mat Board" or "SECUROCK Roof Board" applied over the plywood decking (Item 4) or Foamed Plastic (Items 4A and/or 4B). When used or used over Foamed Plastic bearing plate not required. 4D. Roof Deck Fasteners* – (Bearing Plates) – Plates to be 4"x4" No. 26 MSG min. galvanized steel plate. – "UC Bearing Plate"
5.	Purlins:	Deck Supports – Spaced a max of 24" o.c. Nominal 2"x10" graded dimensional lumber, No. 2 or better.
6.	Plywood Fasteners:	Fasteners used to attach substructure (Item 4) to supports (Item 5) to be 0.113"x2⅜" ring shank nails spaced 6" o.c. along the perimeter and intermediate supports.
* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.		

UC-4 – Construction No. 378; Uplift – Class 90

1.	Panels*:	Width 12" min. to 18" max. with 1½" high female legs; No. 24 MSG min. thickness coated steel. A mounting flange roll formed into male side of panel. Panels continuous over two or more spans with no end laps. – "UC-4"
2.	Panel Fasteners:	Fasteners used to attach panels to hat channels (Item No. 3) to be No. 10-16 by 1" long self-drilling, self-tapping, hex-head plated steel screws. Fasteners spaced 18 in. OC with two fasteners used at each location driven through adjacent guide holes in mounting flange. A ⅝" o.d. nylon or other plastic type washer, 0.030" thick to be used with each fastener.
3.	Hat Channel:	No. 16 MSG min. thickness coated steel. Channels 1" deep and 3¼" total width. Flanges, ¼" web, 1¾" (min. yield strength 33,000 psi). Spaced 18" o.c. hat channels fastened to purlins (Item No. 5) with 2 No. 12-14x¾" self-drilling, self-tapping, hex-head plated steel screws.
4.	Vapor Retarder:	(Optional – Not Shown) – Min. 3 mil vinyl sheeting.
5.	Purlins:	No. 18 MSG min. gauge coated steel (33,000 psi min. yield strength).
* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.		

UC-6 Constructions:

UC-6- Construction No. 655; Uplift - Class 90		
1.	Joists:	(Joists, not shown) — Nominal 2 by 10" graded dimensional lumber, No. 2 or better. Spaced 24" o.c. max.
2.	Deck:	Nominal 5/8" (19/32" actual) plywood, Grade B-C, APA rated. Fastened to supports (joists) using No. 8 by 2" long coarse thread steel screws. Spaced 6" o.c. max. at the butt ends and 12" o.c. max. in the field. When installed with aluminum roofing panels 1/2" (15/32" actual) B-C exterior plywood can be used.
3.	Panels*, Underlayment & Insulation:	<p>3. Panels – Min. 24 MSG steel or min. 0.032" thick aluminum; width 18" max., 2" high at the ribs. Panels continuous over three or more clips with no end-laps. A bead of sealant may be used at panel ribs. Panel ribs seamed with an electric seamer with seaming operation to include upper portion of panel clip (Item 4). — "UC-6", "UC-6 HD"</p> <p>3A. Underlayment — (Optional — Not Shown) — Underlayment attached over deck as per manufacturer's installation instructions.</p> <p>3B. Foamed Plastic — (Rigid Insulation — Optional — Not Shown) — Applied flat or tapered to max. 10" thick combination of Item 3C , placed on top of the wooden deck. Bearing plates required under panel attachment points. — "ISOGARD GL", "ISOGARD HD Composite Board" or "ISOGARD CG"</p> <p>3C. Foamed Plastic — (Rigid Insulation — Optional — Not Shown) — Placed on top of Item 3. Max. 10" thick combination of Item 3B . Bearing plates required under panel attachment points. — "ISOGARD HD".</p>
4.	Fasteners*:	<p>(Panel Clips) — Two-piece assembly; a base of stainless or coated steel and an interlocking upper tab fabricated from stainless or coated steel. Two 1/4" guide holes located in the base. Clips spaced 30" o.c. max. when used with aluminum panels or 36" o.c. max. when used with steel panels. Bearing plates (Item 6) required when Foamed Plastic is used without cover board (Item 7). — "UC-6 Low Float Clip", "UC-6 Super Clip"</p>
5.	Panel Fasteners:	(Screws) — Fasteners used to attach the panel clips to the plywood decking to be No. 12 steel screws, long enough to penetrate the wood deck by 1". Two screws are to be used per clip.
6.	Bearing Plates:	(Not Shown) — Bearing plate 4"x4" by min. 26 MSG galvanized or stainless-steel. — "UC Bearing Plate"
7.	Cover Board:	(Optional — Not Shown) — Min. 1/2" thick (15/32" actual) plywood, DOC PS-1 rated (square edged may be used) or min. 7/16" thick OSB, DOC PS-2 rated, 1/2" thick gypsum board, 1/2" wood fiberboard, 1/4" min. thickness G-P Gypsum "DensDeck", 1/4" min. thick USG "SECUROCK Glass Mat Board" or "SECUROCK Roof Board" applied over the roof deck (item 2) or Foamed Plastic. When used or used over Foamed Plastic bearing plate not required.
* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.		

UC-6- Construction No. 655A; Uplift - Class 90		
1.	Joists:	(Joists, Not Shown) — Nominal 2 by 10" graded dimensional lumber, No. 2 or better. Spaced 24" o.c. max.
2.	Deck:	Min. 7/16" OSB or 15/32" plywood, Grade B-C, APA rated. Fastened to supports (joists) using 0.113"x2 3/8" ring shank nails. Spaced 6" o.c. at all perimeter and intermediate supports.
3.	Roof Panels*:	<p>3. Metal Roof Deck Panels* — Min. 0.032" thick aluminum; width 18" max., 2" high at the ribs. Panels continuous over three or more clips with no end-laps. A bead of sealant may be used at panel ribs. Panel ribs seamed with an electric seamer with seaming operation to include upper portion of panel clip (Item 4). — "UC-6", "UC-6 HD"</p> <p>3A. Underlayment — N/A</p> <p>3B. Foamed Plastic — (Rigid Insulation — Optional — Not Shown) — Applied flat or tapered to max. 10" thick combination of Item 3C , placed on top of the wooden deck. Bearing plates required under panel attachment points. — "ISOGARD GL", "ISOGARD HD Composite Board" or "ISOGARD CG"</p> <p>3C. Foamed Plastic — (Rigid Insulation — Optional — Not Shown) — Placed on top of Item 3. Max. 10" thick combination of Item 3B. Bearing plates required under panel attachment points. — "ISOGARD HD".</p>

UC-6- Construction No. 655A; Uplift - Class 90 Continued

4.	Roof Deck Fasteners*:	(Panel Clips) – Two-piece assembly; a base of stainless or coated steel and an interlocking upper tab fabricated from stainless or coated steel. Two ¼" guide holes located in the base. Clips spaced max. 24" o.c. for Class 90. Clips spaced max. 30" o.c. for Class 60. Bearing plates (Item 6) required when Foamed Plastic is used without cover board (Item 7). – "UC-6 Low Float Clip"
5.	Panel Fasteners*:	(Screws) – Fasteners used to attach the panel clips to the decking to be 10x1" PC PD NW T17 steel or 10x1" PC T NW T17 stainless-steel wood screws. Two screws are to be used per clip.
6.	Bearing Plate:	(Not Shown) – Bearing plate 4"x4" by min. 26 MSG galvanized or stainless-steel. – "UC Bearing Plate"
7.	Cover Board:	(Optional – Not Shown) – Min. ½" thick (15/32" actual) plywood, DOC PS-1 rated (square edged may be used) or min. 7/16" thick OSB, DOC PS-2 rated, ½" thick gypsum board, ½" wood fiberboard, ¼" min. thickness G-P Gypsum "DensDeck", ¼" min. thick USG "SECUROCK Glass Mat Board" or "SECUROCK Roof Board" applied over the roof deck (item 2) or Foamed Plastic. When used or used over Foamed Plastic bearing plate not required.

UC-6- Construction No. 655B; Uplift - Class 90 Continued

1.	Joists:	(Joists, Not Shown) – Nominal 2 by 10" graded dimensional lumber, No. 2 or better. Spaced 24" o.c. max.
2.	Deck:	Min. 7/16" OSB or 15/32" plywood, Grade B-C, APA rated. Fastened to supports (joists) using 0.113"x2⅝" ring shank nails.aced 6" o.c. along the perimeter and intermediate supports.
3.	Roof Panels*:	3. Metal Roof Deck Panels* – Min. 24 MSG steel width 18" max., 2" high at the ribs. Panels continuous over three or more clips with no end-laps. A bead of sealant may be used at panel ribs. Panel ribs seamed with an electric seamer with seaming operation to include upper portion of panel clip (Item 4). – "UC-6", "UC-6 HD" 3A. Underlayment – N/A 3B. Foamed Plastic – (Rigid Insulation – Optional – Not Shown) – Applied flat or tapered to max. 10" thick combination of Item 3C, placed on top of the wooden deck (Item 2). Bearing plates required under panel attachment points. – "ISOGARD GL", "ISOGARD HD Composite Board" or "ISOGARD CG" 3C. Foamed Plastic – (Rigid Insulation – Optional – Not Shown) – Placed on top of Item 3. Max. 10" thick combination of Item 3B. Bearing plates required under panel attachment points. – "ISOGARD HD".
4.	Roof Deck Fasteners*:	(Panel Clips) – Two-piece assembly; a base of stainless or coated steel and an interlocking upper tab fabricated from stainless or coated steel. Two ¼" guide holes located in the base. Clips spaced max. 24" o.c. Bearing plates (Item 6) required when Foamed Plastic is used without cover board (Item 7). – "UC-6 Low Float Clip"
5.	Panel Fasteners*:	(Screws) – Fasteners used to attach the panel clips to deck (item 2) to be 10x1" PC PD NW T17 steel or 10x1" PC T NW T17 stainless-steel wood screws. Two screws are to be used per clip.
6.	Bearing Plate:	(Not Shown) – Bearing plate 4"x4" by min. 26 MSG galvanized or stainless-steel. – "UC Bearing Plate"
7.	Cover Board:	(Optional – Not Shown) – Min. ½" thick (15/32" actual) plywood, DOC PS-1 rated (square edged may be used) or min 7/16" thick OSB, DOC PS-2 rated, ½" thick gypsum board, ½" wood fiberboard, ¼" min. thickness G-P Gypsum "DensDeck", ¼" min. thick USG "SECUROCK Glass Mat Board" or "SECUROCK Roof Board" applied over the roof deck (item 2) or Foamed Plastic. When used or used over Foamed Plastic bearing plate not required.

UC-6- Construction No. 652; Uplift - Class 90

1.	Panels*:	No. 24 MSG min. gauge coated steel. Panel width 18" max; height at female rib 2", at male rib 1¾". Panels seamed with an electric or hand seamer to 180°. A bead of sealant may be used at ribs. – "UC-6", "UC-6 HD"
2.	Fasteners*:	(Panel Clips) Two-piece assembly; a base of stainless or coated steel and an interlocking upper tab fabricated from stainless or coated steel. Two ¼" guide holes located in the base. Clips spaced 30" o.c. located over bearing plate (Item 5). – "UC-6 Low Float Clip", "UC-6 Super Clip"
3.	Fasteners:	(Screws) – Fasteners used to attach the panel clips to the liner panel (Item 6) to be No.12 self-drilling, self-tapping, pancake head plated steel screws. Two fasteners used per clip. Fasteners shall be of sufficient length to penetrate the liner panel (Item 6) by min. ¾".

UC-6- Construction No. 652; Uplift – Class 90 Continued

4.	Insulation*:	4. (Rigid Insulation – Optional – Not Shown) – Applied flat or tapered to max. 10" thick combination of Item 4A. Bearing plates required under panel attachment points. Optional if Cover Board (Item 7) is used. – "ISOGARD GL", "ISOGARD HD Composite Board" or "ISOGARD CG" 4A. Foamed Plastic – (Rigid Insulation – Optional – Not Shown) – Placed on top of Item 4. Max. 10" thick combination of Item 4. Bearing plates required under panel attachment points. Optional if Cover Board (Item 7) is used. – "ISOGARD HD"
5.	Bearing Plate:	Bearing Plate 4"x4" min. 26 MSG galvanized steel. – "UC Bearing Plate"
6.	Deck:	Liner Panel – Structural steel deck, No. 22 MSG min. thick, coated steel (33,000 psi min yield strength). Min. depth 1½".
7.	Cover Board:	(Optional – Not Shown) – Min. ½" thick (15/32" actual) plywood, DOC PS-1 rated (square edged may be used) or min. 7/16" thick OSB, DOC PS-2 rated, ½" thick gypsum board, ½" wood fiberboard, ¼" min. thickness G-P Gypsum "DensDeck", ¼" min. thick USG "SECUROCK Glass Mat Board" or "SECUROCK Roof Board" applied over the liner panel (Item 6) or Foamed Plastic (Items 4 and/or 4A). When used or used over Foamed Plastic bearing plate not required.

*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**

UC-6- Construction No. 653; Uplift – Class 90

1.	Panels*:	Min 0.032" aluminum or 24 MSG steel. Panel width 18" max.; height at female rib 2", at male rib 1¾". Panels seamed with an electric or hand seamer to 180°. A bead of sealant may be used at ribs. – "UC-6", "UC-6 HD"
2.	Fasteners*:	(Panel Clips) Two-piece assembly; a base of stainless or coated steel and an interlocking upper tab fabricated from stainless or coated steel. Two ¼" guide holes located in the base. Clips spaced 30" o.c. located over plywood or OSB cover board (Item 5) – "UC-6 Low Float Clip", "UC-6 Super Clip"
3.	Fasteners:	(Screws) – Fasteners used to attach the panel clips (item 2) to the plywood or OSB cover board (item 5) to be No.10- 10x1 - AS 1" or 1½" steel screws. Two fasteners used per clip. Fasteners used to attach plywood or OSB (Item 5) to liner panel (Item 6) HD ISOGARD HG Fasteners with pattern of 24 per 4'x8' board.
4.	Insulation*:	4. (Rigid Insulation)* – Min. thickness 1". Joints of multiple layers staggered between layers. 4A. Foamed Plastic* – (Rigid Insulation) – Applied flat or tapered to max. 10" thick combination of Item – "ISOGARD GL" or "ISOGARD CG" 4B. Foamed Plastic – (Rigid Insulation-Optional-Not Shown) – Placed on top of Item 4A. Max. 10" thick combination of Item 4A. – "ISOGARD HD"
5.	Cover Board:	Min. ½" thick (15/32" actual) plywood, DOC PS-1 rated (square edged may be used) or min. 7/16" thick OSB, DOC PS-2 rated.
6.	Deck:	Liner Panel – Structural steel deck consisting of No. 22 MSG min. thick coated steel (33,000 psi min. yield strength). Min. depth 1".
7.	Opt. Cover Board:	(Optional – Not Shown) – Min. ½" thick (15/32" actual) plywood, DOC PS-1 rated (square edged may be used) or min. 7/16" thick OSB, DOC PS-2 rated, ½" thick gypsum board, ½" wood fiberboard, ¼" min. thickness G-P Gypsum "DensDeck", ¼" min. thick USG "SECUROCK Glass Mat Board" or "SECUROCK Roof Board" applied over the liner panel (Item 6) under or in lieu of Items 4, 4A and 4B.
8.	Bearing Plate:	(Optional) – Bearing Plate 4"x4" by min. 26 MSG galvanized steel for use with clip fasteners (Item 3). – UC Bearing Plate

*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**

UC-6- Construction No. 653A; Uplift - Class 90

1.	Panels*:	Min. 0.032" aluminum or 24 MSG steel. Panel width 18" max.; height at female rib 2", at male rib 1¾". Panels seamed with an electric or hand seamer to 180°. A bead of sealant may be used at ribs. — "UC-6", "UC-6 HD"
2.	Roof Deck Fasteners*:	(Panel Clips) — Two-piece assembly; a base of stainless or coated steel and an interlocking upper tab fabricated from stainless or coated steel. Two ¼" guide holes located in the base. Clips spaced 24" o.c. for Class 60, or 18" o.c. for Class 90. — "UC-6 Low Float Clip"
3.	Fasteners:	(Screws) — Fasteners used to attach the panel clips (Item 2) to the ISOGARD HG Insulation (item 5) to be 10x1" PC PD WOW T17 steel or 10x1" PC T WOW T17 stainless-steel screws. Two fasteners used per clip. Fasteners used to attach the ISOGARD HG Insulation (Item 5) to liner panel (Item 6) to be HD ISOGARD HG Fasteners with pattern of 8 per 4'x4' board.
4.	Foamed Plastic*:	(Rigid Insulation — Optional — Not Shown) — Applied flat or tapered to max. 10" thick combination with Item 5. — "ISOGARD GL", "ISOGARD HD Composite Board" or "ISOGARD CG".
5.	Insulation*:	(Rigid Insulation) — Min. 1½" ISOGARD HG placed on top of Item 4 or Item 7 is mechanically fastened into Item 7 with 8 ISOGARD HG HD Fasteners per 4'x8' board. Max 10" thick combination of Items 4 and 6. — ISOGARD HG
6.	Underlayment:	(Optional — Not Shown) — N/A
7.	Liner Panel:	Structural steel deck consisting of No. 22 MSG min. thick coated steel (33,000 psi min. yield strength). Min. depth 1½".

UC-7 Constructions:

UC-7- Construction No. 660; Uplift - Class 90

1.	Joists:	(Joists, not shown) — Nominal 2"x10" graded dimensional lumber, No. 2 or better. Spaced 24" o.c. max.
2.	Deck:	Nominal 5/8" (19/32" actual) or 1/2" (15/32" actual) plywood, Grade B-C, APA rated. Fastened to supports (joists) using No. 8"x2½" long coarse thread steel screws. Spaced 6" o.c. max. at the butt ends and 6" o.c. max. in the field.
3.	Underlayment:	(Optional) — Underlayment attached over deck as per manufacturer's installation instructions.
4.	Panels*:	Min. 24 MSG steel width 12" max., 2" high at the ribs. Panels continuous over three or more clips with no end-laps. — "UC-7"
5.	Fasteners*:	(Panel Clips) — One-piece assembly 3" long fabricated from No. 24 MSG coated steel. Two ¼" guide holes located in the base. Clips spaced 12" o.c. max. — "UC-7 Clip"
6.	Fasteners:	(Screws) — Fasteners used to attach the panel clips to the plywood decking to be min. 10x1" PC PD WOW T17 steel screws. Two screws are to be used per clip.
7.	Insulation*:	7. (Rigid Insulation — Optional — Not Shown) — Applied flat or tapered to max. 10" thick combination of Item 7A. Bearing plates required under panel attachment points. — "ISOGARD GL" or "ISOGARD CG" 7A. Foamed Plastic — (Rigid Insulation — Optional — Not Shown) — Placed on top of Item 7. Max. 10" thick combination of Item 7. Bearing plates required under panel attachment points. — "ISOGARD HD"
8.	Cover Board:	(Optional — Not Shown) — Min. ½" thick (15/32" actual) plywood, DOC PS-1 rated (square edged may be used) or min. 7/16" thick OSB, DOC PS-2 rated, ½" thick gypsum board, ½" wood fiberboard, ¼" min. thickness G-P Gypsum "DensDeck", ¼" min. thick USG "SECUROCK Glass Mat Board" or "SECUROCK Roof Board" applied over the plywood decking (Item 2) or Foamed Plastic (Items 7 and/or 7A). When used or used over Foamed Plastic bearing plate not required.
9.	Fasteners*:	Plates to be 4"x4" by No. 26 MSG min. galvanized steel. Two ¼" guide holes. — "UC Bearing Plate"
* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.		

UC-14 Constructions:

UC-14– Construction No. 414; Uplift – Class 90		
1.	Panels*:	No. 24 MSG min coated steel panels, 18" max. width, 1¾" high at female side rib. Panels continuous over three or more clips with no end laps. A bead of sealant may be used at panel side joints. – "UC-14"
2.	Fasteners*:	(Panel Clips) — One-piece assembly, 3½" wide, 1⅞" high. Min. thickness 18 MSG. Clips spaced 36" o.c. max., fastened to plywood deck.
3.	Fasteners:	(Screws) — Fasteners used to attach panel clips (Item 2) to plywood to be No. 10-12 by min. 1" long, without insulation and/or cover board, pancake head, No. 2 Phillips drive, A-point, coated steel screw. Min. two fasteners per clip to be used.
4.	Underlayment:	(Optional) — Underlayment attached over Foamed Plastic (Item 8 and/or 8A) or Decking (Item 5) or Cover Board (Item 10). As an Alternate-A self-adhering modified bitumen water proofing membrane may be used, installed per manufacturer's instructions. NOTE: When alternate is used the plywood joints need not be sealed.
5.	Deck:	Plywood decking to be graded per PS-1 specifications, 19/32" thick, exposure 1, APA Rated Sheathing (42/20) square edged. Butt ends not blocked. All butt and side joints to be sealed with a one-part urethane caulk sealant applied with a caulking gun and feathered outward from the joint. (Note exception under Item No. 4, Alternate).
6.	Supports:	Spaced max of 24" o.c. Any of the following types may be used to support the plywood decking: a) Nom 2"x6", No. 2 grade or better S-P-F, Hemlock Fir, Douglas Fir or Southern Yellow Pine or equivalent. b) Wood trusses with a nominal 2"x4" upper chord of the same grade as Item a. c) No. 22 MSG min. cold formed coated steel (min. yield to be 33,000 psi).
7.	Fasteners:	Fasteners used to attach the plywood deck to the supports to be as follows: a) For plywood-to-wood supports No. 8-18x1⅞" long bugle-head steel screws with a No. 2 Phillips drive, a "Hi-Low" thread pattern and an "S-Point" . b) As an alternate to Item a, 8d common nails may be used. c) For plywood-to-steel supports for a steel thickness less than No. 20 MSG No. 7-19x1¼" long bugle-head steel screws with a No. 2 Phillips head drive "Hi-Low" threads and an "S-Point" . For a steel thickness greater than No. 20 MSG to No. 16 MSG, No. 6-20x1¼" long bugle-head steel screws with a No. 2 Phillips drive and a S12 (TEKS/3) (R) point. Spacing: Fastener spacing for all fastener types to be 6" o.c. at the plywood edges and 12" o.c. in the interior.
8.	Insulation*	8. (Rigid Insulation — Optional — Not Shown) — Applied flat or tapered to max. 10" thick combination of Item 8A. Bearing plates required under panel attachment points. – " ISOGARD GL" or "ISOGARD CG" 8A. Foamed Plastic — (Rigid Insulation — Optional — Not Shown) — Placed on top of Item 4A. Max. 10" thick combination of Item 8 . Bearing plates required under panel attachment points. – "ISOGARD HD"
9.	Fasteners*:	(Bearing Plates) — Plates to be 4"x4" by No. 26 MSG min galvanized steel. Two ¼" guide holes located in line with panel clip (Item 2) guide holes. – "UC Bearing Plate"
10.	Cover Board:	(Optional — Not Shown) — Min. ½" thick (15/32" actual) plywood, DOC PS-1 rated (square edged may be used) or min. 7/16" thick OSB, DOC PS-2 rated, ½" thick gypsum board, ½" wood fiberboard, ¼" min. thickness G-P Gypsum "DensDeck", ¼" min. thick USG "SECUROCK Glass Mat Board" or "SECUROCK Roof Board" applied over the plywood decking (Item 5) or Foamed Plastic (Items 8 and/or 8A). When used or used over Foamed Plastic bearing plate not required.
* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.		

UC-14– Construction No. 436; Uplift – Class 90		
1.	Panels*:	No. 24 MSG min. coated steel. Max. panel width 18", rib height 1¾". Panels continuous over two or more spans. Endlap for panels to be overlapped 6". A bead of sealant may be used at panel ends and side joints. – "UC-14"
2.	Fasteners*:	(Panel Clips) — One-piece assembly, 3½" wide by 1⅞" high. Clip spacing to be 48" o.c. – "UC-14 Clip"

UC-14- Construction No. 436; Uplift – Class 90 Continued

3.	Fasteners:	<p>(Screws) – Screws used to attach the panel clips to Substructure (Item 4) to be No. 10x1" min. long, without insulation and/or cover board, Pancake head wood screws with a No. 2 Phillips head or 10x1", ¼" Hex Head Wood grip. Two screws per clip.</p> <p>Screws used to attach Substructure (Item 4) to wood trusses or joists (Item 6) to be No. 8x2". Bugle head screws. As an optional fastener, 2½" long 8d common deformed shank nails may be used. Fasteners used at end laps to be 14 x1". Type AB or 10x1" wood grip.</p> <p>When light gauge structural steel joists are used, screws to be No. 12 by 1½" long with a Phillips head. Spacing of screws to be 6" o.c. at plywood or OSB ends and 12" o.c. at interior joists.</p>
4.	Substructure:	(Plywood or OSB) – Plywood decking (PS-1) or oriented strand board (OSB) (PS-2) to be a nominal 5/8" thick, exposure sheathing span C-D, 40/20 plywood. (All butt joints to be sealed against leakage by using tape and/or caulking). In lieu of plywood, 1" tongue and groove decking may be used.
5.	Moisture Barrier:	(Optional) – Any suitable membrane to protect Substructure (Item 4).
6.	Joists:	<p>Joists, spaced at 2' o.c. max. (when tongue and groove decking is used, joist spacing may be 30" o.c. max.), may be one of the following:</p> <p>A. Nominal 2"x6" wood joists, No. 2 or better.</p> <p>B. Nominal 2"x4" wood when used on a top chord of a wood truss, No. 2 or better.</p> <p>C. Light gauge structural steel framing with the member against the plywood to be a min. No. 22 MSG coated steel.</p>
7.	Batten Clips and Cap*	N/A
8.	Insulation*:	<p>8. (Rigid Insulation – Optional – Not Shown) – Applied flat or tapered to max. 10" thick combination of Item 8A. Bearing plates required under panel attachment points.</p> <p>– "ISOGARD GL" or "ISOGARD CG"</p> <p>8A. Foamed Plastic – (Rigid Insulation – Optional – Not Shown) – Placed on top of Item 8. Max.10" thick combination of Item 8. Bearing plates required under panel attachment points.</p> <p>– " ISOGARD HD"</p>
9.	Fasteners*:	<p>(Bearing Plates) – Plates to be 4"x4" No. 26 MSG min. galvanized steel. Two ¼" guide holes located in line with panel clip (Item 2) guide holes.</p> <p>– "UC Bearing Plate"</p>
10.	Cover Board:	(Optional – Not Shown) – Min. ½" thick (15/32" actual) plywood, DOC PS-1 rated (square edged may be used) or min. 7/16" thick OSB, DOC PS-2 rated, ½" thick gypsum board, ½" wood fiberboard, ¼" min. thickness G-P Gypsum "DensDeck", ¼" min. thick USG "SECUROCK Glass Mat Board" or "SECUROCK Roof Board" applied over the plywood decking (Item 4) or Foamed Plastic (Items 8 and/or 8A). When used or used over Foamed Plastic bearing plate not required.

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UC-14- Construction No. 436A; Uplift – Class 90

1.	Panels*:	<p>No. 24 MSG min. coated steel or min. 0.032" thick aluminum. Max. panel width 18", rib height 1¾". Panels continuous over two or more spans. Endlap for panels to be overlapped 6". A bead of sealant may be used at panel ends and side joints.</p> <p>– "UC-14"</p>
2.	Fasteners*:	<p>Roof Deck Fasteners* – (Panel Clips) – One-piece assembly, 3½" wide by 1⅞" high. Clip spacing to be 24" o.c. with 24 MSG coated steel panels or 18" o.c. with .032" thick aluminum panels.</p> <p>– "UC-14 Clip"</p>
3.	Fasteners:	<p>(Screws) – Screws used to attach the panel clips to Substructure (Item 4) to be min. 10x1" PC PD WOW T17 steel or 10x1" PC T WOW T17 stainless-steel screws. Two screws per clip.</p> <p>Screws used to attach Substructure (Item 4) to wood trusses or joists (Item 6) to be 0.113"x2¾" ring shank nails spaced 6" o.c. along the perimeter and intermediate supports.</p>
4.	Substructure	Plywood or OSB: Plywood decking (PS-1) or oriented strand board (OSB) (PS-2) to be a nominal ½" thick, exposure sheathing span C-D, 40/20 plywood.
5.	Underlayment:	(Optional) – N/A

UC-14- Construction No. 436A; Uplift – Class 90 Continued

6.	Wood Supports:	(Joists) — Nominal 2"x10" graded dimensional lumber, No. 2 or better. Spaced 24" o.c. max.
7.	Insulation*:	(Rigid Insulation — Optional) — Placed on top of Item 7. Max. 10" thick combination of Item 7. Bearing plates required under panel attachment points. — "ISOGARD HD"
8.	Fasteners*:	Roof Deck Fasteners* — (Bearing Plates) — Plates to be 4"x4" by No. 26 MSG min. galvanized steel. Two ¼" guide holes located in line with panel clip (Item 2) guide holes. — "UC Bearing Plate"
9.	Cover Board:	(Optional) — Min. ½" thick (15/32" actual) plywood, DOC PS-1 rated (square edged may be used) or min. 7/16" thick OSB, DOC PS-2 rated, ½" thick gypsum board, ½" wood fiberboard, ¼" min. thickness G-P Gypsum "DensDeck", ¼" min. thick USG "SECUROCK Glass Mat Board" or "SECUROCK Roof Board" applied over the plywood decking (Item 4) or Foamed Plastic (Items 7 and/or 7A). When used or used over Foamed Plastic bearing plate not required.

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UC-14- Construction No. 508; Uplift – Class 90

1.	Panel*:	0.032" min. thick aluminum; 16" wide, 1¾" high at the rib. Panels continuous over three or more clips with no end laps. A bead of sealant may be used at panel side joints. — "UC-14"
2.	Fasteners*:	(Panel Clips) — One-piece assembly, 3½" wide, 1⅞" high with a 1⅜" wide horizontal leg. No. 18 MSG min. thick galvanized or stainless-steel. Two ¼" guide holes located in horizontal leg. Clips spaced 18" o.c. — "UC-14"
3.	Fasteners:	(Screws) — Fasteners used to attach panel clips (Item 2) to plywood (Item 5) to be No. 10-12x1" min. long, without insulation and/or cover board, No. 1 Phillips drive, bugle head coated steel wood screws. Two screws used per clip inserted through ¼" diameter guide holes.
4.	Underlayment:	(Optional) — Underlayment attached over Foamed Plastic (Item 8 and/or 8A) or Decking (Item 5) or Cover Board (Item 10).
5.	Decking:	Plywood decking to be rated per PS - 1 specification, nominal 5/8" (19/32" actual) or ½" (15/32" actual) thick. Butt ends not blocked.
6.	Supports:	Spaced max. 24" o.c. Any of the following types may be used to support the plywood decking: a) 2"x6", min. No. 2 grade A.F.P.A. S-P-F Hemlock Fir, Douglas Fir or Southern Pine or equivalent. b) Wood trusses with a nominal 2"x4" upper chord of the same grade as Item a. c) No. 22 MSG min. thick cold formed coated steel (min. yield strength to be 33,000 psi).
7.	Deck Fasteners:	(Not Shown) — Fasteners used to attach the plywood deck to the supports to be as follows: a) For plywood-to-wood supports, No. 8-18x1⅞" long bugle-head steel screws with a No. 2 Phillips drive, a "Hi-Low" thread pattern and an "S-Point". b) As an alternate to Item a, 8dx2½" long deformed shank common nails may be used. c) For plywood-to-steel supports for a steel thickness less than No. 20 MSG, No. 7-19x1¼" long bugle-head steel screws with a No. 2 Phillips head drive "Hi-Low" threads and an "S=Point" . For a steel thickness greater than No. 20 MSG to No. 16 MSG, No. 6-20x1¼" long bugle-head steel screws with a No. 2 Phillips drive and an S12 (TEKS/3) ® point. Spacing: Fastener spacing for all fastener types to be 6" o.c. at the plywood edges and 12" o.c. in the interior.
8.	Insulation*:	8. (Rigid Insulation — Optional — Not Shown) — Applied flat or tapered to max. 10" thick combination of Item 8A. Bearing plates required under panel attachment points. — "ISOGARD GL" or "ISOGARD CG" 8A. Foamed Plastic — (Optional — Not Shown) — Placed on top of Item 8. Max. 10" thick combination of Item 8. Bearing plates required under panel attachment points. — "ISOGARD HD"
9.	Fasteners*:	(Bearing Plates) — Plates to be 4"x4" No. 26 MSG min. galvanized steel. Two ¼" guide holes located in line with panel clip (Item 2) guide holes. — "UC Bearing Plate"
10.	Cover Board:	(Optional — Not Shown) — Min. ½" thick (15/32" actual) plywood, DOC PS-1 rated (square edged may be used) or min. 7/16 in thick OSB, DOC PS-2 rated, ½" thick gypsum board, ½" wood fiberboard, ¼" min. thickness G-P Gypsum "DensDeck", ¼" min. thick USG "SECUROCK Glass Mat Board" or "SECUROCK Roof Board" applied over the plywood decking (Item 5) or Foamed Plastic (Items 8 and/or 8A). When used or used over Foamed Plastic bearing plate not required.

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UC-14- Construction No. 303; Uplift - Class 90

1.	Panels*:	No. 24 MSG min. thickness coated steel. Panel width 18" max., 10" min. ribs height 1 ³ / ₄ " at female side. Panels continuous over three or more clips with no end laps. A bead of sealant may be used at panel side joints. — "UC-14"
2.	Fasteners*:	<p>2. (Panel Clips) — One-piece assembly, No. 24 MSG min. thickness, 3¹/₂" wide, 1-15/16" high. Clip spacing to be 48¹/₂ o.c. Clips to interface with Item 2A (bearing plate). — "UC-14 Clip"</p> <p>2A. Roof Deck Fasteners* — (Bearing Plate) — One-piece assembly, No. 24 MSG min. thickness steel, 4¹/₂" wide, 6" long or No. 24 MSG min. thickness, 5" wide, 3⁷/₈" long.</p> <p>2B. Bearing Plate — (Not Shown) — To be used with "Lock-Seam UL 90 Clip", "Perma Seam Clip", "K-Lok Structural Clips" or "MP-175 Clip" only, (Item 2). Bearing plates to be 16 MSG min. coated steel, 3⁷/₈" wide by 5" long (50,000 psi min. yield strength).</p> <p>2F. Roof Deck Fasteners* — (Bearing Plates) — Plates to be 4"x 4" No. 26 MSG min. galvanized steel. Two 1/4" guide holes located in line with panel clip (Item 2) guide holes. — "UC Bearing Plate"</p>
3.	Fasteners:	<p>3. Panel Fasteners — (Screws) — Fasteners used to attach panel clips and bearing plates (Items 2 & 2A) through rigid insulation and optional Cover Board (Item 7) into light gauge steel deck (Item No. 5) to be No. 14 truss head type with No. 3 Phillips drive, self-drilling steel screws. Two screws per clip to be used, inserted through 1/4" dia. guide holes. Fasteners to penetrate liner panel 3/4" min.</p> <p>3A. Panel Fasteners — (Screws) — (Not Shown) — When no Rigid Insulation (Item 4) is used, No. 10-16x1" min. long TEK 3 Carbon pancake head, self-drilling, self-tapping screws to be used. When rigid insulation is used, No. 14-13 by varying lengths, DP1, carbon, pancake-head, Square/Phillips Head screws to be used. Two fasteners per clip to be used for either type.</p>
4.	Insulation*:	<p>4. Foamed Plastic — (Rigid Insulation) — Min. thickness 1", max. thickness 4¹/₂". Density to be a min. of 1.8 pcf. or see products Classified under TJBX Category.</p> <p>4A. Foamed Plastic* — (Rigid Insulation) — In lieu of Item 4, applied flat or tapered to max. 10" thick combination of Item 4B. Bearing plates required under panel attachment points. Optional if Cover Board (Item 7) is used. — "ISOGARD GL" or "ISOGARD CG"</p> <p>4B. Foamed Plastic — (Rigid Insulation — Optional — Not Shown) — Placed on top of Item 4A. Max. 10" thick combination of Item 4A. Bearing plates required under panel attachment points. Optional if Cover Board (Item 7) is used. — "ISOGARD HD"</p>
5.	Deck:	Liner Panel — Min. thickness No. 22 MSG. Coated steel (33000 psi) min. yield strength min. depth 1 ¹ / ₂ ", max. pitch 6" fabricated to various profiles.
6.	Underlayment:	(Not Shown) — One ply of 30 lb roofing felt or one-layer of bituminous resin type water proofing membrane or self-adhering underlayment, installed per manufacturer's instructions.
7.	Cover Board:	(Optional — Not Shown) — Min. 1/2" thick (15/32" actual) plywood, DOC PS-1 rated (square edged may be used) or min. 7/16" thick OSB, DOC PS-2 rated, 1/2" thick gypsum board, 1/2" wood fiberboard, 1/4" min. thickness G-P Gypsum "DensDeck", 1/4" min. thick USG "SECUROCK Glass Mat Board" or "SECUROCK Roof Board" applied over the liner panel (Item 5) in lieu of Foamed Plastic (Item 4) or over Foamed Plastic (Items 4, 4A and/or 4B and 4C). When used or used over Foamed Plastic bearing plate not required.
8.	Supports:	(Not Shown) — Used to support liner panels, spaced per deck manufacturer's specifications for uplift.
<p>* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.</p>		

UC-14- Construction No. 448; Uplift - Class 90

1.	Panels*:	No. 24 MSG min. coated steel. Max. panel width 18", rib height 1 ³ / ₄ ". Panels continuous over three or more spans. End laps for panels to be overlapped 6" and to include back up plate (Item 2B). A bead of sealant may be used at panel ends and side joints. — "UC-14"
2.	Fasteners*:	<p>2. (Panel Clips) — One-piece assembly, 3¹/₂" wide by 1⁷/₈" high. Clip spacing to be 48" o.c. — "UC-14 Clip"</p> <p>2A. Bearing Plate — (Optional) — To be used in lieu of plywood or OSB (Item 4A) with rigid insulation (Item 4). Bearing plates to be 16 MSG min. coated steel or No. 24 MSG min. thickness, 5" wide, 3⁷/₈" long. Located under each clip (Item 2) for support.</p> <p>2B. End Lap Back-Up Plate — (Not Shown) — No. 16 MSG min. coated steel, width of back up plate to correspond to width of panel. Two 1" wide x 3/4" long tabs are used for sliding over end of panels.</p>

UC-14- Construction No. 448; Uplift – Class 90 Continued

3.	Fasteners:	<p>Panel Fasteners – (Screws) – Screws used to attach the panel clips and bearing plates (Items 2 and 2A) through rigid insulation and into metal deck (Item 5). Screws to be No. 14 Truss head with No. 3 Phillips drive. Length to be a min. of ½" longer than thickness of rigid insulation and metal deck. Two screws per clip. Fasteners used at end laps to be one of the following: 14"x1". Type AB self-tapper; 14" x1¼". Hex washer head self-driller; 14"x1". Type AB Phillips stainless-steel self-tapper.</p>
4.	Insulation*:	<p>4. Rigid Insulation – (Optional) – Foamed plastic, max. thickness 10". Density to be a min. of 1.5 PCF.</p> <p>4A. Foamed Plastic* – (Rigid Insulation – Optional) – In lieu of Item 4, applied flat or tapered to max. 10" thick combination of Item 4B. Bearing plates required under panel attachment points. Optional if Cover Board (Item 4D) is used. – "ISOGARD GL" or "ISOGARD CG"</p> <p>4B. Foamed Plastic – (Rigid Insulation – Optional – Not Shown) – Placed on top of Item 4A. Max. 10" thick combination of Item 4A. Bearing plates required under panel attachment points. Optional if Cover Board (Item 4D) is used. – "ISOGARD HD"</p> <p>4C. Roof Deck Fasteners* – (Bearing Plates) – Plates to be 4"x4" No. 26 MSG min. galvanized steel. Two ¼" guide holes located in line with panel clip (Item 2) guide holes. – "UC Bearing Plate"</p> <p>4D. Cover Board – (Optional – Not Shown) – Min. ½" thick (15/32" actual) plywood, DOC PS-1 rated (square edged may be used) or min. 7/16" thick OSB, DOC PS-2 rated, ½" thick gypsum board, ½" wood fiberboard, ¼" min. thickness G-P Gypsum "DensDeck", ¼" min. thick USG "SECUROCK Glass Mat Board" or "SECUROCK Roof Board" applied over the liner panel (Item 5) in lieu of Foamed Plastic (Item 4) or over Foamed Plastic (Items 4, 4A and/or 4B). When used or used over Foamed Plastic bearing plate not required.</p>
5.	Deck:	No. 22 MSG min. thickness coated steel. Min. yield strength 33 KSI. Min. depth 1½". Max. pitch 6".
6.	Vapor Barrier:	<p>6. Vapor Barrier – (Optional) – Installed on top of metal deck (Item 5) or on top of gypsum wallboard (Item 4B) if used. Min. 6 mil plastic sheet.</p> <p>6A. Waterproof Membrane – (Optional) – (Not Shown) – Used to protect plywood or OSB (Item 4A). Installed under panels (Item 1).</p>
7.	Supports:	(Not Shown) – Used to support metal deck, spaced per deck manufacturer's specifications.
8.	Batten Clips and Cap*:	N/A
<p>* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.</p>		

UC-14- Construction No. 448; Uplift – Class 90

1.	Panels*:	<p>No. 24 MSG min. coated steel. Max. panel width 18", rib height 1¾". Panels continuous over three or more spans. End laps for panels to be overlapped 6" and to include back up plate (Item 2B). A bead of sealant may be used at panel ends and side joints. – "UC-14"</p>
2.	Fasteners*:	<p>2. (Panel Clips) – One-piece assembly, 3½" wide by 1⅞" high. Clip spacing to be 48" o.c. – "UC-14 Clip"</p> <p>2A. Bearing Plate – (Optional) – To be used in lieu of plywood or OSB (Item 4A) with rigid insulation (Item 4). Bearing plates to be 16 MSG min. coated steel or No. 24 MSG min. thickness, 5" wide, 3⅞" long. Located under each clip (Item 2) for support.</p> <p>2B. End Lap Back-Up Plate – (Not Shown) – No. 16 MSG min. coated steel, width of back up plate to correspond to width of panel. Two 1" wide x ¾" long tabs are used for sliding over end of panels.</p>
3.	Fasteners:	<p>Panel Fasteners – (Screws) – Screws used to attach the panel clips and bearing plates (Items 2 and 2A) through rigid insulation and into metal deck (Item 5). Screws to be No. 14 Truss head with No. 3 Phillips drive. Length to be a min. of ½" longer than thickness of rigid insulation and metal deck. Two screws per clip. Fasteners used at end laps to be one of the following: 14"x1". Type AB self-tapper; 14" x1¼". Hex washer head self-driller; 14"x1". Type AB Phillips stainless-steel self-tapper.</p>

UC-14- Construction No. 448; Uplift - Class 90 Continued

4.	Insulation*:	<p>4. Rigid Insulation — (Optional) — Foamed plastic, max. thickness 10". Density to be a min. of 1.5 PCF.</p> <p>4A. Foamed Plastic* — (Rigid Insulation — Optional) — In lieu of Item 4, applied flat or tapered to max. 10" thick combination of Item 4B. Bearing plates required under panel attachment points. Optional if Cover Board (Item 4D) is used. — "ISOGARD GL" or "ISOGARD CG"</p> <p>4B. Foamed Plastic — (Rigid Insulation — Optional — Not Shown) — Placed on top of Item 4A. Max. 10" thick combination of Item 4A. Bearing plates required under panel attachment points. Optional if Cover Board (Item 4D) is used. — "ISOGARD HD"</p> <p>4C. Roof Deck Fasteners* — (Bearing Plates) — Plates to be 4"x4" No. 26 MSG min. galvanized steel. Two ¼" guide holes located in line with panel clip (Item 2) guide holes. — "UC Bearing Plate"</p> <p>4D. Cover Board — (Optional — Not Shown) — Min. ½" thick (15/32" actual) plywood, DOC PS-1 rated (square edged may be used) or min. 7/16" thick OSB, DOC PS-2 rated, ½" thick gypsum board, ½" wood fiberboard, ¼" min. thickness G-P Gypsum "DensDeck", ¼" min. thick USG "SECUROCK Glass Mat Board" or "SECUROCK Roof Board" applied over the liner panel (Item 5) in lieu of Foamed Plastic (Item 4) or over Foamed Plastic (Items 4, 4A and/or 4B). When used or used over Foamed Plastic bearing plate not required.</p>
5.	Deck:	No. 22 MSG min. thickness coated steel. Min. yield strength 33 KSI. Min. depth 1½". Max. pitch 6".
6.	Vapor Barrier:	<p>6. Vapor Barrier — (Optional) — Installed on top of metal deck (Item 5) or on top of gypsum wallboard (Item 4B) if used. Min. 6 mil plastic sheet.</p> <p>6A. Waterproof Membrane — (Optional) — (Not Shown) — Used to protect plywood or OSB (Item 4A). Installed under panels (Item 1).</p>
7.	Supports:	(Not Shown) — Used to support metal deck, spaced per deck manufacturer's specifications.
8.	Batten Clips and Cap*:	N/A
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UC-14- Construction No. 664; Uplift - Class 90

1.	Purlins:	(Not shown) Purlins used for liner panel (Item 2) support to be cold formed steel sections. As alternatives, structural components (hot rolled beams, channels, open web joists, etc.) may be used. Min. gauge and yield to depend on design considerations for uplift loading. Purlins spaced max 6' o.c.
2.	Deck:	No. 22 MSG min. thick coated steel (33,000 psi min. yield strength). Min. depth 1½" max. pitch 6". Fabricated to various profiles. Fastened to supports 6" o.c.
3.	Insulation*:	<p>Foamed Plastic* — (Rigid Insulation — Optional) — Applied flat or tapered to max. 10" thick combination of Item 3A. Bearing plates required under panel attachment points. Optional if Cover Board (Item 3B) is used. — "ISOGARD GL" or "ISOGARD CG"</p> <p>3A. Foamed Plastic — (Rigid Insulation — Optional, Not Shown) — Placed on top of Item 3. Max. 10" thick combination of Item 3 Bearing plates required under panel attachment points. Optional if Cover Board (Item 3B) is used. — "ISOGARD HD"</p> <p>3B. Cover Board — (Optional — Not Shown) — Min. ½" thick (15/32" actual) plywood, DOC PS-1 rated (square edged may be used) or min. 7/16" thick OSB, DOC PS-2 rated, ½" thick gypsum board, ½" wood fiberboard, ¼" min. thickness G-P Gypsum "DensDeck", ¼" min. thick USG "SECUROCK Glass Mat Board" or "SECUROCK Roof Board" applied over the plywood decking (Item 2) or Foamed Plastic (Items 3 and/or 3A). When used or used over Foamed Plastic bearing plate not required. — "ISOGARD HD"</p>
4.	Panels*:	No. 24 MSG min. thick coated steel panels or 0.032" min. thick aluminum panels, 18" wide max. 1¾" high at female side rib. Panels continuous over three or more clips with no end laps. A bead of sealant may be used at panel side joints. — "UC-14"
5.	Fasteners*:	(Panel Clips) — One-piece assembly, 3½" wide, 1⅞" high. No. 18 MSG min. thick coated steel. Clips spaced 18" o.c. max. Fasteners used to attach the panel clips. Bearing plates are used with panel screw fasteners (Item 6) under panel clip to be 4"x4" min. No. 26-ga. stainless-steel or min. No. 20-ga. galvanized steel. Bearing plates are optional if foamed plastic is used. — "UC-14 Clip", "UC Bearing Plate"
6.	Fasteners:	(Screws not shown) — Fasteners used to attach the panel clips to the steel decking to be No. 12 steel screws. Length to penetrate steel deck a min. of ½". Two screws are to be used per clip.
<p>* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.</p>		

UC-14– Construction No. 342; Uplift – Class 90

1.	Panels*:	No. 24 MSG min. gauge coated steel. Panel width 18" max., 10" min. Rib height 1¾" at female side. A bead of sealant may be used at panel side joints. Panels continuous over three or more clips with no end laps. – "UC-14"
2.	Fasteners*:	(Panel Clips) – One-piece assembly, No. 24 MSG min. thickness, 3½" wide, 1-15/16" high. Clip spacing to be 48" o.c. – "UC-14 Clip"
3.	Thermal Barrier*:	(Mineral Board) – Min. thickness ½". Opposite side edges have a tongue and groove configuration. Butt (end) joints to be staggered and occur over steel deck crests. Wallboard installed perpendicular to steel deck corrugations. LOADMASTER SYSTEMS INC (View Classification) – "Mineral Board"
4.	Vapor Barrier:	(Optional) – Installed on top of metal deck (Item 8) or on top of gypsum wallboard (Item 3). Min. 6 mil plastic sheet.
5.	Joint Tape:	(Not Shown) – All wallboard joints shall be taped with 2.5" diameter wide joint tape supplied by the manufacturer.
6.	Insulation:	(Rigid Insulation) – (Optional) – Expanded polystyrene supplied in 4'x8' sheets, min. thickness 13/16", min. density 1.0 pcf, or (Rigid Insulation) Polyisocyanurate supplied in 4'x8' sheets or (Rigid Insulation) Phenolic supplied in 4'x8' sheets. All end joints to be staggered with respect to adjoining rows. All joints to be offset from joints in mineral board (Item 3).
7.	Fasteners:	7. For attaching panel clips to steel deck to be two 0.140" diameter threaded shank Phillips, bugle or trumpet head, self-drilling, self-tapping corrosion resistant coated steel screws supplied by roof deck manufacturer. Screws shall penetrate steel deck min. ½". 7A. Fasteners – For attaching wallboard to steel deck (Item 8) to be min. 0.140" diameter threaded shank Phillips, bugle or trumpet head, self-drilling, self-tapping, corrosion resistant coated steel screws supplied by the manufacturer. Screws are installed into top corrugations of steel deck through nominal 3"x3" corrosion resistant steel roof deck plates, spaced in a pattern as determined by the pitch of the steel deck with the min. density of 21 fasteners per 4'x8' sheet (Item 3). 7B. Panel Fasteners – (Screws) – As an alternate, when no Rigid Insulation (Item 4) is used, No. 10-16 x1" min. long TEK 3 Carbon pancake head, self-drilling, self-tapping screws to be used. When rigid insulation is used, No. 14-13 by varying lengths, DP1, carbon, pancake-head, Square/Phillips Head screws to be used. Two fasteners per clip to be used for either type. See Item 8 for steel deck thickness.
8.	Deck:	8. Fabricated to various profiles, min. yield strength 33,000 psi. Steel deck profile, support spacing and method of positioning (end and side laps) and fastening of deck to supports to be per deck manufacturers requirements for uplift loading. Deck thickness to accommodate panel clip screw fastener pullout strength. When fasteners described in Item 7B are used, min. thickness to be No. 22 MSG 8A. Deck Fasteners – Steel deck panels to be fastened to structural supports and at laps using ARC spot welds with weld washers or screw fasteners per deck manufacturer's requirements for uplift loading.
9.	Purlins:	9. Purlins – 16 MSG min. gauge steel (min. yield strength 50,000 PSI) or min. Type H open web joists.
*Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada) respectively.		

UC-14– Construction No. 486; Uplift – Class 90

1.	Panels*:	No. 24 MSG min. coated steel, 18" max. width, 1¾" high at the ribs. Panels continuous over three or more spans. End laps for panel to be overlapped 6" and to include back-up plate (Item 2A). A bead of sealant may be used at panel end joints. – "UC-14"
2.	Fasteners*:	2. Roof Deck Fasteners* – One-piece assembly, 3½" wide, 1⅞" high, thickness 0.048". Clip spacing to be 48" o.c. 2A. End Lap Back-Up Plate – (Not Shown) – No. 16 MSG min. coated steel, width of back-up plate to correspond to width of panel. Two 1" wide by ¾" long tabs are used for sliding over end of panels.
3.	Gypsum Board*:	(Mineral Board) – Min. thickness ½". Opposite side edges have a tongue and groove configuration. Butt (end) joints to be staggered and occur over steel deck crests. Wallboard installed perpendicular to steel deck corrugations. GEORGIA-PACIFIC GYPSUM LLC (View Classification) – "DensDeck®", "DensDeck Prime®"
4.	Vapor Barrier:	Single ply used between the wallboard (Item 3) and the metal roof deck panels (Item 1).
5.	Joint Tape:	(Not Shown) – 2½" wide tape supplied by manufacturer to be used at all wallboard joints.
6.	Insulation:	(Rigid Insulation) – (Optional) – Expanded polystyrene or Polyisocyanurate supplied in 4'x8' sheets, min. thickness 13/16" min. density 1.0 pcf. All end joints to be staggered with respect to adjacent rows. All joints to be offset from joints in mineral board (Item 3).

UC-14- Construction No. 486; Uplift - Class 90 Continued

7.	Fasteners:	<p>7. Fasteners — Screws used to fasten panel clips (Item 2) to steel deck (Item 8) to be No. 14 Truss head with No. 3 Phillips drive. Length to be min. ½" longer than thickness of wallboard, rigid insulation and metal deck. Two screws per clip. Fasteners used at end laps to be one of the following: 14"x1". Type AB self-tapper; 14"x1". Hex washer head self-driller; 14" x1 Type AB Phillips stainless-steel self-tapper.</p> <p>7A. Fasteners — For attaching in wallboard to steel deck to be min .0140" diameter threaded shank Phillips, bugle or trumpet head, self-drilling, self-tapping, corrosion resistance coated steel screws supplied by manufacturer. Screws are installed into top corrugations of steel roof deck through nominal 3"x3" corrosion resistant steel roof deck plates, spaced in a pattern as determined by the pitch of the steel deck with a min. of 21 fasteners per 4'x8' sheet (Item 3).</p>
8.	Deck:	<p>8. Steel Deck — Fabricated to various profiles, min. yield strength 33,000 psi. Steel deck profile, thickness, support spacing and method of positioning (end and side laps) and fastening deck to supports to be per deck manufacturers requirements for uplift loading.</p> <p>8A. Deck Fasteners — Steel deck panels to be fastened to structural supports and at laps using puddle welds with weld washers or screw fasteners per deck manufactures requirements for uplift loading.</p>
9.	Purlins:	16 MSG min. coated steel, min. yield strength 50,000 psi or Type H open web joists.
<p>* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.</p>		

UC-14- Construction No. 544; Uplift - Class 90

1.	Panels*:	No. 24 MSG min. Coated steel. Max. panel width 18" and rib height 1¾". Panels continuous over two or more spans. End lap for panels to be overlapped 6". A bead of sealant may be used at panel ends and side joints. — "UC-14"
2.	Fasteners*:	<p>(Panel Clips) — One-piece assembly, 3½ wide, 1⅞" high. Min. thickness No. 18 MSG. One clip to be used at each purlin. Max. clip spacing to be 48" o.c. Clips to interface with bearing plates (Item No. 2A).</p> <p>2A. Bearing Plate — No. 24 MSG min. gauge coated steel, 5"x3⅞" long (50,000 psi min. yield strength).</p> <p>2B. Roof Deck Fasteners* — (Panel Clips) — One-piece assembly, 3½" wide x 1⅞" high. Clip spacing to be 48" o.c. Clips to interface with bearing plates (Item No. 2C). — "UC-14 Clip"</p> <p>2C. Roof Deck Fasteners* — (Bearing Plates) — Plates to be 4"x4" by No. 26 MSG min. galvanized steel. Two ¼" guide holes located in line with panel clip (Item 2) guide holes. — "UC Bearing Plate"</p>
3.	Fasteners:	(Screws) — Fasteners used to attach panel clips (Item No. 2) and bearing plates (Item No. 2A) through rigid board insulation (Item No. 4), light gauge steel deck (Item No. 5) and into purlins (Item No. 7) to be No. 14 self-tapper. Two screws per clip to be used. Length to be a min. of ½" longer than the combined thickness of the liner panel (Item No. 5), rigid insulation (Item No. 4), gypsum wall board (Item No. 4B) and plywood or oriented strand board (Item No. 4A).
4.	Insulation:	<p>4. Foamed Plastic — (Rigid Insulation) — Min. thickness 1", max. thickness 10". Density to be a min. of 1.5 pcf.</p> <p>4A. Foamed Plastic* — (Rigid Insulation — Optional) — In lieu of Item 4, applied flat or tapered to max. 10" thick combination of Item 4B. Bearing plates required under panel attachment points. Optional if Cover Board (Item 4D) is used. — "ISOGARD GL" or "ISOGARD CG"</p> <p>4B. Foamed Plastic — (Rigid Insulation — Optional — Not Shown) — Placed on top of Item 4A. Max. 10" thick combination of Item 4A. Bearing plates required under panel attachment points. Optional if Cover Board (Item 4D) is used. — "ISOGARD HD"</p> <p>4C. Roof Deck Fasteners* — (Bearing Plates) — Plates to be 4"x4" by No. 26 MSG min. galvanized steel. Two ¼" guide holes located in line with panel clip (Item 2) guide holes. — "UC Bearing Plate"</p> <p>4D. Cover Board — (Optional — Not Shown) — Min. ½" thick (15/32" actual) plywood, DOC PS-1 rated (square edged may be used) or min. 7/16" thick OSB, DOC PS-2 rated, ½" thick gypsum board, ½" wood fiberboard, ¼" min. thickness G-P Gypsum "DensDeck", ¼" min. thick USG "SECUROCK Glass Mat Board" or "SECUROCK Roof Board" applied over the liner panel (Item 5) in lieu of Foamed Plastic (Item 4) or over Foamed Plastic (Items 4, 4A and/or 4B). When used or used over Foamed Plastic bearing plate not required.</p>
5.	Deck:	Liner Panel — (Optional) — (Required when Items 4, 4A, 4B, 4C and 4D are used) — No. 29 MSG min. steel. Min. yield strength 80,000 psi, min. depth 9/16", max. pitch 2.6667" o.c.

UC-14- Construction No. 544; Uplift – Class 90 Continued

5.	Deck:	Liner Panel – (Optional) – (Required when Items 4, 4A, 4B, 4C and 4D are used) – No. 29 MSG min. steel. Min. yield strength 80,000 psi, min. depth 9/16", max. pitch 2.6667" o.c.
6.	Underlayment:	(Optional – Not Shown) – Underlayment attached over Foamed Plastic (Item 4, 4A or 4B), Liner Panel (Item 5) or Cover Board (Item 4D) installed per manufacturer's recommendations.
7.	Supports:	(Purlins) – (Not Shown) – No. 16 MSG min. thickness coated steel with a min. yield strength of 50,000 psi. Or min. "H" series open-web joists. Max. spacing "48" o.c.
* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.		

5V Crimp Constructions:

5V Crimp- Construction No. 629; Uplift – Class 90

1.	Joist:	Graded dimension lumber, No. 2 or better. Spaced a max. of 24" o.c.
2.	Deck:	Min. 5/8", Type CDX APA Rated plywood sheathing.
3.	Underlayment:	3. Underlayment – (Optional) – One-layer of Type 30, fastened per manufacturer's installation instructions. 3A. Underlayment (Not shown) – (Optional) – One-layer UL Classified Elk "VersaShield" with 2" side lap, loose laid.
4.	Panels*:	Width 22½" by No. 26 MSG coated steel. – "5-V-Crimp"
5.	Fasteners:	(Screws) – Fasteners for attaching panels to the decking, No. 9 by min. 1½" long, without insulation and/or cover board, hex head steel screws with a bonded washer. Fasteners spaced 24" o.c. and located on the top part of the panel v-crimp. Fasteners for attaching decking to joists, 2" long, No. 8 coarse thread screws spaced 6" o.c. at the edges and 12" o.c. in the field.
6.	Insulation*:	6. Foamed Plastic* – (Rigid Insulation – Optional – Not Shown) – Applied flat or tapered to max. 10" thick combination of Item 6A. Bearing plates required under panel attachment points. – "ISOGARD GL" or "ISOGARD CG" 6A. Foamed Plastic – (Rigid Insulation – Optional – Not Shown) – Placed on top of Item 6. Max. 10" thick combination of Item 6. Bearing plates required under panel attachment points. – "ISOGARD HD"

UL 1897 Testing

Test is conducted in accordance with UL 1897 "Uplift Test for Roof Covering Systems". The test method subjects a min. 10'x10' sample to various short term (one-minute increments) static air pressure to index performance under uplift loads imposed on a roofing system's securement to a specified roof deck.

HOLCIM SOLUTIONS AND PRODUCTS US, LLC HAS POSTED ALL OF THE AVAILABLE UL REPORTING IN THE CODES SECTION OF THE HOLCIM/ELEVATE WEBSITE: www.holcimelevate.com

Please utilize the UL website to verify the assembly number associated to each listed assembly.

1. **Uplift Resistance:** – 165 psf.

Supports (Purlins): – No. 16 MSG steel (50 ksi yield strength) spaced max. 3' o.c.

Fasteners (Screws): – Used to attach panel clips to purlins, No. ¼-14"x7/8" long, self-drilling, self-taping, hex-head steel. Two screws used per clip.

Roof Deck Fasteners (Panel Clips): – "UC-6 Clip". Two-part assembly. Located over panel sides, fastened to supports using two fasteners per clip.

Metal Roof Deck Panels: – "UC-6" or "UC-6 HD" panel. 0.040" min. thickness aluminum. Panel width 16", height of female rib 2", male rib 1¾". Panels continuous over two or more spans. Panels seamed 180° at ribs with an electric seamer.

2. Uplift Resistance: — 142 psf.

Deck: — Steel, min. No. 22 MSG.

Foamed Plastic (Rigid Insulation): — Min. thickness 1" max. thickness 4". Joints staggered between layers. Mechanically fastened to the steel deck per manufacturers recommendations.

Underlayment: — One-layer Type 30 organic felt with 2" side lap. Mechanically fastened to the steel deck per manufacturers recommendations.

Underlayment: — One-layer UL Classified Elk "VersaShield" with 2" side lap, loose laid. Fasteners (Screws): Fasteners used to attach panel clips to steel deck to be No. 12 pancake wafer head steel screws. Length to penetrate steel deck a min. of 3/4". Two screws used per clip inserted into clip guide holes.

Bearing Plate: — Plates used with panel screw fasteners under panel to be 4"x4" min. No. 26-ga. stainless-steel. As an alternate, 1/2" thick (15/32" actual) plywood, APA rated sheathing, square edged may be used.

Roof Deck Fasteners (Panel Clips): — Two-part assembly, base 5" long, 1" wide, 0.42" high. Fabricated from No. 22 MSG min. thick coated steel. Upper tab 3" long, 0.42" wide, 1.786" high. Fabricated from No. 24 MSG min. thick coated steel. Spaced a max. 12" o.c. Identified as "UC-3 Expansion Clip".

Roof Panels: — Width 16" max. with 1/2" high legs. No. 24 MSG min. thick coated steel. Panels continuous over three or more clips with no end laps. Panel ribs seamed with an electric seaming tool with seaming operation to include upper tabs of panel clips. Identified as "UC-3".

3. Uplift Resistance: — 247 psf.

Deck: — Plywood: Min 19/32" thick CDX.

Underlayment: — One-layer Type 30 organic felt with 2" side lap. Fastened to the plywood deck per manufacturers recommendations.

Underlayment: — One-layer UL Classified Elk "VersaShield" with 2" side lap, loose laid.

Vapor Barrier: — One-layer Colbond "Enkamat 7010", loose laid.

Fasteners(Screws): — Fasteners used to attach panel clips to plywood deck to be No. 10x1/2" long pancake head stainless-steel screws. Two screws used per clip inserted into clip guide holes.

Roof Deck Fasteners (Panel Clips): — Two-part assembly, base 5" long, 1" wide, 0.42" high. Fabricated from min. 0.0225" thick 304 stainless-steel. Upper tab 3/4" long, 0.42", wide, 1.786" high. Fabricated from min 0.0172" thick 304 stainless-steel. Spaced a max. of 12" o.c. Identified as "UC-3 Expansion Clip".

Roof Panels: — Width 16" max. with 1/2" high legs. Min. 0.027" thick RHEINZINK. This is a zinc material. Panel continuous over three or more clips with no end laps. Panel ribs double seamed with an electric seaming tool with seaming operation to include upper tabs of panel clips. Identified as "UC-3".

4. Uplift Resistance: — 187 psf.

Deck: — Steel, min. No. 22 MSG.

Foamed Plastic (Rigid Insulation): — Min. thickness 1", max. thickness 4". Joints staggered between layers. Mechanically fastened to the steel deck per manufacturers recommendations.

Underlayment: — One-layer Type 30 organic felt with 2" side lap. Mechanically fastened to the steel deck per manufacturers recommendations.

Underlayment: — One-layer UL Classified Elk "VersaShield" with 2" side lap, loose laid.

Vapor Barrier: — One-layer Colbond "Enkamat 7010", loose laid.

Fasteners(Screws): — Fasteners used to attach panel clips to steel deck to be No. 12 pancake head steel screws. Length to penetrate steel deck a min. of 3/4". Two screws used per clip inserted into clip guide holes.

Bearing Plate: — Plates used with panel screw fasteners under panel to be 4"x4" min. No. 26-ga. stainless-steel. As an alternate, 1/2" thick (15/32" actual) plywood, APA rated sheathing, square edged may be used.

Roof Deck Fasteners (Panel Clips): — Two-part assembly, base 5" long, 1" wide, 0.42" high. Fabricated from min. 0.0225" thick 304 stainless-steel. Upper tab 3" long, 0.42" wide, 1.786" high. Fabricated from min. 0.0172" thick 304 stainless-steel. Spaced a max. of 12" o.c. Identified as "UC-3 Expansion Clip".

Roof Panels: — Width 16" max. with 1/2" high legs. 0.027" min. thick RHEINZINK. This is a zinc material. Panel continuous over three or more clips with no end laps. Panel ribs double seamed with an electric seaming tool with seaming operation to include upper tabs of panel clips. Identified as "UC-3".

5. Uplift Resistance: — 155 psf.

Deck: — Plywood: Min. 5/8" thick CDX.

Underlayment: — One-layer Type 30 organic felt with 2" side lap. Fastened to the plywood deck per manufacturers recommendations.

Underlayment: — One-layer UL Classified Elk "VersaShield" with 2" side lap, loose laid.

Fasteners (Screws): — No. 9 by 1/2" long hex head steel screws with a bonded washer. Fasteners spaced 24" o.c. and located on the top part of the panel v-crimp.

Roof Panels: — "5-V-Crimp" panel. 0.172" min. thickness steel. Panel width 22 1/2".

6. Uplift Resistance: — 247 psf.

Deck: — Min. 19/32" APA rated plywood sheathing Grade B-C fastened to supports with 8d by 2½" long ring-shank nails spaced 6" o.c.

Panel Fasteners: — Fasteners used to attach the panels to the plywood to be No. 10x1" long coarse thread steel screws. Two screws spaced 12" o.c.

Metal Roof Deck Panels: — Panels designated "UC-4", min. 26 MSG steel or min. 0.032" thick aluminum; width 9¾" max., 1⅜" high at the ribs. A bead of sealant may be used at panel ribs.

7. Uplift Resistance: — 217 psf.

Deck: — Min. 19/32" APA rated plywood sheathing Grade B-C fastened to supports with No. 8 by 2-1/2 in. long coarse thread steel screws spaced 12" o.c. in the field and 6" o.c. along the perimeter.

Panel Fasteners: — Fasteners used to attach the panels to the plywood to be No. 10x1" long coarse thread steel screws. Two screws spaced 12" o.c.

Metal Roof Deck Panels: — Panels designated "UC-4", min. 26 MSG steel or min. 0.032" thick aluminum; width 9¾" max., 1⅜" high at the ribs. A bead of sealant may be used at panel ribs.

8. Uplift Resistance: — 120 psf.

Deck: — Min. 5/8" APA rated plywood sheathing Grade B-C fastened to supports with No. 8d by 2½" long steel ring shank nails spaced 6" o.c. in the field and 6" o.c. along the perimeter.

Roof Deck Fasteners (Panel Clips): — "UC-7 Clip". One-piece assembly spaced 12" o.c. and fastened to deck using two fasteners per clip.

Fasteners (Screws): — Used to attach panel clips to deck, No. 12 by 1" long steel screws. Two screws used per clip.

Metal Roof Deck Panels: — "UC-7" panel. Min. 24 MSG thickness steel. Panel width 12", max. 1" high at the ribs. A bead of sealant may be used at panel ribs.

9. Uplift Resistance: — 105 psf.

Deck: — Steel, min. No. 22 MSG.

Foamed Plastic Rigid Insulation (Optional): — 4" max. thickness. Loose laid, joints staggered between layers.

Fasteners (Clips/Screws): — Fasteners used to attach the metal roof deck panels to the steel deck were galvanized steel "UC-14" clips with 4"x4" bearing plates identified as "UC bearing plates" spaced 18" o.c. Fasteners used to attach the clips to the steel deck to be No. 12 steel screws, Length to penetrate steel deck a min. of ½". Two screws per clip. Bearing plates are optional if foamed plastic insulation is not used.

Metal Roof Deck Panels: — "UC-14" No. 24 MSG min. thick coated steel panels or 0.032" min. thick aluminum panels, 18" wide max. 1¾" high at female side rib. A bead of sealant may be used at panel side joints.

10. Uplift Resistance: — 157 psf.

Deck: — Deck to be min. 5/8" nominal (19/32" actual) thickness plywood; Exposure 1, Grade B-C, APA rated sheathing, conforming to requirements of DOC PS-1, with butt joints to be located over wood supports (joist). Fastened to supports with No. 8d by 2½" long steel ring shank nails spaced 6" o.c. at butted ends and 6" o.c. in the field.

Underlayment: — One-layer Type 15 or 30 organic felt with 2" side lap. Fastened to the plywood deck per manufacturers recommendations.

Roof Deck Fasteners (Panel Clips): — Identified as "UC-3 Expansion Clip". Two-part assembly, base 5" long, 1" wide, 0.42" high. Fabricated from min 0.0225" thick 304 stainless-steel. Upper tab 3" long, .42" wide, 1.786" high. Fabricated from min 0.0172" thick 304 stainless-steel. Spaced a max. of 18" o.c. Identified as "UC-3 Expansion Clip".

Fasteners (Screws): — Used to attach panel clips to deck, No. 10 by 1" long Pancake Type A steel screws. Two screws used per clip.

Metal Roof Deck Panels: — Identified as "UC-3". Width 16" max. with 1½" high legs. No. 24 MSG min. thick coated steel. Panels continuous with no end laps. Panel ribs single seamed with an electric seaming tool with seaming operation to include upper tabs of panel clips.

11. Uplift Resistance: — 202 psf.

Deck: — Deck to be min. 5/8" nominal (19/32" actual) thickness plywood; Exposure 1, Grade B-C, APA rated sheathing, conforming to requirements of DOC PS-1, with butt joints to be located over wood supports (joist). Fastened to supports with No. 8d by 2½" long steel ring shank nails spaced 6" o.c. at butted ends and 6" o.c. in the field.

Underlayment: — One-layer Type 15 or 30 organic felt with 2" side lap. Fastened to the plywood deck per manufacturers recommendations.

Roof Deck Fasteners (Panel Clips): — Identified as "UC-3 Expansion Clip". Two-part assembly, base 5" long, 1" wide, 0.42" high. Fabricated from min. 0.0225" thick 304 stainless-steel. Upper tab 3" long, 0.42" wide, 1.786" high. Fabricated from min. 0.0172" thick 304 stainless-steel. Spaced a max. of 8" o.c. Identified as "UC-3 Expansion Clip".

Fasteners (Screws): — Used to attach panel clips to deck, No. 10 by 1" long Pancake Type A steel screws. Two screws used per clip.

Metal Roof Deck Panels: — Identified as "UC-3". Width 16" max. with 1/2" high legs. No. 24 MSG min. thick coated steel. Panels continuous with no end laps. Panel ribs single seamed with an electric seaming tool with seaming operation to include upper tabs of panel clips.

12. Uplift Resistance: — 172 psf.

Deck: — Steel, min. 20 MSG.

Cover Boards (Optional): — Min. 1/2" thick gypsum board, 1/4" min. thickness G-P Gypsum Dens-Deck, 1/4" min. thick USG SECUROCK Glass Mat Board or SECUROCK Roof Board, loose-laid.

Insulation (Optional): — Max. 10" ISO 95+ GL, loose-laid.

Cover Boards: — Min. nominal 3/4" thick (23/32" actual); fastened to steel deck using Heavy Duty (HD) HailGard Fastener, No. 16. Spacing for the fasteners to be min. 16 fasteners per 4'x8' sheet of plywood (equally spaced) and the fastener length should be long enough to penetrate 1/2" beyond the bottom of the linear panel.

Roof Deck Fasteners (Panel Clips): — "UC-3 Super Clip" fastened to the cover board with UNA-CLAD #10 Fasteners, 1.5" long screws (2 PER CLIP) clips spaced 24" o.c.

Metal Roof Panels: — "UC-3", max. 20" wide with 1/2" high ribs, No. 24 MSG min. thick coated steel. Panel ribs double seamed with an electric or manual seaming tool with seaming operation to include upper tabs of panel clips.

13. Uplift Resistance: — 150 psf.

Deck: — Min. 15/32" APA rated plywood sheathing Grade B-C, or min. 7/16" APA rated OSB fastened to supports with 8d by 2 1/2" long ring-shank nails spaced 6" o.c.

Insulation (Optional): — Max. 10" ISO 95+ GL, RESISTA "ISOGARD HD", ISOGARD HD Composite or "HailGard" loose-laid.

Panel Fasteners: — Fasteners used to attach the panels to the plywood to be No. 10 coarse thread steel screws. Two screws spaced 24" o.c.

Roof Deck Fasteners (Panel Clips): — "UC-3 Expansion Clip" fastened to the decked sheathing with UNA-CLAD #10 Fasteners, (2 PER CLIP) clips spaced 24" o.c.

Metal Roof Deck Panels: — Panels designated "UC-3", min. 24 MSG steel, max. 16" wide, 1/2" high at the ribs. A bead of sealant may be used at panel ribs.

14. Uplift Resistance: — 150 psf.

Deck: — Min. 15/32" APA rated plywood sheathing Grade B-C, or min. 7/16" APA rated OSB fastened to supports with 8d by 2 1/2" long ring-shank nails spaced 6" o.c.

Insulation (Optional): — Max. 10" ISO 95+ GL, RESISTA "ISOGARD HD", ISOGARD HD Composite or "HailGard" loose-laid.

Panel Fasteners: — Fasteners used to attach the panels to the plywood to be No. 10 coarse thread steel screws. Two screws spaced 18" o.c.

Roof Deck Fasteners (Panel Clips): — "UC-3 Expansion Clip" fastened to the decked sheathing with UNA-CLAD #10 Fasteners, (2 per clip) clips spaced 18" o.c.

Metal Roof Deck Panels: — Panels designated "UC-3", min. 0.032" thick aluminum max. 16" wide, 1/2" high at the ribs. A bead of sealant may be used at panel ribs.

15. Uplift Resistance: — 135 psf.

Deck: — Min. 15/32" APA rated plywood sheathing Grade B-C, or min. 7/16" APA rated OSB fastened to supports with 8d by 2 1/2" long ring-shank nails spaced 6" o.c.

Insulation (Optional): — Max. 10" ISO 95+ GL, RESISTA "ISOGARD HD", ISOGARD HD Composite or "HailGard" loose-laid.

Panel Fasteners: — Fasteners used to attach the panels to the plywood to be No. 10 coarse thread steel screws. Two screws spaced 30" o.c.

Roof Deck Fasteners (Panel Clips): — "UC-3 Super Clip" fastened to the decked sheathing with UNA-CLAD #10 Fasteners, (2 per clip) clips spaced 30" o.c.

Metal Roof Deck Panels: — Panels designated "UC-3", min. 24 MSG steel, max. 16" wide, 1/2" high at the ribs. A bead of sealant may be used at panel ribs.

16. Uplift Resistance: — 135 psf.

Deck: — Steel, min. 22 MSG.

Insulation (Optional): — Max. 10" ISO 95+ GL, RESISTA "ISOGARD HD", ISOGARD HD Composite or "HailGard" loose-laid.

Cover Board: — Min. 1 1/2" thick "HailGard Composite Board" installed with 12 "HD HailGard Fasteners" per 4'x8' board.

Panel Fasteners: — Fasteners used to attach the panels to the plywood to be No. 10 coarse thread steel screws. Two screws spaced 18" o.c.

Roof Deck Fasteners (Panel Clips): — "UC-3 Expansion Clip" fastened to the decked sheathing with UNA-CLAD #10 Fasteners, 1 1/2" long (2 PER CLIP) clips spaced 18" o.c.

Metal Roof Deck Panels: — Panels designated "UC-3", min. 0.032" thick aluminum, max. 16" wide, 1/2" high at the ribs. A bead of sealant may be used at panel ribs.

17. **Uplift Resistance:** — 180 psf.

Deck: — Min. 15/32" APA rated plywood sheathing Grade B-C, or min. 7/16" APA rated OSB fastened to supports with 8d by 2½" long ring-shank nails spaced 6" o.c.

Insulation (Optional): — Max. 10" ISO 95+ GL, RESISTA "ISOGARD HD", ISOGARD HD Composite or "HailGard" loose-laid.

Panel Fasteners: — Fasteners used to attach the panels to the plywood to be No. 10 coarse thread steel screws. Two screws spaced 18" o.c.

Metal Roof Deck Panels: — Panels designated "UC-4", min. 24 MSG steel max. 18" wide, 1½" high at the ribs. A bead of sealant may be used at panel ribs.

18. **Uplift Resistance:** — 150 psf.

Deck: — Min. 15/32" APA rated plywood sheathing Grade B-C, or min. 7/16" APA rated OSB fastened to supports with 8d by 2½" long ring-shank nails spaced 6" o.c.

Insulation (Optional): — Max. 10" ISO 95+ GL, RESISTA "ISOGARD HD", ISOGARD HD Composite or "HailGard" loose-laid.

Panel Fasteners: — Fasteners used to attach the panels to the plywood to be No. 10 coarse thread steel screws. Two screws spaced 24" o.c.

Metal Roof Deck Panels: — Panels designated "UC-4", min. 24 MSG steel max. 18" wide, 1½" high at the ribs. A bead of sealant may be used at panel ribs.

19. **Uplift Resistance:** — 105 psf.

Deck: — Min. 15/32" APA rated plywood sheathing Grade B-C, or min. 7/16" APA rated OSB fastened to supports with 8d by 2½" long ring-shank nails spaced 6" o.c.

Insulation (Optional): — Max. 10" ISO 95+ GL, RESISTA "ISOGARD HD", ISOGARD HD Composite or "HailGard" loose-laid.

Panel Fasteners: — Fasteners used to attach the panels to the plywood to be No. 10 coarse thread steel screws. Two screws spaced 12" o.c.

Metal Roof Deck Panels: — Panels designated "UC-4", min. 0.032" thick aluminum max. 18" wide, 1½" high at the ribs. A bead of sealant may be used at panel ribs.

20. **Uplift Resistance:** — 135 psf.

Deck: — Min. 15/32" APA rated plywood sheathing Grade B-C, or min. 7/16" APA rated OSB fastened to supports with 8d by 2½" long ring-shank nails spaced 6" o.c.

Insulation (Optional): — Max. 10" ISO 95+ GL, RESISTA "ISOGARD HD", ISOGARD HD Composite or "HailGard" loose-laid.

Panel Fasteners: — Fasteners used to attach the panels to the plywood to be No. 10 coarse thread steel screws. Two screws spaced 18" o.c.

Metal Roof Deck Panels: — Panels designated "UC-4", min. 0.032" thick aluminum max. 18" wide, 1½" high at the ribs. A bead of sealant may be used at panel ribs.

21. **Uplift Resistance:** — 120 psf.

Metal Roof Deck Panels: — Panels designated "UC-4", min. 0.032" thick aluminum max. 18" wide, 1½" high at the ribs. A bead of sealant may be used at panel ribs.

22. **Uplift Resistance:** — 120 psf.

Deck: — Min. 15/32" APA rated plywood sheathing Grade B-C, or min. 7/16" APA rated OSB fastened to supports with 8d by 2½" long ring-shank nails spaced 6" o.c.

Insulation (Optional): — Max. 10" ISO 95+ GL, RESISTA "ISOGARD HD", ISOGARD HD Composite or "HailGard" loose-laid.

Panel Fasteners: — Fasteners used to attach the panels to the plywood to be No. 10 coarse thread steel screws. Two screws spaced 18" o.c.

Metal Roof Deck Panels: — Panels designated "UC-4", min. 24 MSG steel max. 18" wide, 1½" high at the ribs. A bead of sealant may be used at panel ribs.

23. **Uplift Resistance:** — 105 psf.

Deck: — Steel, min. 22 MSG.

Insulation (Optional): — Max. 10" ISO 95+ GL, RESISTA "ISOGARD HD", ISOGARD HD Composite or "HailGard" loose-laid.

Cover Board: — Min. 1½" thick "HailGard Composite Board" installed with 8 "HD HailGard Fasteners" per 4'x8' board.

Panel Fasteners: — Fasteners used to attach the panels to the plywood to be No. 10 coarse thread steel screws. Two screws spaced 18" o.c.

Roof Deck Fasteners (Panel Clips): — "UC-6 Low-Float Clip" fastened to the decked sheathing with UNA-CLAD #10 Fasteners, 1½" long (2 per clip) clips spaced 30" o.c.

Metal Roof Deck Panels: — Panels designated "UC-6", min. 0.032" thick aluminum max. 18" wide, 1½" high at the ribs. A bead of sealant may be used at panel ribs.

24. Uplift Resistance: — 135 psf.

Deck: — Min. 15/32" APA rated plywood sheathing Grade B-C, or min. 7/16" APA rated OSB fastened to supports with 8d by 2½" long ring-shank nails spaced 6" o.c.

Insulation (Optional): — Max. 10" ISO 95+ GL, RESISTA "ISOGARD HD", ISOGARD HD Composite or "HailGard" loose-laid.

Panel Fasteners: — Fasteners used to attach the panels to the plywood to be No. 10 coarse thread steel screws. Two screws spaced 24" o.c.

Roof Deck Fasteners (Panel Clips): — "UC-14 Clip" fastened to the decked sheathing with UNA-CLAD #10 Fasteners, 1½" long (2 per clip) clips spaced 24" o.c.

Metal Roof Deck Panels: — Panels designated "UC-14", min. 24 MSG steel max. 18" wide, 1½" high at the ribs. A bead of sealant may be used at panel ribs.

[Last Updated](#) on 2018-09-25

Internal Fire ("P") Assemblies

These "P" assemblies can be found using the UL Online Certification Directory report [CETW.R14751](#).

The following panel designations can be used in Design Numbers:

[P225](#), [P227](#), [P230](#), [P237](#), [P259](#), [P508](#), [P510](#), [P512](#), [P514](#), [P518](#), [P701](#), [P711](#), [P717](#), [P720](#), [P722](#), [P723](#), [P726](#), [P731](#), [P734](#), [P801](#), [P815](#), [P819](#).

Mechanically Attached Metal Roof Panels – Type UC-3, UC-4, UC-6, UC-7, UC-14, UC-500, UC-501, UC-600, UC-601, UR, HR, and VR roof panels (26 MSG min. gauge coated steel, min. 0.020" thick copper or 0.032" min. gauge coated aluminum) placed over specified insulation and/or roof covering for the respective designs. Panel secured to top layer of 7/16". APA-rated oriented strand board (OSB) laminated to rigid insulation or 5/8" plywood over rigid insulation. Refer to individual Roof-Ceiling design under the appropriate Building Unit item for name of Classified Companies. Panels secured to oriented strand board or plywood at side ribs with panel clips designed specifically for these panels. Panel clips spaced 18" o.c. using No. 12-15 No. 3 Phillips self-drilling, self-tapping truss head steel or stainless-steel screw. Zinc plated carbon steel screws. The oriented strand board laminated insulation or plywood covered rigid insulation are mechanically fastened to steel roof deck and covered with a 30 lb. felt.

Mechanically Attached Metal Roof Panels – Type UC-3, UC-4, UC-6, UC-7, UC-14, UC-500, UC-501, UC-600, UC-601, UR, HR, and VR roof panels (26 MSG min. gauge coated steel, min. 0.020" thick copper or 0.032 min. gauge coated aluminum) placed over specified insulation and/or roof covering for the respective designs.

Type UC-3, UC-4, UC-6, UC-7, UC-14 panels are secured by their panel clips with the upper portion of the clip engaging the panel rib, a 3"x4" bearing plate fabricated of nominal 0.018" thick coated steel is used under each panel clip. The bearing plate shall be placed over the specified roof insulation. The fastener shall penetrate the roof deck a min. of ½" and shall be spaced 18" o.c.

Type UC-500, UC501, UC-600, UC-601, UR, HR, and VR are screwed into the top of the panel rib through the metal panels into the specified insulation. Panel clips are attached using No. 12-15 Phillips drive truss head steel or stainless-steel screw with a "S" point or tek point. Two fasteners per clip are used. The fasteners shall penetrate the roof deck a min. of ½" and shall be spaced 18" o.c.

Mechanically attached metal roof panels - Type UC-14 secured by steel anchor clips. Anchor clips are attached to a hat shaped member+ (min. depth 1") or a bearing plate++.

For use in Design Numbers: [P225](#), [P227](#), [P230](#), [P237](#), [P265](#), [P268](#), [P508](#), [P512](#), [P701](#), [P711](#), [P720](#), [P722](#), [P724](#), [P726](#), [P731](#), [P801](#), [P815](#), [P819](#), [P821](#).

+Hat-shaped member to be a min. of 16-ga. The member will be fastened through the roof insulation to the steel roof deck with No. 14 self-drilling and/or self-tapping fasteners. Spacing to be determined by the structural loading requirements. In addition, any compressible UL Classified glass fiber blanket insulation with or without a vapor-retarder facing may be used between the specified roof insulation and the metal roof panels.

++Bearing plate to be a min. of 16-ga. Member will be fastened through the roof insulation to the steel deck with No. 14 self-drilling and/or self-tapping fasteners.

State of Florida Product Approvals

Specific State of Florida Approvals can be viewed by going to www.floridabuilding.org		
FL Product Approval Number	Metal Products Profile	Type of Metal
FL 13629-R5	UC-3, UC-4, UC-6, UC-7, UC-14, 5-V-Crimp	See specific product approval
FL 13451-R6	CLAD-GARD™ Roof Underlayments	N/A
FL 13684-R3	UNA-Clad Soffit	N/A

State of Florida Product Approvals

Specific Miami-Dade Notice of Acceptance (NOA) can be viewed by going to www.miamidade.gov		
Miami-Dade NOA#	Metal Products Profile	Roof System
16-0307.02	UC-3	Min. 0.032" Aluminum, WD, NI
16-1212.02	UC-3	Min. 0.032" Aluminum, Steel Deck
17-1113.02	UC-3	Min. 16 oz Copper, WD, NI
17-1113.03	UC-3	Min. 24-ga. Steel, WD, NI
16-0307.03	UC-4	Min. 24-ga. Steel, WD, NI
14-0416.03	UC-4	Min. 0.032" Aluminum
17-1030.01	UC-6	Steel, large & small Impact rated
18-0502.01	UC-14	Min. 24-ga. Steel, WD, NI

NOTE:

See specific Miami-Dade NOA for the maximum pressure allowed for all areas of the roof.
Prescriptive enhancements may not be allowed. **WD** = wood deck, 19/32" or greater; **NI** = non-insulated

State of Florida Product Approvals

Specific Texas Department of Insurance Product Evaluations can be viewed by going to www.tdi.texas.gov			
TDI Product Evaluation ID Number	Metal Products Profile	Deck	Type of Metal
RC-490	UC-3	Installed over a Wood Structural Panel Deck	See Listing
RC-491	UC-3	Installed Over an Insulated Steel Deck	See Listing
RC-260	UC-4	Installed Over a Wood Structural Panel Deck	See Listing
RC-492	UC-4	Installed Over an Insulated Steel Deck	See Listing
RC-254	UC-6	Installed Over a Wood Structural Panel Deck	See Listing
RC-255	UC-6	Installed Over an Insulated Steel Deck	See Listing
RC-257	UC-14	Installed Over a Wood Structural Panel Deck	See Listing
RC-258	UC-14	Installed Over an Insulated Steel Deck	See Listing

Solar Reflectance, Thermal Emittance and Solar Reflective Index (SRI) Values

Solar reflectance values are determined by means of a solar spectrum reflectometer in accordance with ASTM C 1549. Thermal emittance values are determined in accordance with ASTM C 1371. SRI is calculated in accordance to ASTM E 1980 with medium wind speed. Laboratory and Exposure site are ISO 17025 Accredited; Laboratory is also EPA Accredited. Panels are unwashed.

Solar Reflectance, Thermal Emittance and Solar Reflective Index (SRI) Values					
PRODUCT TYPE	SUBSTRATE	PRODUCT COLOR	INITIAL SOLAR REFLECTANCE	INITIAL EMISSIVITY	SOLAR REFLECTIVE INDEX (SRI)
FLUROPON	HDG	STONE WHITE SR	0.53	0.86	61
FLUROPON	GALVALUME	STONE WHITE SR	0.57	0.86	67
FLUROPON	ALUMINUM	STONE WHITE SR	0.56	0.86	65
FLUROPON	ALUMINUM	BONE WHITE	0.68	0.85	82
FLUROPON	HDG	BONE WHITE	0.60	0.84	70
FLUROPON	GALVALUME	BONE WHITE	0.64	0.84	76
FLUROPON	HDG	ALMOND SR	0.52	0.86	60
FLUROPON	GALVALUME	ALMOND SR	0.54	0.86	63
FLUROPON	ALUMINUM	ALMOND SR	0.55	0.86	64
FLUROPON	HDG	SANDSTONE SR	0.45	0.85	50
FLUROPON	GALVALUME	SANDSTONE SR	0.48	0.85	54
FLUROPON	ALUMINUM	SANDSTONE SR	0.49	0.85	55
FLUROPON	HDG	SLATE GRAY	0.32	0.84	32
FLUROPON	GALVALUME	SLATE GRAY	0.36	0.84	37
FLUROPON	ALUMINUM	SLATE GRAY	0.37	0.84	39
FLUROPON	HDG	CITYSCAPE SR	0.29	0.85	28
FLUROPON	GALVALUME	CITYSCAPE SR	0.30	0.85	30
FLUROPON	ALUMINUM	CITYSCAPE SR	0.30	0.85	30
FLUROPON	HDG	CHARCOAL GRAY SR	0.25	0.84	23
FLUROPON	GALVALUME	CHARCOAL GRAY SR	0.27	0.84	25
FLUROPON	ALUMINUM	CHARCOAL GRAY SR	0.29	0.84	28
FLUROPON	HDG	SIERRA TAN SR	0.30	0.86	30
FLUROPON	ALUMINUM	SIERRA TAN SR	0.31	0.86	31
FLUROPON	HDG	MED BRONZE SR	0.25	0.83	22
FLUROPON	GALVALUME	MED BRONZE SR	0.25	0.83	22
FLUROPON	ALUMINUM	MED BRONZE SR	0.25	0.83	22

Solar Reflectance, Thermal Emittance and Solae Reflective Index (SRI) Values Continued

PRODUCT TYPE	SUBSTRATE	PRODUCT COLOR	INITIAL SOLAR REFLECTANCE	INITIAL EMISSIVITY	SOLAR REFLECTIVE INDEX (SRI)
FLUROPON	HDG	DARK BRONZE SR	0.24	0.84	21
FLUROPON	GALVALUME	DARK BRONZE SR	0.28	0.84	27
FLUROPON	ALUMINUM	DARK BRONZE SR	0.27	0.84	25
FLUROPON	HDG	MATTE BLACK SR	0.22	0.86	20
FLUROPON	ALUMINUM	MATTE BLACK	0.05	0.90	0
FLUROPON	GALVALUME	MATTE BLACK SR	0.26	0.86	25
FLUROPON	HDG	BRANDYWINE SR	0.28	0.85	27
FLUROPON	GALVALUME	BRANDYWINE SR	0.30	0.85	30
FLUROPON	GALVALUME	COLONIAL RED SR	0.30	0.85	30
FLUROPON	ALUMINUM	COLONIAL RED SR	0.34	0.85	35
FLUROPON	HDG	TERRA COTTA SR	0.30	0.87	31
FLUROPON	GALVALUME	TERRA COTTA SR	0.35	0.87	37
FLUROPON	ALUMINUM	TERRA COTTA SR	0.34	0.87	36
FLUROPON	HDG	MANSARD BROWN SR	0.25	0.83	22
FLUROPON	GALVALUME	MANSARD BROWN SR	0.25	0.83	22
FLUROPON	ALUMINUM	MANSARD BROWN SR	0.25	0.83	22
FLUROPON	HDG	REGAL RED SR	0.34	0.84	35
FLUROPON	GALVALUME	REGAL RED SR	0.37	0.84	39
FLUROPON	ALUMINUM	REGAL RED SR	0.44	0.84	48
FLUROPON	HDG	SKY BLUE SR	0.27	0.85	26
FLUROPON	GALVALUME	SKY BLUE SR	0.28	0.85	27
FLUROPON	ALUMINUM	SKY BLUE SR	0.29	0.85	28
FLUROPON	HDG	PATINA GREEN SR	0.26	0.86	25
FLUROPON	GALVALUME	PATINA GREEN SR	0.29	0.86	29
FLUROPON	ALUMINUM	PATINA GREEN SR	0.35	0.86	37
FLUROPON	HDG	SHERWOOD GREEN SR	0.26	0.85	24
FLUROPON	GALVALUME	SHERWOOD GREEN SR	0.28	0.85	27
FLUROPON	ALUMINUM	SHERWOOD GREEN SR	0.28	0.85	27
FLUROPON	HDG	HEMLOCK GREEN SR	0.30	0.86	30
FLUROPON	GALVALUME	HEMLOCK GREEN SR	0.31	0.86	31
FLUROPON	ALUMINUM	HEMLOCK GREEN SR	0.32	0.86	33

Solar Reflectance, Thermal Emittance and Solar Reflective Index (SRI) Values Continued

PRODUCT TYPE	SUBSTRATE	PRODUCT COLOR	INITIAL SOLAR REFLECTANCE	INITIAL EMISSIVITY	SOLAR REFLECTIVE INDEX (SRI)
FLUROPON	ALUMINUM	TROPICAL GREEN SR	0.25	.85	23
FLUROPON	HDG	SILVER METALLIC SR	0.50	0.77	54
FLUROPON	GALVALUME	SILVER METALLIC SR	0.52	0.77	57
FLUROPON	ALUMINUM	SILVER METALLIC SR	0.54	0.77	60
FLUROPON	HDG	CLASSIC COPPER SR	0.44	0.85	49
FLUROPON	GALVALUME	CLASSIC COPPER SR	0.45	0.85	50
FLUROPON	ALUMINUM	CLASSIC COPPER SR	0.47	0.85	53
FLUROPON	HDG	CHAMPAGNE METALLIC	0.33	0.83	33
FLUROPON	GALVALUME	CHAMPAGNE METALLIC	0.33	0.83	33
FLUROPON	ALUMINUM	CHAMPAGNE METALLIC	0.36	0.83	37
VINTAGE	HDG	VINTAGE	0.30	0.70	22
FLUROPON	HDG	BURNISHED SLATE	0.11	0.84	4
AGED METALLIC	HDG	AGED ZINC	0.45	0.78	47

Air Infiltration & Water Penetration

ASTM E2140 Standard Test Method for Water Penetration of Roof Panel Systems by Static Water Pressure Head:

To pass the requirements of ASTM E2140 for UC-3 and UC-6 Panel Systems the listed enhancement below is required.

Panel Seams: Prior to installing each panel clip, a min. 1/8" continuous bead of Water-Block Seal (S-20) is placed on the horizontal leg of the male rib, extending a min. of 1/2" to either side of the clip. A 1/8" continuous bead of Water-Block Seal (S-20) was placed on the horizontal leg of the female rib, prior to engaging the panels and mechanically seaming.

ASTM E283 and E1680 Air Infiltration Test:

ASTM E283 and E1680 Air Infiltration Test					
PANEL SYSTEM	ASTM E283		ASTM E1680		
	Static Pressure Differential (PSF)	Air Infiltration Rate (CFM/SF)	Preload Pressure (PSF)	Static Pressure Differential (PSF)	Air Infiltration Rate (CFM/SF)
UC-3					
24-ga. Steel & 0.040" Aluminum 17.75" Wide w/o sealant	1.56	0.03			
	6.24	0.05			
24-ga. Steel 20" Wide w/o Sealant	12.0	0.044	15±	-1.57	0.011
				1.57	0.008
				-6.24	0.0138
				6.24	0.0333
24-ga. Steel 18" Wide w/ Sealant			15+/30-	±1.57	0.0015
				±6.24	0.0022
UC-4					
24-ga. Steel & 0.040" Aluminum 17.75" Wide	1.56 (w/o sealant)	0.22			
	6.24 (w/o sealant)	0.52			
	1.56 (w/ sealant)	0.04			
	6.24 (w/ sealant)	0.17			
24-ga. Steel 18" Wide w/ Sealant			15±	-1.57	0.010
				1.57	0.028
				-6.24	0.010
				6.24	0.099
UC-6					
24-ga. Steel 18" Wide w/ Sealant			15+/30-	±1.57	0.0031
				±6.24	0.0091
UC-14					
24-ga. Steel, 18" Wide w/ Sealant			15+/30-	±1.57	0.0017
				±6.24	0.0039
UC-500					
24-ga. Steel and 0.038 Aluminum, 12" wide	1.56 (w/o sealant)	0.07			
	6.24 (w/o sealant)	0.17			
	1.56 (w/ sealant)	0.03			
	6.24 (w/ sealant)	0.11			

ASTM E331 and E1646 Water Penetration Test:

ASTM E283 and E1680 Air Infiltration Test					
PANEL SYSTEM	ASTM E331		ASTM E1646		
	Static Pressure Differential (PSF)	Water Infiltration	Preload Pressure (PSF)	Static Pressure Differential (PSF)	Water Infiltration
UC-3					
24-ga. Steel & 0.040" Aluminum 17.75" Wide w/o Sealant	10.5	None			
24-ga. Steel, 20" Wide w/o Sealant	12.0	None	15±	2.86	None
24-ga. Steel, 18" Wide w/ Sealant			15+/30-	15.0	None
UC-4					
24-ga. Steel & 0.038" Aluminum 17.75" Wide w/o Sealant	10.5	None			
24-ga. Steel 18" Wide w/ Sealant	12.0	None	15±	2.86	None
UC-6					
24-ga. Steel, 16" Wide w/ Sealant			15+/30-	12.0	None
UC-14					
24-ga. Steel, 18" Wide w/ Sealant			15+/30-	12.0	None
UC 500					
24-ga. Steel and 0.038 Aluminum, 12" wide	10.5 sealed	No Entry			
	10.5 unsealed	No Entry			

Structural Performance

ASTM E330 Structural Performance Test:

ASTM E330 Structural Performance Test						
Product Name	Panel width	Material type	Material thickness	Purlin Spacing	Max. Test Uplift Pressure (psf)	Design Uplift pressure (psf)
UC-3	17.75"	Steel	24-ga.	2.0'	-45	
UC-3	17.75"	Aluminum	0.038"	2.0'	-75	
UC-4	17.75"	Aluminum	0.038"	2.0'	-75	
UC-4	17.75"	Steel	24-ga.	2.0'	-105	

ASTM E330 Structural Performance Test Continued

Product Name	Panel width	Material type	Material thickness	Purlin Spacing	Max. Test Uplift Pressure (psf)	Design Uplift pressure (psf)
UC-7	12.0"	Aluminum	0.032"	1.0'	- 104.3	- 41.7
				1.25'		- 39.1
				1.5'		- 36.5
				1.75'		- 33.9
				2.0'	- 78.3	- 31.3
				2.25'		- 28.8
				2.5'		- 26.4
				2.75'		- 23.9
				3.0'	- 53.95	- 21.5
UC-7	12.0"	Aluminum	.040"	1.0'	- 111.1	- 44.4
				1.25'		- 41.1
				1.5'		- 37.8
				1.75'		- 34.5
				2.0'	- 78.3	- 31.3
				2.25'		- 28.8
				2.5'		- 26.4
				2.75'		- 23.9
				3.0'	- 53.9	- 21.5
UC-7	16.0"	Aluminum	0.032"	1.0'	- 72.7	- 29.0
				1.25'		- 27.3
				1.5'		- 25.6
				1.75'		- 23.9
				2.0'	- 55.5	- 22.2
				2.25'		- 20.6
				2.5'		- 19.1
				2.75'		- 17.6
				3.0'	- 40.0	- 16.0
UC-7	16.0"	Aluminum	.040"	1.0'	- 89.0	- 35.6
				1.25'		- 33.2
				1.5'		- 30.9
				1.75'		- 28.6
				2.0'	- 65.8	- 26.3
				2.25'		- 24.3
				2.5'		- 22.3
				2.75'		- 20.3
				3.0'	- 45.75	- 18.3
UC-7	12.0"	Steel	24-ga.	1.0'	- 103.7	- 41.4
				1.25'		- 38.3
				1.5'		- 35.2
				1.75'		- 32.1
				2.0'	- 72.9	- 29.1
				2.25'		- 28.0
				2.5'		- 27.0
				2.75'		- 26.0
				3.0'	- 62.6	- 25.0
				1.0'	- 157.9	- 63.1
				1.25'		- 59.1
				1.5'		- 55.2
				1.75'		- 51.3
				2.0'	- 118.7	- 47.4
				2.25'		- 44.1
				2.5'		- 40.8
				2.75'		- 37.5
				3.0'	- 85.6	- 34.2

ASTM E1592 Structural Performance Test:

ASTM E1592 Structural Performance Test						
Product Name	Panel width	Material type	Material thickness	Purlin Spacing	Max. Test Uplift Pressure (psf)	Design Uplift pressure (psf)
UC-3	14"	16 oz. Copper	UC-3 Stainless-steel Expansion Clip	1.0'	- 100.8	- 61.0
				2.5'		- 51.8
				3.0'		-42.7
				3.5'		- 33.6
				4.0'	- 40.4	- 24.4
UC-3	20"	24-ga. Steel	UC-3 Stainless-steel Expansion Clip	1.0'	-190.0	-95.0
				1.25'		-89.58
				1.5'		-84.17
				1.75'		-78.75
				2.0'		-73.33
				2.25"		-67.92
				2.5'		-62.50
				2.75'		-57.08
				3.0'		-51.67
				3.25'		-46.25
				3.5'		-40.83
				3.75'		-35.42
				4.0'	-60.0	-30.0
UC-3	20"	0.032" Aluminum	UC-3 Stainless-steel Expansion Clip	1.0'	- 150.0	
				4.0'	- 45.0	
UC-4	18"	24-ga. Steel	N/A	1.0'	- 58.5	
				4.0'	- 48.1	
UC-4	18"	0.032" Aluminum	N/A	1.0'	-55.0	
				4.0'	-15.0	
				1.0'	-220.0	-110.0
				1.25'		-104.69
				1.5'		-99.38
				1.75'		-94.06
				2.0'		-88.75
				2.25'		-83.44
				2.5'		-78.13
				2.75'		-72.81
				3.0'		-67.5
				3.25'		-62.19
				3.5'		-56.88
				3.75'		-51.56
				4.0'		-46.25
				4.25'		-40.94
				4.5'		-35.63
				4.75'		-30.31
				5.0'	-50.0	-25.0
				1.0'	-114.9	
5.0'	-49.9					

ASTM E1592 Structural Performance Test Continued

Product Name	Panel width	Material type	Material thickness	Purlin Spacing	Max. Test Uplift Pressure (psf)	Design Uplift pressure (psf)
UC-6	18"	24-ga. Steel	UC-6 Low-Float Clip, Galvanized Steel	1.0'	-220.0	-110.0
				1.25'		-104.69
				1.5'		-99.38
				1.75'		-94.06
				2.0'		-88.75
				2.25'		-83.44
				2.5'		-78.13
				2.75'		-72.81
				3.0'		-67.5
				3.25'		-62.19
				3.5'		-56.88
				3.75'		-51.56
				4.0'		-46.25
				4.25'		-40.94
				4.5'		-35.63
UC-6	16"	0.032" Aluminum	UC-6 Low-Float Clip	1.0'	-114.9	
				5.0'	-50.0	
				5.0'	-49.9	
UC-6	18"	0.032" Aluminum	UC-6 Low Float Clip, Stainless-steel	1.0'	-180.0	-90.0
				1.25'		-85.94
				1.5'		-81.88
				1.75'		-77.81
				2.0'		-73.75
				2.25'		-69.69
				2.5'		-65.63
				2.75'		-61.56
				3.0'		-57.50
				3.25'		-53.44
				3.5'		-49.38
				3.75'		-45.31
				4.0'		-41.25
				4.25'		-37.19
				4.5'		-33.13
4.75'		-29.06				
5.0'		-25.0				
5.0'		-50.0				

ASTM E1592 Structural Performance Test Continued

Product Name	Panel width	Material type	Material thickness	Purlin Spacing	Max. Test Uplift Pressure (psf)	Design Uplift pressure (psf)
UC-14	16"	24-ga. Steel	UC-14 Clip, Galvanized Steel	1.0'	-100.0	-50.00
				1.25'		-47.92
				1.5'		-45.83
				1.75'		-43.75
				2.0'		-41.67
				2.25'		-39.58
				2.5'		-37.50
				2.75'		-35.42
				3.0'		-33.33
				3.25'		-31.25
				3.5'		-29.17
UC-14	18"	24-ga. steel	UC-14 Clip, Galvanized Steel	3.75'	-50.0	-27.08
				4.0'		-25.00
UC-14	18"	24-ga. steel	UC-14 Clip, Galvanized Steel	4.0'	-95.0	
				4.0'		-40.0
UC-14	18"	.032" Aluminum	UC-14 Clip, Stainless-steel	1.0'	-55.0	
				4.0'		-30.0

Factory Mutual (FM) Tested Assemblies

All assemblies listed below must be verified against the actual RoofNav listings found on the Factory Mutual website RoofNav.com. Not all the information that pertains to the listed assemblies below has been included in the charts below. Special notes and/or instructions for the specific assemblies may exist for the listed assembly once viewed in RoofNav. All notes and comments should be reviewed within the listed assembly.

It is the responsibility of the contractor, designer or building owner to verify that the installed assembly meets Red Shield warranty requirements with the associated regions technical team.

NOTE: Some portions of the assembly may need primer. Most self-adhering materials require primer to be used

UNA-CLAD UC-3 Steel Panel Uplift Ratings

Re-Cover:

UC-3 Re-Cover						
System Information	Vapor Retarder	Separator Sheet, Substrate and Attachment	Bearing Plate	Panel Clip and Fastener	Panel Type	RoofNav Number
105 PSF IF: 1 EF: A Slope: 5" Hail: SH Re-Cover Steel: 22-ga. min. 33 ksi	<u>Optional:</u> Polyethylene (6mil)	<u>Required:</u> - ISO 95+GL, .5"-1", 4'x8' boards, ISOGARD HD, .5"-1", DensDeck or Prime 1/4" min.	Yes	<u>Clip:</u> UC-3 Stainless Expansion Clip, 12" oc w/ 20" max. panel <u>Fastener:</u> UNA-CLAD #12 w/ nylon washer – 2 per clip	<u>Panel Type:</u> UC-3 Steel Width: 12" - 20" Thickness: 0.0239" – 0.0299"	259348-0-0

UC-3 Re-Cover Continued

System Information	Vapor Retarder	Separator Sheet, Substrate and Attachment	Bearing Plate	Panel Clip and Fastener	Panel Type	RoofNav Number
105 PSF IF: 1 EF: A Slope: 5" Hail: SH Re-Cover Steel: 22-ga. min. 33 ksi	<u>Optional:</u> Polyethylene (6mil)	<u>Required:</u> APA Rated OSB, 7/16"-1/2" thickness, 24 HD ISOGARD HG Fasteners per 4'x8' board. <u>Optional:</u> ISO 95+GL, .5"-1", 4'x8' boards, ISOGARD HD, .5"-1", DensDeck or Prime 1/4" min.	No	<u>Clip:</u> UC-3 Stainless Expansion Clip, 12" oc w/ 20" max. panel <u>Fastener:</u> UNA-CLAD #10 (Stainless or E-Coated) – 2 per clip	<u>Panel Type:</u> UC-3 Steel Width: 12" - 20" Thickness: 0.0239" – 0.0299"	259349-0-0
105 PSF IF: 1 EF: A Slope: 5" Hail: SH Re-Cover Steel: 22-ga. min. 33 ksi	<u>Optional:</u> Polyethylene (6mil)	<u>Optional:</u> Separator Sheet – CLAD-GARD SA. <u>Required:</u> ISO 95+GL, .5"-1", 4'x8' boards, ISOGARD HD, .5"-1", DensDeck or Prime 1/4" min.	Yes	<u>Clip:</u> UC-3 Stainless Expansion Clip, 12" oc w/ 20" max. panel <u>Fastener:</u> UNA-CLAD #12 w/ nylon washer – 2 per clip	<u>Panel Type:</u> UC-3 Steel Width: 12" - 20" Thickness: 0.0239" – 0.0299"	301645-0-0
105 PSF IF: 1 EF: A Slope: 5" Hail: SH Re-Cover Steel: 22-ga. min. 33 ksi	<u>Optional:</u> Polyethylene (6mil)	<u>Optional:</u> Separator Sheet – CLAD-GARD SA. <u>Required:</u> APA Rated OSB, 7/16"-1/2" thickness, 24 HD ISOGARD HG Fasteners per 4'x8' board. <u>Optional:</u> ISO 95+GL, .5"-1", 4'x8' boards, ISOGARD HD, .5"-1", DensDeck or Prime 1/4" min.	No	<u>Clip:</u> UC-3 Stainless Expansion Clip, 12" oc w/ 20" max. panel <u>Fastener:</u> UNA-CLAD #10 (Stainless or E-Coated) – 2 per clip	<u>Panel Type:</u> UC-3 Steel Width: 12" - 20" Thickness: 0.0239" – 0.0299"	301646-0-0
120 PSF IF: 1 EF: A Slope: 5" Hail: SH Re-Cover Steel: 22-ga. min. 33 ksi	<u>Optional:</u> Polyethylene (6mil)	<u>Optional:</u> Separator Sheet – CLAD-GARD SA. <u>Required:</u> APA Rated OSB, 7/16"-1/2" thickness, 16 All-Purpose Fasteners per 4'x8' board. <u>Optional:</u> ISO 95+GL, .5"-1", 4'x8' boards, ISOGARD HD, .5"-1", DensDeck or Prime 1/4" min.	No	<u>Clip:</u> UC-3 Stainless Expansion Clip, 12" oc w/ 20" max. panel <u>Fastener:</u> UNA-CLAD #10 (Stainless or E-Coated) – 2 per clip	<u>Panel Type:</u> UC-3 Steel Width: 12" - 20" Thickness: 0.0239" – 0.0299"	301642-0-0
120 PSF IF: 1 EF: A Slope: 5" Hail: SH Re-Cover Steel: 22-ga. min. 33 ksi	<u>Optional:</u> Polyethylene (6mil)	<u>Required:</u> APA Rated OSB, 7/16"-1/2" thickness, 16 All-Purpose Fasteners per 4'x8' board. <u>Optional:</u> ISO 95+GL, .5"-1", 4'x8' boards, ISOGARD HD, .5"-1", DensDeck or Prime 1/4" min.	No	<u>Clip:</u> UC-3 Stainless Expansion Clip, 12" oc w/ 20" max. panel <u>Fastener:</u> UNA-CLAD #10 (Stainless or E-Coated) – 2 per clip	<u>Panel Type:</u> UC-3 Steel Width: 12" - 20" Thickness: 0.0239" – 0.0299"	259347-0-0

UNA-CLAD UC-3 Steel Panel Uplift Ratings

New Roof:

UC-3 Steel New Roof						
System Information	Vapor Retarder	Separator Sheet, Substrate and Attachment	Bearing Plate	Panel Clip and Fastener	Panel Type	RoofNav Number
105 PSF IF: 1 EF: A Slope: 5" Hail: SH New Roof Steel - WR 22-18 ga 72" Span 33 ksi	<u>Optional:</u> Polyethylene (6 mil)	<u>Required:</u> ISO 95+GL, 1.5"-12", 4'x8' boards, ISOGARD HD, .5"-1", DensDeck or Prime ¼" min.	Yes	<u>Clip:</u> UC-3 Stainless Expansion Clip, 12" oc w/ 20" max. panel <u>Fastener:</u> UNA-CLAD #12 w/ nylon washer – 2 per clip	<u>Panel Type:</u> UC-3 Steel Width: 12" - 20" Thickness: 0.0239" – 0.0299"	259335-0-0
105 PSF IF: 1 EF: A Slope: 5" Hail: SH New Roof Steel - WR 22-18 ga 72" Span 33 ksi	<u>Optional:</u> Polyethylene (6 mil)	<u>Required:</u> APA Rated OSB, 7/16"-1/2" thickness, ISOGARD HG, 1.5"-4" 4'x8' boards. 24 HD ISOGARD HG Fasteners per 4'x8' board. <u>Optional:</u> ISO 95+GL, 1.5"-12", 4'x8' boards, ISOGARD HD, .5"- 1", DensDeck or Prime ¼"	No	<u>Clip:</u> UC-3 Stainless Expansion Clip, 12" oc w/ 20" max. panel <u>Fastener:</u> UNA-CLAD #10 (Stainless or E- Coated) – 2 per clip	<u>Panel Type:</u> UC-3 Steel Width: 12" - 20" Thickness: 0.0239" – 0.0299"	259336-0-0
105 PSF IF: 1 EF: A Slope: 5" Hail: SH New Roof Steel - WR 22-18 ga 72" Span 33 ksi	<u>Optional:</u> Polyethylene (6 mil)	<u>Required:</u> ISOGARD HG, 1.5"-4" 4'x8' boards. 24 HD ISOGARD HG Fasteners per 4'x8' board.	No	<u>Clip:</u> UC-3 Stainless Expansion Clip, 12" oc w/ 20" max. panel <u>Fastener:</u> UNA-CLAD #10 (Stainless or E- Coated) – 2 per clip	<u>Panel Type:</u> UC-3 Steel Width: 12" - 20" Thickness: 0.0239" – 0.0299"	259337-0-0
105 PSF IF: 1 EF: A Slope: 5" Hail: SH New Roof Steel - WR 22-18 ga 72" Span 33 ksi	<u>Optional:</u> Polyethylene (6 mil)	<u>Optional:</u> Separator Sheet – CLAD-GARD SA. <u>Required:</u> ISO 95+GL, 1.5"-12", 4'x8' boards, ISOGARD HD, .5"-1", DensDeck or Prime ¼"	Yes	<u>Clip:</u> UC-3 Stainless Expansion Clip, 12" oc w/ 20" max. panel <u>Fastener:</u> UNA-CLAD #12 w/ nylon washer – 2 per clip	<u>Panel Type:</u> UC-3 Steel Width: 12" - 20" Thickness: 0.0239" – 0.0299"	301628-0-0
105 PSF IF: 1 EF: A Slope: 5" Hail: SH New Roof Steel - WR 22-18 ga 72" Span 33 ksi	<u>Optional:</u> Polyethylene (6 mil)	<u>Optional:</u> Separator Sheet – CLAD-GARD SA. <u>Required:</u> APA Rated OSB, 7/16"-1/2" thickness, ISOGARD HG, 1.5"-4" 4'x8' boards 24 HD ISOGARD HG Fasteners per 4'x8'board. <u>Optional:</u> ISO 95+GL, 1.5"-12", 4'x8' boards, ISOGARD HD, .5"- 1", DensDeck or Prime ¼"	No	<u>Clip:</u> UC-3 Stainless Expansion Clip, 12" oc w/ 20" max. panel <u>Fastener:</u> UNA-CLAD #10 (Stainless or E- Coated) – 2 per clip	<u>Panel Type:</u> UC-3 Steel Width: 12" - 20" Thickness: 0.0239" – 0.0299"	301631-0-0
105 PSF IF: 1 EF: A Slope: 5" Hail: SH New Roof Steel - WR 22-18 ga 72" Span 33 ksi	<u>Optional:</u> Polyethylene (6 mil)	<u>Optional:</u> Separator Sheet – CLAD-GARD SA. <u>Required:</u> ISOGARD HG, 1.5"-4" 4'x8' boards 24 HD ISOGARD HG Fasteners per 4'x8' board.	No	<u>Clip:</u> UC-3 Stainless Expansion Clip, 12" oc w/ 20" max. panel <u>Fastener:</u> UNA-CLAD #10 (Stainless or E- Coated) – 2 per clip	<u>Panel Type:</u> UC-3 Steel Width: 12" - 20" Thickness: 0.0239" – 0.0299"	301634-0-0

UC-3 Steel New Roof Continued

System Information	Vapor Retarder	Separator Sheet, Substrate and Attachment	Bearing Plate	Panel Clip and Fastener	Panel Type	RoofNav Number
120 PSF IF: 1 EF: A Slope: 5" Hail: SH New Roof Steel - WR 22-18 ga 72" Span 33 ksi	<u>Optional:</u> Polyethylene (6 mil)	<u>Required:</u> APA Rated OSB, 7/16"-1/2" thickness, ISOGARD HG, 1.5"- 4"x8' boards. 16 All-Purpose Fasteners per 4'x8' board. <u>Optional:</u> ISO 95+GL, 1.5"-12", 4'x8' boards, ISOGARD HD, .5"-1", DensDeck or Prime 1/4"	No	<u>Clip:</u> UC-3 Stainless Expansion Clip, 12" oc w/ 20" max. panel <u>Fastener:</u> UNA-CLAD #10 (Stainless or E- Coated) – 2 per clip	<u>Panel Type:</u> UC-3 Steel Width: 12" - 20" Thickness: 0.0239" – 0.0299"	259059-0-0
120 PSF IF: 1 EF: A Slope: 5" Hail: SH New Roof Steel - WR 22-18 ga 72" Span 33 ksi	<u>Optional:</u> Polyethylene (6 mil)	<u>Required:</u> ISOGARD HG, 1.5"-4" 4'x8' boards, 16 All-Purpose Fasteners per 4'x8' board.	No	<u>Clip:</u> UC-3 Stainless Expansion Clip, 12" oc w/ 20" max. panel <u>Fastener:</u> UNA-CLAD #10 (Stainless or E- Coated) – 2 per clip	<u>Panel Type:</u> UC-3 Steel Width: 12" - 20" Thickness: 0.0239" – 0.0299"	259334-0-0
120 PSF IF: 1 EF: A Slope: 5" Hail: SH New Roof Steel - WR 22-18 ga 72" Span 33 ksi	<u>Optional:</u> Polyethylene (6 mil)	<u>Optional:</u> Separator Sheet – CLAD-GARD SA. <u>Required:</u> APA Rated OSB, 7/16"-1/2" thickness, ISOGARD HG, 1.5"-4" 4'x8' boards. 16 All- Purpose Fasteners per 4'x8' board. <u>Optional:</u> ISO 95+GL, 1.5"- 12", 4'x8' boards, ISOGARD HD, .5"-1", DensDeck or Prime 1/4"	No	<u>Clip:</u> UC-3 Stainless Expansion Clip, 12" oc w/ 20" max. panel <u>Fastener:</u> UNA-CLAD #10 (Stainless or E- Coated) – 2 per clip	<u>Panel Type:</u> UC-3 Steel Width: 12" - 20" Thickness: 0.0239" – 0.0299"	301583-0-0
120 PSF IF: 1 EF: A Slope: 5" Hail: SH New Roof Steel - WR 22-18 ga 72" Span 33 ksi	<u>Optional:</u> Polyethylene (6 mil)	<u>Optional:</u> Separator Sheet – CLAD-GARD SA. <u>Required:</u> ISOGARD HG, 1.5"-4" 4'x8' boards, 16 All-Purpose Fasteners per 4'x8' board.	No	<u>Clip:</u> UC-3 Stainless Expansion Clip, 12" oc w/ 20" max. panel <u>Fastener:</u> UNA-CLAD #10 (Stainless or E- Coated) – 2 per clip	<u>Panel Type:</u> UC-3 Steel Width: 12" - 20" Thickness: 0.0239" – 0.0299"	301625-0-0

UNA-CLAD UC-3 Aluminum Panel Uplift Ratings

New Roof:

UC-3 Aluminum New Roof						
System Information	Vapor Retarder	Separator Sheet, Substrate and Attachment	Bearing Plate	Panel Clip and Fastener	Panel Type	RoofNav Number
120 PSF IF: 1 EF: A Slope: 5" Hail: SH New Roof Steel - WR 22-18 ga. 72" Span 33 ksi	<u>Optional:</u> Polyethylene (6 mil)	<u>Required:</u> APA Rated OSB, 7/16"-1/2" thickness, 16 HD ISOGARD HG Fasteners per 4'x8' board <u>Required:</u> ISO 95+GL, ISOGARD HD Comp., or ISOGARD CG, 1.5"- 12", 4'x8' boards	No	<u>Clip:</u> UC-3 Stainless Expansion Clip, 12" oc w/ 16" max. panel <u>Fastener:</u> UNA-CLAD #10 (Stainless) – 2 per clip	<u>Panel Type:</u> UC-3 Aluminum Width: 8" - 16" Thickness: 0.0320" – 0.04"	341935-0-0

UNA-CLAD UC-4 Steel Panel Uplift Ratings

Re-Cover:

UC-4 Steel Re-Cover						
System Information	Vapor Retarder	Separator Sheet, Substrate and Attachment	Bearing Plate	Panel Clip and Fastener	Panel Type	RoofNav Number
105 PSF IF: 1 EF: A Slope: 5" Hail: SH Re-Cover Steel 33 ksi	<u>Optional:</u> Polyethylene (6 mil)	<u>Required:</u> APA Rated OSB, 7/16"-1/2" thickness, 16 All-Purpose Fasteners per 4'x8' board <u>Optional:</u> ISO 95+GL, .5"-.5", 4'x8' boards, ISOGARD HD, .5"-1", DensDeck or Prime 1/4" min.	No	<u>Fastener:</u> UNA-CLAD #10 (Stainless or E- Coated) – 12" oc, 9.75" row spacing, 1" min. and 1.5" max. length	<u>Panel Type:</u> UC-4 Steel Width: 9.75" Thickness: 0.0239" – 0.0299"	259351-0-0
105 PSF IF: 1 EF: A Slope: 5" Hail: SH Re-Cover Steel 33 ksi	<u>Optional:</u> Polyethylene (6 mil)	<u>Optional:</u> Separator Sheet – CLAD-GARD SA. <u>Required:</u> APA Rated OSB, 7/16"-1/2" thickness, 16 All- Purpose Fasteners per 4'x8' board. <u>Optional:</u> ISO 95+GL, .5"-.5", 4'x8' boards, ISOGARD HD, .5"- 1", DensDeck or Prime 1/4" min.	No	<u>Fastener:</u> UNA-CLAD #10 (Stainless or E- Coated) – 12" oc, 9.75" row spacing, 1" min. and 1.5" max. length	<u>Panel Type:</u> UC-4 Steel Width: 9.75" Thickness: 0.0239" – 0.0299"	301654-0-0
165 PSF IF: 1 EF: A Slope: 5" Hail: SH Re-Cover Steel 33 ksi	<u>Optional:</u> Polyethylene (6 mil)	<u>Optional:</u> Separator Sheet –CLAD-GARD SA. <u>Required:</u> ISO 95+GL, .5"-1", 4'x8' boards, ISOGARD HD, .5"-1", DensDeck or Prime 1/4" min.	Yes	<u>Fastener:</u> UNA-CLAD #12 (Stainless or Steel) w/ nylon washer – 12" oc, 9.75" row spacing, 1" min. and 1.5" max. length. 2 per plate *See Comment under Securement in RoofNav.	<u>Panel Type:</u> UC-4 Steel Width: 9.75" Thickness: 0.0239" – 0.0299"	301649-0-0
165 PSF IF: 1 EF: A Slope: 5" Hail: SH Re-Cover Steel 33 ksi	<u>Optional:</u> Polyethylene (6 mil)	<u>Required:</u> ISO 95+GL, .5"-1", 4'x8'boards, ISOGARD HD, .5"-1", DensDeck or Prime 1/4" min.	Yes	<u>Fastener:</u> UNA-CLAD #12 (Stainless or Steel) w/ nylon washer – 12" oc, 9.75" row spacing, 1" min. and 1.5" max. length. 2 per plate *See Comment under Securement in RoofNav.	<u>Panel Type:</u> UC-4 Steel Width: 9.75" Thickness: 0.0239" – 0.0299"	259350-0-0

UNA-CLAD UC-4 Steel Panel Uplift Ratings

New Roof:

UC-4 Steel New Roof						
System Information	Vapor Retarder	Separator Sheet, Substrate and Attachment	Bearing Plate	Panel Clip and Fastener	Panel Type	RoofNav Number
105 PSF IF: 1 EF: A Slope: 5" Hail: SH New Roof Steel - WR 22-18 ga 72" Span 33 ksi	<u>Optional:</u> Polyethylene (6 mil)	<u>Required:</u> APA Rated OSB, 7/16"-1/2" thickness, ISOGARD HG, 1.5"-4" 4'x8' boards. 16 All-Purpose Fasteners per 4'x8' board <u>Optional:</u> ISO 95+GL, 1"-12", 4'x8' boards, ISOGARD HD, .5"-1", DensDeck or Prime 1/4" min.	No	<u>Fastener:</u> UNA-CLAD #10 (Stainless or E- Coated) – 12" oc, 9.75" row spacing, 1" min. and 1.5" max. length	<u>Panel Type:</u> UC-4 Steel Width: 9.75" Thickness: 0.0239" – 0.0299"	259338-0-0
105 PSF IF: 1 EF: A Slope: 5" Hail: SH New Roof Steel - WR 22-18 ga 72" Span 33 ksi	<u>Optional:</u> Polyethylene (6 mil)	<u>Optional:</u> Separator Sheet – CLAD-GARD SA <u>Required:</u> APA Rated OSB, 7/16"-1/2" thickness, ISOGARD HG, 1.5"-4" 4'x8' boards. 16 All- Purpose Fasteners per 4'x8' board <u>Optional:</u> ISO 95+GL, 1"- 12", 4'x8' boards, ISOGARD HD, .5"-1", DensDeck or Prime 1/4" min.	No	<u>Fastener:</u> UNA-CLAD #10 (Stainless or E- Coated) – 12" oc, 9.75" row spacing, 1" min. and 1.5" max. length	<u>Panel Type:</u> UC-4 Steel Width: 9.75" Thickness: 0.0239" – 0.0299"	301637-0-0
120 PSF IF: 1 EF: A Slope: 5" Hail: SH New Roof Steel - WR 22-18 ga 72" Span 33 ksi	<u>Optional:</u> Polyethylene (6 mil)	<u>Required:</u> ISOGARD HG, 1.5"-4" thickness. 16 All-Purpose Fasteners per 4'x8' board	No	<u>Fastener:</u> UNA-CLAD #10 (Stainless or E- Coated) – 12" oc, 9.75" row spacing, 1" min. and 1.5" max. length	<u>Panel Type:</u> UC-4 Steel Width: 9.75" Thickness: 0.0239" – 0.0299"	259340-0-0
120 PSF IF: 1 EF: A Slope: 5" Hail: SH New Roof Steel - WR 22-18 ga 72" Span 33 ksi	<u>Optional:</u> Polyethylene (6 mil)	<u>Optional:</u> Separator Sheet – CLAD-GARD SA. <u>Required:</u> ISOGARD HG, 1.5"-4" thickness. 16 All-Purpose Fasteners per 4'x8' board	No	<u>Fastener:</u> UNA-CLAD #10 (Stainless or E- Coated) – 12" oc, 9.75" row spacing, 1" min. and 1.5" max. length	<u>Panel Type:</u> UC-4 Steel Width: 9.75" Thickness: 0.0239" – 0.0299"	301640-0-0
165 PSF IF: 1 EF: A Slope: 5" Hail: SH New Roof Steel - WR 22-18 ga 72" Span 33 ksi	<u>Optional:</u> Polyethylene (6 mil)	<u>Required:</u> ISO 95+GL, 1"-4", 4'x8' boards, ISOGARD HD, .5"-1", DensDeck or Prime 1/4" min.	Yes	<u>Fastener:</u> UNA-CLAD #12 (Stainless or Steel) w/ nylon washer – 12" oc, 9.75" row spacing, 2 per plate *See Comment under Securement in RoofNav.	<u>Panel Type:</u> UC-4 Steel Width: 9.75" Thickness: 0.0239" – 0.0299"	259060-0-0
165 PSF IF: 1 EF: A Slope: 5" Hail: SH New Roof Steel - WR 22-18 ga 72" Span 33 ksi	<u>Optional:</u> Polyethylene (6 mil)	<u>Optional:</u> Separator Sheet –CLAD-GARD SA. <u>Required:</u> ISO 95+GL, 1"-4", 4'x8' boards, ISOGARD HD, .5"-1", DensDeck or Prime 1/4" min.	Yes	<u>Fastener:</u> UNA-CLAD #12 (Stainless or Steel) w/ nylon washer – 12" oc, 9.75" row spacing, 2 per plate. *See Comment under Securement in RoofNav.	<u>Panel Type:</u> UC-4 Steel Width: 9.75" Thickness: 0.0239" – 0.0299"	301595-0-0

UNA-CLAD UC-6 Steel Panel Uplift Ratings

Re-Cover:

UC-6 Steel Re-Cover						
System Information	Vapor Retarder	Separator Sheet, Substrate and Attachment	Bearing Plate	Panel Clip and Fastener	Panel Type	RoofNav Number
90 PSF IF: 1 EF: A Slope: 5" Hail: SH Re-Cover Steel 36 ksi	<u>Optional:</u> Polyethylene (6 mil)	<u>Optional:</u> Separator Sheet – CLAD-GARD SA <u>Required:</u> APA Rated OSB, 7/16"-1/2" thickness, 16 All-Purpose Fasteners per 4'x8' board <u>Optional:</u> ISO 95+GL, .5"-.5", 4'x8' boards, ISOGARD HD, .5"-1", DensDeck or Prime 1/4" min.	No	<u>Fastener:</u> UNA-CLAD #10 (Stainless or E-Coated) – 12" oc, 18" row spacing, 2 per clip <u>Clip:</u> UC-6 Super Clips (Galvanized or Stainless-steel)	<u>Panel Type:</u> UC-6 Steel Width: 12" - 18" Thickness: 0.0239" – 0.0299"	259407-0-0
90 PSF IF: 1 EF: A Slope: 5" Hail: SH Re-Cover Steel 36 ksi	<u>Optional:</u> Polyethylene (6 mil)	<u>Optional:</u> Separator Sheet – CLAD-GARD SA <u>Required:</u> APA Rated OSB, 7/16"-1/2" thickness, 16 All-Purpose Fasteners per 4'x8' board <u>Optional:</u> ISO 95+GL, .5"-.5", 4'x8' boards, ISOGARD HD, .5"-1", DensDeck or Prime 1/4" min.	No	<u>Fastener:</u> UNA-CLAD #10 (Stainless or E-Coated) – 12" oc, 18" row spacing, 2 per clip <u>Clip:</u> UC-6 Super Clips (Galvanized or Stainless-steel)	<u>Panel Type:</u> UC-6 Steel Width: 12" - 18" Thickness: 0.0239" – 0.0299"	301686-0-0
105 PSF IF: 1 EF: A Slope: 5" Hail: SH Re-Cover Steel 36 ksi	<u>Optional:</u> Polyethylene (6 mil)	<u>Optional:</u> Separator Sheet – CLAD-GARD SA <u>Required:</u> APA Rated OSB, 7/16"-1/2" thickness. 24 HD ISOGARD HG Fasteners per 4'x8' board. <u>Optional:</u> ISO 95+GL, .5"-.5", 4'x8' boards, ISOGARD HD, .5"-1", DensDeck or Prime 1/4" min.	No	<u>Fastener:</u> UNA-CLAD #10 (Stainless or E-Coated) – 12" oc, 18" row spacing, 2 per clip <u>Clip:</u> UC-6 Low Float Clips (Galvanized or Stainless-steel)	<u>Panel Type:</u> UC-6 Steel Width: 12" - 18" Thickness: 0.0239" – 0.0299"	259394-0-0
105 PSF IF: 1 EF: A Slope: 5" Hail: SH Re-Cover Steel 36 ksi	<u>Optional:</u> Polyethylene (6 mil)	<u>Optional:</u> Separator Sheet – CLAD-GARD SA <u>Required:</u> APA Rated OSB, 7/16"-1/2" thickness, 24 HD ISOGARD HG Fasteners per 4'x8' board. <u>Optional:</u> ISO 95+GL, .5"-.5", 4'x8' boards, ISOGARD HD, .5"-1", DensDeck or Prime 1/4" min.	No	<u>Fastener:</u> UNA-CLAD #10 (Stainless or E-Coated) – 12" oc, 18" row spacing, 2 per clip <u>Clip:</u> UC-6 Low Float Clips (Galvanized or Stainless-steel)	<u>Panel Type:</u> UC-6 Steel Width: 12" - 18" Thickness: 0.0239" – 0.0299"	301677-0-0
135 PSF IF: 1 EF: A Slope: 5" Hail: SH Re-Cover Steel, 36 ksi	<u>Optional:</u> Polyethylene (6 mil)	<u>Required:</u> ISO 95+GL, .5"-.5", 4'x8' boards, ISOGARD HD .5"-1", DensDeck or Prime 1/4" min.	Yes	<u>Fastener:</u> UNA-CLAD #10 (Stainless or E-Coated) – 12" oc, 18" row spacing, 2 per clip w/ optional nylon washer <u>Clip:</u> UC-6 Super Clips (Galvanized or Stainless-steel)	<u>Panel Type:</u> UC-6 Steel Width: 12" - 18" Thickness: 0.0239" – 0.0299"	259406-0-0
135 PSF IF: 1 EF: A Slope: 5" Hail: SH Re-Cover Steel, 36 ksi	<u>Optional:</u> Polyethylene (6 mil)	<u>Optional:</u> Separator Sheet – CLAD-GARD SA <u>Required:</u> ISO 95+GL, .5"-.1", 4'x8' boards, ISOGARD HD, .5"-1", DensDeck or Prime 1/4" min.	Yes	<u>Fastener:</u> UNA-CLAD #10 (Stainless or E-Coated) – 12" oc, 18" row spacing, 2 per clip w/ optional nylon washer <u>Clip:</u> UC-6 Super Clips (Galvanized or Stainless-steel)	<u>Panel Type:</u> UC-6 Steel Width: 12" - 18" Thickness: 0.0239" – 0.0299"	301678-0-0

UNA-CLAD UC-6 Steel Panel Uplift Ratings

New Roof:

UC-6 Steel New Roof						
System Information	Vapor Retarder	Separator Sheet, Substrate and Attachment	Bearing Plate	Panel Clip and Fastener	Panel Type	RoofNav Number
90 PSF IF: 1 EF: A Slope: 5" Hail: SH New Roof Steel 22-16 ga 72" Span 33 ksi	<u>Optional:</u> Polyethylene (6 mil)	<u>Optional:</u> Separator Sheet – CLAD-GARD SA <u>Required:</u> APA Rated OSB, 7/16"-1/2" thickness, ISOGARD HG, 1.5"-4" 4'x8' boards. 16 All-Purpose Fasteners per 4'x8' board. <u>Optional:</u> ISO 95+GL, 1"-12", 4'x8' boards, ISOGARD HD, .5"-1", DensDeck or Prime 1/4" min.	No	<u>Fastener:</u> UNA-CLAD #10 (Stainless or E-Coated) – 12" oc, 18" row spacing, 2 per clip <u>Clip:</u> UC-6 Super Clips (Galvanized or Stainless-steel)	<u>Panel Type:</u> UC-6 Steel Width: 12" - 18" Thickness: 0.0239" – 0.0299"	259360-0-0
105 PSF IF: 1 EF: A Slope: 5" Hail: SH New Roof Steel – WR, 22-18 ga 72" Span, 33 ksi	<u>Optional:</u> Polyethylene (6 mil)	<u>Optional:</u> Separator Sheet – CLAD-GARD SA <u>Required:</u> e ISOGARD HG, 1.5"-4" thickness. 24 HD ISOGARD HG Fasteners per 4'x8' board. <u>Optional:</u> ISO 95+GL, 1"-12", 4'x8' boards, ISOGARD HD, .5"-1", DensDeck or Prime 1/4" min.	No	<u>Fastener:</u> UNA-CLAD #10 (Stainless or E-Coated) – 12" oc, 18" row spacing, 2 per clip <u>Clip:</u> UC-6 Low Float Clips (Galvanized or Stainless-steel),	<u>Panel Type:</u> UC-6 Steel Width: 12" - 18" Thickness: 0.0239" – 0.0299"	259361-0-0
105 PSF IF: 1 EF: A Slope: 5" Hail: SH New Roof Steel – WR, 22-18 ga 72" Span 33 ksi	<u>Optional:</u> Polyethylene (6 mil)	<u>Optional:</u> Separator Sheet – CLAD-GARD SA <u>Required:</u> APA Rated OSB, 7/16"-1/2" thickness, ISOGARD HG, 1.5"-4" 4'x8' boards. 24 HD ISOGARD HG Fasteners per 4'x8' board <u>Optional:</u> ISO 95+GL, 1"-12", 4'x8' boards, ISOGARD HD, .5"-1", DensDeck or Prime 1/4" min.	No	<u>Fastener:</u> UNA-CLAD #10 (Stainless or E-Coated) – 12" oc, 18" row spacing, 2 per clip <u>Clip:</u> UC-6 Low Float Clips (Galvanized or Stainless-steel)	<u>Panel Type:</u> UC-6 Steel Width: 12" - 18" Thickness: 0.0239" – 0.0299"	259358-0-0
105 PSF IF: 1 EF: A Slope: 5" Hail: SH New Roof Steel – WR, 22-18 ga 72" Span 33 ksi	<u>Optional:</u> Polyethylene (6 mil)	<u>Optional:</u> Separator Sheet – CLAD-GARD SA <u>Required:</u> APA Rated OSB, 7/16"-1/2" thickness, ISOGARD HG, 1.5"-4" 4'x8' boards. 24 HD ISOGARD HG Fasteners per 4'x8' board <u>Optional:</u> ISO 95+GL, 1"-12", 4'x8' boards, ISOGARD HD, .5"-1", DensDeck or Prime 1/4" min.	No	<u>Fastener:</u> UNA-CLAD #10 (Stainless or E-Coated) – 12" oc, 18" row spacing, 2 per clip <u>Clip:</u> UC-6 Low Float Clips (Galvanized or Stainless-steel)	<u>Panel Type:</u> UC-6 Steel Width: 12" - 18" Thickness: 0.0239" – 0.0299"	301664-0-0
105 PSF IF: 1 EF: A Slope: 5" Hail: SH New Roof Steel – WR, 22-18 ga 72" Span, 33 ksi	<u>Optional:</u> Polyethylene (6 mil)	<u>Optional:</u> Separator Sheet –CLAD-GARD SA <u>Required:</u> ISOGARD HG, 1.5"-4" thickness. 24 HD ISOGARD HG Fasteners per 4'x8' board	No	<u>Fastener:</u> UNA-CLAD #10 (Stainless or E-Coated) – 12" oc, 18" row spacing, 2 per clip <u>Clip:</u> UC-6 Low Float Clips (Galvanized or Stainless-steel)	<u>Panel Type:</u> UC-6 Steel Width: 12" - 18" Thickness: 0.0239" – 0.0299"	301669-0-0
120 PSF IF: 1 EF: A Slope: 5" Hail: SH New Roof Steel – WR, 22-18 ga 72" Span, 33 ksi	<u>Optional:</u> Polyethylene (6 mil)	<u>Optional:</u> Separator Sheet –CLAD-GARD SA <u>Required:</u> ISOGARD HG, 1.5"-4" thickness. 16 All-Purpose Fasteners per 4'x8' board	No	<u>Fastener:</u> UNA-CLAD #10 (Stainless or E-Coated) – 12" oc, 18" row spacing, 2 per clip <u>Clip:</u> UC-6 Super Clips (Galvanized or Stainless-steel)	<u>Panel Type:</u> UC-6 Steel Width: 12" - 18" Thickness: 0.0239" – 0.0299"	259362-0-0

UC-6 Steel New Roof Continued

System Information	Vapor Retarder	Separator Sheet, Substrate and Attachment	Bearing Plate	Panel Clip and Fastener	Panel Type	RoofNav Number
120 PSF IF: 1 EF: A Slope: 5" Hail: SH New Roof Steel – WR, 22-18 ga 72" Span, 33 ksi	<u>Optional:</u> Polyethylene (6 mil)	<u>Optional:</u> Separator Sheet –CLAD-GARD SA <u>Required:</u> ISOGARD HG, 1.5"-4" thickness. 16 All-Purpose Fasteners per 4'x8' board	No	<u>Fastener:</u> UNA-CLAD #10 (Stainless or E-Coated) – 12" oc, 18" row spacing, 2 per clip <u>Clip:</u> UC-6 Super Clips (Galvanized or Stainless-steel)	<u>Panel Type:</u> UC-6 Steel Width: 12" - 18" Thickness: 0.0239" – 0.0299"	301671-0-0
135 PSF IF: 1 EF: A Slope: 5" Hail: SH New Roof Steel – WR, 22-18 ga 72" Span, 33 ksi	<u>Optional:</u> Polyethylene (6 mil)	<u>Required:</u> ISO 95+GL, 1"-12", 4'x8' boards, ISOGARD HD, .5"-1", DensDeck or Prime ¼" min.	Yes	<u>Fastener:</u> UNA-CLAD #10 (Stainless or E-Coated) – 12" oc, 18" row spacing, 2 per clip w/ optional nylon washers <u>Clip:</u> UC-6 Super Clips (Galvanized or Stainless-steel)	<u>Panel Type:</u> UC-6 Steel Width: 12" - 18" Thickness: 0.0239" – 0.0299"	259359-0-0
135 PSF IF: 1 EF: A Slope: 5" Hail: SH New Roof Steel – WR, 22-18 ga 72" Span, 33 ksi	<u>Optional:</u> Polyethylene (6 mil)	<u>Optional:</u> Separator Sheet –CLAD-GARD SA <u>Required:</u> F ISO 95+GL, 1"-12", 4'x8' boards, ISOGARD HD, .5"-1", DensDeck or Prime ¼" min.	Yes	<u>Fastener:</u> UNA-CLAD #10 (Stainless or E-Coated) – 12" oc, 18" row spacing, 2 per clip w/ optional nylon washers <u>Clip:</u> UC-6 Super Clips (Galvanized or Stainless-steel)	<u>Panel Type:</u> UC-6 Steel Width: 12" - 18" Thickness: 0.0239" – 0.0299"	301666-0-0

UNA-CLAD UC-6 Aluminum Panel Uplift Ratings

New Roof:

UC-6 Aluminum New Roof Continued

System Information	Vapor Retarder	Separator Sheet, Substrate and Attachment	Bearing Plate	Panel Clip and Fastener	Panel Type	RoofNav Number
105 PSF IF: 1 EF: A Slope: 5" Hail: SH New Roof Steel – WR, 22-18 ga 72" Span, 33 ksi	<u>Optional:</u> Polyethylene (6 mil)	<u>Optional:</u> Separator Sheet – CLAD-GARD SA <u>Required:</u> APA Rated OSB, 7/16"-½" thickness, 16 HD ISOGARD HG Fasteners per 4'x8' board <u>Optional:</u> ISO 95+GL, ISOGARD HD Composite, or ISOGARD CG, 1.5"-12", 4'x8' boards	No	<u>Fastener:</u> UNA-CLAD #10 (Stainless or E-Coated) – 12" oc, 18" row spacing, 2 per clip <u>Clip:</u> UC-6 Low Float Clips (Galvanized or Stainless-steel)	<u>Panel Type:</u> UC-6 Aluminum Width: 8" - 16" Thickness: 0.032" – 0.032"	341936-0-0

UNA-CLAD UC-14 Steel Panel Uplift Ratings

Re-Cover:

UC-14 Steel Re-Cover						
System Information	Vapor Retarder	Separator Sheet, Substrate and Attachment	Bearing Plate	Panel Clip and Fastener	Panel Type	RoofNav Number
60 PSF IF: 1 EF: A Slope: 5" Hail: SH Re-Cover, Steel 36 ksi	<u>Optional:</u> Polyethylene (6 mil)	<u>Required:</u> APA Rated OSB, 7/16"-1/2" thickness, 24 HD ISO GARD HG Fasteners per 4'x8' board <u>Optional:</u> ISO 95+GL, .5"-.5", 4'x8' boards, ISO GARD HD, .5"-.5", DensDeck or Prime 1/4" min.	No	<u>Fastener:</u> UNA-CLAD #10 (Stainless or E- Coated) – 12" oc, 18" row spacing, 1" min. length and 1.5" max. length	<u>Panel Type:</u> UC-14 Steel Width: 12" - 18" Thickness: 0.0239" – 0.0299"	259408-0-0
60 PSF IF: 1 EF: A Slope: 5" Hail: SH Re-Cover, Steel 36 ksi	<u>Optional:</u> Polyethylene (6 mil)	<u>Optional:</u> Separator Sheet – CLAD-GARD SA <u>Required:</u> APA Rated OSB, 7/16"-1/2" thickness, 24 HD ISO GARD HG Fasteners per 4'x8' board <u>Optional:</u> ISO 95+GL, .5"-.5", 4'x8' boards, ISO GARD HD, .5"-.5", DensDeck or Prime 1/4" min.	No	<u>Fastener:</u> UNA-CLAD #10 (Stainless or E- Coated) – 12" oc, 18" row spacing, 1" min. length and 1.5" max. length	<u>Panel Type:</u> UC-14 Steel Width: 12" - 18" Thickness: 0.0239" – 0.0299"	301688-0-0

UNA-CLAD UC-14 Steel Panel Uplift Ratings

New Roof:

UC-14 Steel New Roof						
System Information	Vapor Retarder	Separator Sheet, Substrate and Attachment	Bearing Plate	Panel Clip and Fastener	Panel Type	RoofNav Number
60 PSF IF: 1 EF: A Slope: 5" Hail: SH New Roof Steel 22-16 ga 72" Span, 33 ksi	<u>Optional:</u> Polyethylene (6 mil)	<u>Optional:</u> Separator Sheet – CLAD-GARD SA <u>Required:</u> APA Rated OSB, 7/16"-1/2" thickness, ISO GARD HG, 1.5"-4" thickness. 24 HD ISO GARD HG Fasteners per 4'x8' board <u>Optional:</u> ISO 95+GL, 1"-12", 4'x8' boards, ISO GARD HD, .5"- 1", DensDeck or Prime 1/4" min.	No	<u>Fastener:</u> UNA-CLAD #10 (Stainless or E- Coated) – 12" oc, 18" row spacing, 1" min. length and 1.5" max. length	<u>Panel Type:</u> UC-14 Steel Width: 12" - 18" Thickness: 0.0239" – 0.0299"	301656-0-0
60 PSF IF: 1 EF: A Slope: 5" Hail: SH New Roof Steel 22-16 ga 72" Span, 33 ksi	<u>Optional:</u> Polyethylene (6 mil)	<u>Optional:</u> Separator Sheet – CLAD-GARD SA <u>Required:</u> ISO GARD HG, 1.5"-4" thickness. 24 HD ISO GARD HG Fasteners per 4'x8' board	No	<u>Fastener:</u> UNA-CLAD #10 (Stainless or E- Coated) – 12" oc, 18" row spacing, 1" min. length and 1.5" max. length	<u>Panel Type:</u> UC-14 Steel Width: 12" - 18" Thickness: 0.0239" – 0.0299"	301660-0-0
60 PSF IF: 1 EF: A Slope: 5" Hail: SH New Roof Steel 22-16 ga 72" Span, 33 ksi	<u>Optional:</u> Polyethylene (6 mil)	<u>Required:</u> APA Rated OSB, 7/16"-1/2" thickness, 24 HD ISO GARD HG Fasteners per 4'x8' board <u>Optional:</u> ISO 95+GL, 1"-12", 4'x8' boards, ISO GARD HD, .5"- 1", DensDeck or Prime 1/4" min.	No	<u>Fastener:</u> UNA-CLAD #10 (Stainless or E- Coated) – 12" oc, 18" row spacing, 1" min. length and 1.5" max. length	<u>Panel Type:</u> UC-14 Steel Width: 12" - 18" Thickness: 0.0239" – 0.0299"	259354-0-0

UC-14 Steel New Roof

System Information	Vapor Retarder	Separator Sheet, Substrate and Attachment	Bearing Plate	Panel Clip and Fastener	Panel Type	RoofNav Number
60 PSF IF: 1 EF: A Slope: 5" Hail: SH New Roof Steel 22-16 ga 72" Span, 33 ksi	Optional: Polyethylene (6 mil)	Required: ISOGARD HG, 1.5"-4" thickness. 24 HD ISOGARD HG Fasteners per 4'x8' board	No	Fastener: UNA-CLAD #10 (Stainless or E- Coated) – 12" oc, 18" row spacing, 1" min. length and 1.5" max. length	Panel Type: UC-14 Steel Width: 12" - 18" Thickness: 0.0239" – 0.0299"	259356-0-0

Concentrated Load Testing

Testing is per FM 4471, Section 5.4 Foot Traffic Resistance, which uses a 200# load concentrated on a 3"x3" square area at mid span with joists on 5 foot centers.

Panel	Panel description	Maximum Deflection	Permanent Deflection	Damage
UC-3	Nominal 20" wide, 24-ga. Steel with 1.5" rib; 180° seam	0.1875"	None	No failure
UC-4	Nominal 17¾" wide, 24-ga. Steel with 1.5" Snap rib	0.125"	None	No failure
UC-14	Nominal 18" wide, 24-ga. Steel with 1.75" rib; Snap Lock	0.0625"	None	No failure
UC-6	Nominal 18" wide, 24-ga. Steel with 1.5" rib; 180° seam	0.0625"	None	No failure

New Tech UL Compliant Profiles

UL Uplift Resistance – 105 psf

Deck: Steel, min 22 GA.

Insulation: Polyisocyanurate, max. 4 in thick, loose-laid.

Substructure: (Gypsum Board): (Optional) (Not Shown) Min thick 1/2 in. To be placed on top of either the liner panel (Item 2) or rigid insulation (Item 3). Combined thickness of the gypsum board and rigid insulation not to exceed 4 in. All joints to be taped with 2.5 in. wide joint tape.

Substructure (Plywood): (Optional) (Not Shown) Plywood decking, used in lieu of gypsum board, to be nom 1/2 in. thick, exposure 1 sheathing, 40/20, CD. Located over rigid insulation (Item 3). Combined thickness of the plywood and rigid insulation not to exceed 4 in.

Bearing Plates: No. 16 MSG min coated steel, 4 in. wide by 5 in. long. Used under panel clip when rigid insulation is used.

Substructure (Bearing Plate): (Optional) Bearing plate are optional when OSB plywood is used over the rigid insulation (Item 5) and directly under panel (Item 7).

Roof Deck Fasteners (Panel Clips): Building Products Development "NC33003" Floating Clip, two piece assembly with a base fabricated from No. 16 MSG minimum gauge steel, 1-5/8 in. wide, and a top fabricated from No. 22 MSG minimum gauge steel, 4-1/4 in. wide. Clips to be spaced max. 36 in. OC.

Roof Deck Fasteners (Panel Clips): Optional.

Fasteners: NCF-33015 or NCF-33016 fasteners used to attach the panel clips to the steel deck to be No. 14-13 screws, penetrated 1/2 inch beneath the steel deck. Two screws to be used per clip.

Fasteners (Screws): (Not Shown) Fasteners used to attach plywood Substructure through rigid insulation (Item 3) to liner panel (Item 2) to be No. 14-13, No. 3 Phillips drive truss head screws. Fastener length to penetrate liner panel min 1/2 in. Total of 33 fasteners per 4 by 8 ft plywood sheet to be used. Fasteners located in five rows along the 4 ft length in a 3-9-12-12-9-3 in. pattern. The two outer rows are in a 3-9-12-12-12-12-12-12-9-3 in. pattern and the three center rows are in a 2-21-24-24-21-3 in. pattern. All spacing from board edges. Fasteners used to attach panel clips (Item 4 and 5) to plywood (when plywood is fastened to liner panel as indicated above) to be No. 10-12 by 1 in. long pancake head wood screw with No. 2 Phillips drive, or No. 10-12 by 1 in. long hex-head wood screw. Two fasteners per clip.

Vapor Barrier: (Optional) Single ply, used between the substructure and panel. To be min 30 lb roofing felt.

Metal Roof Panels: 275 panel. Overall max width 17.5 in. and 2 in. high at the rib, fabricated from 24 MSG min thickness coated steel.

UL Construction Numbers for New Tech Profiles:

Coated steel panels identified as "SS 550" for use in Construction No. 373 .

Coated steel panels identified as "SS210A" for use in Construction Nos. 90, 176, 180, 238, 238A.

Coated steel panels identified as "SS675" for use in Construction Nos. 254, 255, 261, 303, 343, 414, 508A.

Aluminum panels identified as "SS675" for use in Construction Nos. 261, 508 and 508A.

Coated steel panels identified as "SS450" for use in Construction No. 370.

Coated steel panels identified as "SS450SL" for use in Construction No. 589.

Coated steel panels identified as "SS200" for use in Construction No. No. 610.

Coated steel, aluminum or copper panels identified as "SS150" for use in Construction Nos. 554, 603 and 605.

Copper panels identified as "SS100" for use in Construction No. 575.

Coated steel panels identified as "FF100" for use in Construction No. 529.

Coated steel panels identified as "275" for use in Construction No. 684.

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