

# Alliance

STEEL BUILDING SYSTEMS

**PRODUCT CATALOG**





# WHO WE ARE

## ABOUT ALLIANCE

Established in 1971, Alliance Steel Building Systems, a subsidiary of Associated Steel Group, is a manufacturer of metal and related components for the construction industry. The company operates as an integrated manufacturer of metal building systems, structural steel elements and components, specializing in the construction of complex, highly engineered low-rise metal buildings in a wide range of applications, including office and retail buildings, warehouses, manufacturing plants, churches, schools, agricultural buildings, and aircraft hangars.

At Alliance, we take immense pride in our work and strive for excellence. Our commitment to innovation drives us to push boundaries and explore new technologies, materials, and design approaches. By collaborating closely with our clients, architects, engineers, and contractors, we develop customized solutions that meet your unique needs.

**Choose Alliance Steel Building Systems for superior products and exceptional service. Experience the difference of working with a company that values integrity, innovation, and collaboration. Together, let's build remarkable structures that stand the test of time.**

**AllianceOKC.com**

1-800-624-1579 | [info@allianceokc.com](mailto:info@allianceokc.com)

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# WHAT WE BUILD

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Texas Tech University – School of Veterinary Medicine – Mariposa Station – Amarillo, TX

## AGRICULTURE

### BARNES TO EQUIPMENT DEALERS

Alliance Steel provides numerous solutions to meet your specific agricultural construction needs – from barns and equipment storage to commercial dealerships.

Big animals need love too. At the Texas Tech School of Veterinary Large Animal Teaching Facility, students are learning general and emergency veterinary healthcare and procedural medicine for large animals. Housing these gentle beasts and their needed medical facilities is a job that called on Alliance Steel to provide expertise, along with a lot of framing and sheeting to provide comfort for the big guys and technology for the aspiring vets. Let's call it a labor of love.



McLaren of Houston – Houston, TX

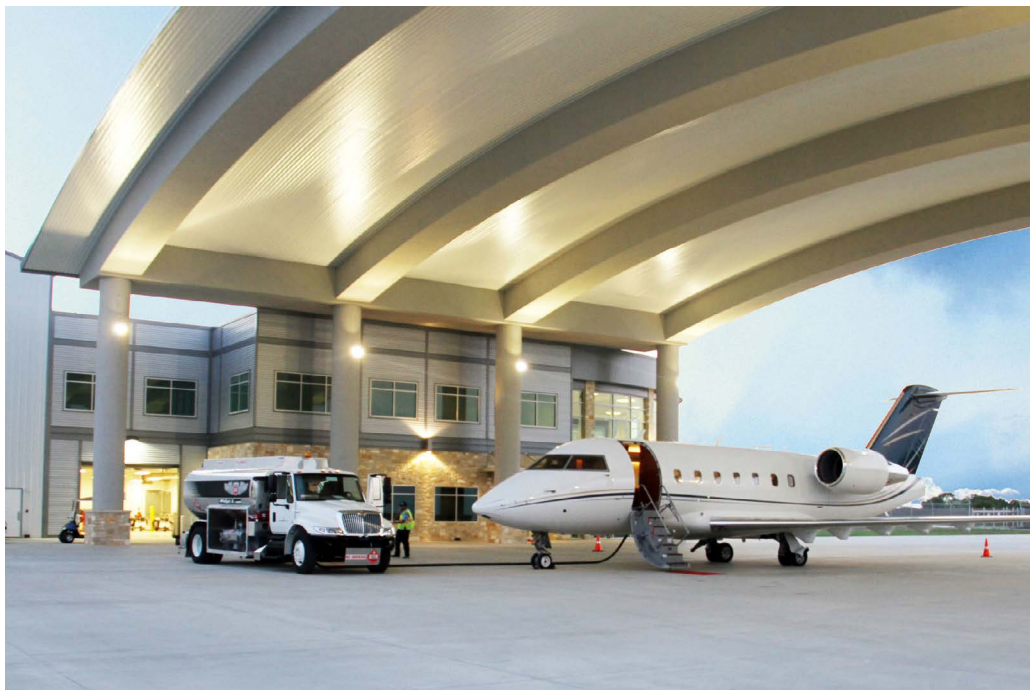


## AUTOMOTIVE

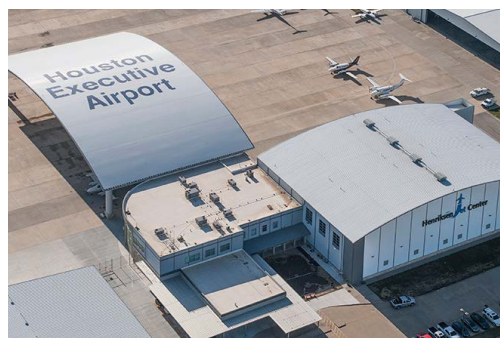
### LOCAL TO REGIONAL DEALERSHIPS

We understand the importance of marketing your dealership by building an iconic structure that promotes your brand and drives sales. Alliance Steel offers a wide range of architectural components to meet your dealership's design aesthetics. From exposed beams to custom-designed pillars - we deliver system materials designed to your specifications - all on time and on budget.

The remarkable 16,000-square-foot McLaren dealership in Houston, TX, completed in 2020, stands as a testament to our exceptional automotive capabilities. This impressive facility showcases a stunning showroom, a customer seating area with a display of McLaren color options, sales offices, a configuration lounge, and a service shop. The incorporation of Alliance's LT3.3 panel and ABT-32 wall panels in the dealership's design ensures a seamless blend of functionality and aesthetics, further enhancing its overall appeal.



Henriksen Jet Center - Brookshire, TX

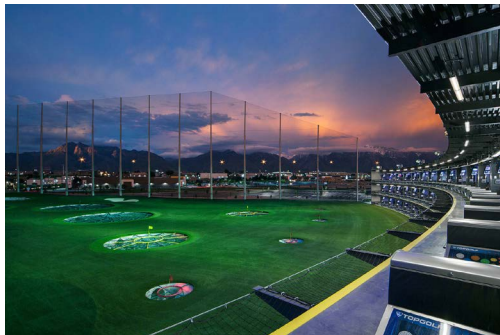
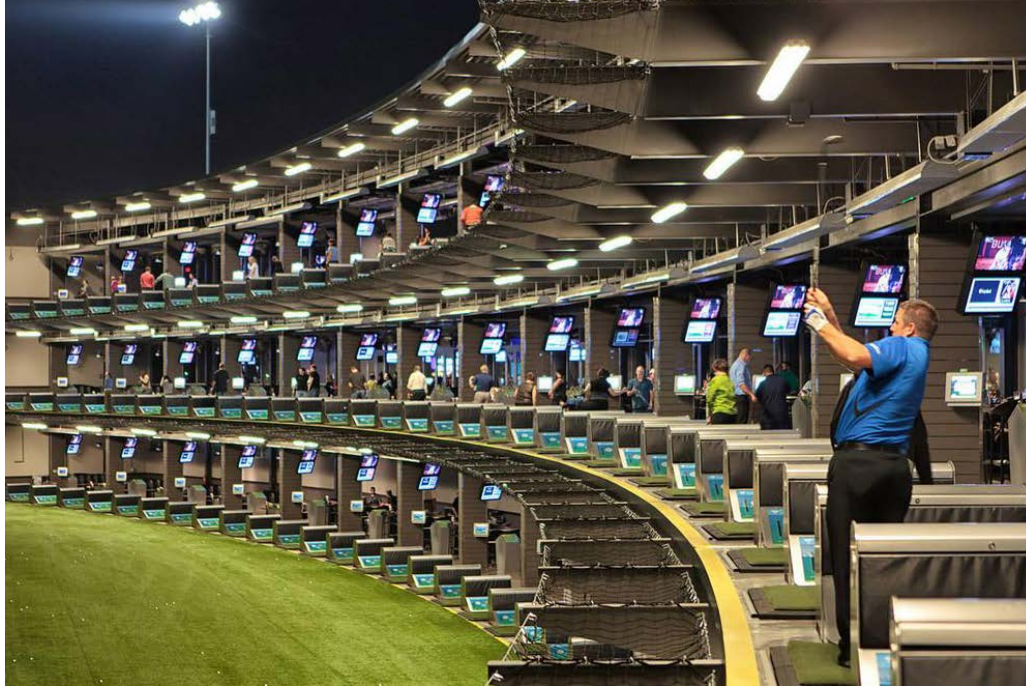


## AVIATION

### HELIPORTS TO COMMERCIAL HANGARS

Alliance Steel specializes in hangar systems that will meet your specific aviation building needs. From heliports to private or commercial jet hangars - we have the precise solution for your aviation building system requirements.

Located in Brookshire, TX, the Henriksen Jet Center spans 120,000 square feet and was completed in August 2020. This architectural masterpiece stands as a testament to our aviation prowess, showcasing our ability to seamlessly integrate design and manufacturing expertise. Experience the Henriksen Jet Center, where elegance meets functionality, and witness firsthand the remarkable fusion of Alliance's aviation capabilities and the owners' visionary concept.



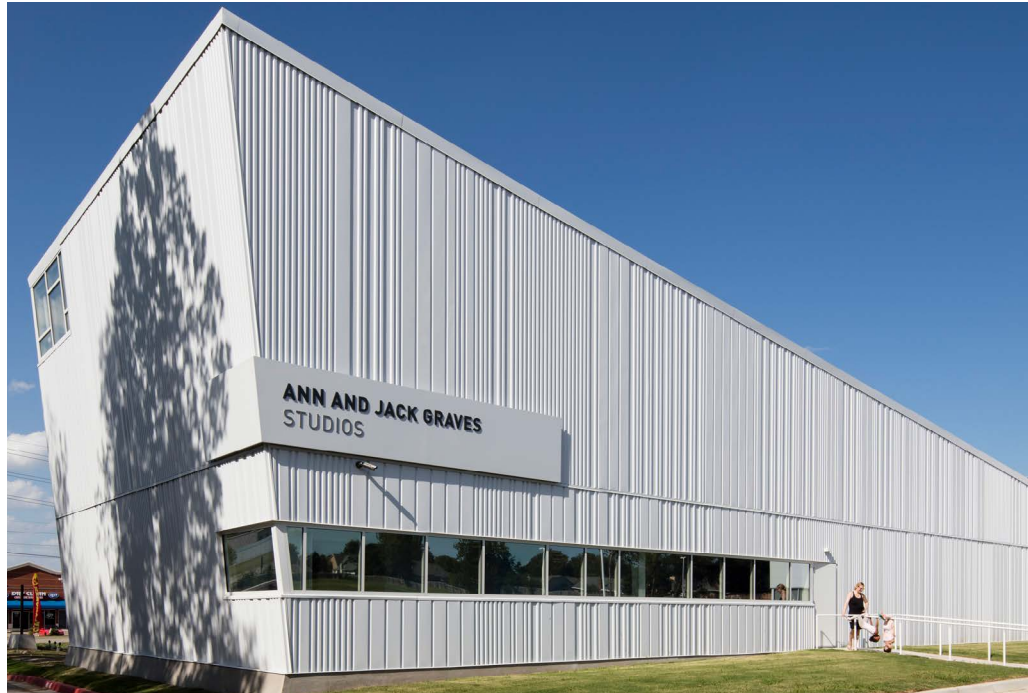
TopGolf - Dallas, TX

## COMMERCIAL RETAIL

### OFFICE TO MULTI-UNIT

We offer a wide range of commercial building system design options. From medical facilities and single- and multistory retail buildings to multi-unit office developments - from custom-designed components to full project support - we provide high-quality building materials that save you time and money while delivering enduring value.

Alliance Steel was a key contributor to the design-build project of TopGolf Dallas, a premier entertainment destination in Dallas, TX. With 74 hitting bays, nine batting cages, three 18-hole miniature golf courses, and a patio and private event space, this remarkable venue spans 23,360 square feet. Alliance Steel worked closely with the architect and contractor to find a unique and cost-effective design solution, resulting in the completion of TopGolf Dallas in May 2020. Our expertise in steel fabrication and construction ensured the seamless integration of structural elements, creating a solid foundation for an inviting and captivating entertainment experience.



Hardesty Center for Dance Education – Tulsa, OK

## COMMUNITY

### MUNICIPALITIES TO WORSHIP

Our expertise lies in constructing custom components tailored to fulfill the unique requirements of your community building systems. Whether it's for municipalities or places of worship, we provide personalized solutions to cater to your specific building design needs.

Experience the awe-inspiring Hardesty Center for Dance Education, a magnificent 21,200-square-foot marvel nestled in Tulsa, OK. This extraordinary facility, completed in January 2020, flawlessly captures the talent and energy of its esteemed resident, the Tulsa Ballet.

Through meticulous craftsmanship, we infused the passion and fluidity of ballet into every aspect of this stunning building. Its graceful lines and harmonious structure serve as a testament to the artistry and spirit of dance, creating an unparalleled space for the Tulsa Ballet.



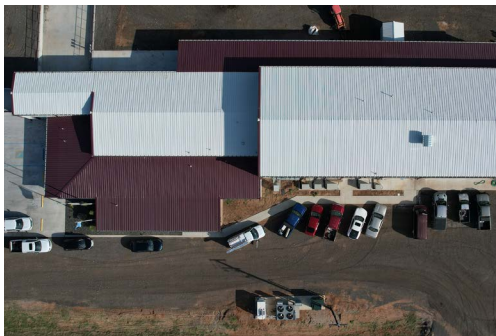
Council Grove Elementary - Oklahoma City, OK

## EDUCATION

### SMALL SCHOOLS TO UNIVERSITIES

Alliance Steel excels in constructing components specifically designed for your school building systems. Whether you have a small school or a sprawling metropolitan campus, we offer tailored solutions to meet your unique school design requirements.

Council Grove Elementary is a fully functional elementary school located in Oklahoma City, OK. Completed in November 2020, this project spans 68,480 square feet, offering a unique and modern aesthetic through the use of various exterior materials. Alliance provided the second-floor materials and tube steel canopy truss system. The school features a full-size gymnasium, a safe room, cupolas, and clerestory windows. Council Grove Elementary is proud to serve as a symbol of educational excellence and innovative design.



South Canadian Meats - Thomas, OK

## INDUSTRIAL

### UNIT STORAGE TO DISTRIBUTION CENTERS

Whether you require multi-unit storage facilities or regional distribution centers, we have the perfect solutions to meet your industrial building system requirements. Our team is dedicated to delivering customized designs that optimize functionality and efficiency for your industrial projects.

They had the hats and the cattle, but they needed a facility to get into the meat marketing business. South Canadian Meats, in Thomas, OK, called and we delivered, building around an existing facility to create a state-of-the-art, USDA-class beef processing facility and retail storefront on the land that nurtures its herd. Now you can get the finest homegrown, highest-quality, best-tasting select cuts imaginable. We'll take ours medium rare.



Crafton Tull – Yukon, OK

## COMMERCIAL

### STAND-ALONE TO MULTI-OFFICE COMPLEX

We provide an extensive selection of span, roofing, and wall components to cater to your office building system needs. Whether you require a stand-alone office or a multi-office complex, we offer turnkey building materials that are customized to your specifications. Our focus is on delivering timely and budget-friendly solutions, ensuring your project is completed efficiently and to your satisfaction.

Behold an extraordinary architectural marvel in Yukon, OK, meticulously crafted by our masterful team at Alliance Steel. This collaborative endeavor with Crafton Tull embodies the seamless integration of engineering, architectural design, and our esteemed steel craftsmanship. Unveiled in April 2020, this resplendent structure spanning 13,635 square feet stands as a testament to our unwavering commitment to unparalleled excellence and visionary innovation, showcasing a breathtaking single-slope design adorned with conjoining eaves.



# COMPONENTS

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# ROOFING PANELS

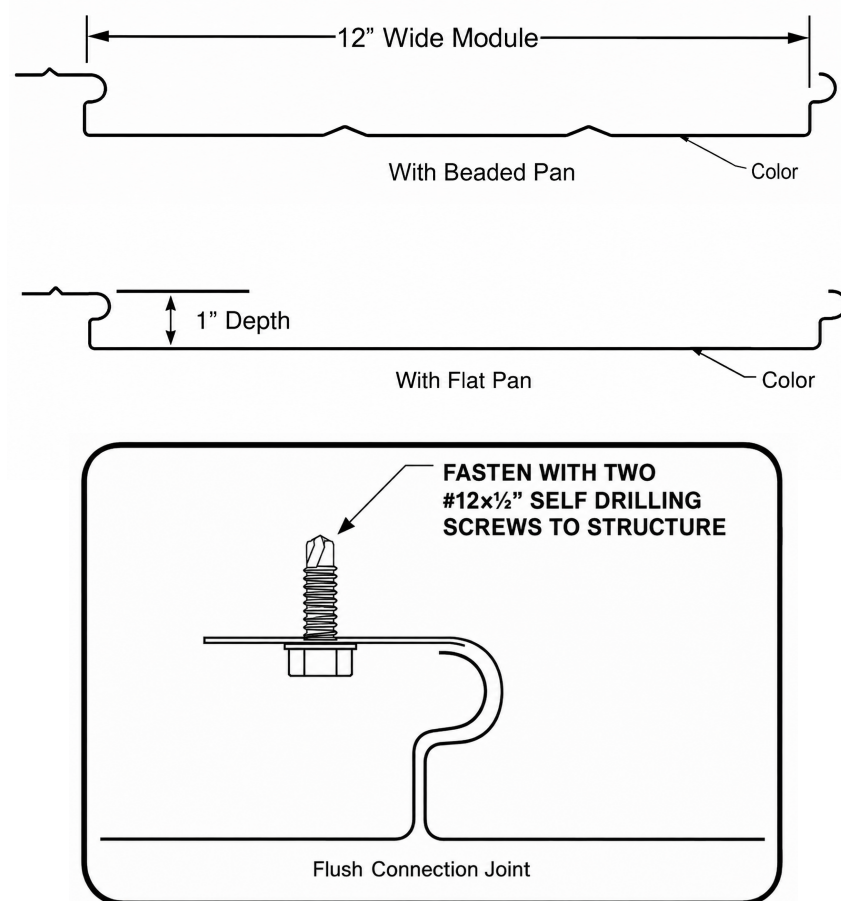
All of our roof panels deliver premium performance while requiring very low maintenance. They also provide excellent energy efficiency and are highly durable. Our panels are available in a wide variety of colors, many with up to 30-year limited paint warranties. Made of premium commercial-grade steel, they are fire resistant, hail resistant, and wind resistant at speeds of up to 140 miles per hour. We have the right roof panel for your next project!

**Every Alliance metal roof is comprised of high-quality materials for added strength and durability.**

# A-12 PANEL

## FLUSH SEAM SOFFIT PANEL

The A-12 is primarily utilized for soffits; however, it can be used for fascias and interior liners. The panel is available either flat or with stiffener accent beads at 4" on center running parallel to the sidelap joinery. The panel features a concealed fastening system and an interlocking sidelap design. For areas that require ventilation, the panel may be supplied in perforated .024 aluminum with an S-P paint system in either White or Light Stone. The non-perforated 24-gauge A-12 steel panel is available in all standard ASI color offerings.



- 12" Low-Profile Flush Panel with a Clean, Smooth Appearance
- Painted Steel Soffits Need No Painting Nor Maintenance
- Strong Positive Attachment with Concealed Fasteners
- Low-Profile Soffit Easily Nests Inside Framing Members
- Unobtrusive Low-Gloss, Long-Life Paint System
- Flat Pan Option Not Recommended Due to Increased Oil Canning Potential
- Perforated Aluminum Option Provides 13.5% Open Venting

## SECTION PROPERTIES

|       | NEGATIVE BENDING |        | NEGATIVE BENDING |             |           | POSITIVE BENDING |             |           |
|-------|------------------|--------|------------------|-------------|-----------|------------------|-------------|-----------|
| PANEL | Fy               | WEIGHT | Ixe              | Sxe         | Maxo      | Ixe              | Sxe         | Maxo      |
| GAUGE | (KSI)            | (PSF)  | (IN. 4/FT.)      | (IN. 3/FT.) | (KIP-IN.) | (IN. 4/FT.)      | (IN. 3/FT.) | (KIP-IN.) |
| 24    | 50               | 1.31   | 0.0271           | 0.0309      | 0.9250    | 0.0178           | 0.0296      | 0.8871    |
| 22    | 50               | 1.65   | 0.0374           | 0.0428      | 1.2829    | 0.0252           | 0.0441      | 1.3199    |

### 24 GAUGE (FY=50 KSI)

| SPAN TYPE | LOAD TYPE          | SPAN IN FEET |       |       |       |       |       |      |
|-----------|--------------------|--------------|-------|-------|-------|-------|-------|------|
|           |                    | 2.0          | 2.5   | 3.0   | 3.5   | 4.0   | 4.5   | 5.0  |
| SINGLE    | POSITIVE WIND LOAD | 194.0        | 99.4  | 57.5  | 36.2  | 24.3  | 17.0  | 12.4 |
| 2-SPAN    | POSITIVE WIND LOAD | 142.9        | 92.5  | 64.7  | 47.7  | 36.6  | 29.0  | 23.5 |
| 3-SPAN    | POSITIVE WIND LOAD | 176.0        | 114.5 | 80.30 | 59.40 | 45.60 | 32.10 | 23.4 |
| 4-SPAN    | POSITIVE WIND LOAD | 165.2        | 107.3 | 75.2  | 55.5  | 42.7  | 33.8  | 24.9 |

### 22 GAUGE (FY=50 KSI)

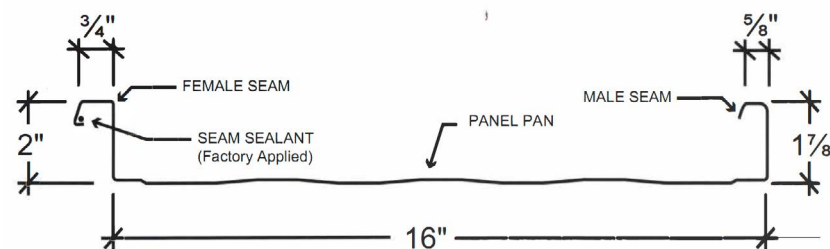
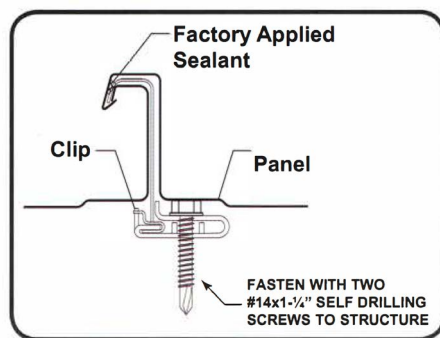
| SPAN TYPE | LOAD TYPE          | SPAN IN FEET |       |       |      |      |      |      |
|-----------|--------------------|--------------|-------|-------|------|------|------|------|
|           |                    | 2.0          | 2.5   | 3.0   | 3.5  | 4.0  | 4.5  | 5.0  |
| SINGLE    | POSITIVE WIND LOAD | 275.3        | 141.0 | 81.6  | 51.4 | 34.4 | 24.2 | 17.6 |
| 2-SPAN    | POSITIVE WIND LOAD | 210.2        | 136.7 | 95.8  | 70.7 | 54.3 | 43.0 | 34.9 |
| 3-SPAN    | POSITIVE WIND LOAD | 257.8        | 168.7 | 118.6 | 87.8 | 64.9 | 45.6 | 33.3 |
| 4-SPAN    | POSITIVE WIND LOAD | 242.3        | 158.2 | 111.1 | 82.2 | 63.2 | 48.4 | 35.3 |

- All calculations for A-12 panel properties are performed in accordance with the 1996 edition of the COLD-FORMED STEEL Design Manual, with the 1999 supplement, published by the American Iron and Steel Institute (AISI).
- Ixe is for deflection determination.
- Sxe is for bending. Maxo is the allowable bending moment.
- All values are for one foot of panel width.
- Allowable loads are based on uniform span lengths.
- POSITIVE WIND LOAD has been increased by 33.333%.
- POSITIVE WIND LOAD is limited by bending, shear, combined shear and bending, or web crippling.
- POSITIVE WIND LOAD is limited by a maximum deflection ratio of L/180 of the span.
- Contact Alliance for negative wind load values.

# ALOK-16 PANEL

## Mechanically Seamed Roof Panel

Alliance Lok-16 (Alok-16) is a 2" vertical rib panel that offers 16" of in-place coverage. The Alok-16 panel's simple vertical rib design allows for freedom of design for hips, valleys, dormers, and other architectural roof features. The panel requires mechanical field seaming, which helps ensure long-term, leak-free performance when correctly installed. Alok-16 can be installed over open framing on 5'-0" centers while maintaining maximum uplift ratings even in the corner and edge zones in high-wind/coastal areas. The panel can be used in environments ranging from ice and snow country to high-wind coastal areas, with excellent performance results without requiring the purlin spacing to be adjusted from 5'-0". The panel has been tested for applications including open sub-framing, wood deck, and composite systems. It is a revolutionary roofing system that offers simple seaming and outstanding weathertightness protection under all roof-loading conditions. Alok-16 is available in all ASI color offerings and several gauges.



- 16" Panel with 2" Structural Standing Seam For Open Framing
- 90° or 180° Mechanical Seam
- Can be used on roof slopes as low as 1/2:12
- Factory-Applied Sealant In The Female Rib
- Clips Allow A Full 3" Of Thermal Movement
- Ideal For Challenging Hip And Valley Roof Designs
- Available Striated Or With Pencil Stiffener Ribs
- UL 580 Class 90 Wind Uplift Rated.
- FM 4471 Class 1-90 and 1-165 Uplift Rated
- FM Fire and Class 1-SH Hail Resistance Rated
- Army Corps Of Engineers ASTM E-1592 Tested
- ASTM E-1680 Air and E-1646 Water Tested
- Texas Department of Insurance Windstorm Tested
- Weathertight Warranties Available

The AllianceLok 16 panel system has been tested and certified by independent testing agencies and laboratories and has achieved the loads and listings shown below.

Underwriters Laboratories Inc. Construction Nos. 506, 506A, 506B

| UL LISTING | PANEL WIDTH | PANEL GAUGE | SEAM TYPE      | PURLIN GAUGE | PURLIN SPACING |
|------------|-------------|-------------|----------------|--------------|----------------|
| UL-90      | 16"         | 24 ga.      | All Seam Types | 16 ga.       | 5'10"          |

**Factory Mutual 4471 Uplift Test Results**

AllianceLok 16 roof with TripleLok or QuadLok Seam

| FM LISTING | PANEL WIDTH | PANEL GAUGE | PURLIN DEPTH | PURLIN GAUGE | PURLIN SPACING |
|------------|-------------|-------------|--------------|--------------|----------------|
| 1-90       | 16"         | 24 ga.      | 8"           | 16 ga.       | 5'10"          |
| 1-165      | 16"         | 22 ga.      | 8"           | 16 ga.       | 2'6"           |

**ASTM E 1592 Uplift Test Results**

AllianceLok 16 roof with TripleLok Seam

| PURLIN SPACING                    | PANEL WIDTH | PANEL GAUGE | AISI REPORT # C-1432-1 |
|-----------------------------------|-------------|-------------|------------------------|
| 2'0"                              | 16"         | 24 ga.      | 136.4                  |
| 5'0"                              | 16"         | 24 ga.      | 56.6                   |
| COE 07416 Factor of Safety = 1.65 |             |             |                        |

**ASTM E 1592 Uplift Test Results**

AllianceLok 16 roof with QuadLok Seam

| PURLIN SPACING                    | PANEL WIDTH | PANEL GAUGE | AISI REPORT # C-1432-1 |
|-----------------------------------|-------------|-------------|------------------------|
| 2'0"                              | 16"         | 24 ga.      | 191.2                  |
| 5'0"                              | 16"         | 24 ga.      | 78.8                   |
| COE 07416 Factor of Safety = 1.65 |             |             |                        |

|                                                           |
|-----------------------------------------------------------|
| ASTM E-1680 Air Infiltration @ 1.57 psf = 0.001 CFM/sq.ft |
| ASTM E-1646 Water Penetration = None @ 50.0 psf           |



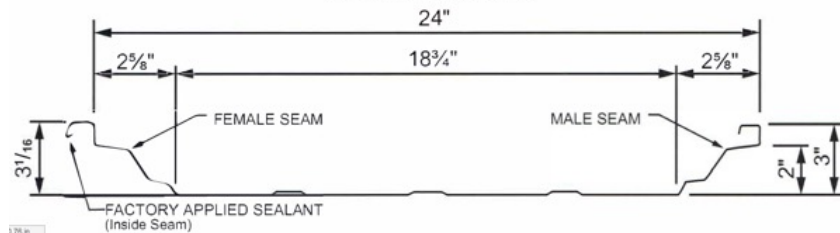
Approval #FL41984

Texas Department of Insurance Windstorm Tested

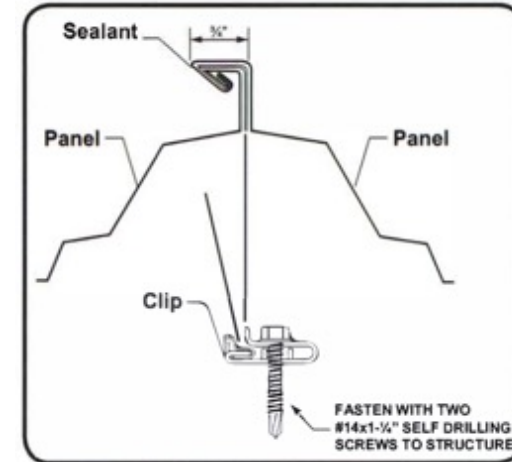
# AS-24 PANEL

## Alliance Seam 24 Panel

The Alliance Seam 24 (AS-24) trapezoidal rib design provides excellent performance on any roof pitch, especially low slopes. The panel requires mechanical field seaming, providing outstanding weathertight performance. It can be used in ice and snow regions as well as coastal and high-wind areas, where it provides excellent uplift ratings and tested performance. The panel design has been in service for many years, providing excellent results in applications including open framing and composite systems. AS-24 is a complete standing-seam roofing system that offers ease of installation and reliable weathertightness at a reasonable cost. AS-24 is available in ASI's full range of colors and various gauges.



Approval #FL41984



- 24" Wide Panel Coverage
- Mechanically Seamed TripleLok or QuadLok
- Ideal For Low-Slope Applications
- Factory-Applied Sealant In The Female Rib
- Weathertightness Warranties Are Available
- Army Corps Of Engineers ASTM E-1592 Tested
- Texas Department of Insurance Windstorm Tested
- UL 580 Class 90 Wind Uplift Rated
- FM Class 1-90, 1-105, 1-120, 1-165, and 1-180 Rated
- FM Fire And Class 1-SH Hail Resistance Rated
- ASTM E-1680 Air and E-1646 Water Tested

## AllianceSeam 24 roof with TripleLok and QuadLok Seam

| UL Listing | Panel Width | Panel Gauge | Seam Type      | Purlin Gauge | Purlin Spacing |
|------------|-------------|-------------|----------------|--------------|----------------|
| UL-60      | 24"         | 24 ga.      | All Seam Types | 16 ga.       | 5'0"           |
| UL-90      | 24"         | 24 ga.      | All Seam Types | 16 ga.       | 5'0"           |

## Texas Department of Insurance Uplift Results QuadLok Seam

| Purlin Spacing         | Panel Width | Panel Gauge | Report # C-1950-1 |
|------------------------|-------------|-------------|-------------------|
| 2'0"                   | 24"         | 24 ga.      | 120.0             |
| 5'0"                   | 24"         | 24 ga.      | 45.0              |
| Factor of Safety = 2.0 |             |             |                   |

## ASTM E 1592 Uplift Test Results Alliance Seam 24 roof with QuadLok Seam

| Purlin Spacing          | Panel Width | Panel Gauge | Report # C-1950-1 |
|-------------------------|-------------|-------------|-------------------|
| 2'0"                    | 24"         | 24 ga.      | 183.3             |
| 5'0"                    | 24"         | 24 ga.      | 81.1              |
| Factor of Safety = 1.65 |             |             |                   |

Design Load = (Mean Ultimate Load/sf) x 1.33 when allowed by building code

## Factory Mutual 4477 Uplift Test Results AllianceSeam 24 roof with TripleLok or QuadLok Seam

| Alliance Seam | Panel Width | Panel Gauge | Purlin Depth | Purlin Gauge | Purlin Spacing |
|---------------|-------------|-------------|--------------|--------------|----------------|
| 1-60          | 24"         | 24 ga.      | 8"           | 16 ga.       | 5'0"           |
| 1-90          | 24"         | 24 ga.      | 8"           | 16 ga.       | 4'0"           |

## ASTM E 1592 Uplift Test Results Alliance Seam 24 roof with TripleLok Seam

| Purlin Spacing          | Panel Width | Panel Gauge | Report # C-1417-1 |
|-------------------------|-------------|-------------|-------------------|
| 2'0"                    | 24"         | 24 ga.      | 149.7             |
| 5'0"                    | 24"         | 24 ga.      | 71.2              |
| Factor of Safety = 1.65 |             |             |                   |

ASTM E-1680 Air Infiltration @ 1.57 psf = 0.001 CFM/sq.ft

ASTM E-1646 Water Penetration = None @ 20.0 psf

The following recognized certifications and listings have been earned:

Underwriters Laboratories UL-90 Classification Construction No. 556

Factory Mutual Class 1-90, 1-105, 1-120, 1-165, and 1-180 listings.

ASTM E 1592 Uplift Test (three tests for each span and gauge)

ASTM E 1680 Air Infiltration

ASTM E 1646 Water Leakage

FM Const# 15, 17, 18, 78723, 78724, 78726

Factory Mutual Class 1-SH Severe Hail Rating

The AllianceSeam 24 roof system utilizing the TS-324™ panel system technology has been tested and certified by independent testing agencies and laboratories and has achieved the loads and listings shown below.

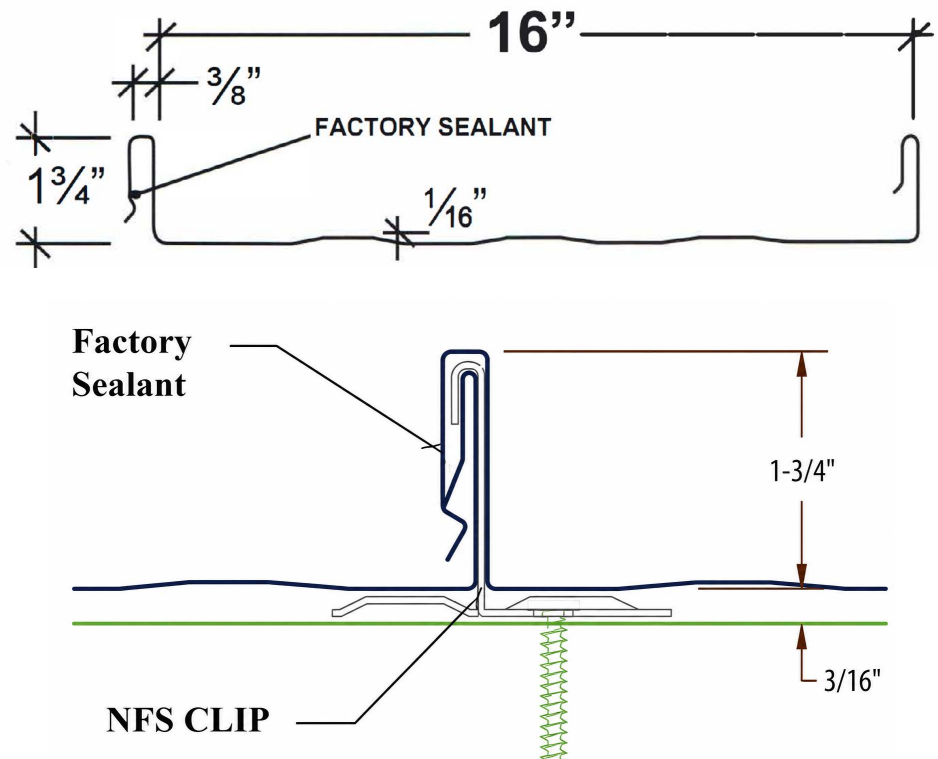
Underwriters Laboratories Inc. Construction Nos. 556, 556A, and 556B

# NFS-16 PANEL

## Narrow Formed Seam Snaplock Panel

Narrow Formed Seam 16 (NFS-16) panels allow flexibility of design and creativity for owners and their architects. The panels may be installed over open framing at 4'-0" centers or solid substrates such as wood deck (5/8" minimum) with the UL 90 clips placed at 3'-0" on center. The integral built-in locking leg of the panel design does not require field seaming. The ease of installation makes this panel an erector's favorite while the architectural appeal makes it an owner's dream. NFS-16 makes an excellent roof but can also make any fascia stand out. The panel is available in all ASI colors and in several gauges.

- 16" Wide Panel Coverage
- Attractive Thin Seam Snap-Together Design
- No Mechanical Seaming Required
- Ideal For Challenging Hip And Valley Roof Designs
- Factory-Applied Sealant In The Female Rib
- Weathertightness Warranties Are Available
- Striated Surface For Consistent Aesthetic Performance
- UL 580 Class 90 Wind Uplift Rated
- UL 790 One-Hour Fire Resistance Rated
- Minimum Roof Slope: 3:12
- UL 2218 Class 4 Impact Resistant



## SECTION PROPERTIES

|             |          |              | Negative Bending           |                            |               | Positive Bending           |                            |               |
|-------------|----------|--------------|----------------------------|----------------------------|---------------|----------------------------|----------------------------|---------------|
| Panel Gauge | Fy (KSI) | Weight (PSF) | I <sub>xe</sub> (IN.4/FT.) | S <sub>xe</sub> (IN.3/FT.) | Maxo (KIP-IN) | I <sub>xe</sub> (IN.4/FT.) | S <sub>xe</sub> (IN.3/FT.) | Maxo (KIP-IN) |
| 24-         | 50       | 1.34         | 0.0353                     | 0.0452                     | 1.3527        | 0.0758                     | 0.0519                     | 1.5563        |
| 22-         | 50       | 1.71         | 0.0500                     | 0.0665                     | 1.9938        | 0.1052                     | 0.0731                     | 2.1906        |

- Calculations for the properties of NFS-16 panels are performed in accordance with the 2001 edition of the North American Specification for the Design of Cold-Formed Steel Structural Members.
- I<sub>xe</sub> is for deflection determination.
- S<sub>xe</sub> is for bending.
- Maxo is the allowable bending moment.
- All values are for one foot of panel width.

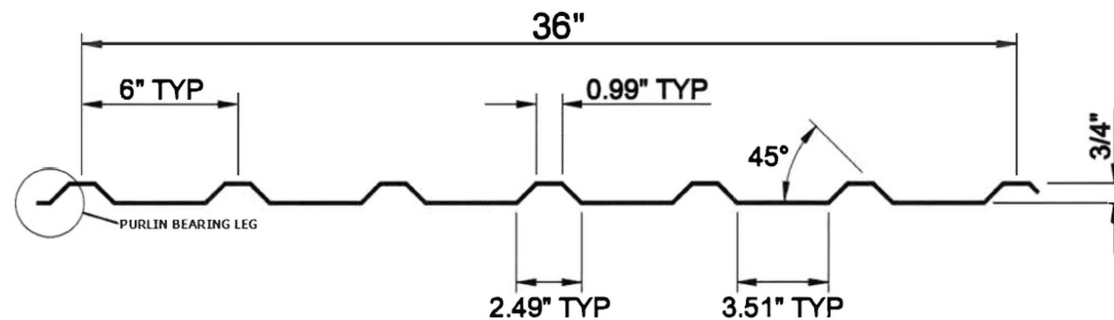
## UNDERWRITERS LABORATORIES APPROVAL

| Construction Number | Panel Width (in.) | Gauge   | Clip Type | Clip Spacing | Substrate        | UL-2218 Impact Resistance | UL-263 Fire Rating | UL-580 Rating |
|---------------------|-------------------|---------|-----------|--------------|------------------|---------------------------|--------------------|---------------|
| 255                 | 18" max.          | 24 min. | UL 90     | 4'-0"        | Open Framing     | Class 4                   | Class A            | Class 90      |
| 303                 | 18" max.          | 24 min. | UL 90     | 4'-0"        | Composite System | Class 4                   | Class A            | Class 90      |
| 342                 | 18" max.          | 24 min. | UL 90     | 4'-0"        | Composite System | Class 4                   | Class A            | Class 90      |
| 343                 | 18" max.          | 24 min. | UL 90     | 3'-0"        | Plywood          | Class 4                   | Class A            | Class 90      |
| 414                 | 18" max.          | 24 min. | UL 90     | 3'-0"        | Plywood          | Class 4                   | Class A            | Class 90      |
| 436                 | 18" max.          | 24 min. | UL 90     | 4'-0"        | Plywood          | Class 4                   | Class A            | Class 90      |
| 446                 | 18" max.          | 24 min. | UL 90     | 4'-0"        | Open Framing     | Class 4                   | Class A            | Class 90      |
| 448                 | 18" max.          | 24 min. | UL 90     | 4'-0"        | Composite System | Class 4                   | Class A            | Class 90      |
| 486                 | 18" max.          | 24 min. | UL 90     | 4'-0"        | Composite System | Class 4                   | Class A            | Class 90      |
| 543                 | 18" max.          | 24 min. | UL 90     | 5'-0"        | Open Framing     | Class 4                   | Class A            | Class 90      |
| 543                 | 18" max.          | 24 min. | UL 90     | 4'-0"        | Open Framing     | Class 4                   | Class A            | Class 90      |
| 544                 | 18" max.          | 24 min. | UL 90     | 4'-0"        | Composite System | Class 4                   | Class A            | Class 90      |

- Wind uplift test procedures are in accordance with Underwriters Laboratories Standard UL-580 under "Tests For Uplift Resistance of Roof Assemblies".
- A detailed installation method is available for each Construction Number above and can be found in the UL Roofing Materials and Systems Directory. The panels must be installed in a certain manner to achieve the published results.
- The panel qualifies for a Class A fire rating in compliance with Underwriters Laboratories Standard UL-263.
- The panel system is listed under the following Fire Resistance Design Numbers: P224, P225, P227, P230, P233, P237, P508, P510, P512, P701, P711, P803. Refer to the UL Fire Resistance Directory for specific construction methods and hourly ratings.
- Narrow Formed Seam 16 Panels carry a Class 4 rating under UL-2218 "Test Standard For Impact Resistance".

# M PANEL

The M Panel (PBM) is ideal for roofs, walls, interior liners, decking, fascias, and residential and agricultural applications. This through-fastened panel has a 3/4"-deep profile with major rib corrugations at 6" on center, providing strength and versatility while maintaining an architectural appearance. The purlin-bearing leg helps ensure that metal-to-metal lap fasteners are seated properly for long-term, weathertight performance when correctly installed. Panels can be reverse-run to recess the fasteners into the flutes (major ribs), helping conceal their appearance on soffits, fascias, and liners. The panel is available in all Alliance Steel Inc. standard (Weather X) and premium (Fluropon) colors.



## FEATURES

- Direct through-fastening system.
- Low-profile corrugations designed for strength and versatility.
- 3/4" rib height at 6" on center.
- When used on agricultural roof applications, 3/4" wide lap sealant is provided.
- Suitable for roof slopes as low as 1:12 with field-applied mastic.
- Matching light-transmitting panels are available.

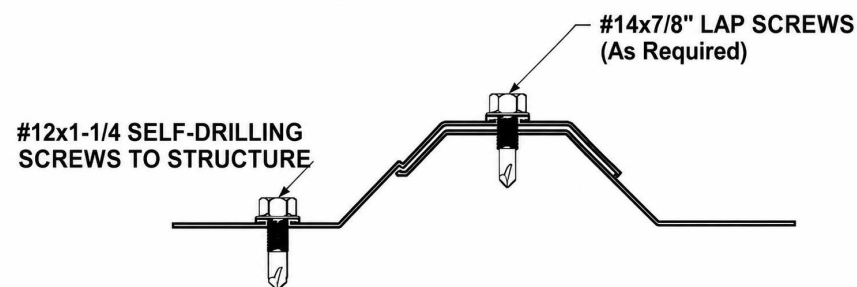
## BENEFITS

- Quick and easy installation.
- Ideal panel for liners, decking, and agricultural applications.
- Provides strength yet remains aesthetically pleasing.
- Lap screw placement can vary and still penetrate the sealant.
- UL Class 90 wind-uplift rating over multiple substrates.
- UL 2218 Class 4 (hail) impact resistance rated.

- **1.0 Slope:** M Panel is ideal for interior liner and decking applications as well as exterior applications on agricultural buildings.
- **2.0 Substructure:** M Panel is designed to be placed over open structural framing but can be used in conjunction with a solid substructure. To avoid panel distortion, be sure the substructure is uniform and properly aligned.
- **3.0 Coverage:** Each panel has a net coverage width of 36".
- **4.0 Lengths:** Minimum factory cut length is 4'-0". Maximum length is 40'-0".
- **5.0 Fasteners:** Panels are fastened to structural framing with #12x1¼ self-drilling screws. When used as decking, sidelaps are fastened together with #14x7/8 self-drilling screws. Refer to the erection drawing package for fastener location and spacing.
- **6.0 Availability:** 26- and 29-gauge steel are standard.



## Sidelap Detail



Allowable Uniform Loads for 3 or More Spans in PSF

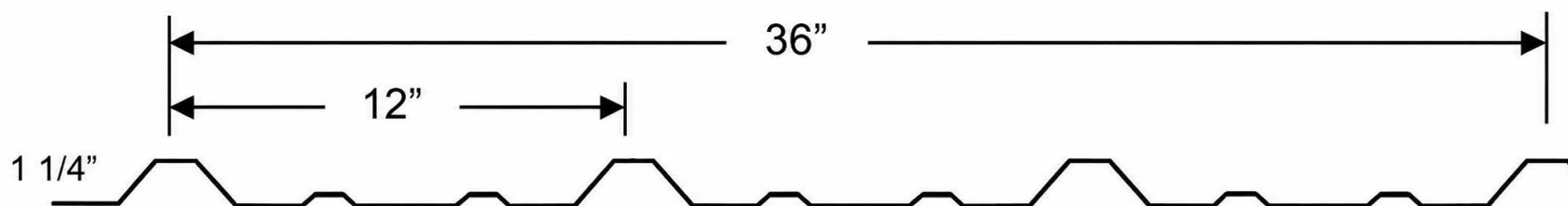
|    |     | LIVE LOAD |      |      |      |            |      |      |      | WIND LOAD |      |      |      |            |      |      |      |
|----|-----|-----------|------|------|------|------------|------|------|------|-----------|------|------|------|------------|------|------|------|
|    |     | Stress    |      |      |      | Deflection |      |      |      | Stress    |      |      |      | Deflection |      |      |      |
| Ga | KSI | 2'        | 3'   | 4'   | 5'   | 2'         | 3'   | 4'   | 5'   | 2'        | 3'   | 4'   | 5'   | 2'         | 3'   | 4'   | 5'   |
| 26 | 50  | 187       | 83.1 | 46.7 | 29.9 | 187        | 83.1 | 46.7 | 26.0 | 215       | 95.7 | 53.9 | 34.5 | 215        | 81.5 | 34.4 | 17.6 |
| 29 | 80  | 153       | 68.1 | 38.3 | 24.5 | 153        | 68.1 | 35.2 | 18.0 | 171       | 76.0 | 42.7 | 27.4 | 171        | 57.0 | 24.1 | 12.3 |

- Tabulated values are total allowable loads calculated in accordance with the maximum bending stresses for physical and section properties.
- These load capacities are for the panel itself. Frames, purlins, fasteners, and all supports must be designed to resist all loads imposed by the panel.
- Deflection loads are limited by a maximum deflection ratio of L/180 of the span.

# R PANEL

Our PBR panels are ideal for a wide range of applications, including roofs, walls, interior liners, fascias, soffits, and most other locations. The PBR panel features a purlin-bearing leg that helps ensure long-term performance of metal-to-metal lap-fastener connections. The rugged versatility of the 1 1/4"-deep panel, with major ribs at 12" on center and two minor ribs between the larger ribs, allows the product to perform well in most applications. The PBR panel is available in thirteen (13) standard S-P (Weather X) 40-year colors, fourteen (14) premium Fluoropon (Kynar) 35-year colors, and various gauges. This is the through-fastened panel of choice for designers, owners, and builders.

## PANEL DETAIL



## FEATURES

- Direct through-fastening system.
- Designed for strength and versatility.
- 1-1/4" rib height at 12" on center with intermediate minor ribs.
- Available in a wide range of standard colors and gauges.
- 3/4" wide lap sealant.

## BENEFITS

- May reduce the amount of bracing required.
- Ideal panel for roofs, walls, and most other locations.
- Provides strength yet remains aesthetically pleasing.
- Nearly limitless possibilities for your project.
- Can be used in most applications.
- Roof lap screw placement can vary and still penetrate the sealant.

| SECTION PROPERTIES |       |        |                          |             |           |                             |             |           |
|--------------------|-------|--------|--------------------------|-------------|-----------|-----------------------------|-------------|-----------|
|                    |       |        | PANEL TOP IN COMPRESSION |             |           | PANEL BOTTOM IN COMPRESSION |             |           |
| Panel              | Fy    | Weight | Ixe                      | Sxe         | Maxo      | Ixe                         | Sxe         | Maxo      |
| GAUGE              | (KSI) | (PSF)  | (IN. 4/FT.)              | (IN. 3/FT.) | (KIP-IN.) | (IN. 4/FT.)                 | (IN. 3/FT.) | (KIP-IN.) |
| 26                 | 80    | 0.85   | 0.0378                   | 0.0387      | 1.394     | 0.0345                      | 0.0458      | 1.648     |
| 24                 | 50    | 1.11   | 0.0560                   | 0.0593      | 1.777     | 0.0467                      | 0.0603      | 1.808     |

|                                                                             | SPAN TYPE | LOAD TYPE  | SPAN IN FEET |       |      |      |      |      |      |      |      |      |
|-----------------------------------------------------------------------------|-----------|------------|--------------|-------|------|------|------|------|------|------|------|------|
|                                                                             |           |            | 3.0          | 3.5   | 4.0  | 4.5  | 5.0  | 5.5  | 6.0  | 6.5  | 7.0  | 7.5  |
| ALLIANCE R-PANEL ALLOWABLE LIVE LOADS - ALL LOADS IN POUNDS PER SQUARE FOOT |           |            |              |       |      |      |      |      |      |      |      |      |
| 26 Gauge (fy=80 ksi)                                                        | SINGLE    | STRESS     | 103.3        | 75.9  | 58.1 | 45.9 | 37.2 | 30.7 | 25.8 | 22.0 | 19.0 | 16.5 |
|                                                                             |           | DEFLECTION | 103.3        | 75.9  | 58.1 | 45.9 | 37.2 | 29.8 | 22.9 | 18.0 | 14.4 | 11.7 |
|                                                                             | 2-SPAN    | STRESS     | 122.1        | 89.7  | 68.7 | 54.3 | 44.0 | 36.3 | 30.5 | 26.0 | 22.4 | 19.5 |
|                                                                             |           | DEFLECTION | 122.1        | 89.7  | 68.7 | 54.3 | 44.0 | 36.3 | 29.8 | 23.5 | 18.8 | 15.3 |
|                                                                             | 3-SPAN    | STRESS     | 142.6        | 104.8 | 80.2 | 63.4 | 51.3 | 42.4 | 35.7 | 30.4 | 26.2 | 22.8 |
|                                                                             |           | DEFLECTION | 142.6        | 104.8 | 80.2 | 63.4 | 51.3 | 42.4 | 35.7 | 30.4 | 26.2 | 22.1 |
| 24 Gauge (fy=50 ksi)                                                        | SINGLE    | STRESS     | 131.6        | 96.7  | 74.0 | 58.5 | 47.4 | 39.2 | 32.9 | 28.0 | 24.2 | 21.1 |
|                                                                             |           | DEFLECTION | 131.6        | 96.7  | 74.0 | 58.5 | 47.4 | 39.2 | 32.9 | 26.7 | 21.4 | 17.4 |
|                                                                             | 2-SPAN    | STRESS     | 134.0        | 98.4  | 75.3 | 59.5 | 48.2 | 39.9 | 33.5 | 28.5 | 24.6 | 21.4 |
|                                                                             |           | DEFLECTION | 134.0        | 98.4  | 75.3 | 59.5 | 48.2 | 39.9 | 33.5 | 28.5 | 24.6 | 21.4 |
|                                                                             | 3-SPAN    | STRESS     | 156.5        | 115.0 | 88.0 | 69.5 | 56.3 | 46.6 | 39.1 | 33.3 | 28.7 | 25.0 |
|                                                                             |           | DEFLECTION | 156.5        | 115.0 | 88.0 | 69.5 | 56.3 | 46.6 | 39.1 | 33.3 | 28.7 | 25.0 |



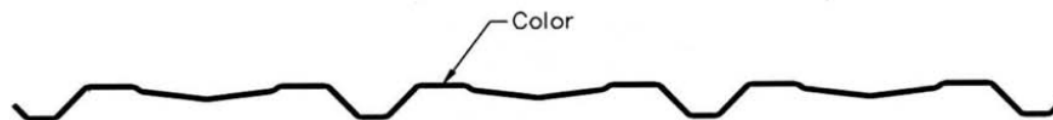
# WALL PANELS

Alliance offers a wide variety of options for exterior metal building wall panels that add just the right architectural touch for discriminating clients. Our attractive and durable metal building panels feature extra overlap for increased strength and water resistance. Most of our steel panels are coated for weather protection, and the color can even be baked onto the panel for an additional layer of protection. If you can design it, we can build it!

**STRONG WALL PANELS WITH HIGH-GAUGE AND HIGH-TENSILE STEEL ARE STANDARD IN ALLIANCE STEEL BUILDINGS.**

# A PANEL

The panel features a direct through-fastening system that places the fasteners in the low portion of the major rib, creating a more aesthetically pleasing look. The PBA panel provides strength without sacrificing appearance for walls, liners, and soffits. The panel is available in Alliance Steel Inc.'s full line of colors. See the color chart for your selection.

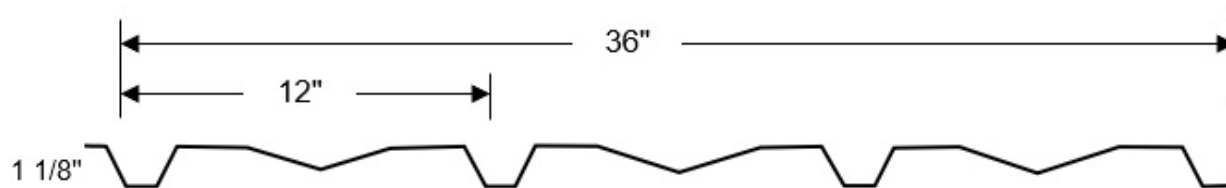


## FEATURES

- Direct through-fastening system.
- Both structural and lap fasteners are placed in the low portion of the corrugation.
- 1-1/4" rib depth at 12" on center with intermediate shallow corrugations.
- Architectural profile.
- Available in a wide range of standard colors.

## BENEFITS

- May reduce the amount of bracing required.
- Fasteners are not visible unless viewed from directly in front.
- Provides strength without sacrificing appearance.
- Ideal for walls and fascias.
- Nearly limitless possibilities for your project.

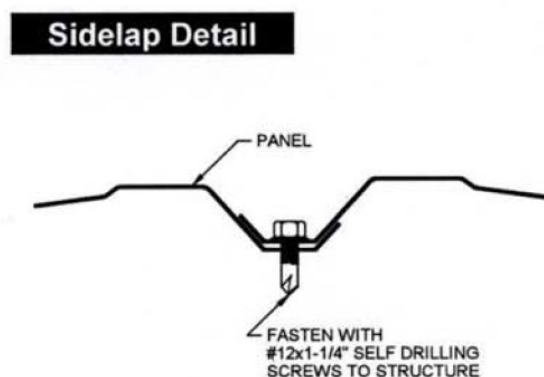


PBA Panel

- **1.0 Slope**  
A- Panel is intended for vertical installation on building exteriors. It may be used as an interior liner for both roof and wall applications.
- **2.0 Substructure**  
A- Panel is designed to be placed over open structural framing but can be used in conjunction with a solid substructure. To avoid panel distortion, be sure the substructure is uniform and properly aligned.
- **3.0 Coverage**  
Each panel has a net coverage width of 36".
- **4.0 Lengths**  
Minimum factory cut length is 4'-0". Maximum length is 40'-0".
- **5.0 Fasteners**  
Panels are fastened to structural framing with #12x1¼ self-drilling screws. Sidelaps are fastened together with #14x7/8 self-drilling screws. Refer to the erection drawing package for fastener location and spacing.
- **6.0 Availability**  
26-gauge steel is standard; 24-gauge steel is optional.

| Allowable Uniform Loads for 3 or More Spans in PSF |     |           |      |      |      |            |      |      |      |           |      |      |      |            |      |      |      |
|----------------------------------------------------|-----|-----------|------|------|------|------------|------|------|------|-----------|------|------|------|------------|------|------|------|
|                                                    |     | Live Load |      |      |      |            |      |      |      | Wind Load |      |      |      |            |      |      |      |
|                                                    |     | Stress    |      |      |      | Deflection |      |      |      | Stress    |      |      |      | Deflection |      |      |      |
| Ga                                                 | KSI | 4'        | 5'   | 6'   | 7'   | 4'         | 5'   | 6'   | 7'   | 4'        | 5'   | 6'   | 7'   | 4'         | 5'   | 6'   | 7'   |
| 26                                                 | 80  | 80.0      | 51.2 | 35.5 | 26.1 | 80.0       | 51.2 | 35.5 | 23.8 | 65.7      | 42.0 | 29.2 | 21.4 | 65.7       | 42.0 | 29.2 | 21.4 |
| 24                                                 | 50  | 89.2      | 57.1 | 39.6 | 29.1 | 89.2       | 57.1 | 39.6 | 29.1 | 86.6      | 55.4 | 38.5 | 28.3 | 86.6       | 55.4 | 38.5 | 28.3 |

- Tabulated values are total allowable loads calculated in accordance with the maximum bending stresses for physical and section properties.
- These load capacities are for the panel itself. Frames, purlins, fasteners, and all supports must be designed to resist all loads imposed by the panel.
- Deflection loads are limited by a maximum deflection ratio of L/240 of the span.



# FW-120 PANEL

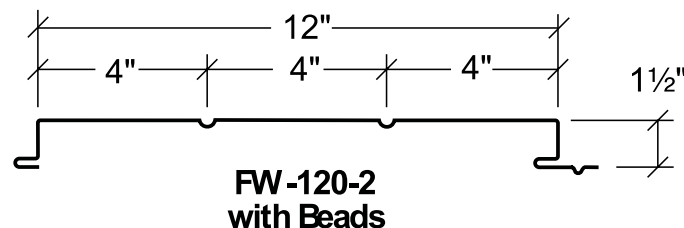
The FW-120 panel is a concealed-fastener wall and liner panel that provides a flat appearance. FW-120 is commonly used for architectural, commercial, and industrial applications. The heavy-gauge offering provides large spanning capabilities, particularly in composite wall applications.

## FEATURES & BENEFITS

- FW-120 is available in a flat profile with two beads, which are recommended to minimize the appearance of oil canning, or with no beads.
- The FW-120 panel has been tested by a certified independent laboratory in accordance with ASTM test procedures for Air Infiltration and Water Penetration at the sidelap. Test results show no air leakage at 1.57 PSF and no water penetration at 6.24 PSF differential pressure.
- FW-120 carries Florida product approval.

## SPECIFICATIONS

- APPLICATIONS: Wall
- COVERAGE WIDTHS: 12"
- PANEL ATTACHMENT: Concealed Fastening System
- GAUGES: 24 (standard); 22 (optional)
- FINISHES: Weather XL and Kynar
- COATINGS: Signature 200 (standard); Signature 300 (optional)



\*Oil canning, a slight waviness inherent in all light-gauge metal, may exist in the FW-120 panel. This minor waviness does not affect the finish or structural integrity of the panel and is therefore not a cause for rejection.

| CATEGORY      | CHARACTERISTIC                    | TEST METHOD | PURPOSE                                                                                                                                                                                                | RESULT                                                                                       |
|---------------|-----------------------------------|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| Environmental | Air leakage                       | ASTM E283   | Determines the air leakage rates of exterior windows, curtain walls, and doors under specified air pressure differences across the specimen                                                            | 0.000 cfm/ft2 at 6.24 psf static pressure<br>0.113 cfm/ft2 at 20.00 psf static pressure      |
|               | Water Penetration                 | ASTM E331   | Determines the resistance of exterior windows, curtain walls, skylights, and doors to water penetration when water is applied under uniform static air pressure difference                             | No uncontrolled water penetration through the panel joints at a static pressure of 13.24 psf |
| Structural    | Negative Wind Loads               | ASTM E1592  | Provides a standard procedure to evaluate or confirm structural performance under uniform static air pressure difference                                                                               | See Load Chart Section                                                                       |
|               | Positive Wind Load                | AISI S100   | North American Specification for the Design of Cold-Formed-Steel Structural Members                                                                                                                    | See Section Properties and Allowable Load Table Section                                      |
| Roof Listings | Roof Performance-Florida Approval | ASTM E1592  | Florida product approval is the approval of products and systems that comprise the building envelope and structural frame for compliance with the structural requirements of the Florida Building Code | Application Pending                                                                          |

| SECTION PROPERTIES 12" WIDE, 50 KSI FW-120 WALL PANEL |               |            |                 |                           |                                       |                              |                  |                                          |                              |                  |
|-------------------------------------------------------|---------------|------------|-----------------|---------------------------|---------------------------------------|------------------------------|------------------|------------------------------------------|------------------------------|------------------|
| Gauge                                                 | Thickness In. | Weight PSF | Allowable Shear | Moment of Inertia         | Top in Compression (Positive Bending) |                              |                  | Bottom in Compression (Negative Bending) |                              |                  |
|                                                       |               |            | $V_a$ kips/ft   | $I_x$ in <sup>4</sup> /ft | $I_{xe}$ in <sup>4</sup> /ft          | $S_{xe}$ in <sup>3</sup> /ft | $M_3$ in.kips/ft | $I_{xe}$ in <sup>4</sup> /ft             | $S_{xe}$ in <sup>3</sup> /ft | $M_3$ in.kips/ft |
| 24                                                    | 0.0230        | 1.342      | 1.00            | 0.1135                    | 0.0483                                | 0.0566                       | 1.416            | 0.1070                                   | 0.0884                       | 2.646            |
| 22                                                    | 0.0285        | 1.662      | 1.22            | 0.1410                    | 0.0648                                | 0.0786                       | 2.354            | 0.1350                                   | 0.1116                       | 3.343            |

- Panel coverage width is 12".
- Section properties and allowables are calculated in accordance with the North American Specification for the Design of Cold-Formed Steel Structural Members (2012 and 2016 Editions).
- $I_x$  is the full moment of inertia;  $I_{xe}$  +/- and  $S_{xe}$  +/- are the effective moment of inertia and section modulus, respectively;  $M_a$  is the allowable bending moment; and  $V_a$  is the allowable shear.
- All values are for one foot of panel width.
- Minimum deliverable bare steel thickness should not be less than 0.95 of the design thickness.

## Preparatory Requirements: Refer to the FW-120 Installation Guide

| 12" WIDE, 50 KSI FW-120 WALL PANEL |                |        |           |       |       |       |       |       |       |      |
|------------------------------------|----------------|--------|-----------|-------|-------|-------|-------|-------|-------|------|
| Allowable Inward Loads (lb/ft)     |                |        |           |       |       |       |       |       |       |      |
| Gauge                              | Span Condition |        | Span (ft) |       |       |       |       |       |       |      |
|                                    |                |        | 2         | 2.5   | 3     | 3.5   | 4     | 4.5   | 5     | 6    |
| 24                                 | SS             | Stress | 236.0     | 151.0 | 104.9 | 77.1  | 59.0  | 46.6  |       | 26.2 |
|                                    |                | L/180  | 527.7     | 270.2 | 156.4 | 98.5  | 66.0  | 46.3  |       | 19.5 |
|                                    | DS             | Stress | 385.8     | 258.0 | 183.9 | 137.3 | 105.4 | 83.2  |       | 46.8 |
|                                    |                | L/180  | 1270.1    | 650.3 | 376.3 | 237.0 | 158.8 | 111.5 |       | 47.0 |
|                                    | TS             | Stress | 382.1     | 244.6 | 169.8 | 124.8 | 95.5  | 75.5  |       | 42.5 |
|                                    |                | L/180  | 995.9     | 509.9 | 295.1 | 185.8 | 124.5 | 87.4  |       | 36.9 |
| 22                                 | SS             | Stress | 392.3     | 251.1 | 174.4 | 128.1 | 98.1  | 77.5  |       | 43.6 |
|                                    |                | L/180  | 708.0     | 362.5 | 209.8 | 132.1 | 88.5  | 62.2  |       | 26.2 |
|                                    | DS             | Stress | 484.2     | 324.5 | 231.5 | 173.0 | 134.0 | 106.7 |       | 60.8 |
|                                    |                | L/180  | 1704.0    | 872.5 | 504.9 | 318.0 | 213.0 | 149.6 | 109.1 | 63.1 |
|                                    | TS             | Stress | 546.3     | 369.8 | 265.5 | 199.2 | 154.7 | 123.5 | 100.7 | 70.6 |
|                                    |                | L/180  | 1336.1    | 684.1 | 395.9 | 249.3 | 167.0 | 117.3 | 85.5  | 49.5 |

| 12" WIDE, 50 KSI FW-120 WALL PANEL |                |        |           |        |       |       |       |       |       |       |
|------------------------------------|----------------|--------|-----------|--------|-------|-------|-------|-------|-------|-------|
| Allowable Inward Loads (lb/ft)     |                |        |           |        |       |       |       |       |       |       |
| Gauge                              | Span Condition |        | Span (ft) |        |       |       |       |       |       |       |
|                                    |                |        | 2         | 2.5    | 3     | 3.5   | 4     | 4.5   | 5     | 6     |
| 24                                 | SS             | Stress | 441.0     | 282.2  | 196.0 | 144.0 | 110.3 | 87.1  | 70.6  | 49.0  |
|                                    |                | L/180  | 1169.1    | 598.6  | 346.4 | 218.1 | 146.1 | 102.6 | 74.8  | 43.3  |
|                                    | DS             | Stress | 226.3     | 147.0  | 102.9 | 76.0  | 58.4  | 46.2  | 37.5  | 26.1  |
|                                    |                | L/180  | 2813.7    | 1440.6 | 833.7 | 525.0 | 351.7 | 247.0 | 180.1 | 104.2 |
|                                    | TS             | Stress | 261.1     | 170.2  | 119.5 | 883   | 67.9  | 53.8  | 43.7  | 30.4  |
|                                    |                | L/180  | 2206.1    | 1129.5 | 653.7 | 411.6 | 275.8 | 193.7 | 141.2 | 81.7  |

|    |    |        |        |        |        |       |       |       |       |       |
|----|----|--------|--------|--------|--------|-------|-------|-------|-------|-------|
| 22 | SS | Stress | 557.2  | 356.6  | 247.6  | 181.9 | 139.3 | 110.1 | 89.1  | 61.9  |
|    |    | L/180  | 1475.0 | 755.2  | 437.0  | 275.2 | 184.4 | 129.5 | 94.4  | 54.6  |
|    | DS | Stress | 364.1  | 239.1  | 168.5  | 124.9 | 96.2  | 76.3  | 62.0  | 43.2  |
|    |    | L/180  | 3550.0 | 1817.6 | 1051.9 | 662.4 | 443.8 | 311.7 | 227.2 | 131.5 |
|    | TS | Stress | 416.9  | 275.4  | 194.8  | 144.7 | 111.6 | 88.7  | 72.1  | 50.3  |
|    |    | L/180  | 2783.4 | 1425.1 | 824.7  | 519.4 | 347.9 | 244.4 | 178.1 | 103.1 |

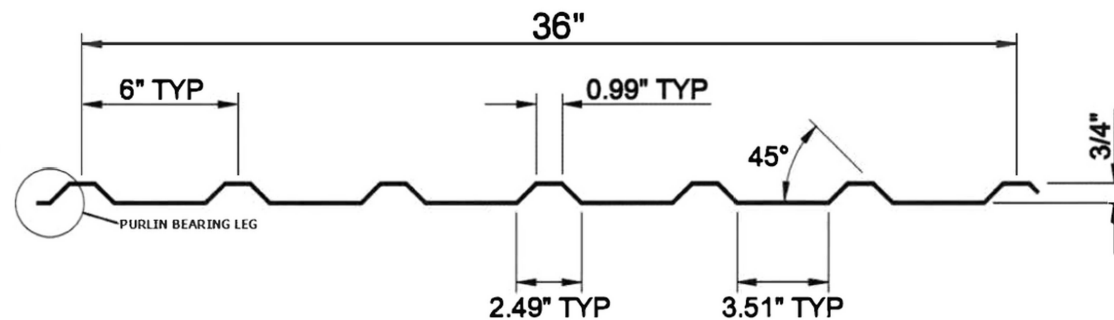
- Allowable load based on stress is the smallest load due to bending, shear, and combined bending and shear.
- Allowable load based on the deflection limit cannot exceed the allowable load based on stress.
- These loads are for panel strength. Fasteners, girts, frames, and all connections must be designed to resist all loads imposed on the panel. Allowable load does not address web crippling or load testing.
- Allowable uplift loads based on stress have not been increased by 33.33% for wind uplift.
- Allowable loads for deflection are based on a deflection limitation of span/180.
- SS = simple span, DS = double span, and TS = three or more spans.



Approval #41985.1

# M PANEL

The M Panel (PBM) is ideal for roofs, walls, interior liners, decking, fascias, and residential and agricultural applications. This through-fastened panel has a 3/4"-deep profile with major rib corrugations at 6" on center, providing strength and versatility while maintaining an architectural appearance. The purlin-bearing leg helps ensure that metal-to-metal lap fasteners are seated properly for long-term, weathertight performance when correctly installed. Panels can be reverse-run to recess the fasteners into the flutes (major ribs), helping conceal their appearance on soffits, fascias, and liners. The panel is available in all Alliance Steel Inc. standard (Weather X) and premium (Fluropon) colors.



## FEATURES

- Direct through-fastening system.
- Low-profile corrugations designed for strength and versatility.
- 3/4" rib height at 6" on center.
- When used on agricultural roof applications, 3/4" wide lap sealant is provided.
- Suitable for roof slopes as low as 1:12 with field-applied mastic.
- Matching light-transmitting panels are available.

## BENEFITS

- Quick and easy installation.
- Ideal panel for liners, decking, and agricultural applications.
- Provides strength yet remains aesthetically pleasing.
- Lap screw placement can vary and still penetrate the sealant.
- UL Class 90 wind-uplift rating over multiple substrates.
- UL 2218 Class 4 (hail) impact resistance rated.

- **1.0 Slope**

M-Panel is ideal for interior liner and decking applications as well as exterior applications on agricultural buildings.

- **2.0 Substructure**

M-Panel is designed to be placed over open structural framing but can be used in conjunction with a solid substructure. To avoid panel distortion, be sure the substructure is uniform and properly aligned.

- **3.0 Coverage**

Each panel has a net coverage width of 36".

- **4.0 Lengths**

Minimum factory cut length is 4'-0". Maximum length is 40'-0".

- **5.0 Fasteners**

Panels are fastened to structural framing with #12x1¼ self-drilling screws. When used as decking, sidelaps are fastened together with #14x7/8 self-drilling screws. Refer to the erection drawing package for fastener location and spacing.

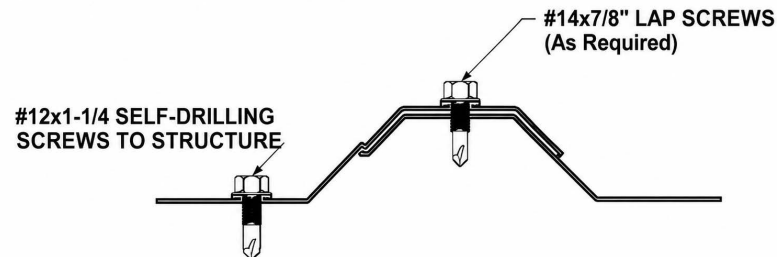
- **6.0 Availability**

26- and 29-gauge steel are standard.

| Allowable Uniform Loads for 3 or More Spans in PSF |     |           |      |      |      |            |      |      |      |           |      |      |      |            |      |      |      |
|----------------------------------------------------|-----|-----------|------|------|------|------------|------|------|------|-----------|------|------|------|------------|------|------|------|
|                                                    |     | Live Load |      |      |      |            |      |      |      | Wind Load |      |      |      |            |      |      |      |
|                                                    |     | Stress    |      |      |      | Deflection |      |      |      | Stress    |      |      |      | Deflection |      |      |      |
| Ga                                                 | KSI | 2'        | 3'   | 4'   | 5'   | 2'         | 3'   | 4'   | 5'   | 2'        | 3'   | 4'   | 5'   | 2'         | 3'   | 4'   | 5'   |
| 26                                                 | 50  | 187       | 83.1 | 46.7 | 29.9 | 187        | 83.1 | 46.7 | 26.0 | 215       | 95.7 | 53.9 | 34.5 | 215        | 81.5 | 34.4 | 17.6 |
| 29                                                 | 80  | 153       | 68.1 | 38.3 | 24.5 | 153        | 68.1 | 35.2 | 18.0 | 171       | 76.0 | 42.7 | 27.4 | 171        | 57.0 | 24.1 | 12.3 |

- Tabulated values are total allowable loads calculated in accordance with the maximum bending stresses for physical and section properties.
- These load capacities are for the panel itself. Frames, purlins, fasteners, and all supports must be designed to resist all loads imposed by the panel.
- Deflection loads are limited by a maximum deflection ratio of L/180 of the span.

## Sidelap Detail

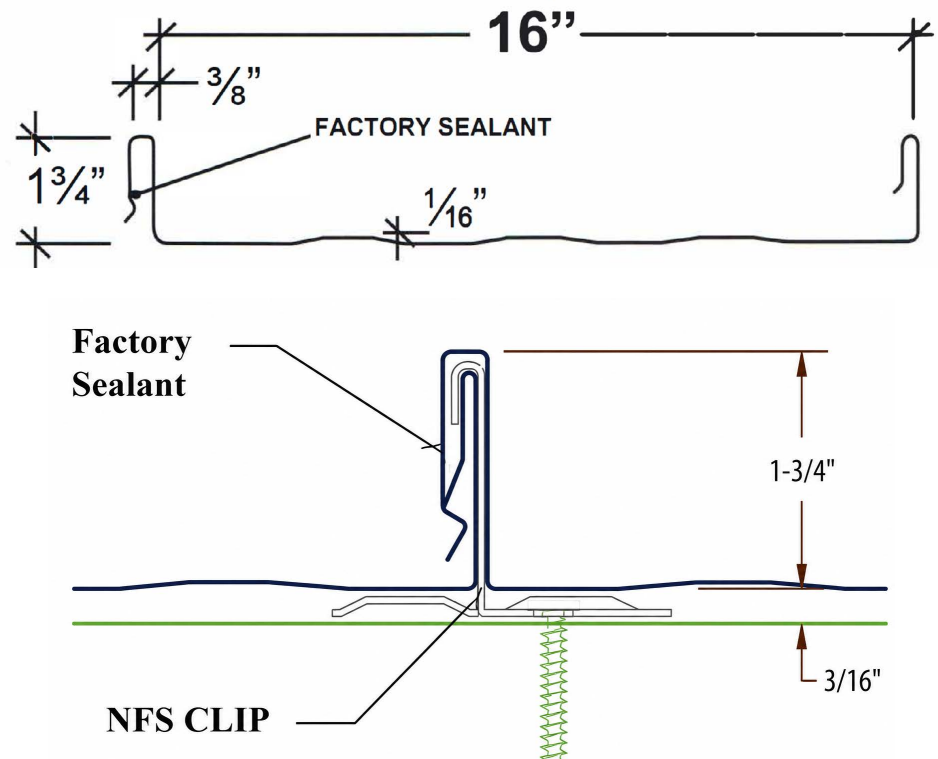


# NFS-16 PANEL

## Narrow Formed Seam Snaplock Panel

Narrow Formed Seam 16 (NFS-16) panels allow flexibility of design and creativity for owners and their architects. The panels may be installed over open framing at 4'-0" centers or solid substrates such as wood deck (5/8" minimum) with the UL 90 clips placed at 3'-0" on center. The integral built-in locking leg of the panel design does not require field seaming. The ease of installation makes this panel an erector's favorite while the architectural appeal makes it an owner's dream. NFS-16 makes an excellent roof but can also make any fascia stand out. The panel is available in all ASI colors and in several gauges.

- 16" Wide Panel Coverage
- Attractive Thin Seam Snap-Together Design
- No Mechanical Seaming Required
- Ideal For Challenging Hip And Valley Roof Designs
- Factory-Applied Sealant In The Female Rib
- Weathertightness Warranties Are Available
- Striated Surface For Consistent Aesthetic Performance
- UL 580 Class 90 Wind Uplift Rated
- UL 790 One-Hour Fire Resistance Rated
- Minimum Roof Slope: 3:12
- UL 2218 Class 4 Impact Resistant



## SECTION PROPERTIES

|             |          |              | Negative Bending |                |               | Positive Bending |                |               |
|-------------|----------|--------------|------------------|----------------|---------------|------------------|----------------|---------------|
| Panel Gauge | Fy (KSI) | Weight (PSF) | Ixe (IN.4/FT.)   | Sxe (IN.3/FT.) | Maxo (KIP-IN) | Ixe (IN.4/FT.)   | Sxe (IN.3/FT.) | Maxo (KIP-IN) |
| 24-         | 50       | 1.34         | 0.0353           | 0.0452         | 1.3527        | 0.0758           | 0.0519         | 1.5563        |
| 22-         | 50       | 1.71         | 0.0500           | 0.0665         | 1.9938        | 0.1052           | 0.0731         | 2.1906        |

- Calculations for the properties of NFS-16 panels are performed in accordance with the 2001 edition of the North American Specification for the Design of Cold-Formed Steel Structural Members.
- Ixe is for deflection determination.
- Sxe is for bending.
- Maxo is the allowable bending moment.
- All values are for one foot of panel width.

## UNDERWRITERS LABORATORIES APPROVAL

| Construction Number | Panel Width (in.) | Gauge   | Clip Type | Clip Spacing | Substrate        | UL-2218 Impact Resistance | UL-263 Fire Rating | UL-580 Rating |
|---------------------|-------------------|---------|-----------|--------------|------------------|---------------------------|--------------------|---------------|
| 255                 | 18" max.          | 24 min. | UL 90     | 4'-0"        | Open Framing     | Class 4                   | Class A            | Class 90      |
| 303                 | 18" max.          | 24 min. | UL 90     | 4'-0"        | Composite System | Class 4                   | Class A            | Class 90      |
| 342                 | 18" max.          | 24 min. | UL 90     | 4'-0"        | Composite System | Class 4                   | Class A            | Class 90      |
| 343                 | 18" max.          | 24 min. | UL 90     | 3'-0"        | Plywood          | Class 4                   | Class A            | Class 90      |
| 414                 | 18" max.          | 24 min. | UL 90     | 3'-0"        | Plywood          | Class 4                   | Class A            | Class 90      |
| 436                 | 18" max.          | 24 min. | UL 90     | 4'-0"        | Plywood          | Class 4                   | Class A            | Class 90      |
| 446                 | 18" max.          | 24 min. | UL 90     | 4'-0"        | Open Framing     | Class 4                   | Class A            | Class 90      |
| 448                 | 18" max.          | 24 min. | UL 90     | 4'-0"        | Composite System | Class 4                   | Class A            | Class 90      |
| 486                 | 18" max.          | 24 min. | UL 90     | 4'-0"        | Composite System | Class 4                   | Class A            | Class 90      |
| 543                 | 18" max.          | 24 min. | UL 90     | 5'-0"        | Open Framing     | Class 4                   | Class A            | Class 90      |
| 543                 | 18" max.          | 24 min. | UL 90     | 4'-0"        | Open Framing     | Class 4                   | Class A            | Class 90      |
| 544                 | 18" max.          | 24 min. | UL 90     | 4'-0"        | Composite System | Class 4                   | Class A            | Class 90      |

- Wind uplift test procedures are in accordance with Underwriters Laboratories Standard UL-580 under "Tests For Uplift Resistance of Roof Assemblies".
- A detailed installation method is available for each Construction Number above and can be found in the UL Roofing Materials and Systems Directory. The panels must be installed in a certain manner to achieve the published results.
- The panel qualifies for a Class A fire rating in compliance with Underwriters Laboratories Standard UL-263.
- The panel system is listed under the following Fire Resistance Design Numbers: P224, P225, P227, P230, P233, P237, P508, P510, P512, P701, P711, P803. Refer to the UL Fire Resistance Directory for specific construction methods and hourly ratings.
- Narrow Formed Seam 16 Panels carry a Class 4 rating under UL-2218 "Test Standard For Impact Resistance".

# REVERSE R PANEL

Reverse R-Panels feature a direct through-fastening system with fasteners placed in the low portion of the corrugations, providing strength while maintaining an aesthetically pleasing appearance. The panel is intended for vertical installation on building exteriors and may also be used as an interior liner for roofs and walls. It is available in a wide range of standard colors and gauges.



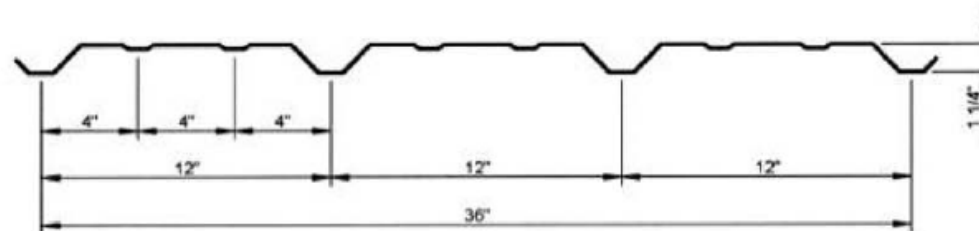
## FEATURES

- Direct through-fastening system.
- Both structural and lap fasteners are placed in the low portion of the corrugations.
- Architectural profile.
- 1-1/4" rib depth at 12" on center with intermediate minor ribs.
- Available in a wide range of standard colors and gauges.

## BENEFITS

- May reduce the amount of bracing required.
- Fasteners are not visible unless viewed from directly in front.
- Ideal for walls and fascias.
- Provides strength yet remains aesthetically pleasing.
- Nearly limitless possibilities for your project.

Panel Detail

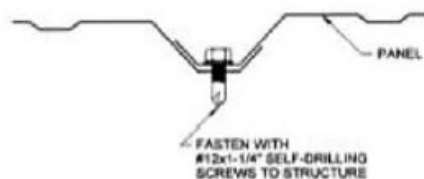


- **1.0 Slope**  
Reverse R-Panel is intended for vertical installation on building exteriors. It may be used as an interior liner for both roof and wall applications.
- **2.0 Substructure**  
Reverse R-Panel is designed to be placed over open structural framing but can be used in conjunction with a solid substructure. To avoid panel distortion, be sure the substructure is uniform and properly aligned.
- **3.0 Coverage**  
Each panel has a net coverage width of 36".
- **4.0 Lengths**  
Minimum factory cut length is 4'-0". Maximum length is 40'-0".
- **5.0 Fasteners**  
Panels are fastened to structural framing with #12x1 1/4 self-drilling screws. Sidelaps are fastened together with #14x7/8 self-drilling screws. Refer to the erection drawing package for fastener location and spacing.
- **6.0 Availability**  
26-gauge steel is standard; 24-gauge steel is optional.

| Allowable Uniform Loads for 3 or More Spans in PSF |     |           |      |      |      |            |      |      |      |           |      |      |      |            |      |      |      |
|----------------------------------------------------|-----|-----------|------|------|------|------------|------|------|------|-----------|------|------|------|------------|------|------|------|
|                                                    |     | Live Load |      |      |      |            |      |      |      | Wind Load |      |      |      |            |      |      |      |
|                                                    |     | Stress    |      |      |      | Deflection |      |      |      | Stress    |      |      |      | Deflection |      |      |      |
| GA                                                 | KSI | 4'        | 5'   | 6'   | 7'   | 4'         | 5'   | 6'   | 7'   | 4'        | 5'   | 6'   | 7'   | 4'         | 5'   | 6'   | 7'   |
| 26                                                 | 80  | 67.9      | 43.4 | 30.2 | 22.2 | 67.9       | 43.4 | 30.2 | 22.2 | 80.2      | 51.3 | 35.7 | 26.2 | 80.2       | 51.3 | 35.7 | 26.2 |
| 24                                                 | 50  | 86.5      | 55.4 | 38.4 | 28.2 | 86.5       | 55.4 | 38.4 | 28.2 | 88.0      | 56.3 | 39.1 | 28.7 | 88.0       | 56.3 | 39.1 | 28.7 |

- Tabulated values are total allowable loads calculated in accordance with the maximum bending stresses for physical and section properties.
- These load capacities are for the panel itself. Frames, purlins, fasteners, and all supports must be designed to resist all loads imposed by the panel.
- Deflection loads are limited by a maximum deflection ratio of L/240 of the span.

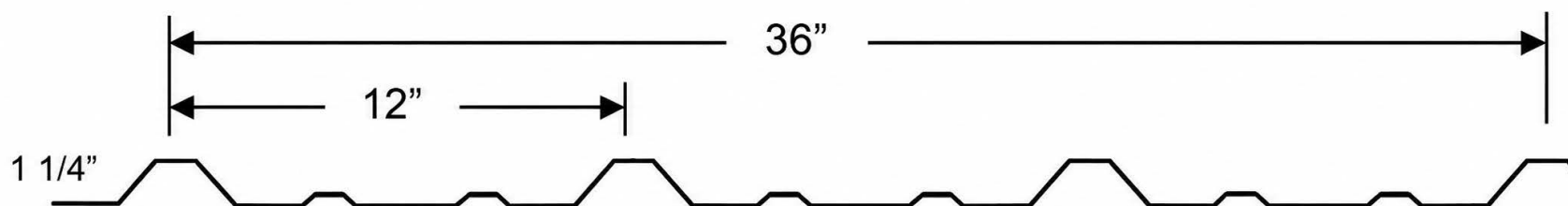
#### Sidelap Detail



# R PANEL

Our PBR panels are ideal for a wide range of applications, including roofs, walls, interior liners, fascias, soffits, and most other locations. The PBR panel features a purlin-bearing leg that helps ensure long-term performance of metal-to-metal lap-fastener connections. The rugged versatility of the 1 1/4"-deep panel, with major ribs at 12" on center and two minor ribs between the larger ribs, allows the product to perform well in most applications. The PBR panel is available in thirteen (13) standard S-P (Weather X) 40-year colors, fourteen (14) premium Fluoropolymer (Kynar) 35-year colors, and various gauges. This is the through-fastened panel of choice for designers, owners, and builders.

## PANEL DETAIL



## FEATURES

- Direct through-fastening system.
- Designed for strength and versatility.
- 1-1/4" rib height at 12" on center with intermediate minor ribs.
- Available in a wide range of standard colors and gauges.
- 3/4" wide lap sealant.

## BENEFITS

- May reduce the amount of bracing required.
- Ideal panel for roofs, walls, and most other locations.
- Provides strength yet remains aesthetically pleasing.
- Nearly limitless possibilities for your project.
- Can be used in most applications.
- Roof lap screw placement can vary and still penetrate the sealant.

## R-Panel General Information

- 1.0 Slope**

R-Panel is ideal for both roof and wall applications. The minimum recommended roof slope for R-Panel is 1:12. When used as roof panels, sealant must be applied to both sidelaps and endlaps. It may be used as an interior liner for both roof and wall applications.

- 2.0 Substructure**

R-Panel is designed to be placed over open structural framing but can be used in conjunction with a solid substructure. To avoid panel distortion, be sure the substructure is uniform and properly aligned.

- 3.0 Coverage**

Each panel has a net coverage width of 36".

- 4.0 Lengths**

Minimum factory cut length is 4'-0". Maximum length is 40'-0".

- 5.0 Fasteners**

Panels are fastened to structural framing with #12x1 1/4 self-drilling screws. Sidelaps are fastened together with #14x7/8 self-drilling screws. Refer to the erection drawing package for fastener location and spacing.

- 6.0 Availability**

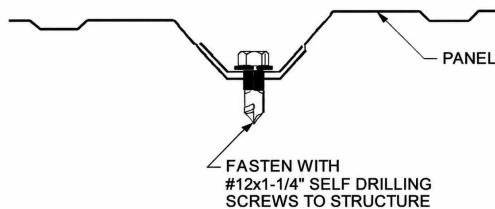
26-gauge steel is standard; 24-gauge steel is optional.

Allowable Uniform Loads for 3 or More Spans in PSF

|    |     | Live Load |      |      |      |            |      |      |      | Wind Load |      |      |      |            |      |      |      |
|----|-----|-----------|------|------|------|------------|------|------|------|-----------|------|------|------|------------|------|------|------|
|    |     | Stress    |      |      |      | Deflection |      |      |      | Stress    |      |      |      | Deflection |      |      |      |
| GA | KSI | 4'        | 5'   | 6'   | 7'   | 4'         | 5'   | 6'   | 7'   | 4'        | 5'   | 6'   | 7'   | 4'         | 5'   | 6'   | 7'   |
| 26 | 80  | 80.2      | 51.3 | 35.7 | 26.2 | 80.2       | 51.3 | 35.7 | 26.2 | 67.9      | 43.4 | 30.2 | 22.2 | 67.9       | 43.4 | 30.2 | 22.2 |
| 24 | 50  | 88.0      | 56.3 | 39.1 | 28.7 | 88.0       | 56.3 | 39.1 | 28.7 | 86.5      | 55.4 | 38.4 | 28.2 | 86.5       | 55.4 | 38.4 | 28.2 |

- Tabulated values are total allowable loads calculated in accordance with the maximum bending stresses for physical and section properties.
- These load capacities are for the panel itself. Frames, purlins, fasteners, and all supports must be designed to resist all loads imposed by the panel.
- Deflection loads are limited by a maximum deflection ratio of L/240 of the span.

### Sidelap Detail



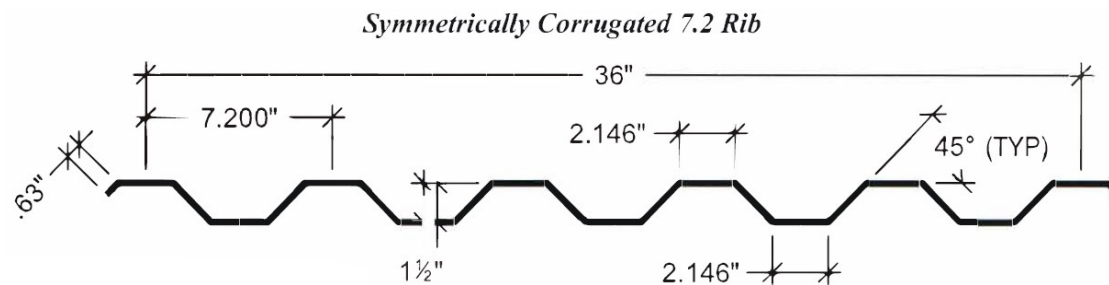
- UL Class 90 Wind Uplift Rated Over Multiple Substrates
- UL 2218 Class 4 Impact (Hail) Resistance Rating
- UL 263 Class A One-Hour Fire Resistance Rated
- Texas Department of Insurance Windstorm Tested #RC-433
- ASTM E283-19 Air Infiltration and ASTM E331-00(2023) Water Penetration Tested, as modified by IBC 2021 Section 1402.2.

## 7.2 PANEL

- 36" Wide Panel Coverage
- Bold Symmetrical Ribs For Dramatic Shadow Effects
- Can Be Applied Horizontally Or Vertically
- Available Mitered Corners For Continuity Around Edges
- Excellent Cladding For Commercial And Industrial Applications
- Long-Span Capability Saves Money On Structural Framing
- UL Class 90 Wind Uplift Rated Over Open Framing
- Matching Light-Transmitting Panels Are Available

### FEATURES

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| SECTION PROPERTIES |          |              |                  |                |               |                  |                |               |
|--------------------|----------|--------------|------------------|----------------|---------------|------------------|----------------|---------------|
|                    |          |              | Negative Bending |                |               | Positive Bending |                |               |
| Panel Gauge        | Fy (KSI) | Weight (PSF) | Ixe (IN.4/FT.)   | Sxe (IN.3/FT.) | Maxo (KIP-IN) | Ixe (IN.4/FT.)   | Sxe (IN.3/FT.) | Maxo (KIP-IN) |
| 29                 | 60 *     | 0.66         | 0.0426           | 0.0418         | 1.502         | 0.0426           | 0.0418         | 1.502         |
| 26                 | 60 *     | 0.86         | 0.0643           | 0.0680         | 2.4424        | 0.0643           | 0.0680         | 2.4424        |
| 24                 | 50       | 1.06         | 0.0918           | 0.1037         | 3.1046        | 0.0918           | 0.1037         | 3.1046        |
| 22                 | 50       | 1.36         | 0.1252           | 0.1459         | 4.3671        | 0.1252           | 0.1459         | 4.3671        |

- Fy is reduced from 80 ksi to 60 ksi in accordance with the 2001 edition of the North American Specification for the Design of Cold-Formed Steel Structural Members -A2.3.2.
- Calculations for the properties of LT 3.3 panels are performed in accordance with the 2001 edition of the North American Specification for the Design of Cold-Formed Steel Structural Members.
- Ixe is for deflection determination.
- Sxe is for bending.
- Maxo is the allowable bending moment.
- All values are for one foot of panel width.

| 29 GAUGE (FV=60 KSI) |                      |              |       |      |      |      |      |      |
|----------------------|----------------------|--------------|-------|------|------|------|------|------|
| SPAN TYPE            | LOAD TYPE            | SPAN IN FEET |       |      |      |      |      |      |
|                      |                      | 3.0          | 4.0   | 5.0  | 6.0  | 7.0  | 8.0  | 9.0  |
| SINGLE               | NEGATIVE WIND LOAD   | 111.3        | 62.6  | 40.1 | 27.8 | 20.4 | 15.6 | 12.4 |
|                      | LIVE LOAD/DEFLECTION | 82.5         | 58.2  | 29.8 | 17.2 | 10.9 | 7.3  | 5.1  |
| 2-SPAN               | NEGATIVE WIND LOAD   | 111.3        | 62.6  | 40.1 | 27.8 | 20.4 | 15.6 | 12.4 |
|                      | LIVE LOAD/DEFLECTION | 76.2         | 56.0  | 37.2 | 26.4 | 19.6 | 15.2 | 12.1 |
| 3-SPAN               | NEGATIVE WIND LOAD   | 139.1        | 78.2  | 50.1 | 34.8 | 25.5 | 19.6 | 15.5 |
|                      | LIVE LOAD/DEFLECTION | 86.6         | 64.9  | 45.1 | 32.3 | 20.5 | 13.7 | 9.6  |
| 4-SPAN               | NEGATIVE WIND LOAD   | 129.9        | 73.0  | 46.7 | 32.5 | 23.9 | 18.3 | 14.4 |
|                      | LIVE LOAD/DEFLECTION | 83.3         | 62.54 | 42.6 | 30.4 | 21.7 | 14.6 | 10.2 |

| 26 GAUGE (FV=60 KSI) |                      |              |       |       |      |      |      |      |
|----------------------|----------------------|--------------|-------|-------|------|------|------|------|
| SPAN TYPE            | LOAD TYPE            | SPAN IN FEET |       |       |      |      |      |      |
|                      |                      | 3.0          | 4.0   | 5.0   | 6.0  | 7.0  | 8.0  | 9.0  |
| SINGLE               | NEGATIVE WIND LOAD   | 180.9        | 101.8 | 65.1  | 45.2 | 33.2 | 25.4 | 20.1 |
|                      | LIVE LOAD/DEFLECTION | 153.7        | 87.8  | 45.0  | 26.0 | 16.4 | 11.0 | 7.7  |
| 2-SPAN               | NEGATIVE WIND LOAD   | 180.9        | 101.8 | 65.1  | 45.2 | 33.2 | 25.4 | 20.1 |
|                      | LIVE LOAD/DEFLECTION | 129.7        | 97.3  | 77.8  | 62.7 | 39.5 | 26.4 | 18.6 |
| 3-SPAN               | NEGATIVE WIND LOAD   | 226.1        | 127.2 | 81.4  | 56.5 | 41.5 | 31.8 | 25.1 |
|                      | LIVE LOAD/DEFLECTION | 147.4        | 110.5 | 76.8  | 49.1 | 30.9 | 20.7 | 14.5 |
| 4-SPAN               | NEGATIVE WIND LOAD   | 211.2        | 118.8 | 76.0  | 52.8 | 38.8 | 29.7 | 23.5 |
|                      | LIVE LOAD/DEFLECTION | 141.8        | 106.4 | 72.1  | 50.9 | 32.8 | 22.0 | 15.4 |
| 24 GAUGE (FY=60 KSI) |                      |              |       |       |      |      |      |      |
| SPAN TYPE            | LOAD TYPE            | SPAN IN FEET |       |       |      |      |      |      |
|                      |                      | 3.0          | 4.0   | 5.0   | 6.0  | 7.0  | 8.0  | 9.0  |
| SINGLE               | NEGATIVE WIND LOAD   | 230.0        | 129.4 | 82.8  | 57.5 | 42.2 | 32.3 | 25.6 |
|                      | LIVE LOAD/DEFLECTION | 205.0        | 125.4 | 64.2  | 37.1 | 23.4 | 15.7 | 11.0 |
| 2-SPAN               | NEGATIVE WIND LOAD   | 230.0        | 129.4 | 82.8  | 57.5 | 42.2 | 32.3 | 25.6 |
|                      | LIVE LOAD/DEFLECTION | 163.1        | 122.3 | 81.2  | 56.7 | 41.8 | 32.1 | 25.4 |
| 3-SPAN               | NEGATIVE WIND LOAD   | 287.5        | 161.7 | 103.5 | 71.9 | 52.8 | 40.4 | 31.9 |
|                      | LIVE LOAD/DEFLECTION | 185.4        | 139.0 | 100.6 | 70.1 | 44.1 | 29.6 | 20.8 |
| 4-SPAN               | NEGATIVE WIND LOAD   | 268.4        | 151.0 | 96.6  | 67.1 | 49.3 | 37.7 | 29.8 |
|                      | LIVE LOAD/DEFLECTION | 178.4        | 133.8 | 94.2  | 65.9 | 46.9 | 31.4 | 22.0 |

| 22 GAUGE (FV=60 KSI) |                      |              |       |       |       |      |      |      |
|----------------------|----------------------|--------------|-------|-------|-------|------|------|------|
| SPAN TYPE            | LOAD TYPE            | SPAN IN FEET |       |       |       |      |      |      |
|                      |                      | 3.0          | 4.0   | 5.0   | 6.0   | 7.0  | 8.0  | 9.0  |
| SINGLE               | NEGATIVE WIND LOAD   | 323.5        | 182.0 | 116.5 | 80.9  | 59.4 | 45.5 | 35.9 |
|                      | LIVE LOAD/DEFLECTION | 323.5        | 171.0 | 87.5  | 50.7  | 31.9 | 21.4 | 15.0 |
| 2-SPAN               | NEGATIVE WIND LOAD   | 323.5        | 182.0 | 116.5 | 80.9  | 59.4 | 45.5 | 35.9 |
|                      | LIVE LOAD/DEFLECTION | 305.1        | 175.9 | 113.9 | 79.6  | 58.7 | 45.1 | 35.7 |
| 3-SPAN               | NEGATIVE WIND LOAD   | 404.4        | 227.5 | 145.6 | 101.1 | 74.3 | 56.9 | 44.9 |
|                      | LIVE LOAD/DEFLECTION | 300.5        | 216.5 | 141.1 | 98.9  | 60.2 | 40.3 | 28.3 |
| 4-SPAN               | NEGATIVE WIND LOAD   | 377.6        | 212.4 | 135.9 | 94.4  | 69.3 | 53.1 | 42.0 |
|                      | LIVE LOAD/DEFLECTION | 289.2        | 203.4 | 132.2 | 92.6  | 63.9 | 42.8 | 30.1 |

- Allowable loads are based on uniform span lengths and Fy - 50 and 60-ksi.
- LIVE LOAD is limited by bending, shear, combined shear and bending, or web crippling.
- NEGATIVE WIND LOAD does not contain a 33.333% increase and does not consider fastener pullout or pullover.
- The above loads consider a maximum deflection ratio of L/180.
- The weight of the panel has not been deducted from the allowable loads.
- The use of any accessories other than those provided by the manufacturer may damage panels and void all warranties and engineering data.
- This material is subject to change without notice.

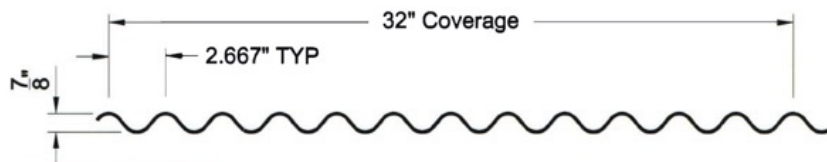
The engineering data contained herein is for the express use of customers and design professionals. Along with this data, it is recommended that the design professional have a copy of the most current version of the North American Specification for the Design of Cold-Formed Steel Structural Members published by the American Iron and Steel Institute to facilitate design. This Specification contains the design criteria for cold-formed steel components. Along with the Specification, the designer should reference the most current building code applicable to the project job site in order to determine environmental loads. If further information or guidance regarding cold-formed design practices is desired, please contact the manufacturer.

# C PANEL

- 32" Wide Panel Coverage Combines Simplicity And Function
- Smooth Symmetrical Ribs For Bold Shadowline Effects
- 7/8" Deep Ribs Are Nine Times Stronger Than Old Corrugated Panels
- Can Be Applied Horizontally Or Vertically.
- Available Mitered Corners For Continuity Around Edges
- Utilizes The Latest Technology While Preserving Nostalgia
- Excellent Cladding For Roof, Wall, Liner Or Fascia Accents
- Matching Light Transmitting Panels Are Available
- Available In Several Gauges, Finishes, And Colors
- UL 2218 Impact And 1-Hour UL 790 Fire Resistance Tested

## FEATURES

- 32" Wide Panel Coverage Combines Simplicity And Function
- Smooth Symmetrical Ribs For Bold Shadowline Effects
- 7/8" Deep Ribs Are Nine Times Stronger Than Old Corrugated Panels
- Can Be Applied Horizontally Or Vertically.
- Available Mitered Corners For Continuity Around Edges
- Utilizes The Latest Technology While Preserving Nostalgia
- Excellent Cladding For Roof, Wall, Liner Or Fascia Accents
- Matching Light-Transmitting Panels Are Available
- Available In Several Gauges, Finishes, And Colors
- Tested for UL 2218 Impact Resistance and One-Hour UL 790 Fire Resistance



| SECTION PROPERTIES |          |              |                            |                            |               |                            |                            |               |
|--------------------|----------|--------------|----------------------------|----------------------------|---------------|----------------------------|----------------------------|---------------|
|                    |          |              | Negative Bending           |                            |               | Positive Bending           |                            |               |
| Panel Gauge        | Fy (KSI) | Weight (PSF) | I <sub>xe</sub> (IN.4/FT.) | S <sub>xe</sub> (IN.3/FT.) | Maxo (KIP-IN) | I <sub>xe</sub> (IN.4/FT.) | S <sub>xe</sub> (IN.3/FT.) | Maxo (KIP-IN) |
| 29                 | 60*      | 0.84         | 0.0187                     | 0.0405                     | 1.4547        | 0.0187                     | 0.0405                     | 1.4547        |
| 26                 | 60*      | 1.06         | 0.0249                     | 0.055                      | 1.9759        | 0.0249                     | 0.055                      | 1.9759        |
| 24                 | 50       | 1.28         | 0.0318                     | 0.0711                     | 2.1296        | 0.0318                     | 0.0711                     | 2.1296        |
| 22                 | 50       | 1.62         | 0.0415                     | 0.0905                     | 2.7099        | 0.0415                     | 0.0905                     | 2.7099        |

- Fy is reduced from 80 ksi to 60 ksi in accordance with the 2001 edition of the North American Specification for the Design of Cold-Formed Steel Structural Members - A2.3.2.
- Calculations for the properties of LT 3.3 panels are performed in accordance with the 2001 edition of the North American Specification for the Design of Cold-Formed Steel Structural Members.
- I<sub>xe</sub> is for deflection determination.
- S<sub>xe</sub> is for bending.
- Maxo is the allowable bending moment.
- All values are for one foot of panel width.

| 29 GAUGE (FV=60 KSI) |                      |              |      |      |      |      |      |      |
|----------------------|----------------------|--------------|------|------|------|------|------|------|
| SPAN TYPE            | LOAD TYPE            | SPAN IN FEET |      |      |      |      |      |      |
|                      |                      | 3.0          | 4.0  | 5.0  | 6.0  | 7.0  | 8.0  | 9.0  |
| SINGLE               | NEGATIVE WIND LOAD   | 107.8        | 60.6 | 38.8 | 26.9 | 19.8 | 15.2 | 12.0 |
|                      | LIVE LOAD/DEFLECTION | 60.5         | 25.5 | 13.1 | 7.6  | 4.8  | 3.2  | 2.2  |
| 2-SPAN               | NEGATIVE WIND LOAD   | 107.8        | 60.6 | 38.8 | 26.9 | 19.8 | 15.2 | 12.0 |
|                      | LIVE LOAD/DEFLECTION | 94.3         | 56.0 | 31.5 | 18.2 | 11.5 | 7.7  | 5.4  |
| 3-SPAN               | NEGATIVE WIND LOAD   | 134.7        | 75.8 | 48.5 | 33.7 | 24.7 | 18.9 | 15.0 |
|                      | LIVE LOAD/DEFLECTION | 112.3        | 48.2 | 24.7 | 14.3 | 9.0  | 6.0  | 4.2  |
| 4-SPAN               | NEGATIVE WIND LOAD   | 125.8        | 70.7 | 45.3 | 31.4 | 23.1 | 17.7 | 14.0 |
|                      | LIVE LOAD/DEFLECTION | 106.6        | 51.2 | 26.2 | 15.2 | 9.5  | 6.4  | 4.5  |

| 26 GAUGE (FV=60 KSI) |                      |              |       |      |      |      |      |      |
|----------------------|----------------------|--------------|-------|------|------|------|------|------|
| SPAN TYPE            | LOAD TYPE            | SPAN IN FEET |       |      |      |      |      |      |
|                      |                      | 3.0          | 4.0   | 5.0  | 6.0  | 7.0  | 8.0  | 9.0  |
| SINGLE               | NEGATIVE WIND LOAD   | 146.4        | 82.3  | 52.7 | 36.6 | 26.9 | 20.6 | 16.3 |
|                      | LIVE LOAD/DEFLECTION | 80.6         | 34.0  | 17.4 | 10.1 | 6.3  | 4.3  | 3.0  |
| 2-SPAN               | NEGATIVE WIND LOAD   | 146.4        | 82.3  | 52.7 | 36.6 | 26.9 | 20.6 | 16.3 |
|                      | LIVE LOAD/DEFLECTION | 126.8        | 75.6  | 41.9 | 24.3 | 15.3 | 10.2 | 7.9  |
| 3-SPAN               | NEGATIVE WIND LOAD   | 183.00       | 102.9 | 65.9 | 45.7 | 33.6 | 25.7 | 20.3 |
|                      | LIVE LOAD/DEFLECTION | 150.5        | 64.2  | 32.9 | 19.0 | 12.0 | 8.0  | 5.6  |
| 4-SPAN               | NEGATIVE WIND LOAD   | 170.8        | 96.1  | 61.5 | 42.7 | 31.4 | 24.0 | 19.0 |
|                      | LIVE LOAD/DEFLECTION | 143.1        | 68.1  | 34.9 | 20.2 | 12.7 | 8.5  | 6.0  |
| 24 GAUGE (FY=60 KSI) |                      |              |       |      |      |      |      |      |
| SPAN TYPE            | LOAD TYPE            | SPAN IN FEET |       |      |      |      |      |      |
|                      |                      | 3.0          | 4.0   | 5.0  | 6.0  | 7.0  | 8.0  | 9.0  |
| SINGLE               | NEGATIVE WIND LOAD   | 157.7        | 88.7  | 56.8 | 39.4 | 29.0 | 22.2 | 17.5 |
|                      | LIVE LOAD/DEFLECTION | 102.9        | 43.4  | 22.2 | 12.9 | 8.1  | 5.4  | 3.8  |
| 2-SPAN               | NEGATIVE WIND LOAD   | 157.7        | 88.7  | 56.8 | 39.4 | 29.0 | 22.2 | 17.5 |
|                      | LIVE LOAD/DEFLECTION | 135.0        | 80.8  | 53.4 | 31.0 | 19.5 | 13.1 | 9.2  |
| 3-SPAN               | NEGATIVE WIND LOAD   | 197.2        | 110.9 | 71.0 | 49.3 | 36.2 | 27.7 | 21.9 |
|                      | LIVE LOAD/DEFLECTION | 159.6        | 82.0  | 42.0 | 24.3 | 15.3 | 10.2 | 7.2  |
| 4-SPAN               | NEGATIVE WIND LOAD   | 184.1        | 103.6 | 66.3 | 46.0 | 33.8 | 25.9 | 20.5 |
|                      | LIVE LOAD/DEFLECTION | 151.9        | 87.0  | 44.5 | 25.8 | 16.2 | 10.9 | 7.6  |

| 22 GAUGE (FV=60 KSI) |                      |              |       |      |      |      |      |      |
|----------------------|----------------------|--------------|-------|------|------|------|------|------|
| SPAN TYPE            | LOAD TYPE            | SPAN IN FEET |       |      |      |      |      |      |
|                      |                      | 3.0          | 4.0   | 5.0  | 6.0  | 7.0  | 8.0  | 9.0  |
| SINGLE               | NEGATIVE WIND LOAD   | 200.7        | 112.9 | 72.3 | 50.2 | 36.9 | 28.2 | 22.3 |
|                      | LIVE LOAD/DEFLECTION | 134.3        | 56.7  | 29.0 | 16.8 | 10.6 | 7.1  | 5.0  |
| 2-SPAN               | NEGATIVE WIND LOAD   | 200.7        | 112.9 | 72.3 | 50.2 | 36.9 | 28.2 | 22.3 |
|                      | LIVE LOAD/DEFLECTION | 172.2        | 103.0 | 68.0 | 40.5 | 25.5 | 17.1 | 12.0 |
| 3-SPAN               | NEGATIVE WIND LOAD   | 250.9        | 141.1 | 90.3 | 62.7 | 46.1 | 35.3 | 27.9 |
|                      | LIVE LOAD/DEFLECTION | 203.7        | 107.0 | 54.8 | 31.7 | 20.0 | 13.4 | 9.4  |
| 4-SPAN               | NEGATIVE WIND LOAD   | 234.3        | 131.8 | 84.3 | 58.6 | 43.0 | 32.9 | 26.0 |
|                      | LIVE LOAD/DEFLECTION | 193.8        | 113.5 | 58.1 | 33.6 | 21.2 | 14.2 | 10.0 |

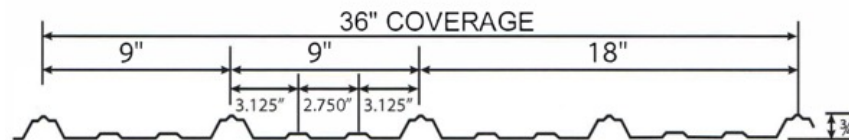
- Allowable loads are based on uniform span lengths and Fy - 50 and 60-ksi.
- LIVE LOAD is limited by bending, shear, combined shear and bending, or web crippling.
- NEGATIVE WIND LOAD does not contain a 33.333% increase and does not consider fastener pullout or pullover.
- The above loads consider a maximum deflection ratio of L/180.
- The weight of the panel has not been deducted from the allowable loads.
- The use of any accessories other than those provided by the manufacturer may damage panels and void all warranties and engineering data.
- This material is subject to change without notice.

The engineering data contained herein is for the express use of customers and design professionals. Along with this data, it is recommended that the design professional have a copy of the most current version of the North American Specification for the Design of Cold-Formed Steel Structural Members published by the American Iron and Steel Institute to facilitate design. This Specification contains the design criteria for cold-formed steel components. Along with the Specification, the designer should reference the most current building code applicable to the project job site in order to determine environmental loads. If further information or guidance regarding cold-formed design practices is desired, please contact the manufacturer.

# AG PANEL

## FEATURES

- 36" Wide Panel Coverage Combines Simplicity and Function
- 9" On-Center Rib Design for Strength and Aesthetics
- 3/4"-Deep Ribs Have a Top Siphon Groove for Water Resistance
- UL 580 Class 90 Wind Uplift Rated (Construction No. 560)
- Purlin-Bearing Rib Provides Superior Sidelap Support
- Utilizes the Latest Technology While Preserving Nostalgia
- Excellent Cladding for Roof, Wall, Liner, or Fascia Accents
- Economical Liner or Partition Panel in Lighter Gauges
- UL 2218 Class 4 (Best) Impact Resistance Rated
- UL 790 Class A One-Hour Fire Resistance Rated
- Available in Several Gauges, Finishes, and Colors



| IP-36 SECTION PROPERTIES |                       |                 |                       |                                       |               |                  |                                          |               |                  |
|--------------------------|-----------------------|-----------------|-----------------------|---------------------------------------|---------------|------------------|------------------------------------------|---------------|------------------|
| GAUGE                    | THICKNESS<br>(INCHES) | WEIGHT<br>(PSF) | YIELD STRESS<br>(KSI) | TOP IN COMPRESSION (POSITIVE BENDING) |               |                  | BOTTOM IN COMPRESSION (NEGATIVE BENDING) |               |                  |
|                          |                       |                 |                       | IXX<br>IN4/FT                         | SXX<br>IN3/FT | MA<br>IN.KIPS/FT | IXX<br>IN4/FT                            | SXX<br>IN3/FT | MA<br>IN.KIPS/FT |
| 26                       | 0.0185                | 0.866           | 80.0                  | 0.0133                                | 0.0220        | 0.7913           | 0.0093                                   | 0.0198        | 0.7123           |
| 29                       | 0.0150                | 0.704           | 80.0                  | 0.0110                                | 0.0181        | 0.6493           | 0.0073                                   | 0.0160        | 0.5760           |

Section properties and allowables are calculated in accordance with the 1996 AISI Specifications and 1999 AISI Supplement No. 1.1 +/- is for deflection determination. S +/- is for bending determination. Ma is the allowable bending moment. All values are for one foot of panel width. These loads are for panel strength. Frames, purlins, fasteners, and all supports must be designed to resist all loads imposed on the panel. Allowable outward loads based on stress have been increased by 33.33% for wind uplift. Allowable loads for deflection are based on a deflection limitation of span/180 or span/240. For roof panels, self-weight of the panel has to be deducted from the allowable inward load to arrive at the actual "live load" carrying capacity of the panel. Minimum bearing length must be checked. Minimum deliverable bare steel thickness should not be less than 0.95 of the design thickness.

| SINGLE SPAN CONDITION |             |                   |                   |         |                   |                   |                   |         |
|-----------------------|-------------|-------------------|-------------------|---------|-------------------|-------------------|-------------------|---------|
| 29 GAUGE & 80 KSI     |             |                   |                   |         | 26 GAUGE & 80 KSI |                   |                   |         |
| Span (feet)           | LL (S)(psf) | LL (D) L/180(psf) | LL (D) L/240(psf) | WL(psf) | LL (S)(psf)       | LL (D) L/180(psf) | LL (D) L/240(psf) | WL(psf) |
| 2                     | 108.2       | 108.2             | 90.1              | 127.7   | 131.9             | 131.9             | 109.3             | 157.9   |
| 2.5                   | 69.3        | 61.5              | 46.2              | 81.7    | 84.4              | 74.6              | 55.9              | 101.1   |
| 3                     | 48.1        | 35.6              | 26.7              | 56.7    | 58.6              | 43.2              | 32.4              | 70.2    |
| 3.5                   | 35.3        | 22.4              | 16.8              | 41.7    | 43.1              | 27.2              | 20.4              | 51.6    |
| 4                     | 27.1        | 15.0              | 11.3              | 31.9    | 33.0              | 18.2              | 13.7              | 39.5    |
| 4.5                   | 21.4        | 10.6              | 7.9               | 25.2    | 26.1              | 12.8              | 9.6               | 31.2    |
| 5                     | 17.3        | 7.7               | 5.8               | 20.4    | 21.1              | 9.3               | 7.0               | 25.3    |
| 6                     | 12.0        | 4.5               | 3.3               | 14.2    | 14.7              | 5.4               | 4.0               | 17.5    |

| TWO SPAN CONDITION           |             |                   |                   |         |                   |                   |                   |         |
|------------------------------|-------------|-------------------|-------------------|---------|-------------------|-------------------|-------------------|---------|
| 29 GAUGE & 80 KSI            |             |                   |                   |         | 26 GAUGE & 80 KSI |                   |                   |         |
| Span (feet)                  | LL (S)(psf) | LL (D) L/180(psf) | LL (D) L/240(psf) | WL(psf) | LL (S)(psf)       | LL (D) L/180(psf) | LL (D) L/240(psf) | WL(psf) |
| 2                            | 96.0        | 96.0              | 96.0              | 121.0   | 118.7             | 118.7             | 118.7             | 175.4   |
| 2.5                          | 61.4        | 61.4              | 60.1              | 77.5    | 76.0              | 76.0              | 72.8              | 112.3   |
| 3                            | 42.7        | 42.7              | 34.8              | 53.8    | 52.8              | 52.8              | 42.2              | 78.0    |
| 3.5                          | 31.3        | 29.2              | 21.9              | 39.5    | 38.8              | 35.4              | 26.5              | 57.3    |
| 4                            | 24.0        | 19.6              | 14.7              | 30.3    | 29.7              | 23.7              | 17.8              | 43.9    |
| 4.5                          | 19.0        | 13.7              | 10.3              | 23.9    | 23.5              | 16.7              | 12.5              | 34.6    |
| 5                            | 15.4        | 10.0              | 7.5               | 19.4    | 19.0              | 12.1              | 9.1               | 28.1    |
| 6                            | 10.7        | 5.8               | 4.3               | 13.4    | 13.2              | 7.0               | 5.3               | 19.5    |
| THREE OR MORE SPAN CONDITION |             |                   |                   |         |                   |                   |                   |         |
| 29 GAUGE & 80 KSI            |             |                   |                   |         | 26 GAUGE & 80 KSI |                   |                   |         |
| Span (feet)                  | LL (S)(psf) | LL (D) L/180(psf) | LL (D) L/240(psf) | WL(psf) | LL(S)(psf)        | LL (D) L/180(psf) | LL (D) L/240(psf) | WL(psf) |
| 2                            | 112.1       | 112.1             | 112.1             | 168.1   | 138.7             | 138.7             | 138.7             | 204.9   |
| 2.5                          | 71.8        | 71.8              | 71.8              | 107.6   | 88.8              | 88.8              | 88.8              | 131.1   |
| 3                            | 49.8        | 49.8              | 49.8              | 74.7    | 61.6              | 61.6              | 61.1              | 91.1    |
| 3.5                          | 36.6        | 36.6              | 31.7              | 54.9    | 45.3              | 45.3              | 38.5              | 66.9    |
| 4                            | 28.0        | 28.0              | 21.3              | 42.0    | 34.7              | 34.4              | 25.8              | 51.2    |
| 4.5                          | 22.2        | 19.9              | 14.9              | 33.2    | 27.4              | 24.1              | 18.1              | 40.5    |
| 5                            | 17.9        | 14.5              | 10.9              | 26.9    | 22.2              | 17.6              | 13.2              | 32.8    |
| 6                            | 12.5        | 8.4               | 6.3               | 18.7    | 15.4              | 10.2              | 7.6               | 22.8    |

Theoretical allowable loads are based on uniform span lengths. LL (S) is the allowable live load based on the stress limitation. LL (D) is the allowable live load based on a deflection limitation of L/180 or L/240. WL is the allowable wind load and has been increased by 33.33%.



# PRODUCTS & ACCESSORIES

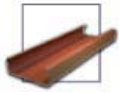
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# COLD-FORMED MEMBERS

Cold-formed steel is widely used in buildings of all types and in all industries. Its popularity is attributed to its ease of production and prefabrication, its uniform quality, lightweight design, economy in transportation and handling, and simple erection and/or installation. Alliance cold-formed steel products provide a significant market advantage because of their strength, durability, and numerous building applications. At Alliance, we have just the right solution for your project.

## WE HAVE AN EXTENSIVE SELECTION OF UNIFORM, LIGHTWEIGHT, AND EASY-TO-INSTALL STEEL MEMBERS FOR ANY INSTALLATION.



10" x 2 1/2" Cee



6" x 2 1/2" Cee



14" x 3" Cee



4" x 2" Angle



7" x 3" Angle



2" x 2" Angle



6" x 2 1/2" Zee



8" x 2 1/2" Zee



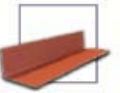
8" Eave Strut



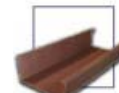
10" x 2 1/2" Zee



4" x 2 1/2" Cee



6" x 4" Angle



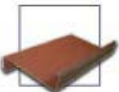
10" Eave Strut



4" x 2 1/2" Zee



4" x 2 1/2"  
Open Face



14" x 3" Zee



6" x 2 1/2"  
Open Face



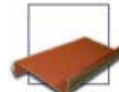
10" x 2 1/2" Cee



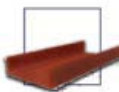
3" x 3" Sq  
Tubing 14 Ga



7" x 7" Angle



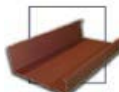
8 1/2" x 2 1/2"  
Cee



10" x 2 1/2"  
Open Face



14" x 3" Cee



12" Eave Strut



Hat Channel



High Eave Plate



Low Eave Plate



Sag Strut



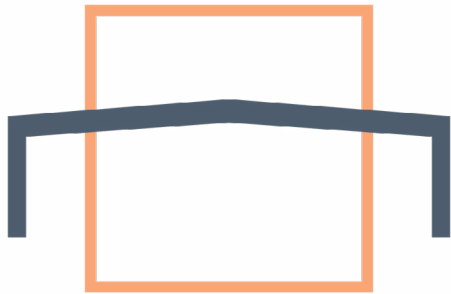
# FRAME TYPES

## **ALLIANCE STEEL PRODUCES JUST THE RIGHT FRAME FOR JUST THE RIGHT APPLICATION**

As a custom steel building manufacturer, we produce a variety of structural frame systems including flush wall clear span, rigid frame, modular rigid frame, tapered beam, and single-slope. Your Alliance metal building can be designed to virtually any desired dimensions to achieve the optimal design solution for your building. From 20' to 250' - gable or single-slope - we have the right frame type for your project.

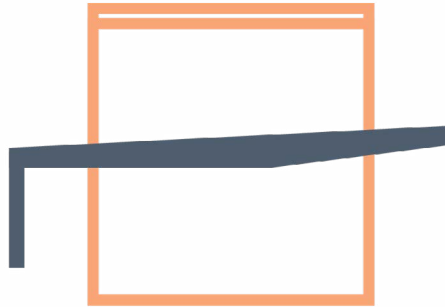
## **OUR COMPONENTS AND ACCESSORIES PROVIDE LONG-TERM PERFORMANCE AND VALUE.**

We offer quality, durable steel building components, steel building parts, and accessories that are highly specialized to provide maximum strength while remaining cost-efficient. This combination of quality manufacturing and affordability makes our building accessories and auxiliary parts an excellent value.



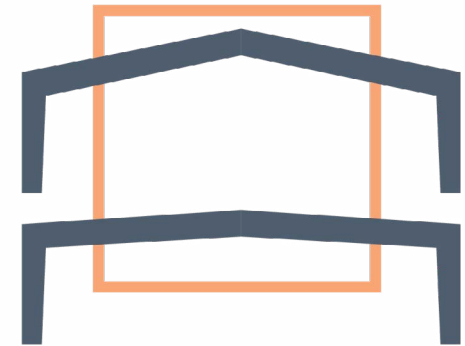
### Flush Wall Clear Span

These buildings offer flush, unbroken interior wall spaces with open, column-free floor areas. Their attractiveness and versatility make them ideal for convenience stores and small office buildings.



### Lean-To

These structures economically increase the width of existing or new buildings without the additional need for a valley gutter. They are ideal for retail buildings, office complexes, and shopping centers.



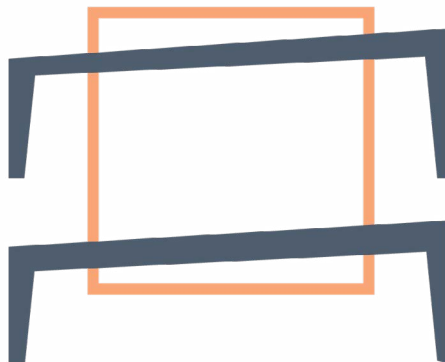
### Rigid Frame Clear Span

These structures are used where a large column-free floor area is required. The extensive size and structural integrity of these buildings make them ideal for auditoriums, gymnasiums, showrooms, and aircraft hangars.



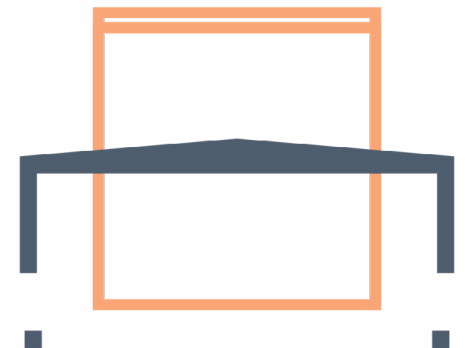
### Rigid Frame With Post

These buildings provide maximum width at the most economical cost and are ideal for most manufacturing plants, industrial warehouses, retail buildings, and shopping centers.



### Single-Slope Clear Span

These buildings are used where one-way roof drainage is desired and a column-free floor area is required. They are ideal for individual retail buildings, office complexes, and shopping centers.



### Tapered Beam Straight Column

These column-free structures economically encompass shorter-span areas and are ideal for small retail stores, buildings, and offices.

# COLOR SELECTION

## BUILDING STANDARD COLOR SELECTIONS (WEATHER X)



BURNISHED SLATE  
SR.34 SRI 35



DESERT BEIGE  
SR.34 SRI 35



SADDLE TAN  
SR.34 SRI 35



MEDIUM BLUE  
SR.34 SRI 35



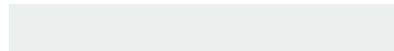
CRIMSON RED  
SR.34 SRI 35



HAWAIIAN BLUE  
SR.34 SRI 35



EVERGREEN  
SR.34 SRI 35



WHITE  
SR.34 SRI 35



LIGHT STONE  
SR.34 SRI 35



ASH GRAY  
SR.34 SRI 35



BRICK RED  
SR.34 SRI 35



KOKO BROWN  
SR.34 SRI 35



CHARCOAL GRAY  
SR.34 SRI 35

## BUILDING PREMIUM COLOR SELECTIONS (FLUROPON/KYNAR)



KOKO BROWN (K)  
SR.34 SRI 35



EVERGREEN (K)  
SR.34 SRI 35



COLONIAL RED  
SR.34 SRI 35



PATRICIAN BRONZE  
SR.34 SRI 35



BRITE RED  
SR.34 SRI 35



BOYSENBERRY  
SR.34 SRI 35



BROWNSTONE  
SR.34 SRI 35



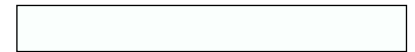
STONE GRAY  
SR.34 SRI 35



REGAL BLUE  
SR.34 SRI 35



SLATE BLUE  
SR.34 SRI 35



REGAL WHITE  
SR.34 SRI 35



PATINA GREEN  
SR.34 SRI 35



LIGHT STONE (K)  
SR.34 SRI 35



ALMOND  
SR.34 SRI 35

Premium Colors are supplied at an additional cost above the standard colors.

## Oil canning is not a cause for rejection.

- Alliance recommends intermediate beads on all A-12 panels.
- Alliance does not recommend lengths greater than 20'-0" on A-12 panels.
- Alliance recommends a striated profile on Alliance-Lok 16 and NFS-16.

## Warranty Information

(See back panel for specific paint system data.)

- All panels have an AZ50 Galvalume substrate with a 25-year rust-through perforation warranty.
- WeatherX colors have a 40-year adhesion and a 30-year chalk and fade warranty.
- Fluropon colors have a 35-year adhesion and a 30-year chalk and fade warranty.
- Acrylume (AZ55) has a 25-year rust-through perforation warranty.
- Warranties are furnished upon request.

# Stick with Alliance

**The very best components and accessories for your next project.**



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