

---

# Metal Roofing Systems

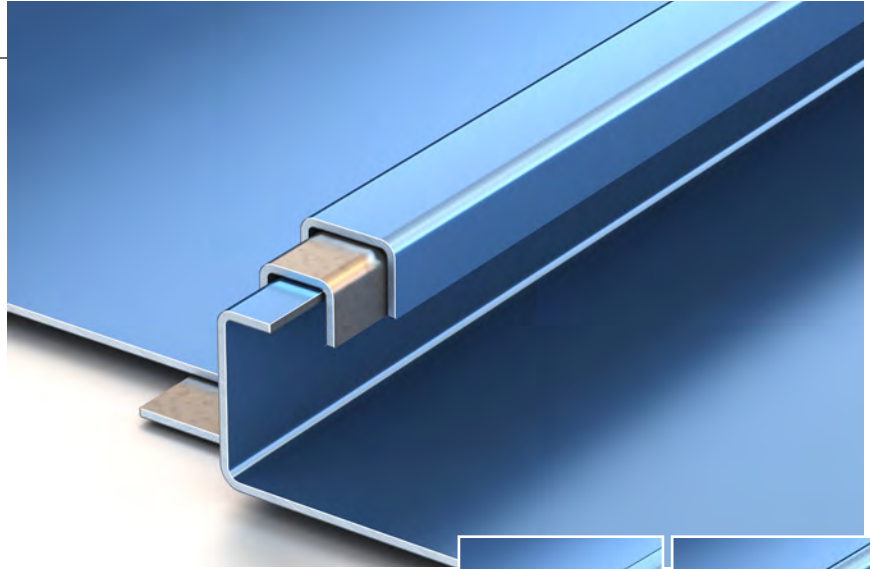


**DrexelMetals**  
Roofing Systems + Custom Fabrication



# DMC 100SS Profile

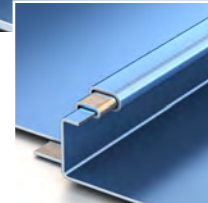
Quality materials and more than 100 years of successful design application govern the construction of our DMC 100SS 1" mechanically seamed metal roof system. Ideal for light commercial or residential applications, this smartly detailed profile can be curved for enhanced architectural appeal. Installed as full-length panels with no end laps helps provide the ultimate in all-weather and watertight protection curved installations.



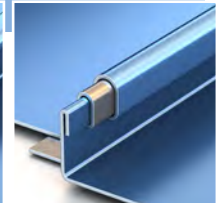
*Ideal Application:*

*Commercial*

*Residential*



Single lock panel



Double lock panel



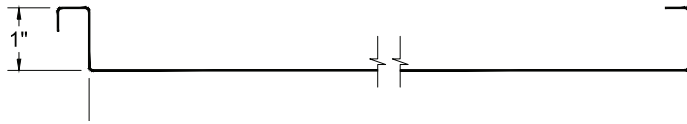
# DMC 100SS Profile



## Available widths:

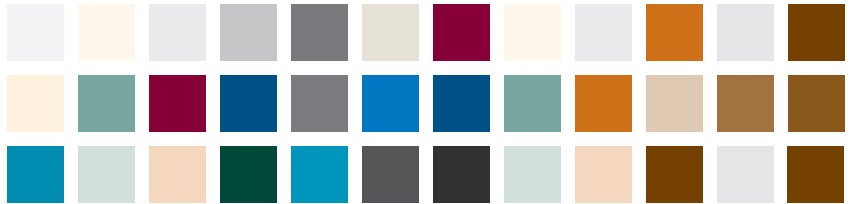
12", 14", 16", 18", 19", 20" or 21"\*

\*Drexel Metals design pressures, wind uplifts and test reports are for specific deck attachments, material gauges, clip spacing and panel widths. A complete specification and listing is available online at [www.drexelmetals.com](http://www.drexelmetals.com)



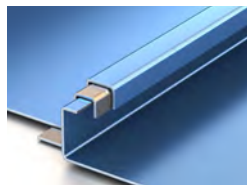
## Substrates available:

- Galvalume® – 24ga and 26ga
- Drexlume® – 24ga and 26ga
- Aluminum – .032"
- Copper – 16 oz and lead-coated copper
- Falzinc

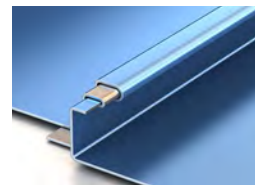


## Profile Options:

- Single lock panel
- Double lock panel
- Radius panel (single or double lock)



Unseamed panel



Single lock panel



Double lock panel

## Finishes and product warranty:

Available in a variety of coatings and colors by AkzoNobel. See the Drexel Metals color card for standard colors and paint specifications.



Galvalume® Substrate:  
High-performance painted metal roofing product, carefully tensioned leveled for superior flatness.

**35 YEAR WARRANTY**

35-Year Non Pro-rated PVDF Paint Warranty

Aluminum Substrate:  
High-performance painted metal roofing product, carefully tensioned leveled for superior flatness.

**35 YEAR WARRANTY**

35-Year Non Pro-rated PVDF Paint Warranty

Drexlume® Substrate:  
Mill finished Galvalume® with a two-sided, clear acrylic finish.

**25 YEAR WARRANTY**

25-Year Non Pro-rated Drexlume Warranty (Acrylic Coated Galvalume)

## Production options:

Factory made or field rolled to exact lengths  
Optional: striation, beads, pencil ribs

## Installation:

Can be installed over plywood decking and Drexel Metals MetShield® underlayment.



## Slope:

Minimum slope 2:12



Minimum Roof Pitch:  
2:12 – low roof pitch

## Testing:

In accordance with:



- UL 580 Wind Uplift (Class 90)
- UL 2218 Class 4 Hail Impact

- UL 790 Class A Fire Rating
- UL Environmental – SRI Third Party Verified

**Drexel Metals**  
Roofing Systems + Custom Fabrication



1234 Gardiner Lane, Louisville, KY 40213  
888-321-9630 toll-free • 502-690-6174 fax

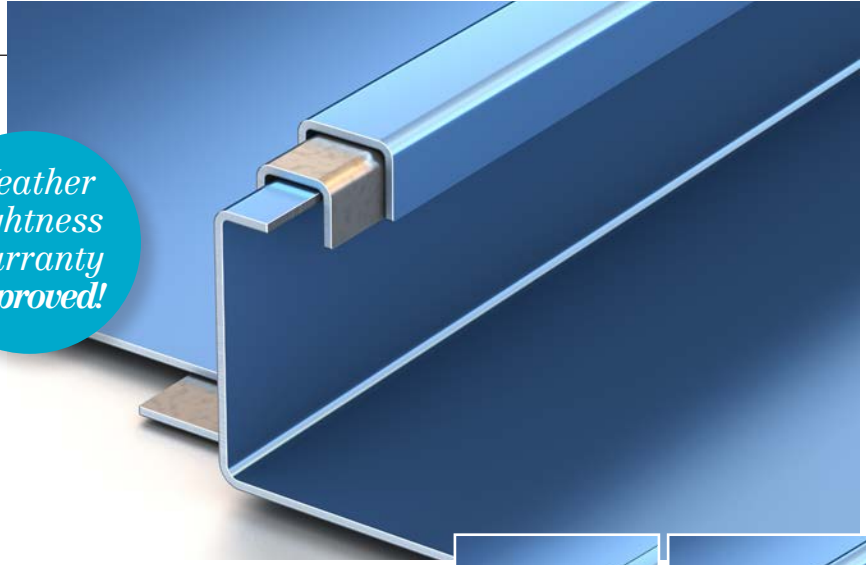


[www.drexelmetals.com](http://www.drexelmetals.com)

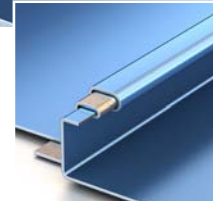
# DMC 150SS Profile

Our DMC 150SS roof system will lend striking dimension to any architectural design. This versatile 1-1/2" mechanically seamed panel can be curved to a wide range of radiuses and applications – from barrel roofs to conical shapes and more. Concealed fasteners and a floating clip system reduce the effect of thermal stresses on the panels, helping to maintain a beautifully smooth, uniform appearance despite fluctuations in temperature.

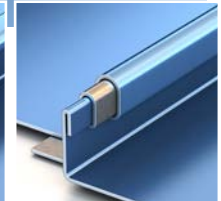
*Weather  
Tightness  
Warranty  
Approved!*



*Ideal Application:*  
Commercial  
Residential



Single lock panel



Double lock panel



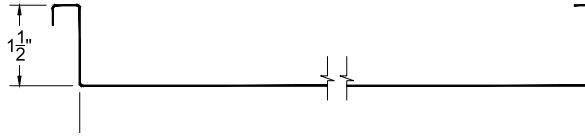
# DMC 150SS Profile



## Available widths:

12", 14", 16", 18", 19" or 20"\*

\*Drexel Metals design pressures, wind uplifts and test reports are for specific deck attachments, material gauges, clip spacing and panel widths. A complete specification and listing is available online at [www.drexelmetals.com](http://www.drexelmetals.com)



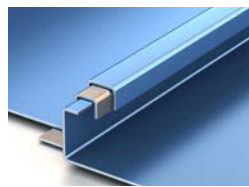
## Substrates available:

- Galvalume® – 24ga and 26ga
- Drexlume® – 24ga and 26ga
- Aluminum – .032"
- Copper – 16 oz and lead-coated copper
- Falzinc

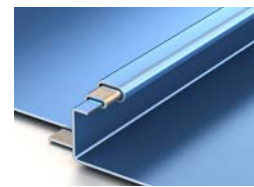


## Profile Options:

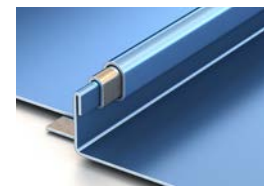
- Single lock panel
- Double lock panel
- Radius panel (single or double lock)



Unseamed panel



Single lock panel



Double lock panel

## Finishes and product warranty:

Available in a variety of coatings and colors by AkzoNobel. See the Drexel Metals color card for standard colors and paint specifications.



Galvalume® Substrate: High-performance painted metal roofing product, carefully tensioned leveled for superior flatness.

**35 YEAR WARRANTY**

35-Year Non Pro-rated PVDF Paint Warranty

Aluminum Substrate: High-performance painted metal roofing product, carefully tensioned leveled for superior flatness.

**35 YEAR WARRANTY**

35-Year Non Pro-rated PVDF Paint Warranty

Drexlume® Substrate: Mill finished Galvalume® with a two-sided, clear acrylic finish.

**25 YEAR WARRANTY**

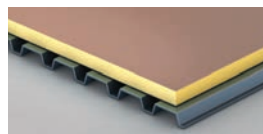
25-Year Non Pro-rated Drexlume Warranty (Acrylic Coated Galvalume)

## Production options:

Factory made or field rolled to exact lengths  
Optional: striation, beads, pencil ribs

## Installation:

Can be installed over steel decking with Polyiso, or over plywood decking and Drexel Metals MetShield® underlayment.



## Slope:

Minimum slope 2:12



Minimum Roof Pitch:  
2:12 – low roof pitch

## Testing:

In accordance with:



- UL 580 Wind Uplift (Class 90)
- TAS 125 Wind Uplift
- UL 1897 Extended Phase Wind Uplift
- UL 2218 Class 4 Hail Impact
- UL 790 Class A Fire Rating
- UL Environmental – SRI Third Party Verified
- ASTM E1646 Water Infiltration
- TAS 100 Wind Driven Rain
- ASTM E1680 Air Infiltration
- ASTM E1886 Missile Impact
- ASTM 2140 Static Pressure Water Head
- Miami-Dade County Approved
- Florida Building Code Approved
- Texas Department of Insurance Approval

**DrexelMetals**  
Roofing Systems + Custom Fabrication



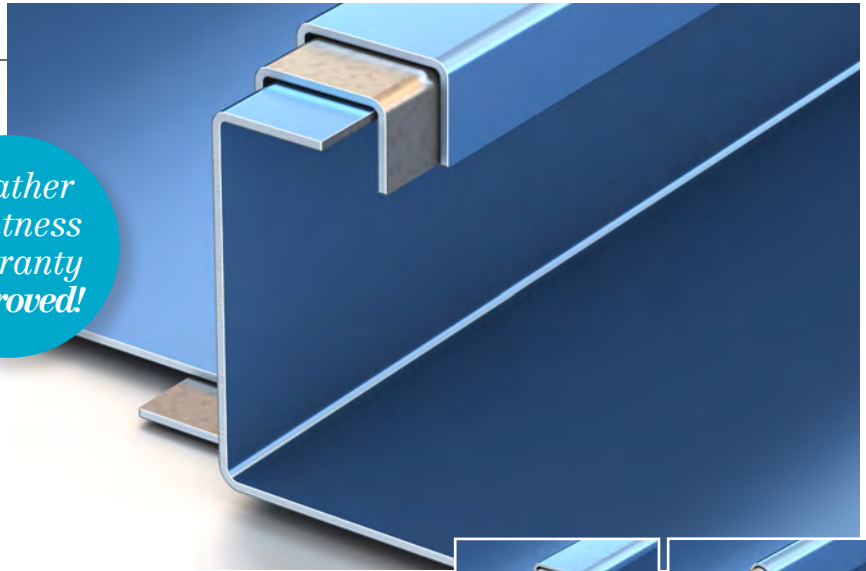
1234 Gardiner Lane, Louisville, KY 40213  
888-321-9630 toll-free • 502-690-6174 fax



[www.drexelmetals.com](http://www.drexelmetals.com)

The versatility of the DMC 200S roof system makes it an ideal choice for low to steep slope applications. Performance-engineered to handle heavy-duty commercial and industrial projects, this 2" mechanically seamed structural metal roof system will meet or exceed most windload and government requirements from coast to coast. Concealed fasteners and floating clip systems reduce panel stress from changes in temperature and help maintain a smooth, uniform appearance. This product can also be curved for large barrel roofs or small canopies.

*Weather  
Tightness  
Warranty  
Approved!*



*Ideal Application:*

*Commercial*

*Institutional*

*Structural*



Single lock panel



Double lock panel

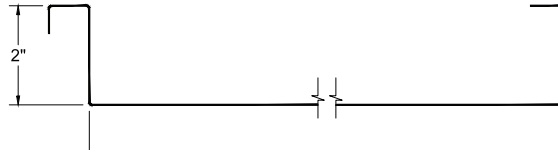


# DMC 200SS Profile

## Available widths:

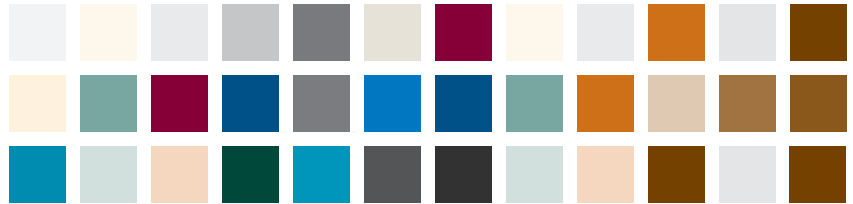
12", 14", 16" or 18"\*

\*Drexel Metals design pressures, wind uplifts and test reports are for specific deck attachments, material gauges, clip spacing and panel widths. A complete specification and listing is available online at [www.drexelmetals.com](http://www.drexelmetals.com)



## Substrates available:

- Galvalume® – 22ga and 24ga
- Drexlume® – 22ga and 24ga
- Aluminum – .040"



## Finishes and product warranty:

Available in a variety of coatings and colors by AkzoNobel. See the Drexel Metals color card for standard colors and paint specifications.



**Galvalume® Substrate:**  
High-performance painted metal roofing product, carefully tensioned leveled for superior flatness.

**35 YEAR WARRANTY**  
35-Year Non Pro-rated PVDF Paint Warranty

**Aluminum Substrate:**  
High-performance painted metal roofing product, carefully tensioned leveled for superior flatness.

**35 YEAR WARRANTY**  
35-Year Non Pro-rated PVDF Paint Warranty

**Drexlume® Substrate:**  
Mill finished Galvalume® with a two-sided, clear acrylic finish.

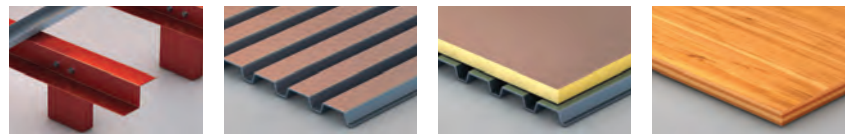
**25 YEAR WARRANTY**  
25-Year Non Pro-rated Drexlume Warranty (Acrylic Coated Galvalume)

## Production options:

Factory made or field rolled to exact lengths  
Optional: striation, beads, pencil ribs  
Available: Radius panel (single or double lock)

## Installation:

Can be installed over open frame steel purlins, steel decking, steel decking with Polyiso or plywood decking.



## Slope:

Minimum slope 1/2:12



Minimum Roof Pitch:  
1/2:12 – low roof pitch

## Allowable uniform:

### Inward load table – psf

| Span        | 2.00 | 2.50 | 3.00 | 3.50 | 4.00 | 5.00 | 5.00 |
|-------------|------|------|------|------|------|------|------|
| 24 ga x 16" | 251  | 201  | 145  | 108  | 83   | 66   | 53   |

### Outward load table – psf

| Span        | 2.00 | 2.50 | 3.00 | 3.50 | 4.00 | 5.00 | 5.00 |
|-------------|------|------|------|------|------|------|------|
| 24 ga x 16" | 106  | 95   | 83   | 72   | 60   | 49   | 37   |

## Testing:

In accordance with:



- UL 580 Wind Uplift (Class 90)
- TAS 125 Wind Uplift
- UL 1897 Extended Phase Wind Uplift
- UL 2218 Class 4 Hail Impact
- UL 790 Class A Fire Rating
- UL Environmental – SRI Third Party Verified
- ASTM E592 Uniform Static Air Pressure Uplift
- ASTM E1646 Water Infiltration
- TAS 100 Wind Driven Rain
- ASTM E1680 Air Infiltration
- ASTM E1886 Missile Impact
- ASTM 2140 Static Pressure Water Head
- Miami-Dade County Approved
- Florida Building Code Approved
- Texas Department of Insurance Approval



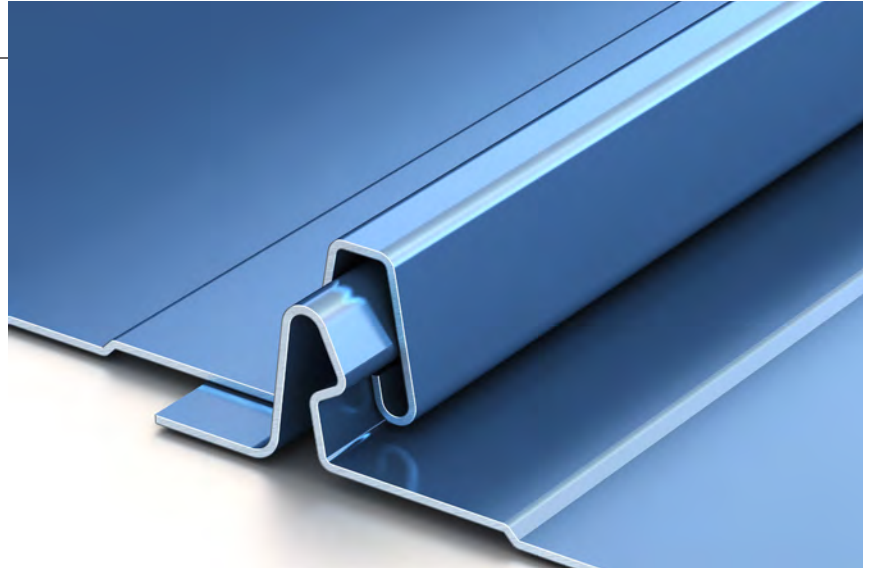
1234 Gardiner Lane, Louisville, KY 40213  
888-321-9630 toll-free • 502-690-6174 fax



[www.drexelmetals.com](http://www.drexelmetals.com)

# DMC 100NS Profile

Our DMC 100NS profile offers unlimited design potential with its sleek, crisp appearance and attractive shadow lines. Eliminating the need for metal roof clips, the concealed 1" self-locking Snap Lock system creates a powerfully protective seal. Versatile and refined, this easy-to-install metal roof delivers superior beauty, durability and strength while showcasing architectural details.



*Ideal Application:*  
*Residential*



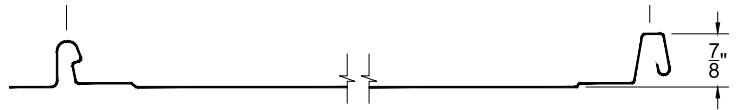


# DMC 100NS Profile

## Available widths:

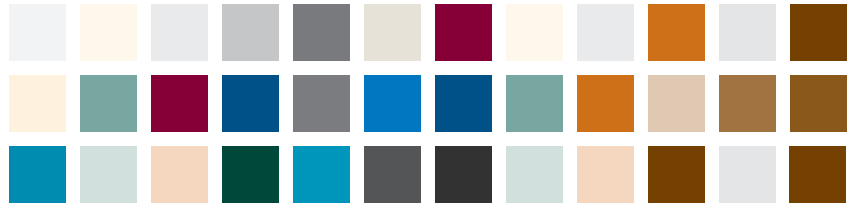
16"\*

\*Drexel Metals design pressures, wind uplifts and test reports are for specific deck attachments, material gauges, clip spacing and panel widths. A complete specification and listing is available online at [www.drexelmetals.com](http://www.drexelmetals.com)



## Substrates available:

- Galvalume® – 24ga and 26ga
- Drexlume® – 24ga
- Aluminum – .032"



## Finishes and product warranty:

Available in a variety of coatings and colors by AkzoNobel. See the Drexel Metals color card for standard colors and paint specifications.



Galvalume® Substrate: High-performance painted metal roofing product, carefully tensioned leveled for superior flatness.

**35 YEAR WARRANTY**

35-Year Non Pro-rated PVDF Paint Warranty

Aluminum Substrate: High-performance painted metal roofing product, carefully tensioned leveled for superior flatness.

**35 YEAR WARRANTY**

35-Year Non Pro-rated PVDF Paint Warranty

Drexlume® Substrate: Mill finished Galvalume® with a two-sided, clear acrylic finish.

**25 YEAR WARRANTY**

25-Year Non Pro-rated Drexlume Warranty (Acrylic Coated Galvalume)

## Production options:

Factory made or field rolled to exact lengths  
Optional: striation, beads, pencil ribs

## Installation:

Can be installed over plywood decking and Drexel Metals MetShield® underlayment.



**MetShield**  
Underlayment

## Slope:

Minimum slope 3:12



Minimum Roof Pitch:  
3:12 – low roof pitch

## Testing:

In accordance with:



- UL 580 Wind Uplift (Class 90)
- UL 2218 Class 4 Hail Impact
- UL 263 Fire Certification
- UL 790 Class A Fire Rating
- UL Environmental – SRI Third-Party Verified
- Florida Building Code Approved

**Drexel Metals**  
Roofing Systems + Custom Fabrication



1234 Gardiner Lane, Louisville, KY 40213  
888-321-9630 toll-free • 502-690-6174 fax



[www.drexelmetals.com](http://www.drexelmetals.com)

# DMC 150SL Profile

Installation ease with impeccable results makes our DMC 150SL roof system a standout choice. The 1-1/2" Snap Lock profile and DMC 150SL Clip create a continuous interlocking system that installs quickly, reducing labor costs. The concealed fastener and clip application also allow thermal expansion and contraction movement to help keep the beautiful finish straight and true.



*Ideal Application:*

*Commercial*

*Residential*

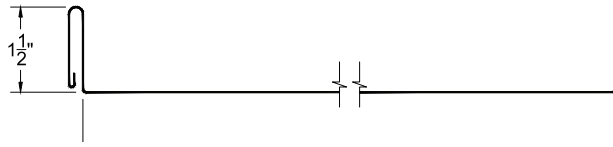


# DMC 150SL Profile

## Available widths:

16"\*

\*Drexel Metals design pressures, wind uplifts and test reports are for specific deck attachments, material gauges, clip spacing and panel widths. A complete specification and listing is available online at [www.drexelmetals.com](http://www.drexelmetals.com)



## Substrates available:

- Galvalume® – 24ga
- Drexlume® – 24ga



## Finishes and product warranty:

Available in a variety of coatings and colors by AkzoNobel. See the Drexel Metals color card for standard colors and paint specifications.



Galvalume® Substrate:  
High-performance painted metal roofing product, carefully tensioned leveled for superior flatness.

**35 YEAR WARRANTY**  
35-Year Non Pro-rated  
PVDF Paint Warranty

Drexlume® Substrate:  
Mill finished Galvalume® with a two-sided, clear acrylic finish.

**25 YEAR WARRANTY**  
25-Year Non Pro-rated  
Drexlume Warranty  
(Acrylic Coated Galvalume)

## Production options:

Factory made or field rolled to exact lengths  
Optional: striation, beads, pencil ribs

## Installation:

Can be installed over plywood decking and Drexel Metals MetShield® underlayment.



**MetShield**  
Underlayment

## Slope:

Minimum slope 3:12



Minimum Roof Pitch:  
3:12 – low roof pitch

## Testing:

In accordance with:



- UL 580 Wind Uplift (Class 90)
- UL 2218 Class 4 Hail Impact
- UL 263 Fire Certification
- UL 790 Class A Fire Rating
- UL Environmental – SRI Third-Party Verified
- Florida Building Code Approved

**Drexel Metals**  
Roofing Systems + Custom Fabrication



[www.drexelmetals.com](http://www.drexelmetals.com)

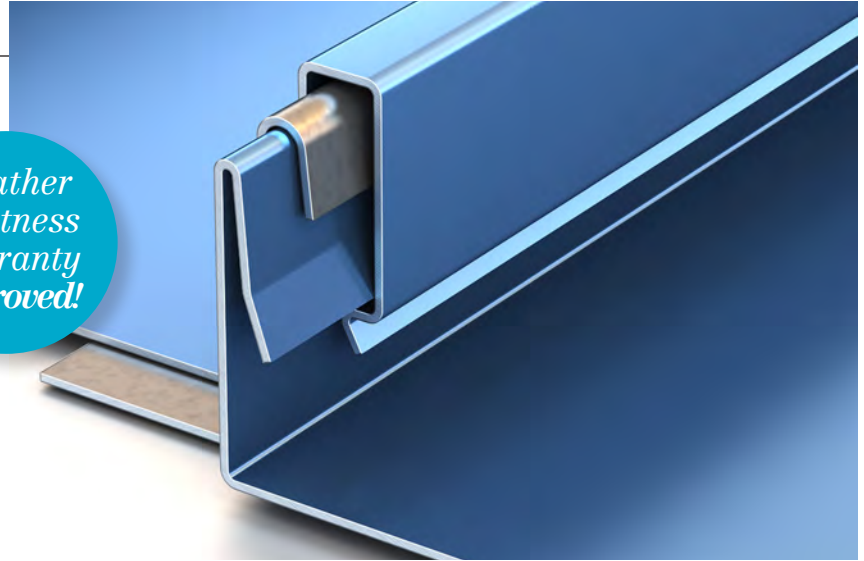
1234 Gardiner Lane, Louisville, KY 40213  
888-321-9630 toll-free • 502-690-6174 fax



# DMC 175S Profile

The DMC 175S is distinctive for its broad width seam, impressive structural capabilities and easy Snap Lock installation. Featuring a 1-3/4" seam height, this continuous interlocking engineered roof system has a concealed fastener and clip application that allows thermal movement and requires no mechanical seaming to ensure weathertight integrity. The installation is simple and quick, yet it withstands extremely high design pressures and is approved for use on Weather Tightness Warranty projects.

*Weather  
Tightness  
Warranty  
Approved!*

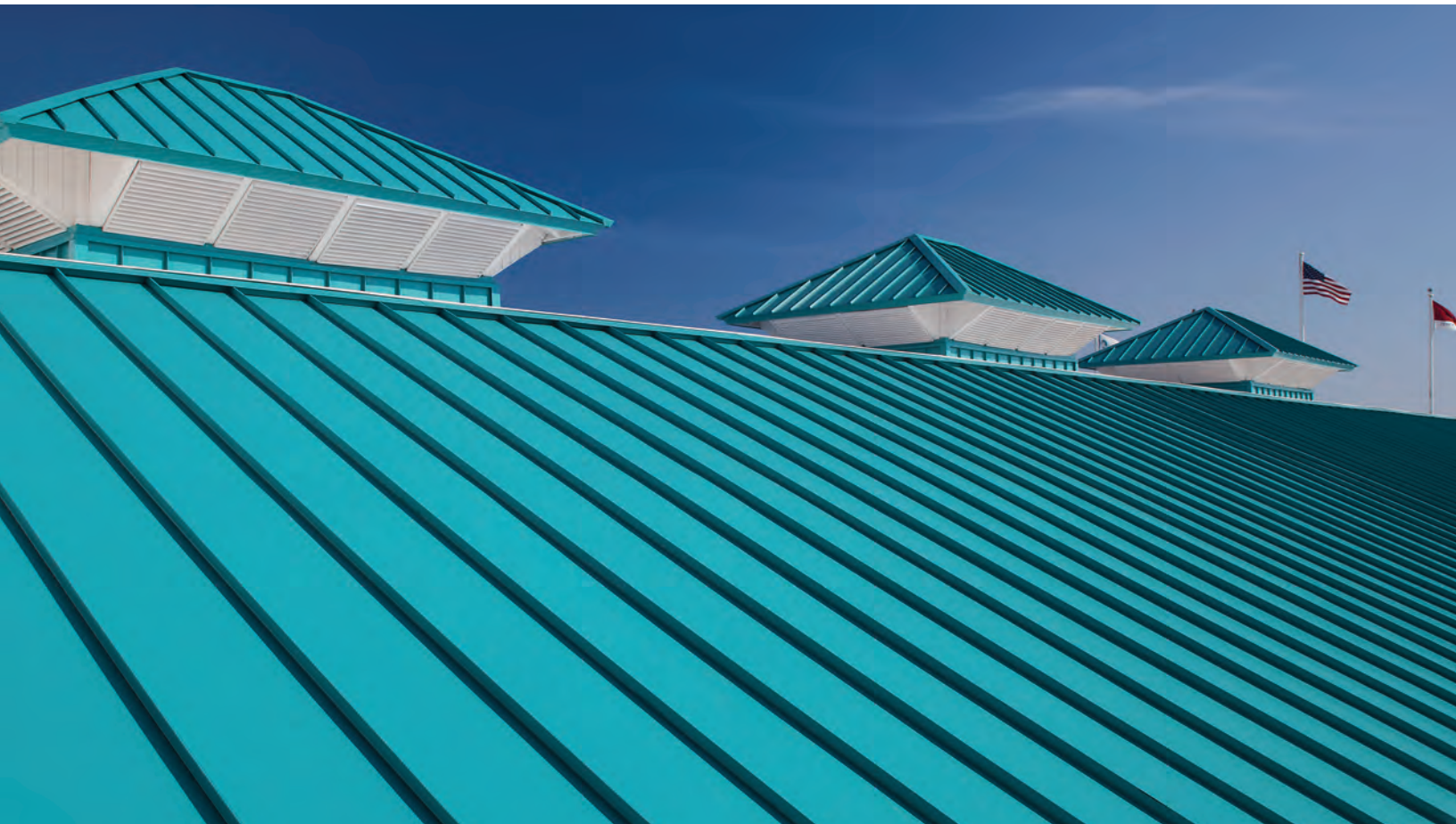


*Ideal Application:*

*Residential*

*Institutional*

*Structural*

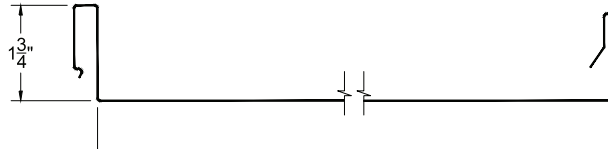


# DMC 175S Profile

## Available widths:

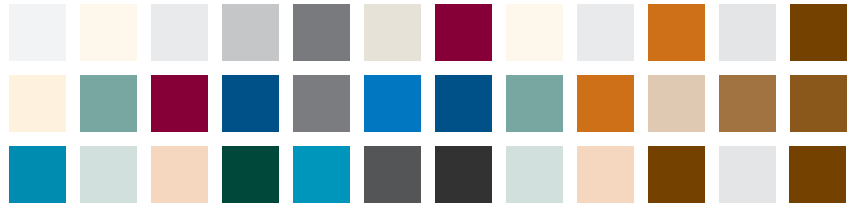
12", 14", 16" or 18"\*

\*Drexel Metals design pressures, wind uplifts and test reports are for specific deck attachments, material gauges, clip spacing and panel widths. A complete specification and listing is available online at [www.drexelmetals.com](http://www.drexelmetals.com)



## Substrates available:

- Galvalume® – 22ga and 24ga
- Drexlume® – 24ga
- Aluminum – .032" and .040"



## Finishes and product warranty:

Available in a variety of coatings and colors by AkzoNobel. See the Drexel Metals color card for standard colors and paint specifications.



Galvalume® Substrate:  
High-performance painted metal roofing product, carefully tensioned leveled for superior flatness.

**35 YEAR WARRANTY**  
35-Year Non Pro-rated  
PVDF Paint Warranty

Aluminum Substrate:  
High-performance painted metal roofing product, carefully tensioned leveled for superior flatness.

**35 YEAR WARRANTY**  
35-Year Non Pro-rated  
PVDF Paint Warranty

Drexlume® Substrate:  
Mill finished Galvalume® with a two-sided, clear acrylic finish.

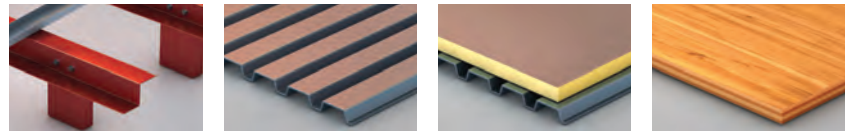
**25 YEAR WARRANTY**  
25-Year Non Pro-rated  
Drexlume Warranty  
(Acrylic Coated Galvalume)

## Production options:

Factory made or field rolled to exact lengths  
Optional: striation, beads, pencil ribs

## Installation:

Can be installed over open frame steel purlins, steel decking, steel decking with Polyiso or plywood decking.



## Slope:

Minimum slope 2:12



Minimum Roof Pitch:  
2:12 – low roof pitch

## Allowable uniform:

### Inward load table – psf

Deflection Ratio L/180

| Span        | 2.00 | 2.50 | 3.00 | 3.50 | 4.00 | 5.00 | 5.00 |
|-------------|------|------|------|------|------|------|------|
| 24 ga x 16" | 251  | 201  | 145  | 108  | 83   | 66   | 53   |
| 24 ga x 18" | 205  | 131  | 90   | 66   | 50   | 39   | 32   |

## Testing:

In accordance with:



- UL 580 Wind Uplift (Class 90)
- TAS 125 Wind Uplift
- UL 1897 Extended Phase Wind Uplift
- UL 2218 Class 4 Hail Impact
- UL 790 Class A Fire Rating
- UL Environmental – SRI Third Party Verified
- ASTM E1646 Water Infiltration
- TAS 100 Wind Driven Rain
- ASTM E1680 Air Infiltration
- ASTM E1886 Missile Impact
- Miami-Dade County Approved
- Florida Building Code Approved
- Texas Department of Insurance Approval

**DrexelMetals**  
Roofing Systems + Custom Fabrication

[www.drexelmetals.com](http://www.drexelmetals.com)

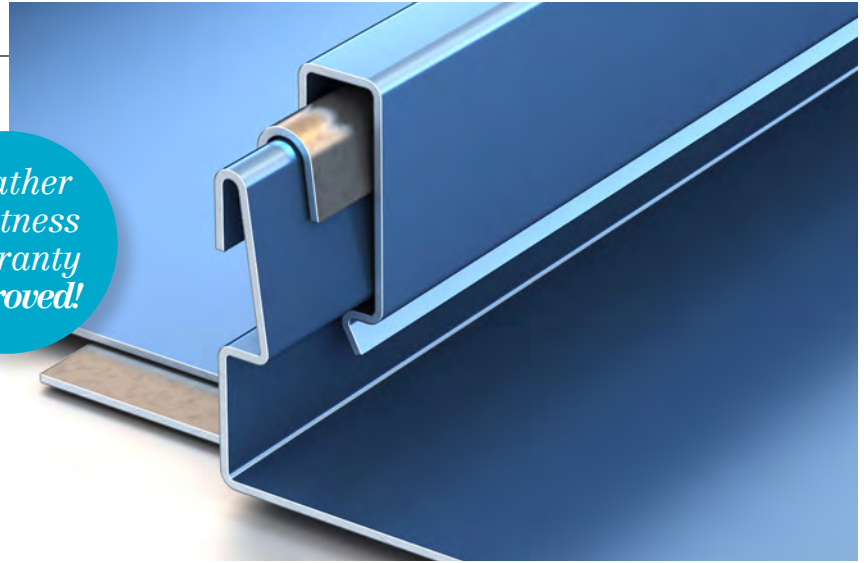
1234 Gardiner Lane, Louisville, KY 40213  
888-321-9630 toll-free • 502-690-6174 fax



# DMC 550S Profile

A superior integral seam design and quick installation – that’s the hallmark of the DMC 550S panel. This expertly crafted interlocking roof system provides a powerfully protective weathertight seam. The finished results deliver a substantial measure of quality and style that’s certain to stand the test of time.

*Weather  
Tightness  
Warranty  
Approved!*



*Ideal Application:*

*Commercial*

*Residential*

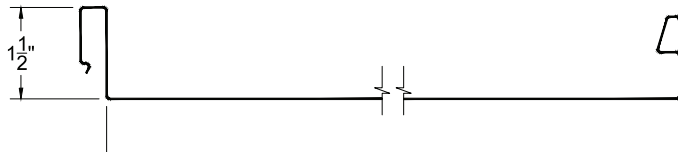


# DMC 550S Profile

## Available widths:

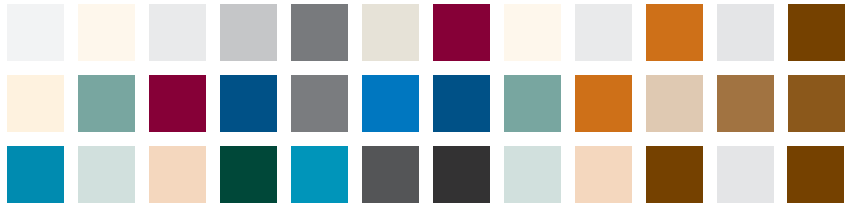
12", 14", 16" or 19"

\*Drexel Metals design pressures, wind uplifts and test reports are for specific deck attachments, material gauges, clip spacing and panel widths. A complete specification and listing is available online at [www.drexelmetals.com](http://www.drexelmetals.com)



## Substrates available:

- Galvalume® – 24ga
- Drexlume® – 24ga



## Finishes and product warranty:

Available in a variety of coatings and colors by AkzoNobel. See the Drexel Metals color card for standard colors and paint specifications.



Galvalume® Substrate:  
High-performance painted metal roofing product, carefully tensioned leveled for superior flatness.

**35 YEAR WARRANTY**  
35-Year Non Pro-rated PVDF Paint Warranty

Drexlume® Substrate:  
Mill finished Galvalume® with a two-sided, clear acrylic finish.

**25 YEAR WARRANTY**  
25-Year Non Pro-rated Drexlume Warranty (Acrylic Coated Galvalume)

## Production options:

Factory made or field rolled to exact lengths  
Optional: striation, beads, pencil ribs

## Installation:

Can be installed over open frame steel purlins, or over plywood decking and Drexel Metals MetShield® underlayment.



## Slope:

Minimum slope 3:12



Minimum Roof Pitch:  
3:12 – low roof pitch

## Testing:

In accordance with:



- UL 580 Wind Uplift (Class 90)
- UL 2218 Class 4 Hail Impact
- UL 263 Fire Certification
- UL 790 Class A Fire Rating
- UL Environmental – SRI Third-Party Verified

**Drexel Metals**  
Roofing Systems + Custom Fabrication



[www.drexelmetals.com](http://www.drexelmetals.com)

1234 Gardiner Lane, Louisville, KY 40213  
888-321-9630 toll-free • 502-690-6174 fax



# DMC Cap Seam Profile

Classic yet versatile, our Cap Seam roof is ideal for a variety of projects, especially those including curved applications. The low profile 1" cap with the flat pan effortlessly accommodates detailing at hips and valleys, and can be curved as tight as a 3' radius. A quick and easy installation is inherent in this premium quality roof system.



# DMC Snap-On Batten Profile

Distinctive in its powerful profile design, the DMC Snap-On Batten roof system beautifully accentuates the architectural appeal of mansards, fascias and other solid substrate with a slope that exceeds 3:12. The ample 1-1/2" batten provides added dimension with bold shadow lines, while the heavy-duty construction delivers outstanding performance and protection. Quick snap-on battens ensure ease of installation.

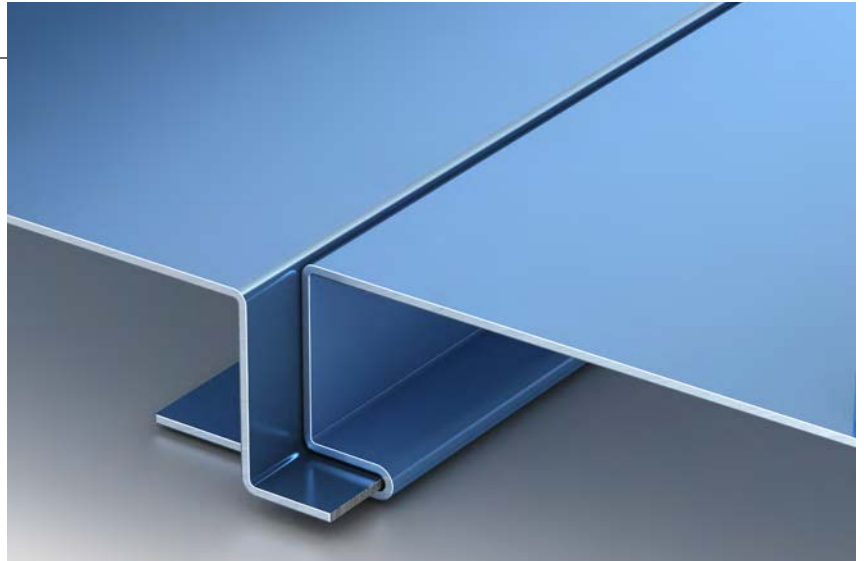




# DMC FW1 Flush Profile



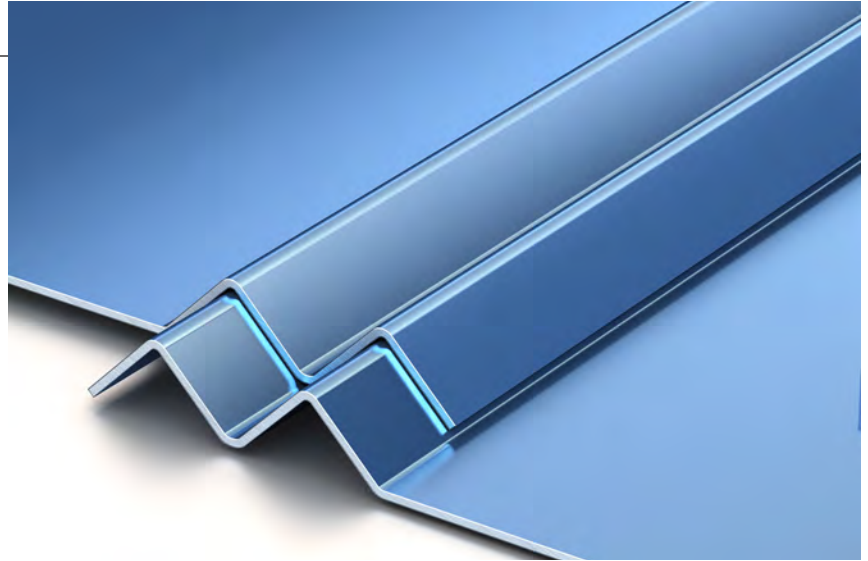
From subtle elegance to modern sophistication, the smooth, uniform appearance of DMC FW1 Flush panel is certain to please. This expertly crafted panel is ideally suited for a wide range of applications, included fascias, walls, equipment screens and soffits. The concealed male and female connection achieves a distinctly superior finished look and stiffener beads also can be used to further safeguard the flush appearance.



# DMC 5V Profile

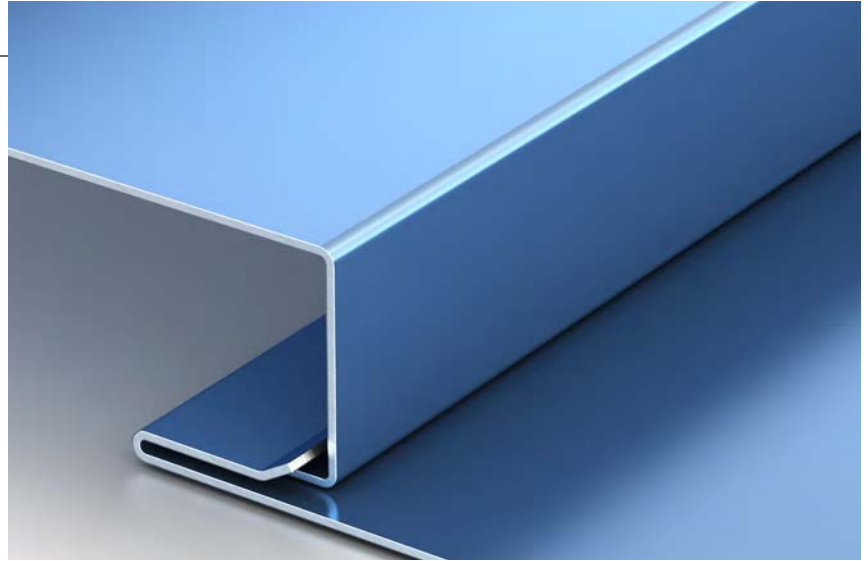


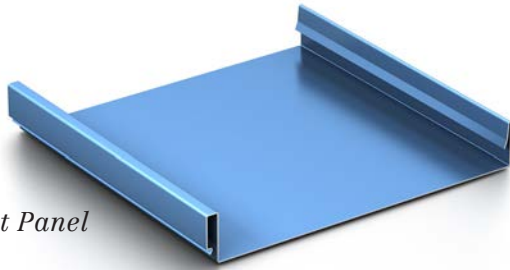
Featuring an authentic “Key West” aesthetic, this traditional roof system is a long-time favorite for its functionality and style. The generous 24" panel span, 3/8" rib height and exposed fastener design together achieve an attractive finish that will stand up strong to harsh weather year after year.



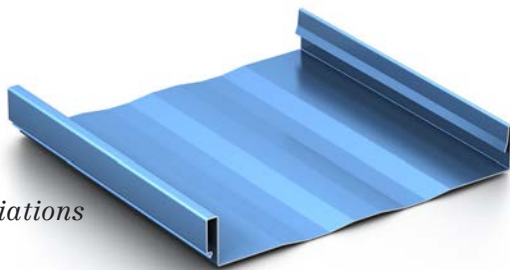
# Bermuda Horizon Profile

Simplistic beauty is defined by our DMC Bermuda Horizon profile. This horizontal roof and wall panel system features a 12" exposure and a dramatic shadow line that perfectly conveys the welcoming ambiance of Bermuda-style architecture. The shingle lapped interlocking seams not only provide aesthetic appeal, they deliver superior water-resistance on walls or roof applications with a slope as low as 4:12. Bermuda Horizon can be installed over vertical framing, thus eliminating the need for additional hat channel framing.

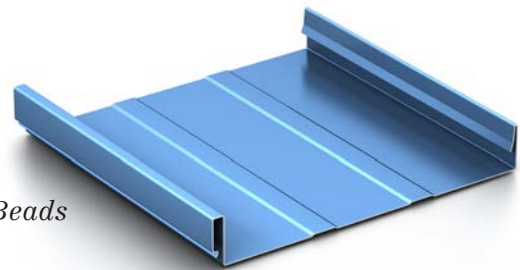




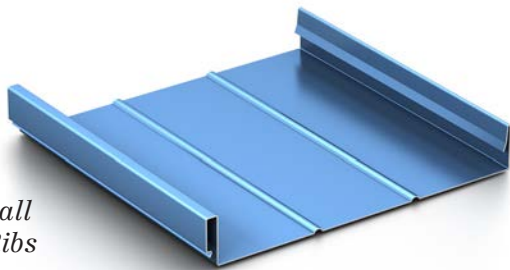
*Flat Panel*



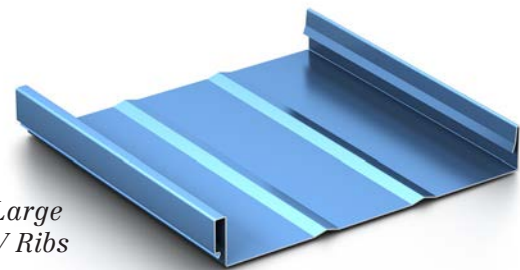
*Striations*



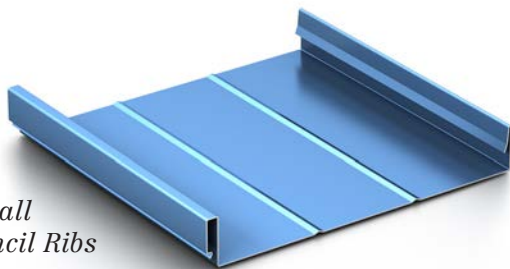
*Beads*



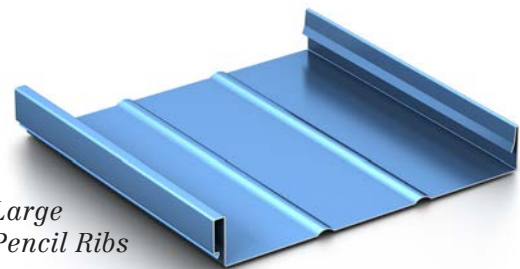
*Small  
V Ribs*



*Large  
V Ribs*



*Small  
Pencil Ribs*

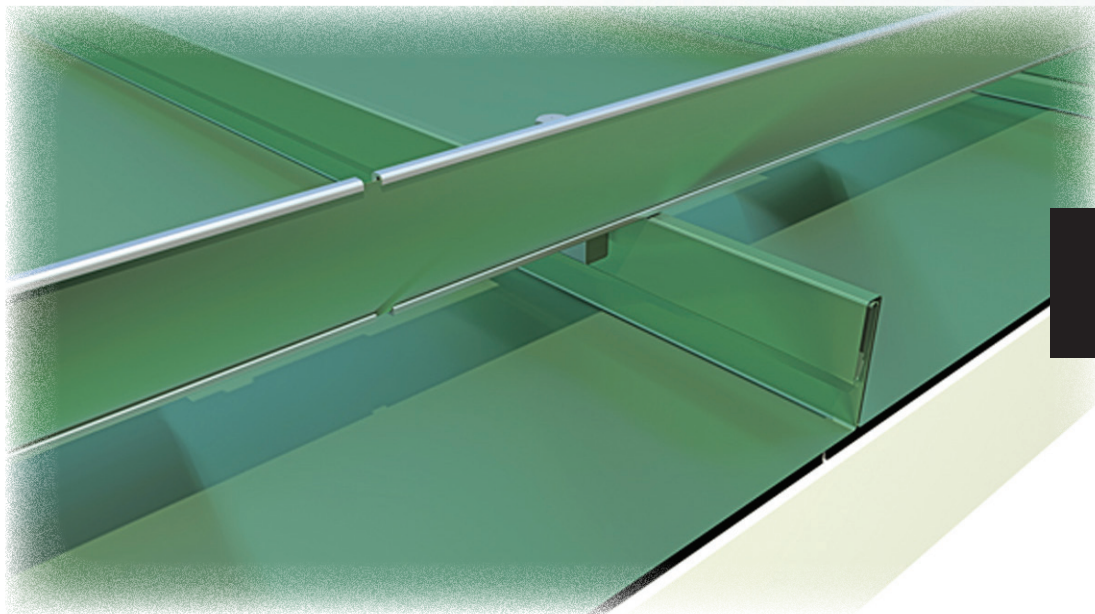


*Large  
Pencil Ribs*



## S-5!® ColorGard® Snow Retention

Maximum holding strength, longer service life, superior aesthetics and lower installation costs make our ColorGard® snow retention system an excellent choice. Designed and engineered on a site-specific basis, ColorGard's impressive holding strength controls snow migration with a perfect color match that lasts the life of the roof.



---

# Custom Fabrication



**DrexelMetals**  
Roofing Systems + Custom Fabrication



# Cornice/Custom Fabrication

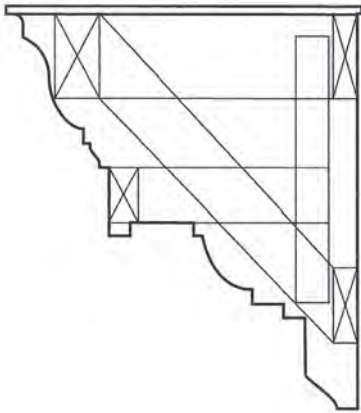
Design ingenuity and skilled craftsmanship inspire creative formmaking with our cornices and custom fabrications. From refreshing contemporary designs to historic reproductions, we have a full line of tooling to produce shapes to precise specifications. An ample selection of prefabricated dentils, finals and corners also provide easy installation for enhanced visual appeal.



**Met-Fab**  
Premium  
Products

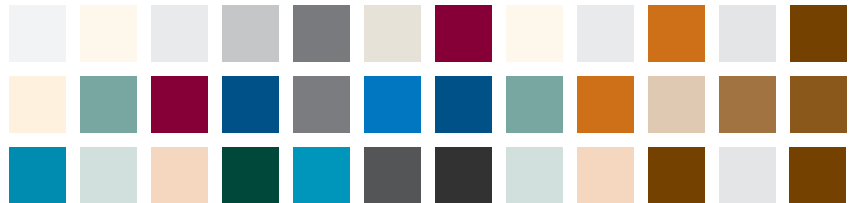


# Cornice/Custom Fabrication



## Substrates available:

- Aluminum: .032", .040", .050", .063", .080", .090" and .125"
- Copper: 16 oz, 20 oz and 24 oz
- Lead-coated copper: 16 oz and 20 oz
- Stainless steel: 26ga, 24ga, 22ga and 20ga
- Galvanized steel: 18ga, 20ga, 22ga, and 24ga



## Finishes and product warranty:

Available in a variety of coatings and colors by AkzoNobel. See the Drexel Metals color card for standard colors and paint specifications.



Galvalume® Substrate: High-performance painted metal roofing product, carefully tensioned leveled for superior flatness.

**35 YEAR WARRANTY**  
35-Year Non Pro-rated PVDF Paint Warranty

Aluminum Substrate: High-performance painted metal roofing product, carefully tensioned leveled for superior flatness.

**35 YEAR WARRANTY**  
35-Year Non Pro-rated PVDF Paint Warranty

Drexlume® Substrate: Mill finished Galvalume® with a two-sided, clear acrylic finish.

**25 YEAR WARRANTY**  
25-Year Non Pro-rated Drexlume Warranty (Acrylic Coated Galvalume)

## Production options:

Factory made

*Your heirloom design or architectural artifact, meticulously recreated in metal . . . crafted to last.*



www.drexelmetals.com

1234 Gardiner Lane, Louisville, KY 40213  
888-321-9630 toll-free • 502-690-6174 fax







A merger of functionality and form, our masterfully crafted trim and accessories accentuate architectural character, while protecting rooflines and hard-to-reach areas with a durable finish. Designed to handle all sheet metal requirements, our computer-operated equipment delivers superior accuracy and consistency with every component.

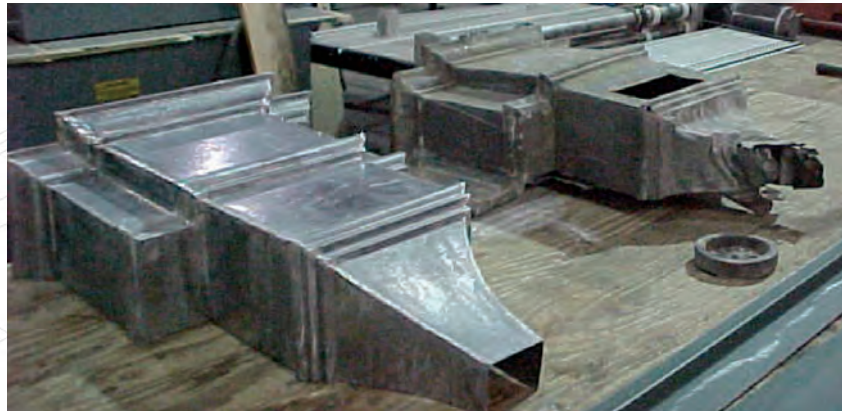
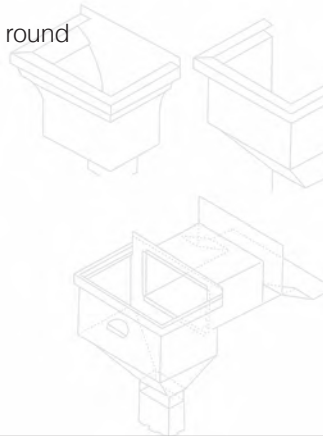
**Met-Fab**  
Premium  
Products



# Custom Trim /Accessories

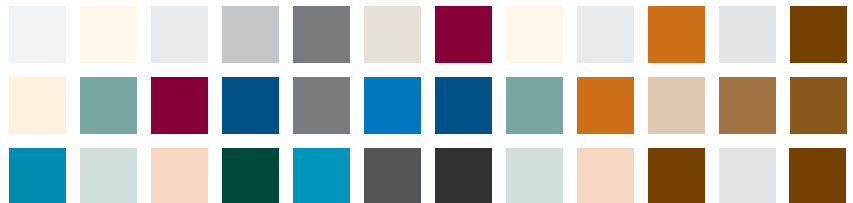


- Full range of gutters – box, ogee and half round
- Downspouts – box and round
- Conductor heads
- Cornices and fascias
- In-wall reglet
- Vented ridge caps
- C, Z and hat channels
- Custom shapes



## Substrates available:

- Aluminum: .032", .040", .050", .063", .080" and .125"
- Copper: 16 oz, 20 oz and 24 oz
- Lead-coated copper: 16 oz and 20 oz
- Stainless steel: 28ga, 26ga, 24ga, 22ga and 20ga



## Finishes and product warranty:

Available in a variety of coatings and colors by AkzoNobel. See the Drexel Metals color card for standard colors and paint specifications.



Galvalume® Substrate: High-performance painted metal roofing product, carefully tensioned leveled for superior flatness.

**35** YEAR WARRANTY

35-Year Non Pro-rated PVDF Paint Warranty

Aluminum Substrate: High-performance painted metal roofing product, carefully tensioned leveled for superior flatness.

**35** YEAR WARRANTY

35-Year Non Pro-rated PVDF Paint Warranty

Drexlume® Substrate: Mill finished Galvalume® with a two-sided, clear acrylic finish.

**25** YEAR WARRANTY

25-Year Non Pro-rated Drexlume Warranty (Acrylic Coated Galvalume)

## Production options:

Factory made

*Your heirloom design or architectural artifact, meticulously recreated in metal . . . crafted to last.*



**Drexel Metals**  
Roofing Systems + Custom Fabrication



1234 Gardiner Lane, Louisville, KY 40213  
888-321-9630 toll-free • 502-690-6174 fax



www.drexelmetals.com



**Met-Fab**  
Premium  
Products

A strong collaboration of simple elegance and modern practicality define our soffit panels and plate wall system. Featuring a clean-line aesthetic, the structure is installed using a unique track and compression channel that allows the panels to be installed in virtually any order. Panels can be removed individually, allowing for easy future access or replacement. Joints are caulked.





Column covers work double time – concealing structural columns and enhancing the overall architectural design. Highly durable and easy to install, our columns feature a wide range of sizes, options and finishes to achieve the perfect finished look in every application.



# Specialty Metals

There's an art to working with specialty metals – and in our skilled hands your concepts and design challenges will be clearly defined and meticulously achieved. Terne-coated stainless steel, copper, zinc and other specialty metals can be fabricated into a host of panels and shapes to your exact specifications.



**Drexel Metals**   
Roofing Systems + Custom Fabrication

[www.drexelmetals.com](http://www.drexelmetals.com)

1234 Gardiner Lane, Louisville, KY 40213  
888-321-9630 toll-free • 502-690-6174 fax



**Project:** Switch Building

**Architect:** Eric Bunge

**Firm:** narchitects, New York, NY

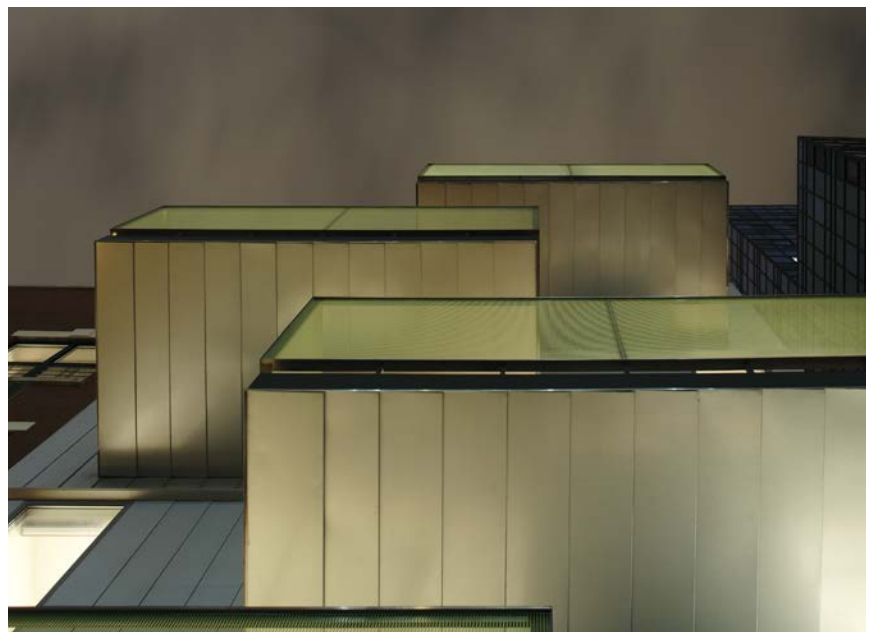
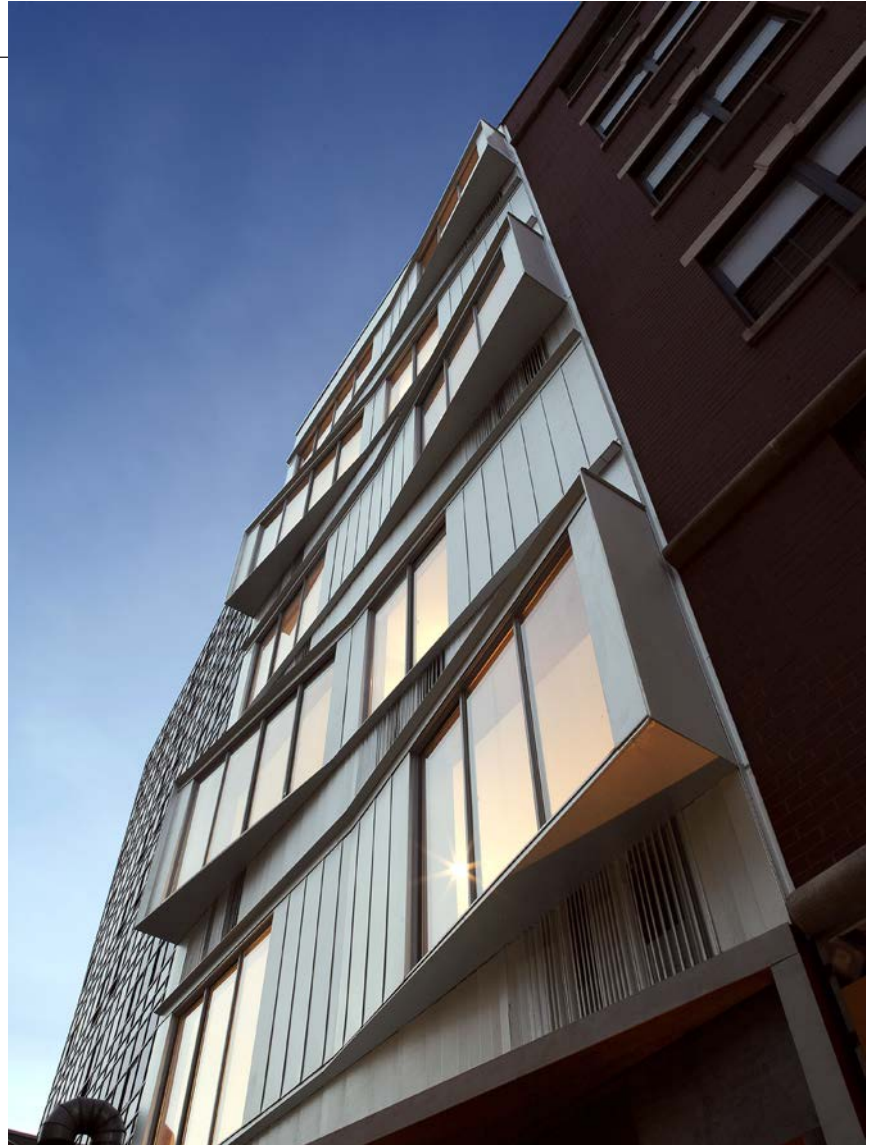
**Project Site:** 109 Norfolk, NYC

**Photography:** Frank Oudeman

Switch Building is a 7-story apartment and art gallery building at 109 Norfolk Street in the Lower East Side, completed in 2007. The building consists of four floor-through apartments, a duplex penthouse, and a double height art gallery on the ground and cellar levels. nARCHITECTS provided full architectural services for the project, including all interior design.

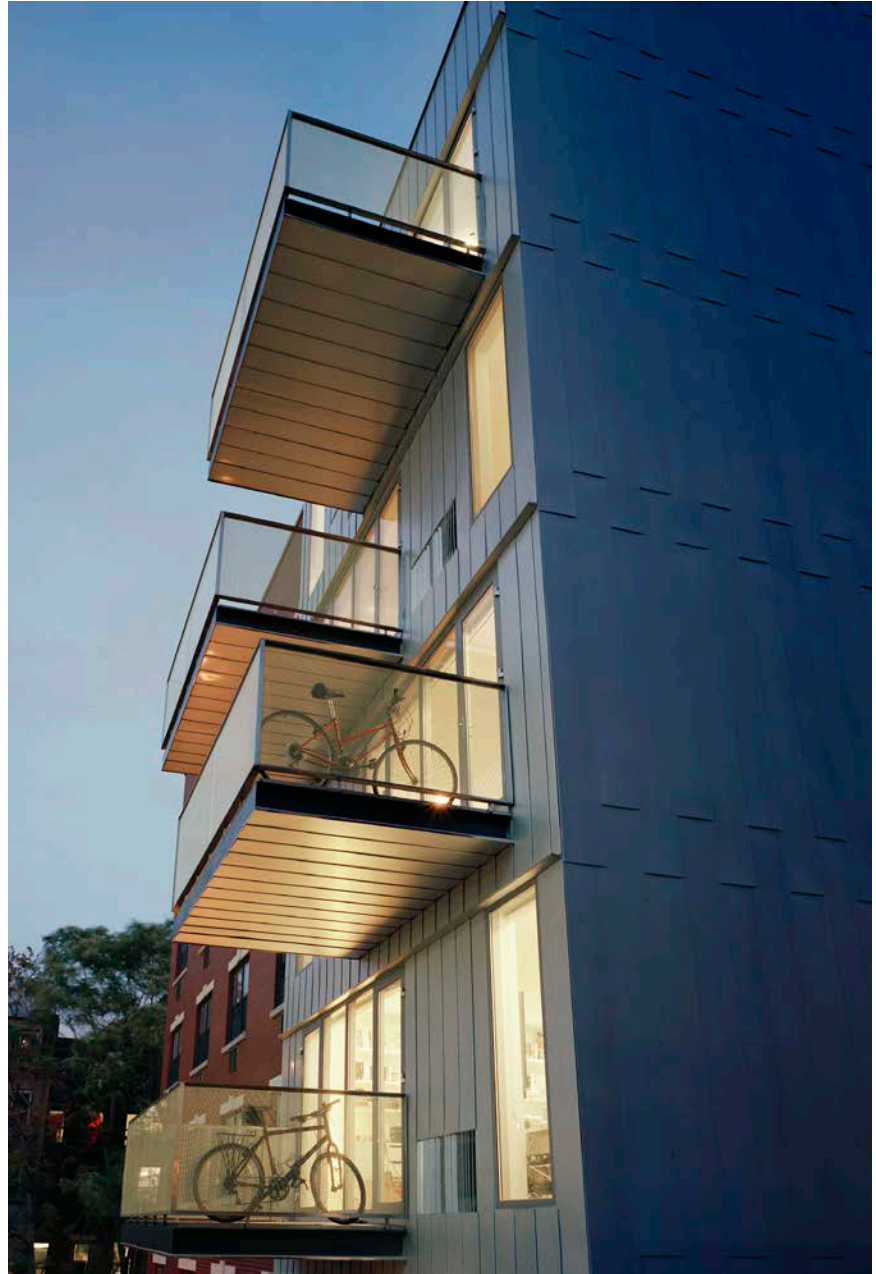
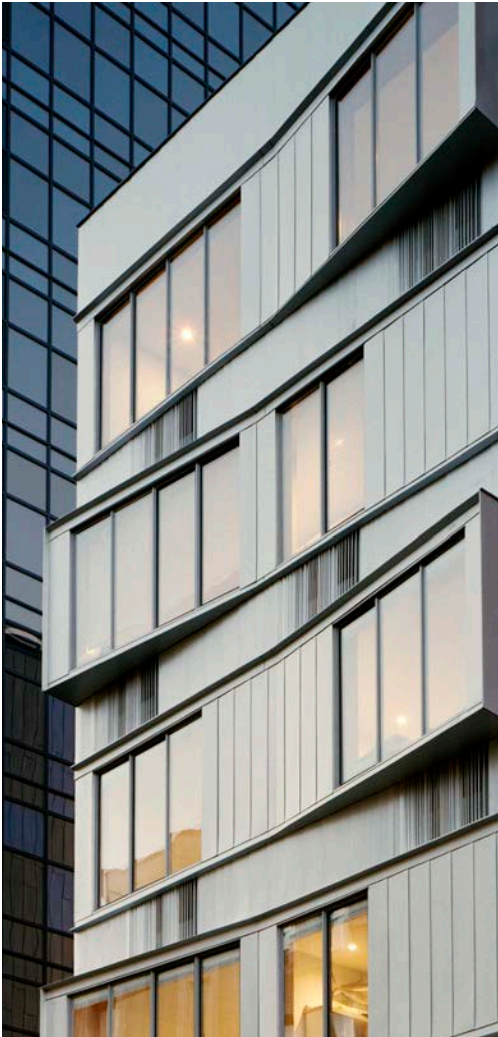
The project's design emerges from a creative interpretation of some of the narrow constraints imposed by zoning and the developer's needs. In a reinterpretation of a bay window, an angled front facade switches back and forth, allowing each floor-through apartment unique views up and down Norfolk Street. From the inside, the bay windows provide deep window seats surrounded by warm hardwood. At the rear of each apartment, the living space extends out to large balconies, which also shift side to side, creating "double height" spaces between balconies that maximize afternoon light. While the apartment plans are identical, these variations allow each apartment to be unique in its light qualities and views to the city. The 'switching' concept extends to the Galvalume® cladding panels, which alternate in direction from floor to floor, creating subtle differences in shadows and reflections. The project's standard PTAC units are disguised with custom AC grilles that are integrated with the cladding panels.

*Drexel Metals was chosen to work with the architect, to provide the custom wall panels and louvers specially crafted for the Switch Building.*



# Switch Building / New York, NY

Switch Gallery has a black hot-rolled steel and glass storefront and canopy that opens completely, allowing for openings to extend onto the sidewalk. At the rear of the gallery, visitors can descend into a double height volume, illuminated by a large skylight. The gallery introduces a larger scale into the Lower East Side's burgeoning art gallery scene, which has been primarily inserting cultural programs into former tenement buildings.



*Custom Wall Panels and Louvers  
created in metal . . . crafted to last.*

**DrexelMetals**   
Roofing Systems + Custom Fabrication

[www.drexelmetals.com](http://www.drexelmetals.com)

1234 Gardiner Lane, Louisville, KY 40213  
888-321-9630 toll-free • 502-690-6174 fax

---

# Perimeter ES-1 Edge System

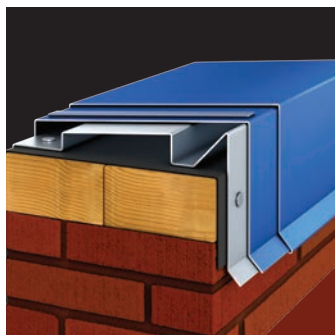




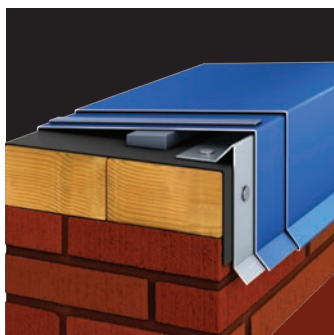
# Coping and Perimeter Edge-to-Edge Systems

**ES-1**  
*Compliant  
and  
Certified*

From the highest wind resistance to lighter duty, our perimeter systems have you covered. Drexel Metals perimeter edge-to-edge and ES-1 compliant systems are built weather-tough with premium quality, heavy-gauge materials and a fully supporting anchor chair that will meet the strictest of standards. The anchor chair is manufactured in continuous lengths and pre-punched, taking the guesswork out of cleat spacing. This unique design prevents sag and supports the coping for a markedly superior installation that's also quick and easy. Spring-Tite copings are precision-engineered to provide maximum wind resistance and eliminate roof edge blow off.



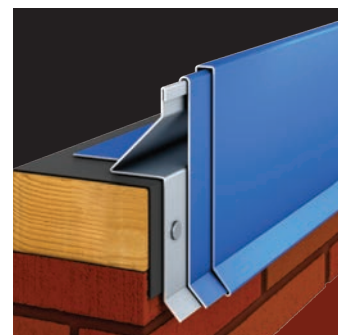
**Spring-Tite Coping**



**Standard Coping**



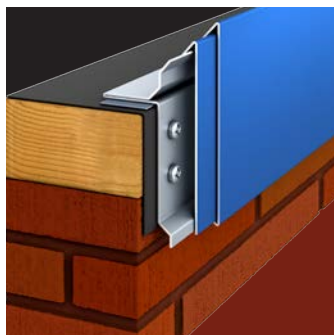
**7" Box Gutter**



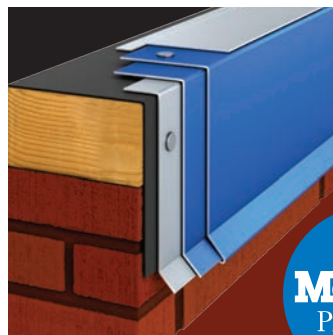
**Snap Gravel Stop**



**Gravel Stop**



**Fascia**



**Drip Edge**



**Drexel Metals**  
Roofing Systems + Custom Fabrication

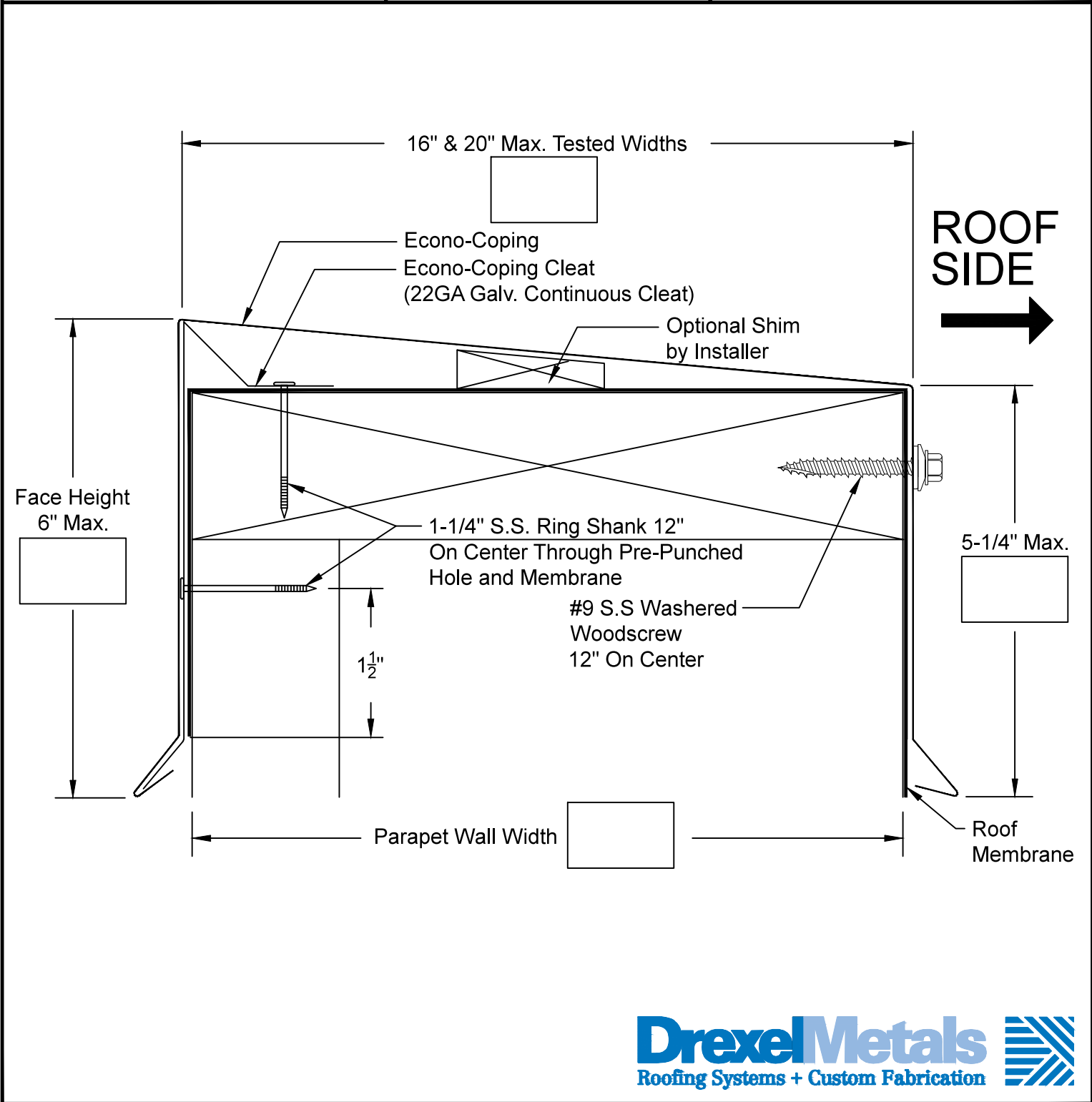


1234 Gardiner Lane, Louisville, KY 40213  
888-321-9630 toll-free • 502-690-6174 fax



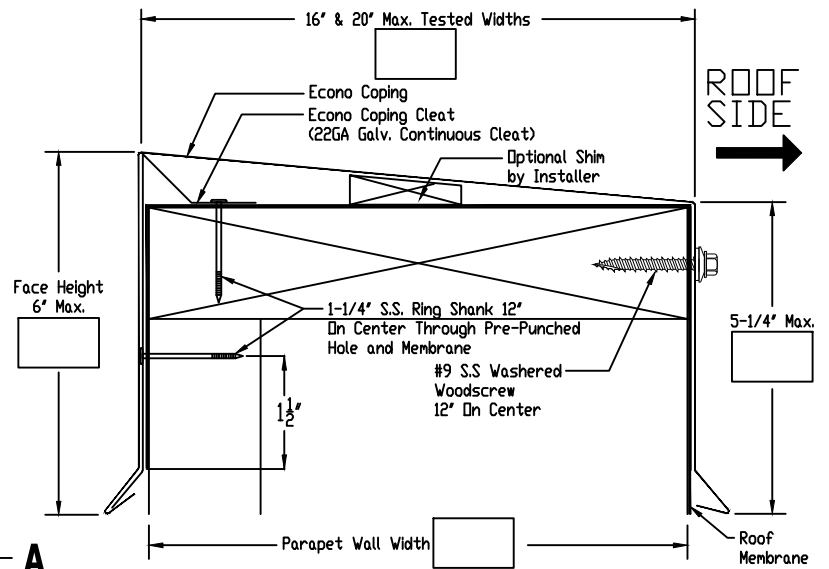
[www.drexelmetals.com](http://www.drexelmetals.com)

|                 |             |           |
|-----------------|-------------|-----------|
| Order Number #: | Ordered By: | Date:     |
| Material:       | Finish:     | Quantity: |
|                 | Color:      | Length:   |



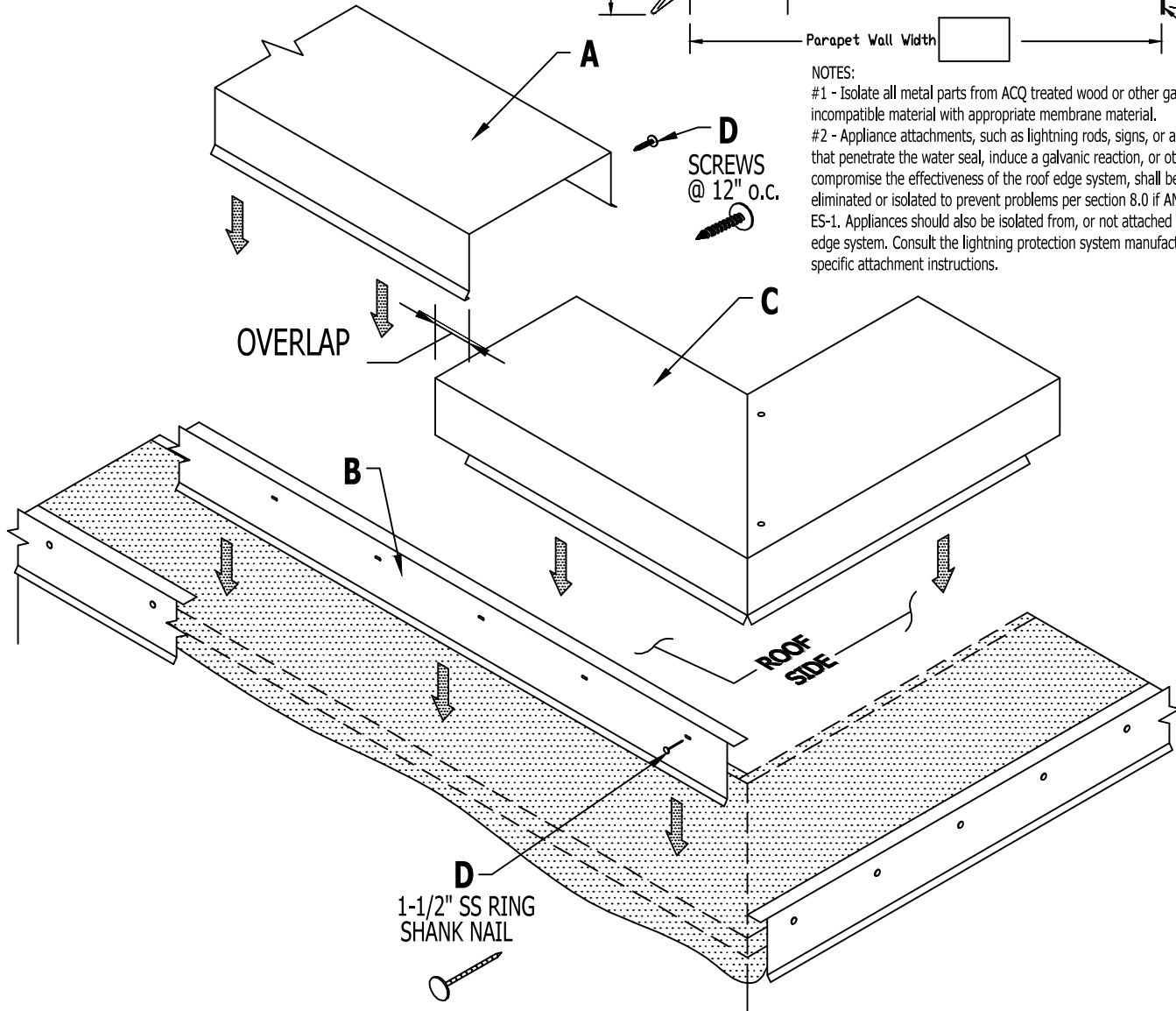
|                           |                |                        |
|---------------------------|----------------|------------------------|
| Description: Econo Coping | Drawn By: J.S. | Approved By: B.P.      |
| Scale: NTS                | Part Number:   | Effective Date: 5-1-13 |

# Installation Guide for Econo Coping



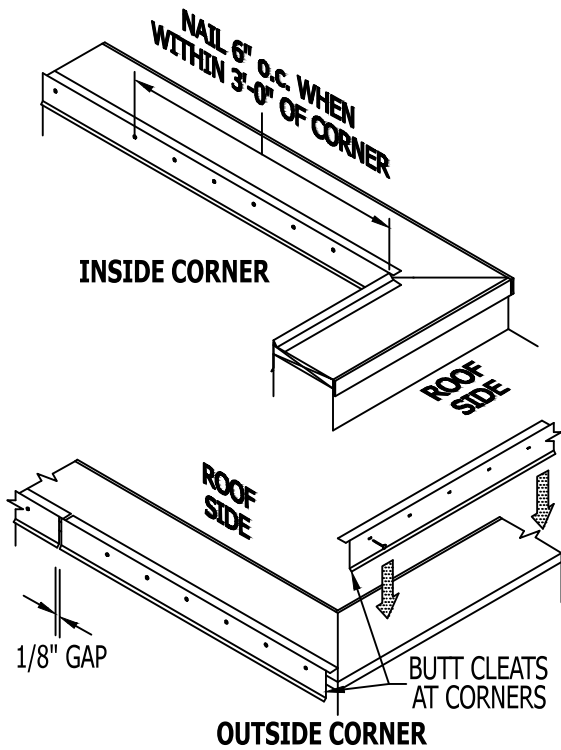
**NOTES:**

- #1 - Isolate all metal parts from ACQ treated wood or other galvanically incompatible material with appropriate membrane material.
- #2 - Appliance attachments, such as lightning rods, signs, or antennae that penetrate the water seal, induce a galvanic reaction, or otherwise compromise the effectiveness of the roof edge system, shall be eliminated or isolated to prevent problems per section 8.0 if ANSI/SPRI ES-1. Appliances should also be isolated from, or not attached to, the roof edge system. Consult the lightning protection system manufacturer for specific attachment instructions.



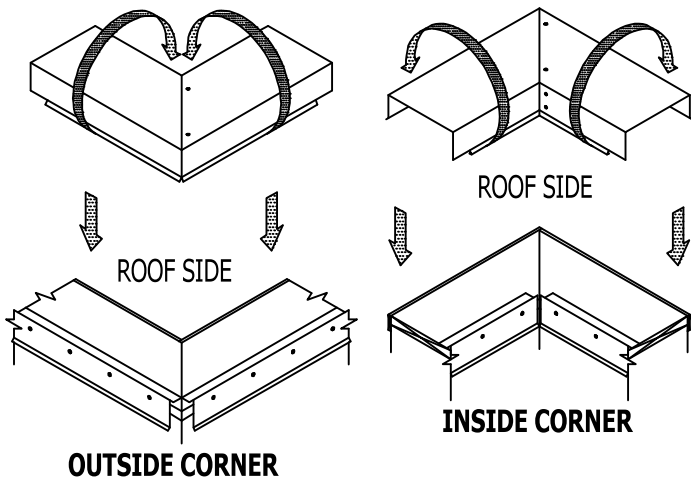
- A. Econo Coping**  
10'-0" Std. Lengths (20'-0" Max.)
- B. 22GA Galvanized Cleat**  
10'-0" Lengths
- C. Coping Miter Cap**  
(Outside Corner Shown)

- D. 1-1/4" S.S. Ring Shank Nail**  
at 12" o.c. (6" o.c. within 3'-0" of Corners)  
(Included and Required)
- E. #9-15x1-1/2" Washered Screw**  
at 12" o.c.  
(Included and Required)



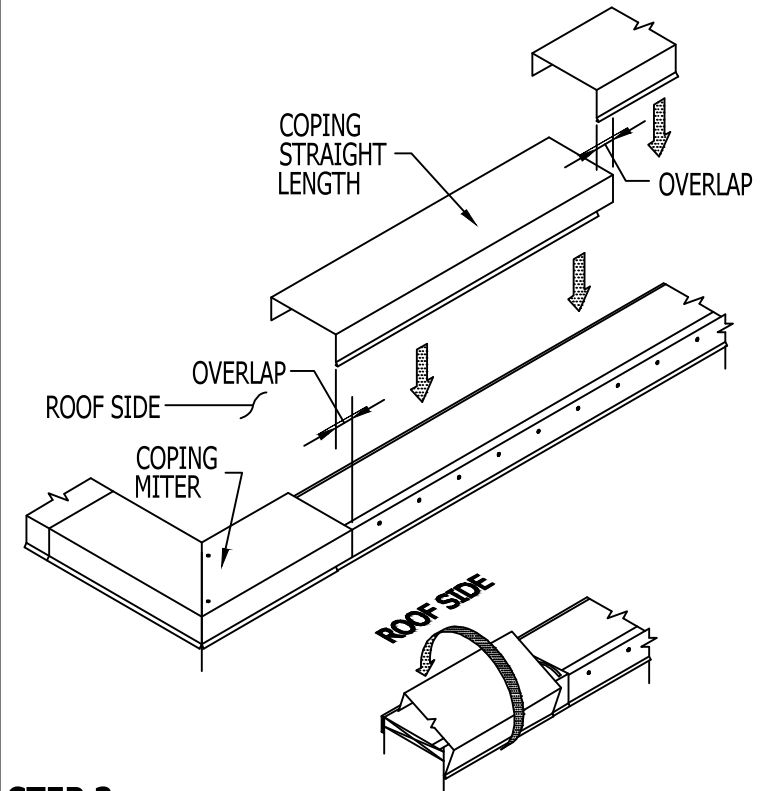
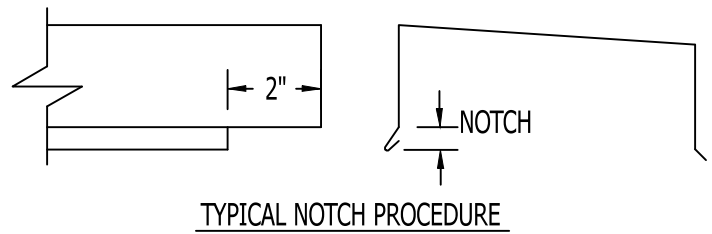
**STEP 1: Installing 22GA Galvanized Cleat**

Prior to installing the cleat, ensure that all metal components have been isolated from ACQ treated lumber with appropriate membrane material. Butt Cleats together at corner conditions. Install Cleat working away from corners. Allow  $\frac{1}{8}$ " gap between sections for thermal movement. Attach the Cleat using 1-1/4" S.S. Ring Shank Nails provided into each pre-punched hole. When within 3'-0" of corners, attach Cleat with 1-1/4" Ring Shank Nails at 6" on center.



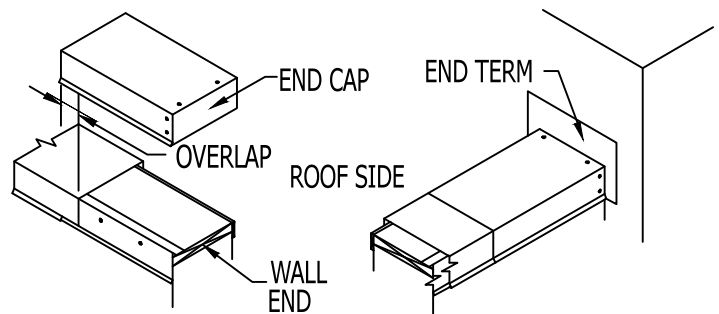
**STEP 2: Installing Econo Coping Miters**

Locate the Miter for the appropriate corner. Notch both sides of the Miter as shown. Hook the drip of the Miter over the kick out of the Cleat, then rotate the Miter over the top of the parapet and screw the roof side leg of the miter with #9-15x1-1/2" screws provided at 12" on center.



**STEP 3: Installing Econo Coping Straight Lengths**

Start by notching the end of the Coping opposite of the installed Miter. Install the Coping by hooking the drip over the kick out on the Cleat and rotating the Coping over the parapet wall and screw the roof side leg of the miter with #9-15x1-1/2" screws provided at 12" on center. Consider lengths of all straight pieces prior to cutting to avoid creating relatively short sections adjacent to one another.

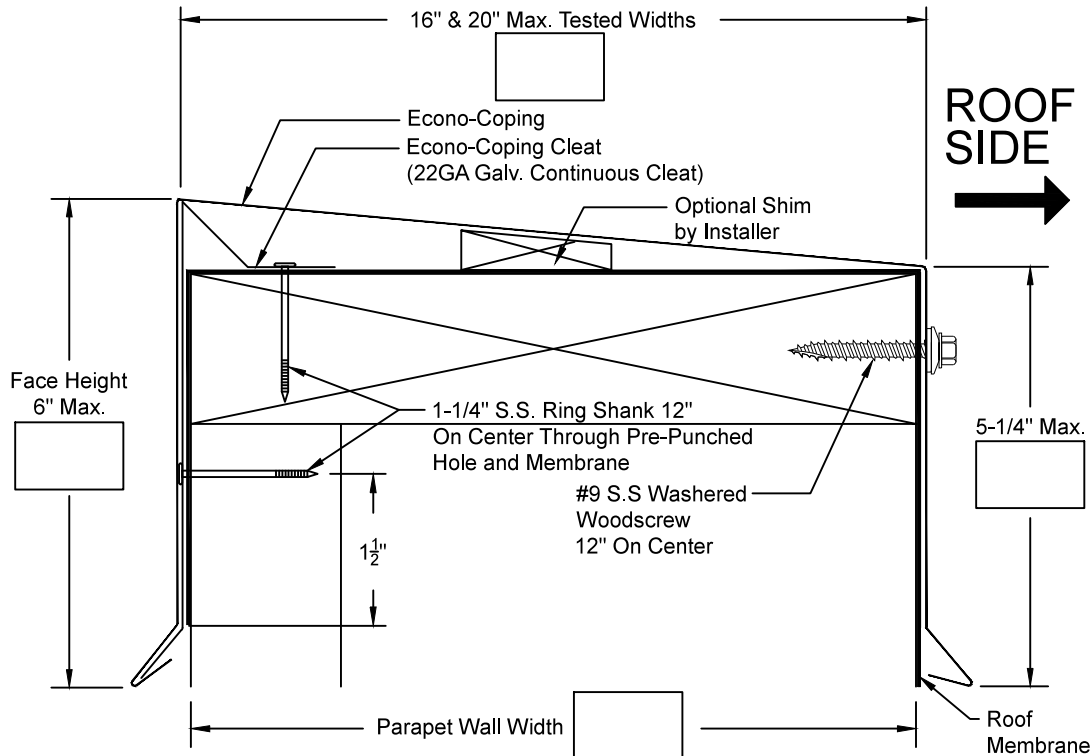


**STEP 4: Installing Econo Coping End Caps & Terms**

Pop-riquet the End Cap and End Term inserts into place. Install End Caps and End Terms by hooking the drip over the kick out on the Cleat and rotating over the part over the parapet. End Caps and End Terms must be restrained from moving by securing with a minimum of (2) #9-15x1-1/2" screws through the roof side leg.

# Econo Coping

ANSI/SPRI ES-1 CERTIFIED: 16" - .040" Aluminum = 260 psf, 24GA Steel = 250 psf  
 20" - .040" Aluminum = 210 psf, 24GA Steel = 210 psf



- Continuous Cleat and fasteners provided.
- Concealed Splice Plates provided.
- Splice Plate Sealant available for extra charge.

## PRINT APPROVAL:

Architect and/or Contractor shall verify all dimensions, sizes, and quantities, All products to be installed in strict accordance with Drexel's printed instructions.

Approved By: \_\_\_\_\_

Date: \_\_\_\_\_

## QUANTITIES:

Lineal Feet (10'-0" Lengths\*): \_\_\_\_\_

Outside Miters\*\* : \_\_\_\_\_  Optional Welded (Surcharge Applies)

Inside Miters\*\* : \_\_\_\_\_  Optional Welded (Surcharge Applies)

Right End Caps\*\* : \_\_\_\_\_  Optional Welded (Surcharge Applies)

Left End Caps\*\* : \_\_\_\_\_  Optional Welded (Surcharge Applies)

Splice Plate Tape Sealant:  Optional Sealant (Surcharge Applies)

\* Optional lengths available up to 20'-0"

\*\* Standard riveted

PROJECT: \_\_\_\_\_

ARCHITECT: \_\_\_\_\_

ROOFING CONTRACTOR: \_\_\_\_\_

REPRESENTATIVE: \_\_\_\_\_

## MATERIAL:

24GA  .040" AL

Other: \_\_\_\_\_

Finish: \_\_\_\_\_

Color: \_\_\_\_\_

Effective Date: 5-1-13

Drawn By: J.S.

Approved By: B.P.



P: (888) 321-9630 , F: (877) 321-9638 , www.drexelmetals.com

SECTION 07710

EDGE METAL ROOF SPECIALTIES

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Metal Drip Edge.
- B. Metal Econo Coping.
- C. Metal Fascia Cover.
- D. Metal Gravel Stop.
- E. Metal Gutter.
- F. Metal Snap Gravel Stop.
- G. Metal Spring Tite Coping.
- H. Accessories.

1.2 RELATED SECTIONS

- A. Section 06150 - Wood Decking.
- B. Section 06160 - Sheathing: Plywood and oriented strand board.
- C. Section 06200 - Wood Trim.
- D. Section 07220 - Roof and Deck Insulation: Roof board insulation.
- E. Section 07310 - Roof Shingles.
- F. Section 07320 - Roof Tiles.
- G. Section 07410 - Metal Roof and Wall Panels: Preformed metal roofing.
- H. Section 07500 - Membrane Roofing.
- I. Section 07620 - Sheet Metal Flashing and Trim.
- J. Section 07720 - Roof Accessories: Soffit vents, roof pavers, etc.

1.3 REFERENCES

- A. ANSI/SPRI ES-1 - Wind Design Standard for Edge Systems Used with Low Slope Roofing Systems.
- B. ANSI/SPRI GD-1 – Structural Design Standard for Gutter Systems Used with Low Slope Roofing Systems.

- C. SPRI Single Ply Roofing Industry Standards.
- 1.4 PERFORMANCE REQUIREMENTS
- A. ANSI/SPRI ES-1 or GD-1 tested and certified by a 3<sup>rd</sup> party testing laboratory active in the testing of industry standard edge metal systems.
- 1.5 SUBMITTALS
- A. Submit under provisions of Section 01300.
  - B. Product Data: Manufacturer's data sheets on each product to be used, including:
    - 1. Preparation instructions and recommendations.
    - 2. Storage and handling requirements and recommendations.
    - 3. Installation methods.
  - C. Shop Drawings: Show profiles, joining method, location of accessory items, attachment and flashing details, membrane roof interface, and dimensions.
  - D. Finish/Color Samples: For each color product specified, two complete sets of color charts representing Manufacturer's full range of minimum 35 colors and patterns.
  - E. Verification Samples: For each color product specified, two sample chips representing actual product, color, and patterns.
  - F. Manufacturer's Certificates: Certify products meet specified performance requirements.
- 1.6 QUALITY ASSURANCE
- A. Manufacturer Qualifications: Company certified by Drexel as a "DM-ARM Authorized Fabricator" in manufacturing Edge Metal Products specified in this section.
  - B. 3<sup>rd</sup> Party QA Certification: "DM-ARM Authorized Fabricator" certified and inspected by 3<sup>rd</sup> party ANSI/SPRI authorized testing laboratory for quality assurance. Current annual certificate required.
  - C. Installer Qualifications: Company certified by Drexel as a "Certified Installer" in the installation of Edge Metal Products specified in this section.
  - D. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
    - 1. Finish areas designated by Architect.
    - 2. Do not proceed with remaining work until workmanship, color, and sheen are approved by Architect.
    - 3. Refinish mock-up area as required to produce acceptable work.
- 1.7 DELIVERY, STORAGE, AND HANDLING
- A. Store products in Manufacturer's unopened packaging until ready for installation.
  - B. Store materials in a dry, protected, well-vented area.
  - C. Remove protective plastic surface film immediately before installation.
  - D. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

## 1.8 SEQUENCING

- A. Ensure that information required for installation of products of this section are furnished to affected trades in time to prevent interruption of construction progress.
- B. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.
- C. Coordinate installation with roof membrane manufacturer's installation instructions.

## 1.9 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by Manufacturer for optimum results. Do not install products under environmental conditions outside Manufacturer's absolute limits.

## 1.10 WARRANTY

- A. Bare/Unpainted Corrosion Warranty: Drexel Drexlume® (Acrylic Coated Galvalume) AZ-55 comes with a 25 year, 6 month warranty (salt water locations within 2,800 feet from direct surf, 1,200 feet from a large bay, or 600 feet from marshes and canals are excluded).
- B. Paint Finish Warranty: Drexmet® 35 year "Non Pro-Rated" Paint Finish Warranty for all colors. Drexel Metals Inc. standard form in which manufacturer agrees to repair finish or replace material that show evidence of deterioration of factory-applied finishes within specified warranty period.
  - a. Fluoropolymer Paint Finish Warranty Period: 35 years from date of substantial completion.
  - b. Failures include, but are not limited to, the following:
    - i. Structural failures including rupturing, cracking, or puncturing.
  - c. Deterioration of metals, metal finishes, and other materials beyond normal weathering and excluding salt water locations within specified number of feet
    - i. Drexel Job Information Sheet and Warranty Applications must be completed prior to delivery of the warranty.
  - d. Energy Efficient Roof Coatings: A number of Drexmet® Standard Colors meet the minimum standard energy efficient requirements as outlined in the Energy Star Program.
- C. Galvalume Substrate Warranty AZ-50: 20 year (salt water locations within 2,800 feet from direct surf, 1,200 feet from a large bay, or 600 feet from marshes and canals are excluded).
- D. Aluminum Substrate Warranty: 25 year within 2800 feet of coastline / 30 year greater than 2800 feet of coastline.

## PART 2 PRODUCTS

### 1.11 MANUFACTURERS

- A. Acceptable Manufacturer: Drexel Metals Inc., which is located at: 1234 Gardiner Lane, Louisville, KY ; Toll Free Tel: 888-321-9630 ; Tel: 502-716-7143; Email: Web: [www.drexelmetals.com](http://www.drexelmetals.com)
- B. Substitutions: Not permitted.



## 1.12 ROOF EDGE PRODUCTS

A. Metal Drip Edge: Decorative metal Drip Edge with continuous 22 Gauge Cleat. Cleat to be pre-punched by Drexel for precise attachment.

1. Construction:

a. Drip Edge Material:

- 1) .040 inch (1 mm) thick formed aluminum.
- 2) 24 gauge Galvalume coated steel.

b. Drip Edge Finish:

- 1) Drexmet® 35 year color as selected by the Architect from Drexel's color chart.
- 2) Drexlume® (Acrylic Coated Galvalume).
- 3) Bare/Unpainted mill finish aluminum.

c. Drip Edge Length:

- 1) Standard 10'-0" (3.048m), or up to 20'-0" (6.096m) maximum.

d. Drip Edge Attachment:

- 1) 1-1/4" Stainless Steel Ring Shank Nails provided by Drexel attached to substrate at 12" on center through Cleat.
- 2) Certified per ANSI/SPRI ES-1 Standard to a design pressure of 390 lbs./ft<sup>2</sup> (24GA Steel) and 410 lbs./ft<sup>2</sup> (.040" AL) to comply with the International Building Code.

B. Metal Econo Coping: Decorative metal Econo Coping with continuous 22 Gauge Cleat. Cleat to be pre-punched by Drexel for precise attachment.

1. Construction:

a. Econo Coping Material:

- 1) .040 inch (1 mm) thick formed aluminum.
- 2) 24 gauge Galvalume coated steel.

b. Econo Coping Finish:

- 1) Drexmet® 35 year color as selected by the Architect from Drexel's color chart.
- 2) Drexlume® (Acrylic Coated Galvalume).
- 3) Bare/Unpainted mill finish aluminum.

c. Econo Coping Length:

- 1) Standard 10'-0" (3.048m), or up to 20'-0" (6.096m) maximum.

d. Econo Coping Attachment:

- 1) 1-1/4" Stainless Steel Ring Shank Nails provided by Drexel attached to substrate face side at 12" on center through Cleat.
- 2) #9 Washered Drexmet Woodscrew provided by Drexel attached to substrate roof side at 12" on center.
- 3) Certified 16" maximum width per ANSI/SPRI ES-1 Standard to a design pressure of 250 lbs./ft<sup>2</sup> (24GA Steel) and 260 lbs./ft<sup>2</sup> (.040" AL) to comply with the International Building Code.
- 4) Certified 20" maximum width per ANSI/SPRI ES-1 Standard to a design pressure of 210 lbs./ft<sup>2</sup> (24GA Steel) and 210 lbs./ft<sup>2</sup> (.040" AL) to comply with the International Building Code.

C. Metal Fascia Cover: Decorative metal Fascia Cover with continuous 22 Gauge Cleat. Cleat to be pre-punched by Drexel for precise attachment.

1. Construction:

a. Fascia Cover Material:

- 1) .040 inch (1 mm) thick formed aluminum.
- 2) 24 gauge Galvalume coated steel.

b. Fascia Cover Finish:

- 1) Drexmet® 35 year color as selected by the Architect from Drexel's color chart.

- 2) Drexlume® (Acrylic Coated Galvalume).
  - 3) Bare/Unpainted mill finish aluminum.
  - c. Fascia Cover Length:
    - 1) Standard 10'-0" (3.048m), or up to 20'-0" (6.096m) maximum.
  - d. Fascia Cover Attachment:
    - 1) #10 Pancake Head Woodscrew Stainless Steel provided by Drexel attached to substrate at 12" on center through Cleat.
    - 2) Certified per ANSI/SPRI ES-1 Standard to a design pressure of 135 lbs./ft<sup>2</sup> (24GA Steel) and 135 lbs./ft<sup>2</sup> (.040" AL) to comply with the International Building Code.
- D. Metal Gravel Stop: Decorative metal Gravel Stop with continuous 22 Gauge Cleat. Cleat to be pre-punched by Drexel for precise attachment.
- 1. Construction:
    - a. Gravel Stop Material:
      - 1) .040 inch (1 mm) thick formed aluminum.
      - 2) 24 gauge Galvalume coated steel.
    - b. Gravel Stop Finish:
      - 1) Drexmet® 35 year color as selected by the Architect from Drexel's color chart.
      - 2) Drexlume® (Acrylic Coated Galvalume).
      - 3) Bare/Unpainted mill finish aluminum.
    - c. Gravel Stop Length:
      - 1) Standard 10'-0" (3.048m), or up to 20'-0" (6.096m) maximum.
    - d. Gravel Stop Attachment:
      - 1) 1-1/4" Stainless Steel Ring Shank Nails provided by Drexel attached to substrate at 12" on center through Cleat.
      - 2) Certified per ANSI/SPRI ES-1 Standard to a design pressure of 180 lbs./ft<sup>2</sup> (24GA Steel) and 170 lbs./ft<sup>2</sup> (.040" AL) to comply with the International Building Code.
- E. Metal Gutter: Decorative metal Gutter.
- 1. Construction:
    - a. Gutter Material:
      - 1) .040 inch (1 mm) thick formed aluminum.
      - 2) 24 gauge Galvalume coated steel.
    - b. Gutter Finish:
      - 1) Drexmet® 35 year color as selected by the Architect from Drexel's color chart.
      - 2) Drexlume® (Acrylic Coated Galvalume).
      - 3) Bare/Unpainted mill finish aluminum.
    - c. Gutter Length:
      - 1) Standard 10'-0" (3.048m), or up to 20'-0" (6.096m) maximum.
    - d. Gutter Attachment:
      - 1) #10 Pancake Head Woodscrew Stainless Steel provided by Drexel attached to substrate at 12" on center.
      - 2) Drexel Gutter Bracket made from .063" aluminum spaced to meet performance requirements and design loads. (30" max.)
      - 3) #9 Washered Drexmet Woodscrew Stainless Steel provided by Drexel attached through gutter bracket to substrate.
      - 4) Certified per ANSI/SPRI GD-1 Standard to a design pressure of XXX lbs./ft<sup>2</sup> (24GA Steel) and XXX lbs./ft<sup>2</sup> (.040" AL) to comply with the International Building Code.
- F. Metal Snap Gravel Stop: Decorative metal Snap Gravel Stop with continuous 22 Gauge Cleat. Cleat to be pre-punched by Drexel for precise attachment.

1. Construction:
  - a. Snap Gravel Stop Material:
    - 1) .040 inch (1 mm) thick formed aluminum.
    - 2) 24 gauge Galvalume coated steel.
  - b. Snap Gravel Stop Finish:
    - 1) Drexmet® 35 year color as selected by the Architect from Drexel's color chart.
    - 2) Drexlume® (Acrylic Coated Galvalume).
    - 3) Bare/Unpainted mill finish aluminum.
  - c. Snap Gravel Stop Length:
    - 1) Standard 10'-0"(3.048m), or up to 20'-0"(6.096m) maximum.
  - d. Snap Gravel Stop Attachment:
    - 1) 1-1/4" Stainless Steel Ring Shank Nails provided by Drexel attached to substrate at 12" on center through Cleat.
    - 2) Certified per ANSI/SPRI ES-1 Standard to a design pressure of 90 lbs./ft<sup>2</sup> (24GA Steel) and 75 lbs./ft<sup>2</sup> (.040" AL) to comply with the International Building Code.
  
- G. Metal Spring Tite Coping: Decorative metal Spring Tite Coping with continuous 22 Gauge Cleat. Cleat to be pre-punched by Drexel for precise attachment.
  1. Construction:
    - a. Spring Tite Coping Material:
      - 1) .040 inch (1 mm) thick formed aluminum.
      - 2) 24 gauge Galvalume coated steel.
    - b. Spring Tite Coping Finish:
      - 1) Drexmet® 35 year color as selected by the Architect from Drexel's color chart.
      - 2) Drexlume® (Acrylic Coated Galvalume).
      - 3) Bare/Unpainted mill finish aluminum.
    - c. Spring Tite Coping Length:
      - 1) Standard 10'-0"(3.048m), or up to 20'-0"(6.096m) maximum.
    - d. Spring Tite Coping Attachment:
      - 1) #10 Pancake Head Woodscrew Stainless Steel provided by Drexel attached to substrate at 12" on center through Cleat.
      - 2) Certified 16" maximum width per ANSI/SPRI ES-1 Standard to a design pressure of 105 lbs./ft<sup>2</sup> (24GA Steel) and 90 lbs./ft<sup>2</sup> (.040" AL) to comply with the International Building Code.
      - 3) Certified 20" maximum width per ANSI/SPRI ES-1 Standard to a design pressure of 90 lbs./ft<sup>2</sup> (24GA Steel) and 75 lbs./ft<sup>2</sup> (.040" AL) to comply with the International Building Code.

### 1.13 ACCESSORIES

- A. Miters, Termination Ends, and End Caps shall be fabricated by Drexel to suit the conditions indicated on the Shop Drawings.
- B. Provide Drexmet fasteners consistent with manufacturer's instructions for each product that is suitable for the substrate to which it is being installed.

## PART 3 EXECUTION

### 1.14 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.

- B. Verify that the substrate is dry, clean and free of foreign matter.
- C. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

#### 1.15 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the Manufacturer for achieving the best result for the substrate under the project conditions.
- C. Verify Manufacturer's roof edge details for application to fit the assembly prior to fabrication.

#### 1.16 INSTALLATION

- A. Install in accordance with Manufacturer's installation instructions.
- B. Use provided fasteners consistent with Manufacturer's instructions.
- C. Install water cut-off mastics and sealants, as recommended by the membrane manufacturer.

#### 1.17 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up scratched finish areas with Drexel "Drexmet® Touch-Up Paint Pen".
- C. Repair or replace damaged products before Substantial Completion.

END OF SECTION

---

# Color Selection



 Premium 
  Mill Finish 
 SR = Solar Reflectance



Stone White  
SR.66



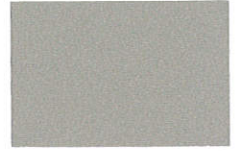
Bone White  
SR.67



Regal White  
SR.70



Sandstone  
SR.54



Bright Silver  
SR.54 



Colonial Red  
SR.26



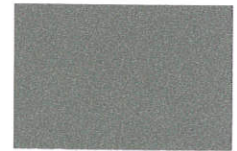
Aged Copper  
SR.41




Burgundy  
SR.28



Pacific Blue  
SR.29



Pre-weathered  
Galvalume®   
SR.27



Slate Blue  
SR.35



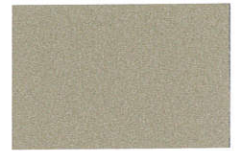
Teal Blue  
SR.28




Patina Green  
SR.32



Everglade Moss  
SR.29



Champagne   
SR.46



Forest Green  
SR.28



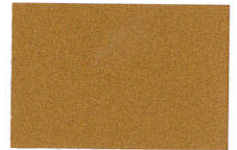
Island Blue  
SR.35



Hartford Green  
SR.25



Charcoal Gray  
SR.25



Metallic Copper   
SR.37



Dove Gray  
SR.38



Dark Bronze  
SR.26




Surrey Beige  
SR.47



Sierra Tan  
SR.37



Antique Patina   
SR.27



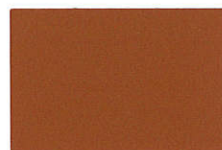
Medium Bronze  
SR.32



Mansard Brown  
SR.27



Matte Black  
SR.26



Terra Cotta  
SR.40



Brilliance Red   
SR.38



Deep Blue Sea  
SR.26



Hemlock  
SR.34



Slate Gray  
SR.41



Buckskin  
SR.25



 Drexlume™  
SR.68

## High Performance Metal Roofing Finishes

FOR GALVALUME®, ALUMINUM COILS AND SHEETS

| COLOR <sup>35 Year Warranty</sup> | 24 ga x 20' | 24 ga x 24' | 24 ga x 4' x 10' | 26 ga x 24' | SRI* |
|-----------------------------------|-------------|-------------|------------------|-------------|------|
| Aged Copper                       | X           | X           | X                |             | 46   |
| Antique Patina                    | X           | X           | X                |             | 28   |
| Bone White                        | X           | X           | X                |             | 81   |
| Bright Silver                     | X           | X           | X                |             | 64   |
| Brilliance (20-Year Warranty)     | X           | X           | X                | X           | 44   |
| Buckskin                          | X           | X           | X                |             | 25   |
| Burgundy                          | X           | X           | X                | X           | 29   |
| Champagne                         | X           | X           | X                |             | 46   |
| Charcoal Gray                     | X           | X           | X                | X           | 25   |
| Colonial Red                      | X           | X           | X                | X           | 27   |
| Dark Bronze                       | X           | X           | X                | X           | 27   |
| Deep Blue Sea                     | X           | X           | X                |             | 27   |
| Dove Gray                         | X           | X           | X                | X           | 42   |
| Everglade Moss                    | X           | X           | X                |             | 30   |
| Forest Green                      | X           | X           | X                | X           | 29   |
| Hartford Green                    | X           | X           | X                | X           | 25   |
| Hemlock                           | X           | X           | X                |             | 37   |
| Island Blue                       | X           | X           | X                |             | 38   |
| Mansard Brown                     | X           | X           | X                | X           | 28   |
| Matte Black                       | X           | X           | X                | X           | 27   |
| Medium Bronze                     | X           | X           | X                | X           | 34   |
| Metallic Copper                   | X           | X           | X                |             | 41   |
| Pacific Blue                      | X           | X           | X                |             | 25   |
| Patina Green                      | X           | X           | X                |             | 34   |
| Pre-Weathered Galvalume           | X           | X           | X                |             | 28   |
| Regal White                       | X           | X           | X                |             | 85   |
| Sandstone                         | X           | X           | X                |             | 64   |
| Sierra Tan                        | X           | X           | X                |             | 41   |
| Slate Blue                        | X           | X           | X                | X           | 38   |
| Slate Gray                        | X           | X           | X                | X           | 46   |
| Stone White                       | X           | X           | X                |             | 66   |
| Surrey Beige                      | X           | X           | X                |             | 46   |
| Teal Blue                         | X           | X           | X                |             | 29   |
| Terra Cotta                       | X           | X           | X                |             | 46   |

\*Solar Reflectance Index (SRI)

| KYNAR ALUMINUM  | .032 x 20' | .032 x 4' x 10' | .040 x 4' x 10' | .050 x 4' x 10' |
|-----------------|------------|-----------------|-----------------|-----------------|
| Bone White      |            | X               | X               |                 |
| Bright Silver   | X          | X               |                 |                 |
| Burgundy        | X          | X               |                 |                 |
| Charcoal Gray   | X          | X               | X               |                 |
| Colonial Red    | X          | X               |                 |                 |
| Dark Bronze     | X          | X               | X               | X               |
| Dove Gray       | X          | X               |                 |                 |
| Forest Green    | X          | X               | X               |                 |
| Hartford Green  | X          | X               | X               |                 |
| Mansard Brown   |            | X               | X               |                 |
| Matte Black     |            | X               | X               |                 |
| Medium Bronze   | X          | X               | X               | X               |
| Metallic Copper | X          | X               | X               |                 |
| Regal White     | X          | X               | X               | X               |
| Sandstone       |            | X               | X               |                 |
| Slate Gray      | X          | X               | X               |                 |
| Terra Cotta     | X          | X               | X               |                 |

### Substrates

High performance metal roofing products are available in Galvalume® and Aluminum. All metal products are tension leveled for superior flatness.

### Warranty

- 35 Year Non Pro-rated PVDF Paint Warranty with a 20 year Galvalume® Substrate Warranty
- 35 Year Non Pro-rated PVDF Paint and 25 year Aluminum Substrate Warranty
- 20 Year Non Pro-rated International PVDF Paint Warranty
- 25 Year Non Pro-rated Drexlume™ (Acrylic Coated Galvalume®) Warranty

### Trinar® (Fluoropolymer)

Drexel Metals standard colors are produced by Akzo Nobel and contain a minimum of 70% PVDF base resin with ceramic pigments. All colors are formulated to ensure consistent appearance and quality. The Trinar system is applied over Akzo Nobel polyester primer in a minimum thickness of 0.2 mil and can be applied to either Galvalume® HD Galvanized or Aluminum substrates. All topcoats are a minimum of 0.8 mil of the Trinar® color choice. The reverse side is primer and a washcoat of 0.5 mil total dry film thickness.



### Drexlume™

Drexel Metals offers a mill finished Galvalume® with a two-sided, clear acrylic finish that simultaneously aids roll forming without the use of lubricants and eliminates unsightly handprints or stains resulting from handling and storage. The acrylic finish dissolves naturally over a period of time, and when left as is, allows for natural and even weathering.

### Drexel Metals Inc. Distribution Facilities:

#### Drexel Metals Inc.

204 Railroad Drive  
Ivyland, PA 18974  
Toll Free: (888) 321-9630  
Fax: (877) 321-9638

#### Drexel Metals Inc.

13450 E. Smith Road,  
Unit #900  
Aurora, CO 80011  
Toll Free: (866) 207-7663  
Fax: (303) 340-0982

#### Drexel Metals Inc.

1234 Gardiner Lane,  
Louisville, KY 40213  
Toll Free: (888) 321-9630  
Fax: (877) 321-9638

#### Drexel Metals Inc.

7450 Montevideo Road  
Jessup, MD 20794  
Phone: 800-863-8322  
Fax: 410-799-9913

#### Drexel Metals Inc.

3360 Scherer Drive N.  
Suite A  
St. Petersburg, FL 33716  
Phone: (877) 399-3600  
Fax: (727) 572-7910

Colors shown represent the actual color as closely as possible. To ensure exact color for final approval, a metal color chip is available. Warranty statements mentioned are outlines; complete Limited Warranty information is available on request. No other warranty expressed or implied is applicable.

Please go to [www.drexelmetals.com](http://www.drexelmetals.com) to find pertinent information regarding our products, corporate disclosures and disclaimers.

Toll Free: (888) 321-9630 | [www.drexelmetals.com](http://www.drexelmetals.com)

## Flat Sheet and Edge Metal Program Color Chart



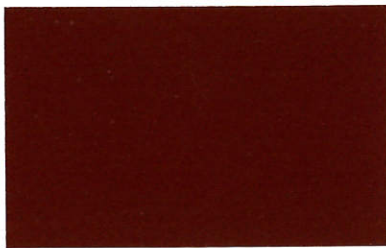
Regal White



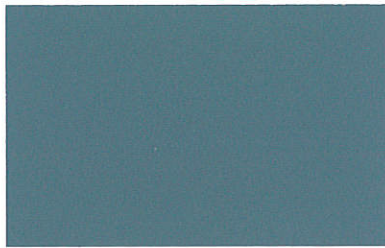
Sandstone



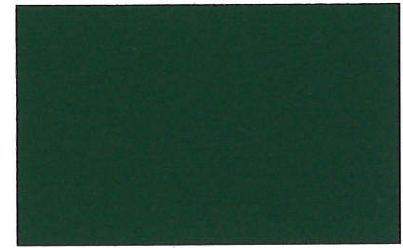
Sierra Tan



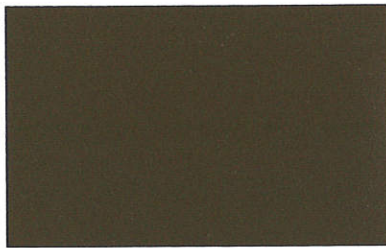
Colonial Red



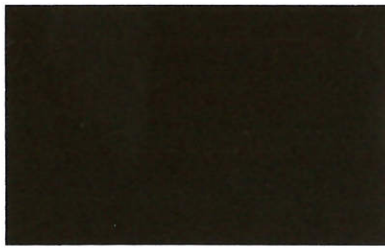
Slate Blue



Forest Green



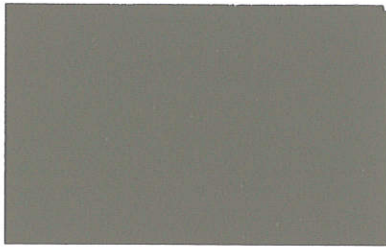
Medium Bronze



Dark Bronze



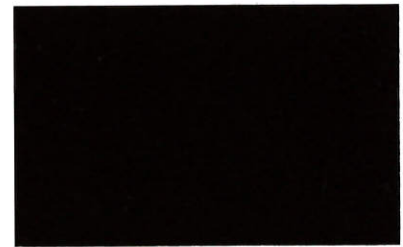
Mansard Brown



Slate Gray



Charcoal Gray



Matte Black



Bright Silver



Drexlume™

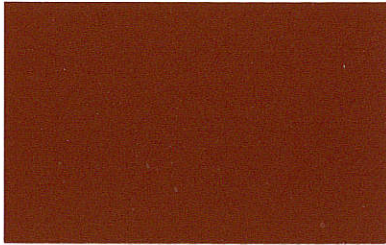


Mill Finished Aluminum

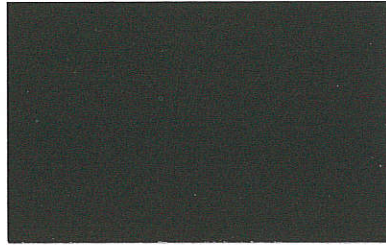


- Galvalume® Substrate
- Siliconized Modified Polyester Paint System
- 25-Year “Non Pro-Rated” Warranty
- 26 Gauge x 20" and 48" x 120" Flat Sheets

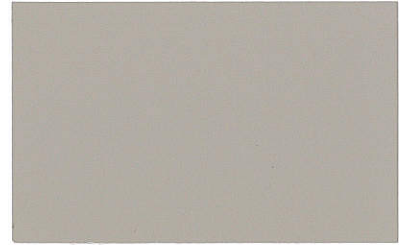
### Metal Roofing Finishes



**Country Red**  
Solar Reflectance: 35%



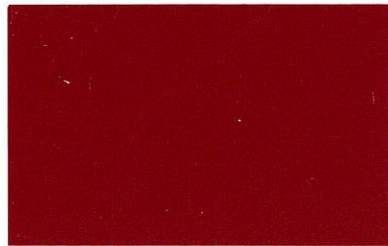
**Charcoal**  
Solar Reflectance: 29%



**Ash Gray**  
Solar Reflectance: 51%



**Black**  
Solar Reflectance: 26%



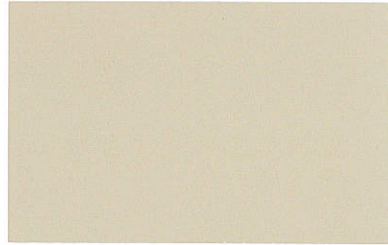
**Regal Red**  
Solar Reflectance: 32%



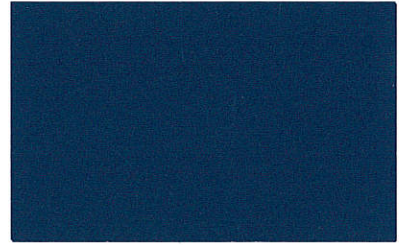
**Royal Brown**  
Solar Reflectance: 29%



**Fern Green**  
Solar Reflectance: 25%



**Beige**  
Solar Reflectance: 60%



**Gallery Blue**  
Solar Reflectance: 26%



**Burnished Slate**  
Solar Reflectance: 31%



**Pure White**  
Solar Reflectance: 69%



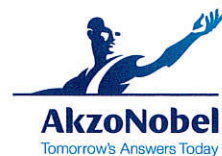
**Drexlume™**

**Distribution Facilities:**

- 1234 Gardiner Lane, Louisville, KY 40213
- 13450 E. Smith Road, Unit #900, Aurora, CO 80011
- 204 Railroad Drive, Ivyland, PA 18974
- 7450 Montevideo Road, Jessup, Maryland 20794
- 3360 Scherer Drive N., St Petersburg, FL 33716

**To Order Call Toll Free: (888).321.9630**

Please go to [www.drexelmetals.com](http://www.drexelmetals.com) to find pertinent information regarding our products, corporate disclosures and disclaimers.



Colors shown represent the actual color as closely as possible. To ensure exact color for final approval, a metal color chip is available.

© 2013 Drexel Metals Inc. All rights reserved.

Drexlume™ is a trademark of Drexel Metals, Inc.

# Specialty Metals

There's an art to working with specialty metals – and in our skilled hands your concepts and design challenges will be clearly defined and meticulously achieved. Terne-coated stainless steel, copper, zinc and other specialty metals can be fabricated into a host of panels and shapes to your exact specifications.



**Drexel Metals**   
Roofing Systems + Custom Fabrication

[www.drexelmetals.com](http://www.drexelmetals.com)

1234 Gardiner Lane, Louisville, KY 40213  
888-321-9630 toll-free • 502-690-6174 fax



You can depend on Drexel Metals' quality materials and excellent service for your entire sheet and slit coil needs. We stock coil for your site-formed panels, and flat material for all trim and fabrication applications. With our cut-to-length and recoil system each order is fulfilled quickly and accurately.



---

# Warranties





We are pioneers when it comes to standing behind our product with meaningful warranties! In 2012, Drexel Metals introduced our Gold Standard paint warranty to our network of qualified installers. This industry-leading warranty encompasses the total Drexel Metals system from the roof deck up and covers both materials and replacement labor if the installed Drexel Metals painted product ever were to fail.

Drexel Metals  
Coated Coil  
Non-Prorated  
25-Year  
Gold Standard  
Warranty  
(From date of installation)

**DrexelMetals**   
Roofing Systems + Custom Fabrication

Drexel Metals  
Coated Coil  
Non-Prorated  
35-Year  
Gold Standard  
Warranty

(From date of installation)

**DrexelMetals**   
Roofing Systems + Custom Fabrication



**DrexelMetals**   
Roofing Systems + Custom Fabrication

[www.drexelmetals.com](http://www.drexelmetals.com)

1234 Gardiner Lane, Louisville, KY 40213  
888-321-9630 toll-free • 502-690-6174 fax



***Drexel Metals GOLD STANDARD System Warranty***  
**35-YEAR “Non Pro-rated” PVDF Warranty**  
**starts from the date of installation**

**Parties:** Drexel Metals, Inc. extends the following limited warranty to:

**Invoice #:**

**Drexel Metals Contractor:**

**Address:**

**Project Owner:**

**Project Name:**

**Address:**

Concerning sales of PVDF (Polyvinylidene Fluoride) painted coil, which will be fabricated into components for pre-painted metal roofing, edge to edge perimeter systems and metal buildings.

**Coverage:**

This paint anti-weathering limited warranty (“Limited Warranty”) applies to flat sheets and coils identified on offerings and invoices from Drexel Metals, which are therefore eligible to be covered under this Limited Warranty and used by fabricator within six months of invoicing. It applies to metal buildings installed in the continental United States. This is an anti-weathering paint finish warranty and does not apply to corrosion of the substrate.

**Terms:**

Although it is recognized by the owner, fabricator and Drexel Metals that most coatings will fade and change in appearance to some degree over a period of time in outdoor installations, and that some changes may not be uniform between surfaces not equally exposed, provided all conditions as set forth herein of this Limited Warranty are first met, Drexel Metals warrants that the goods covered by this warranty will resist natural weathering of the paint finish to the extent that they will conform to the manufacturer’s performance standards for thirty-five (35) years following field installation as set forth below:

1. TRINAR® will not peel, crack, check, or flake to an extent that is apparent on ordinary outdoor visual observation; and
2. Vertical installations of TRINAR® will not change color more than 5 NBS (Hunter) units, and non-vertical installations will not change color more than 7 NBS (Hunter) units following field installation. Color measurements are to be made per ASTM D 2244 and only on clean surfaces after removing surface deposits and chalk per ASTM D 3964; and
3. Vertical installations of TRINAR® will not chalk more than a number 8 rating, and non-vertical installations will not chalk more than a number 6 rating, when measured per ASTM D-4214, Method A.

This is an anti-weathering limited warranty and does not apply to other causes of failure, including:

Coils or fabricated parts which have suffered scratching or abrasion or impact by a hard object, are stored at any time prior to field installation contrary to storage instructions as issued by Drexel Metals; are stored or installed in a way which allows standing water on the coating or which occurs in any chemically aggressive environment containing salts or other chemicals, whether naturally occurring or caused by man; are stored or installed in an environment that includes a high degree of humidity, sand, dirt or grease, whether naturally occurring or caused by man; have suffered any damage caused by acts of God, radiation, falling objects, explosion, or other external forces, including conditions which develop between the coating and the metal which cause the coating to degrade.

This Limited Warranty does not apply to the following conditions: areas subject to water run-off from lead or copper flashings or areas in metallic contact with lead or copper; areas sheltered from periodic washing by natural rainfall such as underside eaves and soffits; conditions and circumstances where corrosive fumes or condensates are generated or released inside the building; or forming where the bend is tighter than 2T for sheet thicknesses up to 0.030” (0.75mm) and tighter than 4T for sheet thicknesses 0.031” (0.76mm) and thicker; the slope of the roof or sections of the roof being flatter than 1/4; 12; forming which involves severe reverse bending or which subjects the coating to alternate compression and tension; failure to provide free drainage of water, including internal condensation, from overlaps and all other surfaces of the sheets or panels; failure to remove debris from overlaps and all other surfaces of sheets and panels; damage to the coating caused by contact with green or wet lumber; wet storage stain caused by water damage or from condensation; presence of damp insulation or other corrosive materials in contact with or close proximity to sheets or panels; deterioration of sheets or panels caused directly or indirectly by contact with fasteners (The selection of suitable long-lasting fasteners to be used rests solely with the Buyer).

THIS PAINT WARRANTY IS A "FILM INTEGRITY" WARRANTY ONLY AND DOES NOT COVER EVENTS OR ENVIRONMENTAL CIRCUMSTANCES THAT NEGATIVELY IMPACT THE PERFORMANCE OF THE SUBSTRATE ON WHICH THE PAINT SYSTEM IS APPLIED.

### **Exclusion of other Warranties:**

THIS LIMITED WARRANTY IS EXCLUSIVE AND IS IN LIEU OF ANY WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR OTHER WARRANTY OF QUALITY, WHETHER EXPRESSED OR IMPLIED, AND WHETHER WRITTEN OR ORAL. CORRECTIONS OF NON-CONFORMITIES IN THE MANNER AND FOR THE PERIOD OF TIME PROVIDED HEREIN SHALL CONSTITUTE FULFILLMENT OF ALL LIABILITIES OF DREXEL METALS WITH RESPECT TO OR ARISING OUT OF THE GOODS WHETHER BASED ON CONTRACT, NEGLIGENCE, STRICT LIABILITY IN TORT, OR OTHERWISE.

### **Remedy:**

If Drexel Metals product fails to comply with the Limited Warranty, Drexel Metals' sole liability, and Buyer's exclusive remedy, will pay for labor and material reasonably necessary to repaint, repair or replace, at Drexel Metals' option, the metal panels exhibiting the conditions described above (the "Warranty Benefits"). All products must be purchased from Drexel Metals to complete the "metal roofing assembly/system" (including but not limited to: metshield underlayment, Drexel Metals system clips, screws, approved sealants, tapes, rivets and Touch Up Paint Pens). The Warranty Benefits shall not exceed the original purchase price of the affected metal panels or the remedy provided in any other warranty provided to the building owner, whichever is less. This Limited Warranty will continue to apply to any metal panels that were repainted, repaired or replaced under this Limited Warranty, but only for the unexpired portion of the Limited Warranty period applicable to the original coated metal panel. If Drexel Metals' investigation indicates that this Limited Warranty does not cover the claimed defect, Buyer shall reimburse all of Drexel Metals' third-party expenses incurred in connection with the investigation of the claim.

Drexel Metals recommends that there be a systematic fresh water rinse maintenance program in effect in the areas of salt concentration (such as adjacent to the seashore and/or industrial atmospheres) so as to prevent the accumulation of concentrated mineral deposits.

### **Stipulations and Limitations for Remedy:**

Drexel Metals Inc.'s liability for breach of this warranty shall be limited exclusively to the cost of either repairing non-conforming sheets or panels or, at Drexel Metals Inc.'s sole option, of furnishing F.O.B. Buyer's plant, sufficient sheet product to enable Buyer to fabricate replacement panels for the non conforming panels and labor to fabricate replacement parts.

1. All products (Coils/Flats/MetShield UnderlaymentsClips/Screws/Paint Pens) used during the initial installation must be supplied by Drexel Metals Inc. and manufactured by a qualified and registered DM-ARM Member.
2. Claims must be promptly reported in writing to Drexel Metals Inc. and Drexel Metals Inc. shall be given a reasonable opportunity to inspect the sheets or panels claimed to be non-conforming. Adequate identification of the material involved in the claim, including the date of installation, order number, coil number, invoice number and date of shipment must be established by the Buyer.
3. Buyer shall exercise diligence in the inspection of material as received from Drexel Metals Inc. so as to mitigate repair or replacement.
4. Drexel Metals Inc. extends this warranty solely to the owner.
5. Our Gold Standard System warranty is transferable but will be dated back to the original installation date.
6. Drexel Metals Inc. reserves the right to terminate this warranty at any time (except as to orders already accepted) upon giving of
7. written notice thereof.
8. This Warranty becomes effective only upon presentation of paid invoices from contractor/owner to manufacturer/installer and to Drexel Metals Inc.. In no event will future claims be honored if the above payments have not been made.

This is our complete warranty. The laws of the State of Kentucky, USA, hereunder shall govern the rights and obligations of the parties. Any controversy or claim arising out of or relating to this contract shall be determined by arbitration in accordance with the Commercial Arbitration Rules of the American Arbitration Association. The place of arbitration shall be Louisville, KY USA. The language of the arbitration shall be English. Drexel Metals Inc. makes no guarantees, either expressed or implied beyond the fact hereof; including, with limitation, warranties of fitness and merchantability and shall have no other liability with respect thereto.

### **Other Conditions:**

Drexel Metals Inc. shall process any warranty claims under the limited warranty provided by the original manufacturer, Akzo Nobel Coatings, Inc., of the Trinar® paint. The limited warranty for the Trinar® paint from Akzo Nobel Coatings, Inc. is the sole warranty related thereto. Any and all previous warranties, whether express or implied, provided by Drexel Metals, Inc. arising from the Trinar® paint from Akzo Nobel Coatings, Inc. are hereby superseded.

Drexel Metals Inc.



Brian Partyka  
Partner

Date: \_\_\_\_\_

***Drexel Metals PVDF Coated Product***  
**35-YEAR “Non Prorated” Warranty**  
**starts from the date of installation**

**Parties:** Drexel Metals, Inc. extends the following limited warranty to:

**Invoice #:**

**Drexel Metals Contractor:**

**Address:**

**Project Owner:**

**Project Name:**

**Address:**

concerning sales of PVDF (Polyvinylidene Fluoride) painted coil, which will be fabricated into components for, pre-painted metal roofing and metal buildings.

**Coverage:**

This anti-weathering warranty applies to flat sheets and coils identified on offerings and invoices from Drexel Metals, therefore eligible to be covered under this warranty and is used by fabricator within six months of invoicing. It applies to metal buildings installed in the continental United States. This is an anti-weathering paint finish warranty and does not apply to corrosion of the substrate.

**Terms:**

Although it is recognized by the owner, fabricator and Drexel Metals that most coatings will fade and change in appearance to some degree over a period of time in outdoor installations, and that some changes may not be uniform between surfaces not equally exposed, Drexel Metals warrants that the goods covered by this warranty will resist natural weathering of the paint finish to the extent that they will conform to the manufacturer’s performance standards for thirty-five (35) years following field installation, provided all conditions of this warranty are first met:

1. TRINAR® will not peel, crack, check, or flake to an extent that is apparent on ordinary outdoor visual observation; and
2. Vertical installations of TRINAR® will not change color more than 5 NBS (Hunter) units, and non-vertical installations will not change color more than 7 NBS (Hunter) units following field installation. Color measurements are to be made per ASTM D 2244 and only on clean surfaces after removing surface deposits and chalk per ASTM D 3964; and
3. Vertical installations of TRINAR® will not chalk more than a number 8 rating, and non-vertical installations will not chalk more than a number 6 rating, when measured per ASTM D-4214, Method A.

This is an anti-weathering limited warranty and does not apply to other causes of failure, including:

Coils or fabricated parts which have suffered scratching or abrasion or impact by a hard object, are stored at any time prior to field installation contrary to storage instructions as issued by Drexel Metals; are stored or installed in a way which allows standing water on the coating or which occurs in any chemically aggressive environment containing salts or other chemicals, whether naturally occurring or caused by man; are stored or installed in an environment that includes a high degree of humidity, sand, dirt or grease, whether naturally occurring or caused by man; have suffered any damage caused by acts of God, radiation, falling objects, explosion, or other external forces, including conditions which develop between the coating and the metal which cause the coating to degrade.

This paint warranty is a “film integrity” warranty only and does not cover events or environmental circumstances that negatively impact the performance of the substrate on which the paint system is applied.



## **Exclusion of other Warranties:**

This limited warranty is exclusive and is in lieu of any warranty of merchantability, fitness for a particular purpose, or other warranty of quality, whether expressed or implied, and whether written or oral. Corrections of non-conformities in the manner and for the period of time provided herein shall constitute fulfillment of all liabilities of Drexel Metals with respect to or arising out of the goods whether based on contract, negligence, strict liability in tort, or otherwise.

## **Other Conditions:**

This limited warranty does not apply to the following conditions: areas subject to water run-off from lead or copper flashings or areas in metallic contact with lead or copper; areas sheltered from periodic washing by natural rainfall such as underside eaves and soffits; conditions and circumstances where corrosive fumes or condensates are generated or released inside the building; or forming where the bend is tighter than 2T for sheet thicknesses up to 0.030" (0.75mm) and tighter than 4T for sheet thicknesses 0.031" (0.76mm) and thicker; the slope of the roof or sections of the roof being flatter than 1/4; 12; forming which involves severe reverse bending or which subjects the coating to alternate compression and tension; failure to provide free drainage of water, including internal condensation, from overlaps and all other surfaces of the sheets or panels; failure to remove debris from overlaps and all other surfaces of sheets and panels; damage to the coating caused by contact with green or wet lumber; wet storage stain caused by water damage or from condensation; presence of damp insulation or other corrosive materials in contact with or close proximity to sheets or panels; deterioration of sheets or panels caused directly or indirectly by contact with fasteners (The selection of suitable long-lasting fasteners to be used rests solely with the Buyer).

Drexel Metals recommends that there be a systematic fresh water rinse maintenance program in effect in the areas of salt concentration (such as adjacent to the seashore and/or industrial atmospheres) so as to prevent the accumulation of concentrated mineral deposits.

## **Stipulations and Limitations for Remedy**

Drexel Metals Inc.'s liability for breach of this warranty shall be limited exclusively to the cost of either repairing non-conforming sheets or panels or, at Drexel Metals Inc.'s sole option, of furnishing F.O.B. Buyer's plant, sufficient sheet product to enable Buyer to fabricate replacement panels for the non conforming panels.

1. Drexel Metals Inc. shall not in any event be liable for the cost of labor expended by others on any non-conforming sheets or panels or for any special, indirect or consequential damages to anyone by reason of the fact that such sheets or panels shall have been non-conforming.
2. Claims must be promptly reported in writing to Drexel Metals Inc. and Drexel Metals Inc. shall be given a reasonable opportunity to inspect the sheets or panels claimed to be non-conforming. Adequate identification of the material involved in the claim, including the date of installation, order number, coil number, invoice number and date of shipment must be established by the Buyer.
3. Buyer shall exercise diligence in the inspection of material as received from Drexel Metals Inc. so as to mitigate repair or replacement.
4. Drexel Metals Inc. extends this warranty solely to the owner. This warranty is non-transferable and non-assignable.
5. Drexel Metals Inc. reserves the right to terminate this warranty at any time (except as to orders already accepted) upon giving of written notice thereof.
6. This Warranty becomes effective only upon presentation of paid invoices from contractor/owner to manufacturer/installer and to Drexel Metals Inc.. In no event will future claims be honored if the above payments have not been made.

This is our complete warranty. The laws of the State of Kentucky, USA, hereunder shall govern the rights and obligations of the parties. Any controversy or claim arising out of or relating to this contract shall be determined by arbitration in accordance with the Commercial Arbitration Rules of the American Arbitration Association. The place of arbitration shall be Louisville, KY USA. The language of the arbitration shall be English. Drexel Metals Inc. makes no guarantees, either expressed or implied beyond the fact hereof; including, with limitation, warranties of fitness and merchantability and shall have no other liability with respect thereto.

Drexel Metals Inc.



Brian Partyka  
Partner

Date: \_\_\_\_\_

***Drexel Metals PVDF Coated and Aluminum Product***  
**35-YEAR “Non Prorated” Paint and Aluminum Substrate Warranty**  
**starts from the date of installation**

**Date:**

**Parties:** Drexel Metals Inc. extends the following limited warranty to:

**Invoice #:**

**Owner:**

**Job Name & Address:**

**Drexel Contractor:**

concerning sales of PVDF (Polyvinylidene Fluoride) painted coil, which will be fabricated into components for, pre-painted metal roofing and metal buildings.

**Coverage:**

This anti-weathering warranty applies to flat sheets and coils identified on offerings and invoices from Drexel Metals, therefore eligible to be covered under this warranty and is used by fabricator within six months of invoicing. It applies to metal buildings installed in the continental United States.

**Terms:**

Although it is recognized by the owner, fabricator and Drexel Metals that most coatings will fade and change in appearance to some degree over a period of time in outdoor installations, and that some changes may not be uniform between surfaces not equally exposed, Drexel Metals warrants that the goods covered by this warranty will resist natural weathering to the extent that they will conform to the manufacturer’s performance standards for thirty-five (35) years following field installation, provided all conditions of this warranty are first met:

1. TRINAR® will not peel, crack, check, or flake to an extent that is apparent on ordinary outdoor visual observation; and
2. Vertical installations of TRINAR® will not change color more than 5 NBS (Hunter) units, and non-vertical installations will not change color more than 7 NBS (Hunter) units following field installation. Color measurements are to be made per ASTM D 2244 and only on clean surfaces after removing surface deposits and chalk per ASTM D 3964; and
3. Vertical installations of TRINAR® will not chalk more than a number 8 rating, and non-vertical installations will not chalk more than a number 6 rating, when measured per ASTM D-4214, Method A.

## **Term of Warranty:**

This is a non-prorated limited warranty for paint finish only for a period of 35 years from date of installation.

## **Substrate Warranty:**

1. 25-year Substrate warranty in effect from date of installation for projects within 2,800 feet of a coastal environment containing salt.
2. 30-year Substrate warranty in effect from date of installation for projects greater than 2,800 feet of a coastal environment containing salt.

## **Maintenance:**

On pre-painted aluminum material installed less than 2,800 feet from a coastal environment including salt water and/or brackish water, an annual maintenance must be performed by the building owner or management team including a fresh water rinse of all the components of the roof system, soffits and eaves. This maintenance program will be based on a job specific project and shall be in accordance with AAMA guidelines. It is the building owner or management team's responsibility to maintain records to provide evidence that annual maintenance has been completed and such records must be given to Drexel Metals Inc. upon request. Drexel Metals Inc. will provide cleaning instructions and guidelines that should be followed to maintain your Drexmet™ SSMRS. The use of Drexmet™ Clear Edge Protection will also be required during installation of your Drexmet™ SSMRS.

The application, use, and fabrication of the product covered by this warranty is at the discretion of persons other than employees or officers of Drexel Metals Inc. and Drexel accepts no claims to applicability or installation

This is an anti-weathering limited warranty and does not apply to other causes of failure, including:

Coils or fabricated parts which have suffered scratching or abrasion or impact by a hard object, are stored at any time prior to field installation contrary to storage instructions as issued by Drexel Metals; are stored or installed in a way which allows standing water on the coating or which occurs in any chemically aggressive environment containing salts or other chemicals, whether naturally occurring or caused by man; are stored or installed in an environment that includes a high degree of humidity, sand, dirt or grease, whether naturally occurring or caused by man; has suffered any damage caused by acts of God, radiation, falling objects, explosion, or other external forces, including conditions which develop between the coating and the metal which cause the coating to degrade.

## **Exclusion of other Warranties:**

This limited warranty is exclusive and is in lieu of any warranty of merchantability, fitness for a particular purpose, or other warranty of quality, whether expressed or implied, and whether written or oral. Corrections of non-conformities in the manner and for the period of time provided herein shall constitute fulfillment of all liabilities of Drexel Metals with respect to or arising out of the goods whether based on contract, negligence, strict liability in tort, or otherwise.

## **Other Conditions:**

This limited warranty does not apply to the following conditions: areas subject to water run-off from lead or copper flashings or areas in metallic contact with lead or copper; areas sheltered from periodic washing by natural rainfall such as underside eaves and soffits; conditions and circumstances where corrosive fumes or condensates are generated or released inside the building; or forming where the bend is tighter than 2T for sheet thicknesses up to 0.030" (0.75mm) and tighter than 4T for sheet thicknesses 0.031" (0.76mm) and thicker; the slope of the roof or sections of the roof being flatter than 1/4; 12; forming

which involves severe reverse bending or which subjects the coating to alternate compression and tension; failure to provide

free drainage of water, including internal condensation, from overlaps and all other surfaces of the sheets or panels; failure to remove debris from overlaps and all other surfaces of sheets and panels; damage to the coating caused by contact with green or wet lumber; wet storage stain caused by water damage or from condensation; presence of damp insulation or other corrosive materials in contact with or close proximity to sheets or panels; deterioration of sheets or panels caused directly or indirectly by contact with fasteners (the selection of suitable long-lasting fasteners to be used rests solely with the Buyer).

Drexel Metals recommends that there be a systematic fresh water rinse maintenance program in effect in the areas of salt concentration (such as adjacent to the seashore and/or industrial atmospheres) so as to prevent the accumulation of concentrated mineral deposits.

## **Stipulations and Limitations for Remedy**

Drexel Metals Inc.'s liability for breach of this warranty shall be limited exclusively to the cost of either repairing non-conforming sheets or panels or, at Drexel Metals Inc.'s sole option of furnishing F.O.B. Buyer's plant, sufficient sheet product to enable Buyer to fabricate replacement panels for the non conforming panels.

1. Drexel Metals Inc. shall not in any event be liable for the cost of labor expended by others on any non-conforming sheets or panels or for any special, indirect or consequential damages to anyone by reason of the fact that such sheets or panels shall have been non-conforming.
2. Claims must be promptly reported in writing to Drexel Metals Inc. and Drexel Metals Inc. shall be given a reasonable opportunity to inspect the sheets or panels claimed to be non-conforming. Adequate identification of the material involved in the claim, including the date of installation, order number, coil number, invoice number and date of shipment must be established by the Buyer.
3. Buyer shall exercise diligence in the inspection of material as received from Drexel Metals Inc. so as to mitigate repair or replacement.
4. Drexel Metals Inc. extends this warranty solely to the owner. This warranty is non-transferable and non-assignable.
5. Drexel Metals Inc. reserves the right to terminate this warranty at any time (except as to orders already accepted) upon giving of written notice thereof.
6. This Warranty becomes effective only upon presentation of paid invoices from contractor/owner to manufacturer/installer and to Drexel Metals Inc. In no event will future claims be honored if the above payments have not been made.

This is our complete warranty. The laws of the State of Kentucky, USA, hereunder shall govern the rights and obligations of the parties. Any controversy or claim arising out of or relating to this contract shall be determined by arbitration in accordance with the Commercial Arbitration Rules of the American Arbitration Association. The place of arbitration shall be Louisville, KY USA. The language of the arbitration shall be English. Drexel Metals Inc. makes no guarantees, either expressed or implied beyond the fact hereof, including, with limitation, warranties of fitness and merchantability and shall have no other liability with respect thereto.

Drexel Metals Inc.



---

Brian Partyka  
Partner

Date: \_\_\_\_\_

**25-Year DREXLUME Warranty**  
Galvalume® Acrylic/Chromate Treated  
starts from the date of installation

**Parties:** Drexel Metals Inc extends the following limited warranty to:

**Invoice #:**

**Drexel Contractor:**

**Address:**

**Project Owner:**

**Project Name:**

**Address:**

that Drexel Metals Inc.'s hot dipped aluminum-zinc alloy coated known as DREXLUME™ sheet steel sold for use as steel roofing, siding panels, gutters and downspouts, if erected within the United States, WILL NOT as a result of corrosion from exposure to normal atmospheric conditions, rupture, fail structurally, or perforate within a period of 25 years and 6 months after shipment from Drexel Metals Inc.. This warranty applies to all categories of product with coating classes AZ50 ASTM A792-96 or heavier.

This warranty DOES NOT APPLY to sheets exposed at any time to corrosive or aggressive atmospheric conditions, including but not limited to:

- Areas subject to salt water marine atmospheres or to repeated spraying of either salt or fresh water.
- Areas subject to fallout or exposure to corrosive chemicals, fumes, ash, cement dust, or animal waste.
- Areas subject to water run-off from lead or copper flashings or areas in metallic contact with lead or copper.
- Areas sheltered from periodic washing by natural rainfall such as the underside of eaves and soffits.
- Conditions and circumstances where corrosive fumes or condensates are generated or released inside the building.

This warranty DOES NOT APPLY in the event of:

1. Bending or forming where the bend is tighter than 2T for sheet thickness up to 0.30" (0.75mm) and tighter than 4T for sheet thickness 0.031" (0.76mm) and thicker.
2. This slope of the roof or sections of the roof being flatter than 1/4:12.
3. Mechanical, chemical, or other damage sustained during shipments, storage, forming, fabrication, or during or after erection.
4. Forming which involves severe bending or which subjects the coating to alternate compression and tension.
5. Failure to provide free drainage of water, including internal condensation, from overlaps and all other surfaces of the sheets or panels.
6. Failure to remove debris from overlaps and all other surfaces of the sheets or panels.
7. Damage to the metallic coating caused by contact with green or wet lumber.
8. Deterioration of sheets or panels caused by contact with green or wet lumber.
9. Wet storage stain caused by water damage or from condensation.
10. Presence of damp insulation or other corrosive materials in contact with or close proximity to sheets or panels.
11. Deterioration of sheets or panels caused directly or indirectly by contact with fasteners. The selection of suitable long-lasting fasteners to be used with GALVALUME® roofing, siding, gutter and downspouts rests solely with the Buyer.

This warranty shall be subject to the stipulations, limitations and conditions hereinafter set forth:

1. Drexel Metals Inc.'s liability for breach of this warranty shall be limited exclusively to the cost of either repairing non-conforming sheets, panels, gutters and downspouts, at Drexel Metals Inc.'s sole option of furnishing FOB Buyer's plant sufficient sheet product to enable Buyer to fabricate replacements for the nonconforming panels, gutters and downspouts.
2. Drexel Metals Inc. shall not in any event be liable for the cost of labor expended by others on any nonconforming sheets or for any special, indirect or consequential damages to anyone by reason of the fact that such sheets shall have been nonconforming.
3. Claims must be promptly reported in writing to Drexel Metals Inc. and Drexel Metals Inc. shall be given a reasonable opportunity to inspect the sheets, panels, gutter and downspouts claimed to be nonconforming adequate identification of the material involved in the claim, including the date of installation, order number, coil number, invoice number and date of shipment must be established by the Buyer.
4. Buyer shall exercise diligence in the inspection of material as received from Drexel Metals Inc. so as to mitigate repair or replacement.
5. Drexel Metals Inc. reserves the right to terminate this warranty at any time (except as to orders already accepted) upon the giving of written notice thereof.

This is our complete warranty. The laws of the State of Kentucky, USA, hereunder shall govern the rights and obligations of the parties. Any controversy or claim arising out of or relating to this contract shall be determined by arbitration in accordance with the Commercial Arbitration Rules of the American Arbitration Association. The place of arbitration shall be Louisville, KY USA. The language of the arbitration shall be English. Drexel Metals Inc. makes no guarantees, either expressed or implied beyond the fact hereof; including, with limitation, warranties of fitness and merchantability and shall have no other liability with respect thereto.

## GUIDELINES FOR DREXLUME™ WARRANTY

In order for our warranty to be effective in environments with a salt atmosphere or relative to bodies of salt water the following criteria must be adhered to:

1. Application in proximity to a coastline, with surf, the distance from the coast must be at a minimum of 2,800 feet.
2. Application in proximity to a large Bay the distance must be at a minimum of 1,200 feet.
3. Application in proximity to Marshes and Canals the distance must be at a minimum of 600 feet.

All other exclusions listed in our warranty must be recognized. Areas of the roof or soffit unexposed to natural fresh water rainfall must be washed and cleaned with fresh water and a mild detergent yearly. This at the discretion of the owner.

Drexel Metals Inc.



Brian Partyka  
Partner

Date: \_\_\_\_\_

***Drexel Metals Siliconized Polyester Coated Product***  
**25-YEAR “Non Prorated” Warranty**  
**starts from the date of installation**

**Parties:** Drexel Metals, Inc. extends the following limited warranty to:

**Invoice #:**

**Drexel Metals Contractor:**

**Address:**

**Project Owner:**

**Project Name:**

**Address:**

concerning sales of our CERAM-A-STAR® 1050 painted coil and sheets, which will be fabricated into components for, pre-painted metal roofing and metal buildings.

**Coverage:**

Drexel Metals warrants that CERAM-A-STAR® 1050 will conform to the performance standards listed below (the “Limited Warranty”):

1. Within 25 years from the date of installation, CERAM-A-STAR® 1050 will not peel, flake or otherwise lose adhesion to an extent that is apparent on ordinary outdoor visual observation. NOTE: Slight crazing or cracking may occur on roll-formed edges or break bends at the time of forming, and is considered standard—such crazing or cracking shall not constitute a basis for complaint under this Limited Warranty. Further, failure due to substrate issues including, but not limited to corrosion is not covered by this Limited Warranty. Various metals may react differently under different atmospheric conditions.
2. Within 25 years from the date of installation:
  - a. sidewall panels of CERAM-A-STAR® 1050 will not change color more than five (5) (delta E) Hunter units and roof panels will not change more than seven (7) (delta E) Hunter units when measured per ASTM D 2244 on clean surfaces after removing dirt, other surface deposits and chalk per ASTM D 3964; and
  - b. sidewall panels of CERAM-A-STAR® 1050 will not chalk more than a number eight (8) rating and roof panels will not chalk more than a number six (6) rating when measured per ASTM D 4214, Method A.

This is an anti-weathering limited warranty and does not apply to other causes of failure, including: Coils or fabricated parts which have suffered scratching or abrasion or impact by a hard object, are stored at any time prior to field installation contrary to storage instructions as issued by Drexel Metals; are stored or installed in a way which allows standing water on the coating or which occurs in any chemically aggressive environment containing salts or other chemicals, whether naturally occurring or caused by man; are stored or installed in an environment that includes a high degree of humidity, sand, dirt or grease, whether naturally occurring or caused by man; have suffered any damage caused by acts of God, radiation, falling objects, explosion, or other external forces, including conditions which develop between the coating and the metal which cause the coating to degrade.

This paint warranty is a “film integrity” warranty only and does not cover events or environmental circumstances that negatively impact the performance of the substrate on which the paint system is applied.

**Exclusion of other Warranties:**

This limited warranty is exclusive and is in lieu of any warranty of merchantability, fitness for a particular purpose, or other warranty of quality, whether expressed or implied, and whether written or oral. Corrections of non-conformities in the manner and for the period of time provided herein shall constitute fulfillment of all liabilities of Drexel Metals with respect to or arising out of the goods whether based on contract, negligence, strict liability in tort, or otherwise.

### **Other Conditions:**

This limited warranty does not apply to the following conditions: areas subject to water run-off from lead or copper flashings or areas in metallic contact with lead or copper; areas sheltered from periodic washing by natural rainfall such as underside eaves and soffits; conditions and circumstances where corrosive fumes or condensates are generated or released inside the building; or forming where the bend is tighter than 2T for sheet thicknesses up to 0.030" (0.75mm) and tighter than 4T for sheet thicknesses 0.031" (0.76mm) and thicker; the slope of the roof or sections of the roof being flatter than 1/4; 12; forming which involves severe reverse bending or which subjects the coating to alternate compression and tension; failure to provide free drainage of water, including internal condensation, from overlaps and all other surfaces of the sheets or panels; failure to remove debris from overlaps and all other surfaces of sheets and panels; damage to the coating caused by contact with green or wet lumber; wet storage stain caused by water damage or from condensation; presence of damp insulation or other corrosive materials in contact with or close proximity to sheets or panels; installed or stored in such a way that allows contact with animals or animal waste, harmful fumes or foreign substances in the atmosphere, or salt spray; CERAM-A-STAR® 1050 which has been damaged due to moisture entrapment in coils and/or bundles during transit or storage or which has been stored or installed in such a way that allows standing water on the coating; Significant differences in insulation below coated metal panel, where materials / items such as snow guards and solar panels are attached / adhered to the product and finally, deterioration of sheets or panels caused directly or indirectly by contact with fasteners (The selection of suitable long-lasting fasteners to be used rests solely with the Buyer).

Drexel Metals recommends that there be a systematic fresh water rinse maintenance program in effect in the areas of salt concentration (such as adjacent to the seashore and/or industrial atmospheres) so as to prevent the accumulation of concentrated mineral deposits.

### **Stipulations and Limitations for Remedy:**

Drexel Metals Inc.'s liability for breach of this warranty shall be limited exclusively to the cost of either repairing non-conforming sheets or panels or, at Drexel Metals Inc.'s sole option, of furnishing F.O.B. Buyer's plant, sufficient sheet product to enable Buyer to fabricate replacement panels for the non conforming panels.

1. Drexel Metals Inc. shall not in any event be liable for the cost of labor expended by others on any non-conforming sheets or panels or for any special, indirect or consequential damages to anyone by reason of the fact that such sheets or panels shall have been non-conforming.
2. Claims must be promptly reported in writing to Drexel Metals Inc. and Drexel Metals Inc. shall be given a reasonable opportunity to inspect the sheets or panels claimed to be non-conforming. Adequate identification of the material involved in the claim, including the date of installation, order number, coil number, invoice number and date of shipment must be established by the Buyer.
3. Buyer shall exercise diligence in the inspection of material as received from Drexel Metals Inc. so as to mitigate repair or replacement.
4. Drexel Metals Inc. extends this warranty solely to the owner. This warranty is non-transferable and non-assignable.
5. Drexel Metals Inc. reserves the right to terminate this warranty at any time (except as to orders already accepted) upon giving of written notice thereof.
6. This Warranty becomes effective only upon presentation of paid invoices from contractor/owner to manufacturer/installer and to Drexel Metals Inc.. In no event will future claims be honored if the above payments have not been made.

This is our complete warranty. The laws of the State of Kentucky, USA, hereunder shall govern the rights and obligations of the parties. Any controversy or claim arising out of or relating to this contract shall be determined by arbitration in accordance with the Commercial Arbitration Rules of the American Arbitration Association. The place of arbitration shall be Louisville, KY USA. The language of the arbitration shall be English. Drexel Metals Inc. makes no guarantees, either expressed or implied beyond the fact hereof; including, with limitation, warranties of fitness and merchantability and shall have no other liability with respect thereto.

Drexel Metals Inc.



Brian Partyka  
Partner

Date: \_\_\_\_\_





1234 Gardiner Lane – Louisville, KY 40213 – 502-716-7143 - 888-321-9630 – fax – 502-690-6174 – [www.drexmet.com](http://www.drexmet.com)

## ***20-YEAR WEATHER TIGHTNESS LIMITED WARRANTY AGREEMENT***

**Warranted Building:**

**Address:**

**Telephone:**

**Building Owner:**

**Address:**

**Telephone:**

**General Contractor:**

**Address:**

**Telephone:**

**Panel Manufacturer:**

**Address:**

**Telephone:**

**Installation Contractor:**

**Address:**

**Telephone:**

Area of Metal Roof: \_\_\_\_\_ Square Feet

Date of Completion: \_\_\_\_\_

Type of Product Approved and Applied: \_\_\_\_\_

## **WARRANTY PROVISIONS FOR MATERIAL AND WORKMANSHIP**

Drexel Metals Inc., a Delaware corporation (hereinafter "Drexel") and the Installation Contractor identified above hereby jointly and severally warrant to the Building Owner identified above (hereinafter "the Owner") that, subject to each and every item, condition, limitation and allocation of warranty and responsibility stated herein, for a period of twenty (20) years commencing with the date of completion of installation of the roofing system identified above (hereinafter "roofing system"), should leaks develop in the roofing system due solely to defects in the material provided by Drexel, manufacturing defects, ordinary wear and tear by the elements or workmanship on the part of the Installation Contractor, then Drexel and the Installation Contractor shall be responsible for repairs necessary to return the roofing system to a water tight condition, within cost limitations stated within. Drexel's and Installation Contractor's total cumulative liability under this warranty is limited to: (FIRST) Drexel for the cost of replacement materials and (SECOND) Installation Contractor for the replacement labor. In no event shall the total cost of such repairs exceed the original payment of the installed roofing system. Repairs shall carry a warranty against leaks only for the then remaining balance of the original twenty (20) year Warranty period. This Warranty only covers those leaks that have been reported to Drexel in writing within thirty (30) days of discovery by the Owner.

Notwithstanding anything contained herein to the contrary, during the first two (2) years after completion of the roofing system on the building identified above, Drexel warrants only against water leaks caused by defects in the material provided by Drexel. The Installation Contractor shall be solely responsible for all costs and expenses for the repair and/or replacement of the roofing system arising as a result of defective workmanship or installation during the first two (2) years after completion of installation of the roofing system, extended by successive twenty-four (24) month periods from the date of any leaks reported or repaired within the relevant two (2) year period. For the remaining term of this Warranty, Drexel warrants to the Owner, should leaks develop in the Roofing System due solely to manufacturing defects, ordinary wear and tear by the elements or workmanship on the part of the Installation Contractor, then subject to each and every term, condition and limitation contained herein, shall be responsible for completing such repairs to the Roof System as necessary to return it to a watertight condition.

NEITHER DREXEL NOR THE INSTALLATION CONTRACTOR, MAKE ANY OTHER WARRANTY WHATEVER EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY AND WARRANTY OF FITNESS FOR ANY PARTICULAR PURPOSE. ALL WARRANTIES WHICH EXCEED, DIFFER FROM OR EXTEND BEYOND THOSE EXPRESSLY PROVIDED HEREIN ARE DISCLAIMED BY EACH AND ALL THE PARTIES HERETO AND ARE EXCLUDED FROM THIS 20-YEAR WEATHER TIGHT LIMITED WARRANTY. IN NO EVENT SHALL DREXEL OR THE INSTALLATION CONTRACTOR HAVE ANY LIABILITY FOR COMMERCIAL LOSS, CLAIMS FOR LABOR, CONSEQUENTIAL DAMAGES OR LOSS TO THE BUILDING, ITS CONTENTS OR ITS OCCUPANTS, OR INCIDENTAL, SPECIAL OR CONSEQUENTIAL DAMAGES OF ANY TYPE, WHETHER THE OWNER'S CLAIM BE BASED IN CONTRACT, TORT WARRANTY, STRICT LIABILITY OR ON ANY OTHER THEORY OR CAUSE OF ACTION. ALL RIGHTS, OBLIGATIONS, REMEDIES AND LIABILITIES OF THE PARTIES HERETO RELATING TO OR ARISING FROM CLAIMS OF DEFECTIVE GOODS AND/OR WORKMANSHIP SHALL BE GOVERNED EXCLUSIVELY BY THE TERMS OF THIS 20-YEAR WEATHER TIGHT LIMITED WARRANTY AND THOSE TERMS MAY NOT BE MODIFIED OR AMENDED ORALLY. IT IS EXPRESSLY AGREED THAT THE OWNER'S REMEDIES EXPRESSLY PROVIDED HEREIN ARE THE OWNER'S EXCLUSIVE REMEDIES.

### **EXCLUSIONS**

This Limited Warranty shall apply only to roofing systems installed in areas of normal atmospheric exposure and specifically does not cover leaks caused in whole or in part by the following:

1. Marine (salt water) atmosphere or regular spray of either salt or fresh water. If an Aluminum roof system is installed, the Substrate Warranty guide lines and Maintenance Instructions must be followed as stated in the Non-Prorated 35-Year Paint and Aluminum Substrate Warranty to avoid exclusion.
2. Exposure to or fallout from corrosive chemicals, ash or fumes from any chemical plant, foundry, plating works, kiln, fertilizer manufacturing plant, paper manufacturing plant or the like. Any harmful or corrosive substance or any condensate contained within or generated or released from inside the building.
3. Vent pipe flashing manufactured from rubber based products.
4. Any condensation or corrosion which is or was caused at any time, in part or in whole, as a result of (a) the use of an inadequate vapor barrier (perm rating of 0.5 or less with sealed joints and perimeter) when the insulation is installed immediately beneath the roof panels and/or (b) inadequate ventilation of the attic space between a roof panel and insulation when the installation is installed directly on top of an existing roof.
5. Worker traffic on the roof, other than traffic during the course of installation.
6. Hail, fire, lightning, wind speeds in excess of **XX mph per XX/ASCE 7-10**, hurricane, tornado, earthquake or any other act of God.
7. Alterations such as, but not limited to, the placement of structures, fixtures or utilities upon or to the roof without prior written authorization from Drexel.
8. Repairs performed to the roof and/or materials furnished with regard to such repairs by an entity or entities other than Drexel or the Installation Contractor.

9. Failure by the Owner or any lessee or other occupant or user of the Building to take reasonable care in maintaining the roof system, such as, but not limited to, failure to clean the gutter, valleys, etc., so as to allow water to run off without interruption.
10. Faulty building design or construction.
11. Birds, vermin, rodents, insects or other animals or pests.
12. Settlement, failure or cracking of the roof deck, walls or foundation of the Building, or defects or failures of coping gravel-stop due to cracking of walls or any part of the building structure.
13. Any other event, occurrence or cause beyond the control of Drexel and/or the Installation Contractor.
14. Failures due to the use of fasteners other than stainless steel and without an adequate barrier, that comes in contact with Pressure Treated/ACQ Treated Lumber.

In addition, Drexel shall have no liability or responsibility under or in connection with this Warranty if the Installation Contractor or any subcontractor fails to use all roof curbs, roof jacks, sealants, mastics, sub-framing, roof panels, clips, fasteners, and flashings provided by Drexel or approved or required by Drexel, nor shall Drexel have any liability or responsibility under or in connection with this Warranty if the Installation Contractor fails to follow Drexel's standard recommended installation instructions for the layout, design and erection of the roofing system, or if the roofing system is constructed in such a manner as not to permit proper drainage of water from all surfaces, but rather to permit standing or ponding water.

### **NOTICE OF CLAIMS AND GENERAL PROVISIONS**

All claims hereunder must be submitted in writing to Drexel within the Warranty Period and within thirty (30) days of discovery of any leak in the roofing system. Failure of the Owner to do so shall automatically relieve both Drexel and the Installation Contractor of any and all responsibility and/or liability under this 20-Year Weather Tightness Limited Warranty. Upon receipt of a warranty claim, from either the owner or the Installation Contractor, Drexel will send a representative to the location specified for an inspection of the roof. If during Drexel's inspection Drexel determines that the leak or leaks in the roof are not covered by this Warranty, the party requesting Drexel's inspection shall be liable for all direct expenses incurred by Drexel to conduct the roof inspection. If after the inspection by Drexel, it is determined that the leak has taken place after the twenty-four (24) month leak free period provided by the installation contractor in accordance with this warranty, Drexel shall repair the roof system in accordance to this warranty.

**FAILURE TO FOLLOW THESE GUIDELINES MAY VOID THIS WARRANTY AND RELIEVE DREXEL OF ANY AND ALL RESPONSIBILITY AND/OR LIABILITY UNDER THE TERMS OF THE WARRANTY.**

All notices given pursuant to this Warranty shall be in writing and sent by certified mail, return receipt requested, to Drexel and the Installation Contractor to the following address:

**Drexel Metals Inc.**  
 Technical Department  
 1234 Gardiner Lane  
 Louisville, KY 40213

**INSTALLATION CONTRACTOR:**

During the term of this Warranty, Drexel and the Installation Contractor, their sales representatives and employees, shall have free access to the roof during regular business hours upon reasonable notice to the Owner. Notwithstanding any other provision contained herein, Drexel shall not have any liability or responsibility under this Warranty for any roofing products or materials that were not supplied by Drexel and this Warranty applies only to those portions of the roofing system which was constructed solely with products and materials supplied by Drexel.

This document constitutes the entire Warranty made by Drexel and the Installation Contractor. No modification or amendment to this Warranty shall be binding on Drexel or the Installation Contractor unless made in writing and signed by both parties authorized representatives. The terms, conditions and provisions contained in this Warranty may be waived only in writing and signed by a Drexel authorized representative. No oral statements, course of conduct, or course of dealing shall be deemed or constitute a waiver.

The invalidity or unenforceability of any provisions of the Warranty shall not affect the enforceability and validity of any remaining provisions, and this Warranty shall be construed in all respects as if the invalid or unenforceable provisions were omitted.

This Warranty is tendered for the sole benefit of the Owner identified above and is not transferable or assignable. Neither Drexel nor the Installation Contractor shall have any obligation under this Warranty unless all invoices for materials, installation and services have been paid in full by or on behalf of the Owner.

Neither Drexel's nor the Installation Contractor's failure at any time to enforce any of the terms or conditions of this Warranty shall be deemed or construed as a waiver of any provision herein or of the ability to exercise their rights in the future in accordance with this Warranty. This Warranty shall be governed by and enforced in accordance with the laws of the Commonwealth of Delaware.

Executed this: \_\_\_\_\_ Day of \_\_\_\_\_, 2013

**DREXEL METALS INC.  
1234 GARDINER LANE  
LOUISVILLE, KY 40213**

BY: \_\_\_\_\_ ATTEST: \_\_\_\_\_  
Title: \_\_\_\_\_

**INSTALLATION CONTRACTOR:**

BY: \_\_\_\_\_ ATTEST: \_\_\_\_\_  
Title: \_\_\_\_\_

**BUILDING OWNER:**

BY: \_\_\_\_\_ ATTEST: \_\_\_\_\_  
Title: \_\_\_\_\_



1234 Gardiner Lane – Louisville, KY 40213 – 502-716-7143 - 888-321-9630 – fax – 502-690-6174 – [www.drexmet.com](http://www.drexmet.com)

## ***20-YEAR NO DOLLAR LIMIT WEATHER TIGHTNESS LIMITED WARRANTY AGREEMENT***

**Warranted Building:** \_\_\_\_\_  
**Address:** \_\_\_\_\_

**Telephone:** \_\_\_\_\_

**Building Owner:** \_\_\_\_\_  
**Address:** \_\_\_\_\_

**Telephone:** \_\_\_\_\_

**General Contractor:** \_\_\_\_\_  
**Address:** \_\_\_\_\_

**Telephone:** \_\_\_\_\_

**Panel Manufacturer:** \_\_\_\_\_  
**Address:** \_\_\_\_\_

**Telephone:** \_\_\_\_\_

**Installation Contractor:** \_\_\_\_\_  
**Address:** \_\_\_\_\_

**Telephone:** \_\_\_\_\_

Area of Metal Roof: \_\_\_\_\_ Square Feet

Date of Completion: \_\_\_\_\_

Type of Product Approved and Applied: \_\_\_\_\_

## **WARRANTY PROVISIONS FOR MATERIAL AND WORKMANSHIP**

Drexel Metals Inc., a Delaware corporation (hereinafter "Drexel") and the Installation Contractor identified above hereby jointly and severally warrant to the Building Owner identified above (hereinafter "the Owner") that, subject to each and every item, condition, limitation and allocation of warranty and responsibility stated herein, for a period of twenty (20) years commencing with the date of completion of installation of the roofing system identified above (hereinafter "roofing system), should leaks develop in the roofing system due solely to defects in the material provided by Drexel, manufacturing defects, ordinary wear and tear by the elements or workmanship on the part of the Installation Contractor, then Drexel and the Installation Contractor shall be responsible for all cost of the repairs necessary to return the roofing system to a water tight condition. This Warranty will be fully satisfied by repair of the roofing system, and any such repairs shall carry a warranty against leaks only for the then remaining balance of the original 20-year Warranty period. This Warranty only covers those leaks that have been reported to Drexel in writing within thirty (30) days of discovery by the Owner.

Notwithstanding anything contained herein to the contrary, during the first five (5) years after completion of the roofing system on the building identified above, Drexel warrants only against water leaks caused by defects in the material provided by Drexel. The Installation Contractor shall be solely responsible for all costs and expenses for the repair and/or replacement of the roofing system arising as a result of defective workmanship or installation during the first five (5) years after completion of installation of the roofing system, extended by successive sixty (60) month periods from the date of any leaks reported or repaired within the relevant five (5) year period. For the remaining term of this Warranty, Drexel warrants to the owner, should leaks develop in the roofing system due solely to manufacturing defects, ordinary wear and tear by the elements or workmanship on the part of the Installation Contractor, then subject to each and every term, condition and limitation contained herein, shall be responsible for completing such repairs to the roof system as necessary to return it to a watertight condition.

NEITHER DREXEL NOR THE INSTALLATION CONTRACTOR, MAKE ANY OTHER WARRANTY WHATEVER EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY AND WARRANTY OF FITNESS FOR ANY PARTICULAR PURPOSE. ALL WARRANTIES WHICH EXCEED, DIFFER FROM OR EXTEND BEYOND THOSE EXPRESSLY PROVIDED HEREIN ARE DISCLAIMED BY EACH AND ALL THE PARTIES HERETO AND ARE EXCLUDED FROM THIS 20-YEAR WEATHER TIGHT LIMITED WARRANTY. IN NO EVENT SHALL DREXEL OR THE INSTALLATION CONTRACTOR HAVE ANY LIABILITY FOR COMMERCIAL LOSS, CLAIMS FOR LABOR, CONSEQUENTIAL DAMAGES OR LOSS TO THE BUILDING, ITS CONTENTS OR ITS OCCUPANTS, OR INCIDENTAL, SPECIAL OR CONSEQUENTIAL DAMAGES OF ANY TYPE, WHETHER THE OWNER'S CLAIM BE BASED IN CONTRACT, TORT WARRANTY, STRICT LIABILITY OR ON ANY OTHER THEORY OR CAUSE OF ACTION. ALL RIGHTS, OBLIGATIONS, REMEDIES AND LIABILITIES OF THE PARTIES HERETO RELATING TO OR ARISING FROM CLAIMS OF DEFECTIVE GOODS AND/OR WORKMANSHIP SHALL BE GOVERNED EXCLUSIVELY BY THE TERMS OF THIS 20-YEAR WEATHER TIGHT LIMITED WARRANTY AND THOSE TERMS MAY NOT BE MODIFIED OR AMENDED ORALLY. IT IS EXPRESSLY AGREED THAT THE OWNER'S REMEDIES EXPRESSLY PROVIDED HEREIN ARE THE OWNER'S EXCLUSIVE REMEDIES.

### **EXCLUSIONS**

This Limited Warranty shall apply only to roofing systems installed in areas of normal atmospheric exposure and specifically does not cover leaks caused in whole or in part by the following:

1. Marine (salt water) atmosphere or regular spray of either salt or fresh water. If an Aluminum roof system is installed, the Substrate Warranty guide lines and Maintenance Instructions must be followed as stated in the Non-Prorated 35-Year Paint and Aluminum Substrate Warranty to avoid exclusion.
2. Exposure to or fallout from corrosive chemicals, ash or fumes from any chemical plant, foundry, plating works, kiln, fertilizer manufacturing plant, paper manufacturing plant or the like. Any harmful or corrosive substance or any condensate contained within or generated or released from inside the building.
3. Vent pipe flashing manufactured from rubber based products.
4. Any condensation or corrosion which is or was caused at any time, in part or in whole, as a result of (a) the use of an inadequate vapor barrier (perm rating of 0.5 or less with sealed joints and perimeter) when the insulation is installed immediately beneath the roof panels and/or (b) inadequate ventilation of the attic space between a roof panel and insulation when the installation is installed directly on top of an existing roof.
5. Worker traffic on the roof, other than traffic during the course of installation.
6. Hail, fire, lightning, wind speeds in excess of **XX mph per XX/ASCE 7-10**, hurricane, tornado, earthquake or any other act of God.
7. Alterations such as, but not limited to, the placement of structures, fixtures or utilities upon or to the roof without prior written authorization from Drexel.
8. Repairs performed to the roof and/or materials furnished with regard to such repairs by an entity or entities other than Drexel or the Installation Contractor.

9. Failure by the Owner or any lessee or other occupant or user of the Building to take reasonable care in maintaining the roof system, such as, but not limited to, failure to clean the gutter, valleys, etc., so as to allow water to run off without interruption.
10. Faulty building design or construction.
11. Birds, vermin, rodents, insects or other animals or pests.
12. Settlement, failure or cracking of the roof deck, walls or foundation of the Building, or defects or failures of coping gravel-stop due to cracking of walls or any part of the building structure.
13. Any other event, occurrence or cause beyond the control of Drexel and/or the Installation Contractor.
14. Failures due to the use of fasteners other than stainless steel and without an adequate barrier, that comes in contact with Pressure Treated/ACQ Treated Lumber.

In addition, Drexel shall have no liability or responsibility under or in connection with this Warranty if the Installation Contractor or any subcontractor fails to use all roof curbs, roof jacks, sealants, mastics, sub-framing, roof panels, clips, fasteners, and flashings provided by Drexel or approved or required by Drexel, nor shall Drexel have any liability or responsibility under or in connection with this Warranty if the Installation Contractor fails to follow Drexel's standard recommended installation instructions for the layout, design and erection of the roofing system, or if the roofing system is constructed in such a manner as not to permit proper drainage of water from all surfaces, but rather to permit standing or ponding water.

#### **NOTICE OF CLAIMS AND GENERAL PROVISIONS**

All claims hereunder must be submitted in writing to Drexel within the Warranty Period and within thirty (30) days of discovery of any leak in the roofing system. Failure of the Owner to do so shall automatically relieve both Drexel and the Installation Contractor of any and all responsibility and/or liability under this 20-Year Weather Tightness Limited Warranty. Upon receipt of a warranty claim, from either the owner or the Installation Contractor, Drexel will send a representative to the location specified for an inspection of the roof. If during Drexel's inspection Drexel determines that the leak or leaks in the roof are not covered by this Warranty, the party requesting Drexel's inspection shall be liable for all direct expenses incurred by Drexel to conduct the roof inspection. If after the inspection by Drexel, it is determined that the leak has taken place after the (60) month leak free period provided by the installation contractor in accordance with this warranty, Drexel shall repair the roof system in accordance to this warranty.

**FAILURE TO FOLLOW THESE GUIDELINES MAY VOID THIS WARRANTY AND RELIEVE DREXEL OF ANY AND ALL RESPONSIBILITY AND/OR LIABILITY UNDER THE TERMS OF THE WARRANTY.**

All notices given pursuant to this Warranty shall be in writing and sent by certified mail, return receipt requested, to Drexel and the Installation Contractor to the following address:

**Drexel Metals Inc.**  
Technical Department  
1234 Gardiner Lane  
Louisville, KY 40213

**INSTALLATION CONTRACTOR:**

During the term of this Warranty, Drexel and the Installation Contractor, their sales representatives and employees, shall have free access to the roof during regular business hours upon reasonable notice to the Owner. Notwithstanding any other provision contained herein, Drexel shall not have any liability or responsibility under this Warranty for any roofing products or materials that were not supplied by Drexel and this Warranty applies only to those portions of the roofing system which was constructed solely with products and materials supplied by Drexel.

This document constitutes the entire Warranty made by Drexel and the Installation Contractor. No modification or amendment to this Warranty shall be binding on Drexel or the Installation Contractor unless made in writing and signed by both parties authorized representatives. The terms, conditions and provisions contained in this Warranty may be waived only in writing and signed by a Drexel authorized representative. No oral statements, course of conduct, or course of dealing shall be deemed or constitute a waiver.

The invalidity or unenforceability of any provisions of the Warranty shall not affect the enforceability and validity of any remaining provisions, and this Warranty shall be construed in all respects as if the invalid or unenforceable provisions were omitted.

This Warranty is tendered for the sole benefit of the Owner identified above and is not transferable or assignable. Neither Drexel nor the Installation Contractor shall have any obligation under this Warranty unless all invoices for materials, installation and services have been paid in full by or on behalf of the Owner.

Neither Drexel's nor the Installation Contractor's failure at any time to enforce any of the terms or conditions of this Warranty shall be deemed or construed as a waiver of any provision herein or of the ability to exercise their rights in the future in accordance with this Warranty. This Warranty shall be governed by and enforced in accordance with the laws of the Commonwealth of Delaware.

Executed this: \_\_\_\_\_ Day of \_\_\_\_\_, 2013

**DREXEL METALS INC.  
1234 GARDINER LANE  
LOUISVILLE, KY 40213**

BY: \_\_\_\_\_ ATTEST: \_\_\_\_\_  
Title: \_\_\_\_\_

**INSTALLATION CONTRACTOR:**

BY: \_\_\_\_\_ ATTEST: \_\_\_\_\_  
Title: \_\_\_\_\_

**BUILDING OWNER:**

BY: \_\_\_\_\_ ATTEST: \_\_\_\_\_  
Title: \_\_\_\_\_





1234 Gardiner Lane – Louisville, KY 40213 – 502-716-7143 - 888-321-9630 – fax – 502-690-6174 – [www.drexmet.com](http://www.drexmet.com)

## ***20-YEAR SINGLE SOURCE NO DOLLAR LIMIT WEATHER TIGHTNESS LIMITED WARRANTY AGREEMENT***

**Warranted Building:** \_\_\_\_\_  
**Address:** \_\_\_\_\_

**Telephone:** \_\_\_\_\_

**Building Owner:** \_\_\_\_\_  
**Address:** \_\_\_\_\_

**Telephone:** \_\_\_\_\_

**General Contractor:** \_\_\_\_\_  
**Address:** \_\_\_\_\_

**Telephone:** \_\_\_\_\_

**Panel Manufacturer:** \_\_\_\_\_  
**Address:** \_\_\_\_\_

**Telephone:** \_\_\_\_\_

**Installation Contractor:** \_\_\_\_\_  
**Address:** \_\_\_\_\_

**Telephone:** \_\_\_\_\_

Area of Metal Roof: \_\_\_\_\_ Square Feet

Date of Completion: \_\_\_\_\_

Type of Product Approved and Applied: \_\_\_\_\_

## **WARRANTY PROVISIONS FOR MATERIAL AND WORKMANSHIP**

Drexel Metals Inc., a Delaware corporation (hereinafter "Drexel") hereby severally warrants to the Building Owner identified above (hereinafter "the Owner") that, subject to each and every item, condition, limitation and allocation of warranty and responsibility stated herein, for a period of twenty (20) years commencing with the date of completion of installation of the roofing system identified above (hereinafter "roofing system), should leaks develop in the roofing system due solely to defects in the material provided by Drexel, manufacturing defects, ordinary wear and tear by the elements or workmanship on the part of the Installation Contractor, then Drexel alone shall be responsible for all cost of the repairs necessary to return the roofing system to a water tight condition. This Warranty will be fully satisfied by repair of the roofing system, and any such repairs shall carry a warranty against leaks only for the then remaining balance of the original 20-year Warranty period. This Warranty only covers those leaks that have been reported to Drexel in writing within thirty (30) days of discovery by the Owner.

DREXEL MAKES NO OTHER WARRANTY WHATEVER EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY AND WARRANTY OF FITNESS FOR ANY PARTICULAR PURPOSE. ALL WARRANTIES WHICH EXCEED, DIFFER FROM OR EXTEND BEYOND THOSE EXPRESSLY PROVIDED HEREIN ARE DISCLAIMED BY EACH AND ALL THE PARTIES HERETO AND ARE EXCLUDED FROM THIS 20-YEAR WEATHER TIGHT LIMITED WARRANTY. IN NO EVENT SHALL DREXEL HAVE ANY LIABILITY FOR COMMERCIAL LOSS, CLAIMS FOR LABOR, CONSEQUENTIAL DAMAGES OR LOSS TO THE BUILDING, ITS CONTENTS OR ITS OCCUPANTS, OR INCIDENTAL, SPECIAL OR CONSEQUENTIAL DAMAGES OF ANY TYPE, WHETHER THE OWNER'S CLAIM BE BASED IN CONTRACT, TORT WARRANTY, STRICT LIABILITY OR ON ANY OTHER THEORY OR CAUSE OF ACTION. ALL RIGHTS, OBLIGATIONS, REMEDIES AND LIABILITIES OF THE PARTIES HERETO RELATING TO OR ARISING FROM CLAIMS OF DEFECTIVE GOODS AND/OR WORKMANSHIP SHALL BE GOVERNED EXCLUSIVELY BY THE TERMS OF THIS 20-YEAR WEATHER TIGHT LIMITED WARRANTY AND THOSE TERMS MAY NOT BE MODIFIED OR AMENDED ORALLY. IT IS EXPRESSLY AGREED THAT THE OWNER'S REMEDIES EXPRESSLY PROVIDED HEREIN ARE THE OWNER'S EXCLUSIVE REMEDIES.

## **EXCLUSIONS**

This Limited Warranty shall apply only to roofing systems installed in areas of normal atmospheric exposure and specifically does not cover leaks caused in whole or in part by the following:

1. Marine (salt water) atmosphere or regular spray of either salt or fresh water. If an Aluminum roof system is installed, the Substrate Warranty guide lines and Maintenance Instructions must be followed as stated in the Non-Prorated 35-Year Paint and Aluminum Substrate Warranty to avoid exclusion.
2. Exposure to or fallout from corrosive chemicals, ash or fumes from any chemical plant, foundry, plating works, kiln, fertilizer manufacturing plant, paper manufacturing plant or the like. Any harmful or corrosive substance or any condensate contained within or generated or released from inside the building.
3. Vent pipe flashing manufactured from rubber based products.
4. Any condensation or corrosion which is or was caused at any time, in part or in whole, as a result of (a) the use of an inadequate vapor barrier (perm rating of 0.5 or less with sealed joints and perimeter) when the insulation is installed immediately beneath the roof panels and/or (b) inadequate ventilation of the attic space between a roof panel and insulation when the installation is installed directly on top of an existing roof.
5. Worker traffic on the roof, other than traffic during the course of installation.
6. Hail, fire, lightning, wind speeds in excess of **XX mph per XX/ASCE 7-10**, hurricane, tornado, earthquake or any other act of God.
7. Alterations such as, but not limited to, the placement of structures, fixtures or utilities upon or to the roof without prior written authorization from Drexel.
8. Repairs performed to the roof and/or materials furnished with regard to such repairs by an entity or entities other than Drexel or a Drexel Certified Installation Contractor.
9. Failure by the Owner or any lessee or other occupant or user of the Building to take reasonable care in maintaining the roof system, such as, but not limited to, failure to clean the gutter, valleys, etc., so as to allow water to run off without interruption.
10. Faulty building design or construction.
11. Birds, vermin, rodents, insects or other animals or pests.
12. Settlement, failure or cracking of the roof deck, walls or foundation of the Building, or defects or failures of coping gravel-stop due to cracking of walls or any part of the building structure.
13. Any other event, occurrence or cause beyond the control of Drexel.
14. Failures due to the use of fasteners other than stainless steel and without an adequate barrier, that comes in contact with Pressure Treated/ACQ Treated Lumber.

In addition, Drexel shall have no liability or responsibility under or in connection with this Warranty if the Installation Contractor or any subcontractor fails to use all roof curbs, roof jacks, sealants, mastics, sub-framing, roof panels, clips, fasteners, and flashings provided by Drexel or approved or required by Drexel, nor shall Drexel have any liability or responsibility under or in connection with this Warranty if the Installation Contractor fails to follow Drexel's standard recommended installation instructions for the layout, design and erection of the roofing system, or if the roofing system is constructed in such a manner as not to permit proper drainage of water from all surfaces, but rather to permit standing or ponding water.

#### **NOTICE OF CLAIMS AND GENERAL PROVISIONS**

All claims hereunder must be submitted in writing to Drexel within the Warranty Period and within thirty (30) days of discovery of any leak in the roofing system. Failure of the Owner to do so shall automatically relieve Drexel of any and all responsibility and/or liability under this 20-Year Weather Tightness Limited Warranty. Upon receipt of a warranty claim, in writing from the owner, Drexel will send a representative to the location specified for an inspection of the roof. If during Drexel's inspection Drexel determines that the leak or leaks in the roof are not covered by this Warranty, the party requesting Drexel's inspection shall be liable for all direct expenses incurred by Drexel to conduct the roof inspection.

**FAILURE TO FOLLOW THESE GUIDELINES MAY VOID THIS WARRANTY AND RELIEVE DREXEL OF ANY AND ALL RESPONSIBILITY AND/OR LIABILITY UNDER THE TERMS OF THE WARRANTY.**

All notices given pursuant to this Warranty shall be in writing and sent by certified mail, return receipt requested, to Drexel at the following address:

**Drexel Metals Inc.**  
Technical Department  
1234 Gardiner Lane  
Louisville, KY 40213

During the term of this Warranty, Drexel and the Installation Contractor, their sales representatives and employees, shall have free access to the roof during regular business hours upon reasonable notice to the Owner. Notwithstanding any other provision contained herein, Drexel shall not have any liability or responsibility under this Warranty for any roofing products or materials that were not supplied by Drexel and this Warranty applies only to those portions of the roofing system which was constructed solely with products and materials supplied by Drexel.

This document constitutes the entire Warranty made by Drexel. No modification or amendment to this Warranty shall be binding on Drexel unless made in writing and signed by a Drexel authorized representative. The terms, conditions and provisions contained in this Warranty may be waived only in writing and signed by a Drexel authorized representative. No oral statements, course of conduct, or course of dealing shall be deemed or constitute a waiver.

The invalidity or unenforceability of any provisions of the Warranty shall not affect the enforceability and validity of any remaining provisions, and this Warranty shall be construed in all respects as if the invalid or unenforceable provisions were omitted.

This Warranty is tendered for the sole benefit of the Owner identified above and is not transferable or assignable. Drexel shall not have any obligation under this Warranty unless all invoices for materials, installation and services have been paid in full by or on behalf of the Owner.

Drexel's failure at any time to enforce any of the terms or conditions of this Warranty shall not be deemed or construed as a waiver of any provision herein or of the ability to exercise their rights in the future in accordance with this Warranty. This Warranty shall be governed by and enforced in accordance with the laws of the Commonwealth of Delaware.

Executed this: \_\_\_\_\_ Day of \_\_\_\_\_, 2013

**DREXEL METALS INC.  
1234 GARDINER LANE  
LOUISVILLE, KY 40213**

BY: \_\_\_\_\_ ATTEST: \_\_\_\_\_  
Title: \_\_\_\_\_

**BUILDING OWNER:**

BY: \_\_\_\_\_ ATTEST: \_\_\_\_\_  
Title: \_\_\_\_\_



## ***20-YEAR SIDELAP WEATHER TIGHTNESS LIMITED WARRANTY AGREEMENT***

**Warranted Building:** \_\_\_\_\_

**Address:** \_\_\_\_\_

**Telephone:** \_\_\_\_\_

**Building Owner:** \_\_\_\_\_

**Address:** \_\_\_\_\_

**Telephone:** \_\_\_\_\_

**General Contractor:** \_\_\_\_\_

**Address:** \_\_\_\_\_

**Telephone:** \_\_\_\_\_

**Panel Manufacturer:** \_\_\_\_\_

**Address:** \_\_\_\_\_

**Telephone:** \_\_\_\_\_

**Installation Contractor:** \_\_\_\_\_

**Address:** \_\_\_\_\_

**Telephone:** \_\_\_\_\_

Area of Metal Roof: \_\_\_\_\_ Square Feet

Date of Completion: \_\_\_\_\_

Type of Product Approved and Applied: \_\_\_\_\_

## **WARRANTY PROVISIONS FOR MATERIAL AND WORKMANSHIP**

Drexel Metals Inc., a Delaware corporation (hereinafter "Drexel") and the Installation Contractor identified above hereby jointly and severally warrant to the Building Owner identified above (hereinafter "the Owner") that, subject to each and every item, condition, limitation and allocation of warranty and responsibility stated herein, for a period of twenty (20) years commencing with the date of completion of installation of the roofing system identified above (hereinafter "roofing system"), should leaks develop in the panel sidelaps due solely to defects in the material provided by Drexel, manufacturing defects, ordinary wear and tear by the elements or workmanship on the part of the Installation Contractor, then Drexel and the Installation Contractor shall be responsible for repairs necessary to return the roofing system to a water tight condition, within cost limitations stated within. Drexel's and Installation Contractor's total cumulative liability under this warranty is limited to: (FIRST) Drexel for the cost of replacement materials and (SECOND) Installation Contractor for the replacement labor. In no event shall the total cost of such repairs exceed the original payment of the installed roofing system. Repairs shall carry a warranty against leaks only for the then remaining balance of the original twenty (20) year Warranty period. This Warranty only covers sidelap leaks that have been reported to Drexel in writing within thirty (30) days of discovery by the Owner.

Notwithstanding anything contained herein to the contrary, during the first two (2) years after completion of the roofing system on the building identified above, Drexel warrants only against water leaks caused by defects in the material provided by Drexel. The Installation Contractor shall be solely responsible for all costs and expenses for the repair and/or replacement of the roofing system arising as a result of defective workmanship or installation during the first two (2) years after completion of installation of the roofing system, extended by successive twenty-four (24) month periods from the date of any leaks reported or repaired within the relevant two (2) year period. For the remaining term of this Warranty, Drexel warrants to the Owner, should leaks develop in the panel sidelaps due solely to manufacturing defects, ordinary wear and tear by the elements or workmanship on the part of the Installation Contractor, then subject to each and every term, condition and limitation contained herein, shall be responsible for completing such repairs to the roof system as necessary to return it to a watertight condition.

NEITHER DREXEL NOR THE INSTALLATION CONTRACTOR, MAKE ANY OTHER WARRANTY WHATEVER EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY AND WARRANTY OF FITNESS FOR ANY PARTICULAR PURPOSE. ALL WARRANTIES WHICH EXCEED, DIFFER FROM OR EXTEND BEYOND THOSE EXPRESSLY PROVIDED HEREIN ARE DISCLAIMED BY EACH AND ALL THE PARTIES HERETO AND ARE EXCLUDED FROM THIS 20-YEAR WEATHER TIGHT LIMITED WARRANTY. IN NO EVENT SHALL DREXEL OR THE INSTALLATION CONTRACTOR HAVE ANY LIABILITY FOR COMMERCIAL LOSS, CLAIMS FOR LABOR, CONSEQUENTIAL DAMAGES OR LOSS TO THE BUILDING, ITS CONTENTS OR ITS OCCUPANTS, OR INCIDENTAL, SPECIAL OR CONSEQUENTIAL DAMAGES OF ANY TYPE, WHETHER THE OWNER'S CLAIM BE BASED IN CONTRACT, TORT WARRANTY, STRICT LIABILITY OR ON ANY OTHER THEORY OR CAUSE OF ACTION. ALL RIGHTS, OBLIGATIONS, REMEDIES AND LIABILITIES OF THE PARTIES HERETO RELATING TO OR ARISING FROM CLAIMS OF DEFECTIVE GOODS AND/OR WORKMANSHIP SHALL BE GOVERNED EXCLUSIVELY BY THE TERMS OF THIS 20-YEAR WEATHER TIGHT LIMITED WARRANTY AND THOSE TERMS MAY NOT BE MODIFIED OR AMENDED ORALLY. IT IS EXPRESSLY AGREED THAT THE OWNER'S REMEDIES EXPRESSLY PROVIDED HEREIN ARE THE OWNER'S EXCLUSIVE REMEDIES.

### **EXCLUSIONS**

This Limited Warranty shall apply only to roofing systems installed in areas of normal atmospheric exposure and specifically does not cover leaks caused in whole or in part by the following:

1. Marine (salt water) atmosphere or regular spray of either salt or fresh water. If an Aluminum roof system is installed, the Substrate Warranty guide lines and Maintenance Instructions must be followed as stated in the Non-Prorated 35-Year Paint and Aluminum Substrate Warranty to avoid exclusion.
2. Exposure to or fallout from corrosive chemicals, ash or fumes from any chemical plant, foundry, plating works, kiln, fertilizer manufacturing plant, paper manufacturing plant or the like. Any harmful or corrosive substance or any condensate contained within or generated or released from inside the building.
3. All flashings, penetrations, or curbs.
4. Any condensation or corrosion which is or was caused at any time, in part or in whole, as a result of (a) the use of an inadequate vapor barrier (perm rating of 0.5 or less with sealed joints and perimeter) when the insulation is installed immediately beneath the roof panels and/or (b) inadequate ventilation of the attic space between a roof panel and insulation when the installation is installed directly on top of an existing roof.
5. Worker traffic on the roof, other than traffic during the course of installation.
6. Hail, fire, lightning, wind speeds in excess of **XX mph per XX/ASCE 7-10**, hurricane, tornado, earthquake or any other act of God.
7. Alterations such as, but not limited to, the placement of structures, fixtures or utilities upon or to the roof without prior written authorization from Drexel.
8. Repairs performed to the roof and/or materials furnished with regard to such repairs by an entity or entities other than Drexel or the Installation Contractor.

9. Failure by the Owner or any lessee or other occupant or user of the Building to take reasonable care in maintaining the roof system, such as, but not limited to, failure to clean the gutter, valleys, etc., so as to allow water to run off without interruption.
10. Faulty building design or construction.
11. Birds, vermin, rodents, insects or other animals or pests.
12. Settlement, failure or cracking of the roof deck, walls or foundation of the Building, or defects or failures of coping gravel-stop due to cracking of walls or any part of the building structure.
13. Any other event, occurrence or cause beyond the control of Drexel and/or the Installation Contractor.
14. Failures due to the use of fasteners other than stainless steel and without an adequate barrier, that comes in contact with Pressure Treated/ACQ Treated Lumber.

In addition, Drexel shall have no liability or responsibility under or in connection with this Warranty if the Installation Contractor or any subcontractor fails to use all materials provided by Drexel or approved or required by Drexel, nor shall Drexel have any liability or responsibility under or in connection with this Warranty if the Installation Contractor fails to follow Drexel's standard recommended installation instructions for the layout, design and erection of the roofing system, or if the roofing system is constructed in such a manner as not to permit proper drainage of water from all surfaces, but rather to permit standing or ponding water.

#### **NOTICE OF CLAIMS AND GENERAL PROVISIONS**

All claims hereunder must be submitted in writing to Drexel within the Warranty Period and within thirty (30) days of discovery of any leak in the roofing system. Failure of the Owner to do so shall automatically relieve both Drexel and the Installation Contractor of any and all responsibility and/or liability under this 20-Year Weather Tightness Limited Warranty. Upon receipt of a warranty claim, from either the owner or the Installation Contractor, Drexel will send a representative to the location specified for an inspection of the roof. If during Drexel's inspection Drexel determines that the leak or leaks in the roof are not covered by this Warranty, the party requesting Drexel's inspection shall be liable for all direct expenses incurred by Drexel to conduct the roof inspection. If after the inspection by Drexel, it is determined that the leak has taken place after the twenty-four (24) month leak free period provided by the installation contractor in accordance with this warranty, Drexel shall repair the roof system in accordance to this warranty.

**FAILURE TO FOLLOW THESE GUIDELINES MAY VOID THIS WARRANTY AND RELIEVE DREXEL OF ANY AND ALL RESPONSIBILITY AND/OR LIABILITY UNDER THE TERMS OF THE WARRANTY.**

All notices given pursuant to this Warranty shall be in writing and sent by certified mail, return receipt requested, to Drexel and the Installation Contractor to the following address:

**Drexel Metals Inc.**  
Technical Department  
1234 Gardiner Lane  
Louisville, KY 40213

**INSTALLATION CONTRACTOR:**

During the term of this Warranty, Drexel and the Installation Contractor, their sales representatives and employees, shall have free access to the roof during regular business hours upon reasonable notice to the Owner. Notwithstanding any other provision contained herein, Drexel shall not have any liability or responsibility under this Warranty for any roofing products or materials that were not supplied by Drexel and this Warranty applies only to those portions of the roofing system which was constructed solely with products and materials supplied by Drexel.

This document constitutes the entire Warranty made by Drexel and the Installation Contractor. No modification or amendment to this Warranty shall be binding on Drexel or the Installation Contractor unless made in writing and signed by both parties authorized representatives. The terms, conditions and provisions contained in this Warranty may be waived only in writing and signed by a Drexel authorized representative. No oral statements, course of conduct, or course of dealing shall be deemed or constitute a waiver.

The invalidity or unenforceability of any provisions of the Warranty shall not affect the enforceability and validity of any remaining provisions, and this Warranty shall be construed in all respects as if the invalid or unenforceable provisions were omitted.

This Warranty is tendered for the sole benefit of the Owner identified above and is not transferable or assignable. Neither Drexel nor the Installation Contractor shall have any obligation under this Warranty unless all invoices for materials, installation and services have been paid in full by or on behalf of the Owner.

Neither Drexel's nor the Installation Contractor's failure at any time to enforce any of the terms or conditions of this Warranty shall be deemed or construed as a waiver of any provision herein or of the ability to exercise their rights in the future in accordance with this Warranty. This Warranty shall be governed by and enforced in accordance with the laws of the Commonwealth of Delaware.

Executed this: \_\_\_\_\_ Day of \_\_\_\_\_, 2013

**DREXEL METALS INC.  
1234 GARDINER LANE  
LOUISVILLE, KY 40213**

BY: \_\_\_\_\_ ATTEST: \_\_\_\_\_  
Title: \_\_\_\_\_

**INSTALLATION CONTRACTOR:**

BY: \_\_\_\_\_ ATTEST: \_\_\_\_\_  
Title: \_\_\_\_\_

**BUILDING OWNER:**

BY: \_\_\_\_\_ ATTEST: \_\_\_\_\_  
Title: \_\_\_\_\_



---

# Specifications



MANUSPEC

**Drexel Metals Inc.**  
**DMC 200S 24 Gauge min. Steel 180° Mechanical Seam Metal Roof**  
**System over 22 GA B-Deck with ISO**

Section 07411 – Metal Roof Panels

Part 1 – General

1.1 Summary

- A. This section includes the following:
  - a. Factory-formed or onsite formed and field-assembled, concealed-fastener DMC 200S Steel, Standing Seam Metal Roofing System. Mechanically seamed at 180°
  - b. Metal soffit panels
- B. See Division 7 Section “Sheet Metal Roofing” for custom-fabricated and onsite, roll-formed sheet metal roofing

1.2 Performance Requirements

- A. Florida Building Code Approval, FBC FL #12114.10
- B. Miami-Dade County Product Approval NOA #11-0405.03
- C. Texas Department of Insurance (TDI) approval #RC-225
- D. Wind-Uplift Resistance: Comply with UL 580, UL Extended 1897, TAS 125
- E. Wing-Driven Rain: Comply with TAS 100
- F. Air Infiltration: Comply with ASTM E 1680 at 12psf
- G. Water Infiltration: Comply with ASTM 1646 at 20psf
- H. Static Water Pressure Head: Comply with ASTM E 2140
- I. Large Missile Impact: Comply with ASTM E 1886
- J. Impact Resistance: Comply with UL 2218
- K. Class A Fire Rating UL 263/790
- L. Requirements under each set of performance criteria below are examples only. Revise to suit project. Consult a structural engineer experienced in engineering metal roof panel assemblies of type indicated to quantify design loads applicable to project. Verify compliance with codes. See Evaluations.

1.3 Submittals

- A. Product Data: DMC 200S Standing Seam Metal Roofing System
- B. Shop Drawings:
  - a. All details will include edge conditions, panel profiles, trim and flashings, closures, and other accessories
  - b. Include structural analysis data signed and sealed by the qualified professional engineer responsible for their preparation
- C. Coordination Drawings: Drawn to scale and coordinating metal roof panel installation with penetrations and roof-mounted items
- D. Samples: For each exposed finish and color selection

MANUSPEC

- E. Material and paint certificates
- F. Field quality-control inspection reports for weather tight warranty projects
- G. Product test reports
- H. Maintenance date

1.4 Quality Assurance

- A. Installer Qualifications: DMC 200S Standing Seam Metal Roofing Systems manufactured and/or installed by a Drexel Metals certified manufacturer and/or installer
  - a. Installer's responsibilities include fabricating and installing metal roof panel assemblies and providing professional engineering services needed to assume engineering responsibility
- B. Pre-Installation Conference: Conduct conference at project site or at specified location for the architect or the general contractor

1.5 Warranty

- A. Bare/Unpainted Corrosion Warranty: Drexel Drexlume® (Acrylic Coated Galvalume) comes with a 25 year, 6 month warranty (salt water locations within 2,800 feet from direct surf, 1,200 feet from a large bay, or 600 feet from marshes and canals are excluded)
  - a. Contractor must qualify as a certified installer of Drexel products
- B. Paint Finish Warranty: Drexmet® 35 year "Non Pro-Rated" Paint Finish Warranty for all colors. Drexel Metals Inc. standard form in which manufacturer agrees to repair finish or replace material that show evidence of deterioration of factory-applied finishes within specified warranty period
  - a. Fluoropolymer Paint Finish Warranty Period: 35 years from date of substantial completion
  - b. Failures include, but are not limited to, the following:
    - i. Structural failures including rupturing, cracking, or puncturing
  - c. Deterioration of metals, metal finishes, and other materials beyond normal weathering and excluding salt water locations within specified number of feet
    - i. Drexel Job Information Sheet and Warranty Applications must be completed prior to delivery of the warranty
  - d. Energy Efficient Roof Coatings: A number of Drexmet® Standard Colors meet the minimum standard energy efficient requirements as outlined in the Energy Star Program
- C. Galvalume Substrate Warranty: 20 year (salt water locations within 2,800 feet from direct surf, 1,200 feet from a large bay, or 600 feet from marshes and canals are excluded)
- D. Weather Tight Warranty: Drexel Metals offers a weather tight warranty for up to 20-year periods. A 20-year no dollar limit warranty is also available. Contact Drexel Metals for information

Part 2 – Products

2.1 Panel Materials

MANUSPEC

- A. Metallic-Coated Steel Sheet Pre-painted with Coil Coating: Steel sheet metallic coated by the hot-dip process and pre-painted by the coil-coating process to comply with ASTM A755/A755M-03
  - a. Aluminum-Zinc Alloy-Coated Steel Sheet: Galvalume ASTM A792/A792M-05, AZ50 coating designation, SS, Grade D/50,000 psi min yield, Tension Leveled
  - b. Zinc-Coated (Galvanized) Steel Sheet: ASTM A653/A653M-05, G90 coating designations; SS, grade D/50,000 psi min yield, tension leveled.
  - c. Surface Appearance: Smooth and free of streaks, blistering, and other imperfections
  - d. Exposed Finishes:
    - i. High-performance Trinar® Finish: Two-coat, thermocured paint system with flouropolymer coats containing not less than 70 percent polyvinylidene fluoride (Kynar 500/Hylar 5000) resin by weight; complying with physical properties and coating performance requirements of AAMA 605.3-92 except as modified below:
      - 1. Humidity Resistance: 1500 hours per Federal Test Method Standard 141, Method 6201 or ASTM D2247-02
      - 2. Salt-Spray Resistance: 1000 hours per ASTM B117-03
      - 3. Accelerated Weathering: 3000 hours per ASTM D822, G151, G153
    - e. Concealed Finish: White or light-colored acrylic or polyester backer finish
    - f. Drexlume: ASTM A792-96, Acrylic Coated Galvalume, SS, Grade 50
- B. Panel Sealants:
  - a. Sealant Tape: Pressure-sensitive, gray polyisobutylene compound sealant tape with release-paper backing: 3/16 inch thick x 7/8 inch wide minimum
  - b. Joint Sealant: ASTM C920-05 as recommended in writing by metal roof panel manufacturer
  - c. Butyl-Rubber Based Solvent Release Sealant: ASTM C1311-02
  - d. Sidelap Sealant: Machine or field applied per Drexel engineering

2.2 Underlayment Materials

- A. MetShield underlayment: US classified, ICC-ES ESR #2206, meets 2009 International Building Code™, State of Florida Approved Product FSA #FL6785, Meets ASTM D1970
- B. Self-Adhering, Polyethylene-Faced Sheet: ASTM D1970-11, 40 mils thick minimum, consisting of slip-resisting polyethylene-film reinforcing and top surface laminated to SBS-modified asphalt adhesive, with release-paper backing; cold applied. Provide primer when recommended by underlayment manufacturer
  - a. Standard for self adhering modified bituminous sheet per ASTM D1970-11
  - b. Standard for sampling and testing per ASTM D5147-11
  - c. Standard for load strain properties per ASTM D2523-00
  - d. Standard for peel/stripping strength per ASTM D903-98
  - e. Standard for dimensional change at high temperature per ASTM D1204-08
  - f. Standard for tensile tear strength per ASTM D4073-06
  - g. Standard for water vapor transmission per ASTM E96-10

## MANUSPEC

### 2.3 Substrate Boards

- A. 22 gauge B-deck for new construction
- B. Deck attachment:
  - a. Follow DMC Engineering Report specifications for deck attachment
  - b. When re-roofing, where the deck is less than 22 gauge the above attachment method must be added to the existing attachment
- C. Polyisocyanurate Foam Board Insulation
  - a. Minimum of ¾" and maximum of 8" thick approved rigid board insulation with a current NOA having a minimum of 20 psi comprehensive strength. Fastening density will be in compliance with applicable building code and roofing application standard RAS 117

### 2.4 Miscellaneous Materials

- A. Fasteners: Self-Drilling #10 min. pancake head fasteners sufficiently long enough to penetrate B-Deck designed to withstand design loads.
  - a. See DMC Engineering Report for fastener specifications
  - b. Blind Fasteners: High-strength aluminum or stainless-steel rivets
- B. Concealed-Fastener, Mechanically Seamed Metal Roof Panels: Factory-formed or onsite, designed to be field assembled by lapping and interconnecting side edges of adjacent panels and mechanically attaching clips with appropriate fasteners between vertical legs of Standing Seam Roof System. Seem DMC Engineering for exact specifications. Include accessories required for weather tight installation

### 2.5 Standing Seam Roof Panels

- a. Manufacturer:
  - i. Drexel Metals Inc. – (888) 321-9630
- b. Profile: DMC 200S Standing Seam Metal Roofing Systems as indicated on drawings
- c. Material: Metallic-coated steel sheet, 24 gauge/.023" nominal thickness, or 22 gauge/.030" nominal thickness
  - i. Exterior Finish: Drexmet® High Performance Metal Roofing Finishes (Trinar®)
  - ii. Color: As selected by architect or building owner from Drexel Metals Inc. Standard Color Chart
- d. Panel Coverage: 16" Maximum
- e. Panel Height: 2.00" Minimum
- f. Panel Length: Continuous with no end laps or panel splices allowed
- g. Pan Configuration: Flat, Striations, Minor Ribs, or Vee Grooves
- h. Uplift Rating: UL 580, TAS 125, Miami-Dade County NOA #11-0405.03, Florida Building Code Approval FBC #12114.10
- i. Wind-Driven Rain: TAS 100
- j. Air Infiltration: ASTM E 1680

## MANUSPEC

- k. Water Infiltration: ASTM E 1646
- l. Static Water Pressure Head: ASTM E 2140
- m. Large Missile Impact: ASTM E 1886
- n. Impact Resistance: UL 2218
- o. UL Class A Fire Rating 263/790
- p. Type: Mechanical Seam 180 Degree
- q. Clips: Two-piece butterfly clip with 18GA base and 22GA butterfly. In corner application a continuous base is used.

### 2.6 Metal Soffit Panels

- A. General: Provide factory formed or onsite metal soffit panels designed to be field assembled by lapping and interconnecting side edges of adjacent panels and mechanically attaching through panel to supports using concealed fasteners in side laps. Include accessories required for weather tight installation
- B. Metal Soffit Panels:
  - a. Finish: As indicated on drawings
- C. Metal Soffit Panels:
  - a. Manufacturers:
    - i. Drexel Metals Inc. DMC-FW1
  - b. Profile: Flush or Vee Grooves
  - c. Material: Same material, finishes, and colors as metal roof panels
  - d. Material: Metallic-coated steel sheet, 24 gauge .023" nominal or aluminum .032" perforated
    - i. Exterior Smooth Finish: Drexmet® High Performance Metal Roofing Finishes (Trinar®)
    - ii. Color: As selected by architect or building owner from manufacturer's Drexel Metals Inc. Color Chart
  - e. Panel coverage: 12" coverage
  - f. Panel Height: 1" depth
  - g. Panel Length: Continuous with no end laps or panel splices

### 2.7 Accessories

- A. Roof Panel Accessories: Provide components required for a complete metal roof panel assembly including trim, copings, fascia, corner units, ridge closures, clips, flashings, sealants, gaskets, fillers, closure strips, and similar items. Match material and finish of metal roof panels unless otherwise indicated
  - a. Closures: Provide closures at eaves and ridges, fabricated of same metal as metal roof panels
  - b. Clips: See DMC Engineering for exact specifications
- B. Flashing and Trim: Formed from 24 gauge (.023" nominal) or thicker, metallic coated steel sheet. Provide flashing and trim as required to seal against weather and to provide finished appearance. Locations include eaves, rakes, corners, bases, framed openings, ridges, fascia, and fillers. Finish flashing and trim with the same finish system as adjacent metal roof panels

## MANUSPEC

- C. Gutters: Formed from 24-gauge (.023" nominal) or thicker, metallic-coated steel sheet. Match profile of gable trim, complete with end pieces, outlet tubes, and other special pieces as required. Fabricate in minimum 120" long sections, sized according to SMACNA's "Architectural Sheet Metal Manual". Furnish gutter supports spaced 36 inches (900 mm) fabricated from same metal as gutters. Finish gutters to match metal roof panels and roof fascia and rake trim.
- D. Downspouts: Formed from 24-gauge (.023" nominal) or thicker, metallic-coated steel sheet in 10-foot (3m) long sections, complete with formed elbows and offsets. Finish downspouts to match metal roof panels.
- E. Roof Curbs: Approved roof curb manufacturers
  - a. KCC International, Inc.
    - i. Phone: (800) 382-2872
    - ii. Website: <http://www.kcccurbs.com/>
  - b. ThyCurb
    - i. Phone: (800) 666-2872
    - ii. Website: <http://www.thybar.com/>
  - c. LM Curbs
    - i. Phone: (800) 284-1412
    - ii. Website: <http://www.lmcurbs.com/>
  - d. Curbs Plus, Inc.
    - i. Phone (888) 639-2872
    - ii. Website: <http://www.curbs-plus.com/>

### 2.8 Fabrication

- A. General: Fabricate and finish metal roof panels and accessories either at the factory or onsite by manufacturer's standard procedures and processes, as necessary to fulfill indicated performance requirements demonstrated by laboratory testing. Comply with indicated profiles, details with dimensional and structural requirements.
- B. Provide panel profile, include major ribs, and intermediate stiffing ribs or striations if any for full length of panel. Note: Major ribs, intermediate stiffening ribs or striations minimize oil canning. Oil canning is not cause for rejection.
- C. Sheet Metal Accessories: Fabricate flashing and trim to comply with recommendations in Drexel Metals Inc. Details or SMACNA's "Architectural Sheet Metal Manual" that apply to the design, dimensions, metal, and other characteristics of item indicated.
- D. Use the Drexmet® Paint Pen to touchup all minor scratches on all trim and panels.

## Part 3 – Execution

### 3.1 Preparation

- A. Substrate: Install solid substrate of 22 gauge B-Deck on entire roof surface. Attachment: See DMC Engineering Report for size and spacing of fasteners.
- B. Install flashings and other sheet metal to comply with requirements specified in Division 7 Section "Sheet Metal Flashing and Trim".

## MANUSPEC

- C. On coastal application (salt water locations within 2,800 feet from direct surf, 1,200 feet from a large bay, or 600 feet from marshes and canals) use Drexmet® Clear Air Dry Edge Coat products on all exposed cut edges to help delay edge creep and corrosion. Follow Drexel Metals Inc. proper instillation procedures.

### 3.2 Underlayment Installation

- A. Self-Adhering Sheet Underlayment: Install self-adhering sheet underlayment wrinkle free on roof sheathing under metal roof panels. Comply with temperature restrictions of underlayment (refer to manufacturer for instillation). Use primer rather than nails for installing underlayment at low temperatures. Apply at locations indicated on drawings, in shingle fashion to shed water, with end laps of no less than 6 inches (150 mm) staggered 24 inches (600 mm) between courses. Overlap side edges not less than 3½ inches (90 mm). Extend underlayment past eave approximately 3/8" to cover substrate. Roll laps with roller. Cover underlayment within 120 days.

### 3.3 Polyisocyanurate Foam Board Insulation

- A. ISO board insulation can be ½" to 8" in thickness
- B. Bearing plates are not required when using the butterfly clips
- C. See DMC Engineering for exact specifications

### 3.4 Metal Roof Panel Installation – General

- A. General: Provide metal roof panels of full length from eave to ridge. Anchor metal roof panels and other components of the work securely in place, with provisions for thermal and structural movement
  - a. Field cutting of metal roof panels by torch or saw blade is not permitted
  - b. Mechanically fasten ridge end of metal roof panels and allow eave end free movement due to thermal expansion and contraction.
  - c. Provide metal Z closures at high-side eave, rake edges, rake walls, and each side of ridge and hip caps.
  - d. Flash and seal metal roof panels with weather closures at eaves, rakes, and at perimeter of all openings. Fasten with self-tapping screws.
  - e. Lap metal flashing over metal roof panels to allow moisture to run over and off the material
- B. Fasteners:
  - a. Steel Roof Panels: Use #10 min. pancake head fastener sufficiently long enough to penetrate B-Deck per DMC Engineering Report
- C. Metal Protection: Where dissimilar metals will contact each other or corrosive substrates, protect against galvanic action by painting contact surfaces with bituminous coating, by applying rubberized-asphalt underlayment to each contact surface, or by other permanent separation as recommended by metal roof panel manufacturer. Fasteners used must be stainless steel.
- D. Joint Sealers: Install gaskets, joint fillers, and sealants where indicated and where required for weatherproof performance of metal roof panel assemblies



## MANUSPEC

- a. Seal side joints where recommended by metal roof panel manufacturer
- b. Prepare joints and apply sealants to comply with requirements in Division 7 Section Joint Sealants

### 3.5 Field-Assembled Metal Roof Panel Installation

- A. Standing Seam Metal Roof Panels: Fasten metal roof panels to supports with concealed clips at maximum 48" o.c., 2 fasteners per clip or 24" o.c. per Miami-Dade NOA
  - a. Install clips to deck with two self-drilling #10 pancake head fastener sufficiently long enough to penetrate B-Deck.
  - b. Hand seam panels 90 degrees at clips and then use a robotic seamer to seam the panels to full 180 degrees
- B. Metal Soffit Panels: Provide metal soffit panel's full width of soffits. Install the panels perpendicular to support framing.
  - a. Flash and seal panels with weather closures where metal soffit panels meet walls and at perimeter of all openings

### 3.6 Accessory Installation

- A. General: Install accessories with positive anchorage to building weather tight mounting and provide for thermal expansion. Coordinate installation with flashings and other components.
  - a. Install components required for a complete metal roof panel assembly including trim, copings, ridge closures, seam covers, flashings, sealants, gaskets, fillers, closure strips, and similar items.
  - b. Comply with performance requirements, manufacturer's written installation instructions, and SMACNA's "Architectural Sheet Metal Manual". Provide concealed fasteners where possible, and set units true to line and level as indicated. Install work with laps, joints, and seams that will be permanently water tight and weather resistant.
  - c. Provide elbows at base of downspouts to direct water away from building
  - d. Tie downspouts to underground drainage system indicated.

### 3.7 Cleaning and Protection

- A. Remove temporary protective coverings and strippable films if applicable, if any, as metal roof panels are installed, unless otherwise indicated in manufacturer's written installation instructions. On completion of metal roof panel installation, clean finished surfaces as recommended by metal roof panel manufacturer. Maintain in a clean condition during construction.
- B. To prevent rust staining remove any fillings caused by drilling or cutting immediately from finished surfaces.
- C. ACQ Treated Lumber: Do not install Drexel Metals Steel or Aluminum Roof Systems over ACQ Treated Lumber without consulting Drexel Metals regarding proper installation procedures and requirements.

MANUSPEC

See engineering report and details and follow appropriate requirements.  
For any further questions or comments contact:

Drexel Metals Inc.  
Technical Department  
1234 Gardiner Lane  
Louisville, KY 40213  
Phone: (502) 716-7143  
Fax: (502) 690-6174

SECTION 07710

EDGE METAL ROOF SPECIALTIES

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Metal Drip Edge.
- B. Metal Econo Coping.
- C. Metal Fascia Cover.
- D. Metal Gravel Stop.
- E. Metal Gutter.
- F. Metal Snap Gravel Stop.
- G. Metal Spring Tite Coping.
- H. Accessories.

1.2 RELATED SECTIONS

- A. Section 06150 - Wood Decking.
- B. Section 06160 - Sheathing: Plywood and oriented strand board.
- C. Section 06200 - Wood Trim.
- D. Section 07220 - Roof and Deck Insulation: Roof board insulation.
- E. Section 07310 - Roof Shingles.
- F. Section 07320 - Roof Tiles.
- G. Section 07410 - Metal Roof and Wall Panels: Preformed metal roofing.
- H. Section 07500 - Membrane Roofing.
- I. Section 07620 - Sheet Metal Flashing and Trim.
- J. Section 07720 - Roof Accessories: Soffit vents, roof pavers, etc.

1.3 REFERENCES

- A. ANSI/SPRI ES-1 - Wind Design Standard for Edge Systems Used with Low Slope Roofing Systems.
- B. ANSI/SPRI GD-1 – Structural Design Standard for Gutter Systems Used with Low Slope Roofing Systems.

- C. SPRI Single Ply Roofing Industry Standards.
- 1.4 PERFORMANCE REQUIREMENTS
- A. ANSI/SPRI ES-1 or GD-1 tested and certified by a 3<sup>rd</sup> party testing laboratory active in the testing of industry standard edge metal systems.
- 1.5 SUBMITTALS
- A. Submit under provisions of Section 01300.
  - B. Product Data: Manufacturer's data sheets on each product to be used, including:
    - 1. Preparation instructions and recommendations.
    - 2. Storage and handling requirements and recommendations.
    - 3. Installation methods.
  - C. Shop Drawings: Show profiles, joining method, location of accessory items, attachment and flashing details, membrane roof interface, and dimensions.
  - D. Finish/Color Samples: For each color product specified, two complete sets of color charts representing Manufacturer's full range of minimum 35 colors and patterns.
  - E. Verification Samples: For each color product specified, two sample chips representing actual product, color, and patterns.
  - F. Manufacturer's Certificates: Certify products meet specified performance requirements.
- 1.6 QUALITY ASSURANCE
- A. Manufacturer Qualifications: Company certified by Drexel as a "DM-ARM Authorized Fabricator" in manufacturing Edge Metal Products specified in this section.
  - B. 3<sup>rd</sup> Party QA Certification: "DM-ARM Authorized Fabricator" certified and inspected by 3<sup>rd</sup> party ANSI/SPRI authorized testing laboratory for quality assurance. Current annual certificate required.
  - C. Installer Qualifications: Company certified by Drexel as a "Certified Installer" in the installation of Edge Metal Products specified in this section.
  - D. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
    - 1. Finish areas designated by Architect.
    - 2. Do not proceed with remaining work until workmanship, color, and sheen are approved by Architect.
    - 3. Refinish mock-up area as required to produce acceptable work.
- 1.7 DELIVERY, STORAGE, AND HANDLING
- A. Store products in Manufacturer's unopened packaging until ready for installation.
  - B. Store materials in a dry, protected, well-vented area.
  - C. Remove protective plastic surface film immediately before installation.
  - D. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

## 1.8 SEQUENCING

- A. Ensure that information required for installation of products of this section are furnished to affected trades in time to prevent interruption of construction progress.
- B. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.
- C. Coordinate installation with roof membrane manufacturer's installation instructions.

## 1.9 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by Manufacturer for optimum results. Do not install products under environmental conditions outside Manufacturer's absolute limits.

## 1.10 WARRANTY

- A. Bare/Unpainted Corrosion Warranty: Drexel Drexlume® (Acrylic Coated Galvalume) AZ-55 comes with a 25 year, 6 month warranty (salt water locations within 2,800 feet from direct surf, 1,200 feet from a large bay, or 600 feet from marshes and canals are excluded).
- B. Paint Finish Warranty: Drexmet® 35 year "Non Pro-Rated" Paint Finish Warranty for all colors. Drexel Metals Inc. standard form in which manufacturer agrees to repair finish or replace material that show evidence of deterioration of factory-applied finishes within specified warranty period.
  - a. Fluoropolymer Paint Finish Warranty Period: 35 years from date of substantial completion.
  - b. Failures include, but are not limited to, the following:
    - i. Structural failures including rupturing, cracking, or puncturing.
  - c. Deterioration of metals, metal finishes, and other materials beyond normal weathering and excluding salt water locations within specified number of feet
    - i. Drexel Job Information Sheet and Warranty Applications must be completed prior to delivery of the warranty.
  - d. Energy Efficient Roof Coatings: A number of Drexmet® Standard Colors meet the minimum standard energy efficient requirements as outlined in the Energy Star Program.
- C. Galvalume Substrate Warranty AZ-50: 20 year (salt water locations within 2,800 feet from direct surf, 1,200 feet from a large bay, or 600 feet from marshes and canals are excluded).
- D. Aluminum Substrate Warranty: 25 year within 2800 feet of coastline / 30 year greater than 2800 feet of coastline.

## PART 2 PRODUCTS

### 1.11 MANUFACTURERS

- A. Acceptable Manufacturer: Drexel Metals Inc., which is located at: 1234 Gardiner Lane, Louisville, KY ; Toll Free Tel: 888-321-9630 ; Tel: 502-716-7143; Email: Web: [www.drexelmetals.com](http://www.drexelmetals.com)
- B. Substitutions: Not permitted.

## 1.12 ROOF EDGE PRODUCTS

A. Metal Drip Edge: Decorative metal Drip Edge with continuous 22 Gauge Cleat. Cleat to be pre-punched by Drexel for precise attachment.

1. Construction:

a. Drip Edge Material:

- 1) .040 inch (1 mm) thick formed aluminum.
- 2) 24 gauge Galvalume coated steel.

b. Drip Edge Finish:

- 1) Drexmet® 35 year color as selected by the Architect from Drexel's color chart.
- 2) Drexlume® (Acrylic Coated Galvalume).
- 3) Bare/Unpainted mill finish aluminum.

c. Drip Edge Length:

- 1) Standard 10'-0" (3.048m), or up to 20'-0" (6.096m) maximum.

d. Drip Edge Attachment:

- 1) 1-1/4" Stainless Steel Ring Shank Nails provided by Drexel attached to substrate at 12" on center through Cleat.
- 2) Certified per ANSI/SPRI ES-1 Standard to a design pressure of 390 lbs./ft<sup>2</sup> (24GA Steel) and 410 lbs./ft<sup>2</sup> (.040" AL) to comply with the International Building Code.

B. Metal Econo Coping: Decorative metal Econo Coping with continuous 22 Gauge Cleat. Cleat to be pre-punched by Drexel for precise attachment.

1. Construction:

a. Econo Coping Material:

- 1) .040 inch (1 mm) thick formed aluminum.
- 2) 24 gauge Galvalume coated steel.

b. Econo Coping Finish:

- 1) Drexmet® 35 year color as selected by the Architect from Drexel's color chart.
- 2) Drexlume® (Acrylic Coated Galvalume).
- 3) Bare/Unpainted mill finish aluminum.

c. Econo Coping Length:

- 1) Standard 10'-0" (3.048m), or up to 20'-0" (6.096m) maximum.

d. Econo Coping Attachment:

- 1) 1-1/4" Stainless Steel Ring Shank Nails provided by Drexel attached to substrate face side at 12" on center through Cleat.
- 2) #9 Washered Drexmet Woodscrew provided by Drexel attached to substrate roof side at 12" on center.
- 3) Certified 16" maximum width per ANSI/SPRI ES-1 Standard to a design pressure of 250 lbs./ft<sup>2</sup> (24GA Steel) and 260 lbs./ft<sup>2</sup> (.040" AL) to comply with the International Building Code.
- 4) Certified 20" maximum width per ANSI/SPRI ES-1 Standard to a design pressure of 210 lbs./ft<sup>2</sup> (24GA Steel) and 210 lbs./ft<sup>2</sup> (.040" AL) to comply with the International Building Code.

C. Metal Fascia Cover: Decorative metal Fascia Cover with continuous 22 Gauge Cleat. Cleat to be pre-punched by Drexel for precise attachment.

1. Construction:

a. Fascia Cover Material:

- 1) .040 inch (1 mm) thick formed aluminum.
- 2) 24 gauge Galvalume coated steel.

b. Fascia Cover Finish:

- 1) Drexmet® 35 year color as selected by the Architect from Drexel's color chart.

- 2) Drexlume® (Acrylic Coated Galvalume).
  - 3) Bare/Unpainted mill finish aluminum.
  - c. Fascia Cover Length:
    - 1) Standard 10'-0"(3.048m), or up to 20'-0"(6.096m) maximum.
  - d. Fascia Cover Attachment:
    - 1) #10 Pancake Head Woodscrew Stainless Steel provided by Drexel attached to substrate at 12" on center through Cleat.
    - 2) Certified per ANSI/SPRI ES-1 Standard to a design pressure of 135 lbs./ft<sup>2</sup> (24GA Steel) and 135 lbs./ft<sup>2</sup> (.040" AL) to comply with the International Building Code.
- D. Metal Gravel Stop: Decorative metal Gravel Stop with continuous 22 Gauge Cleat. Cleat to be pre-punched by Drexel for precise attachment.
- 1. Construction:
    - a. Gravel Stop Material:
      - 1) .040 inch (1 mm) thick formed aluminum.
      - 2) 24 gauge Galvalume coated steel.
    - b. Gravel Stop Finish:
      - 1) Drexmet® 35 year color as selected by the Architect from Drexel's color chart.
      - 2) Drexlume® (Acrylic Coated Galvalume).
      - 3) Bare/Unpainted mill finish aluminum.
    - c. Gravel Stop Length:
      - 1) Standard 10'-0"(3.048m), or up to 20'-0"(6.096m) maximum.
    - d. Gravel Stop Attachment:
      - 1) 1-1/4" Stainless Steel Ring Shank Nails provided by Drexel attached to substrate at 12" on center through Cleat.
      - 2) Certified per ANSI/SPRI ES-1 Standard to a design pressure of 180 lbs./ft<sup>2</sup> (24GA Steel) and 170 lbs./ft<sup>2</sup> (.040" AL) to comply with the International Building Code.
- E. Metal Gutter: Decorative metal Gutter.
- 1. Construction:
    - a. Gutter Material:
      - 1) .040 inch (1 mm) thick formed aluminum.
      - 2) 24 gauge Galvalume coated steel.
    - b. Gutter Finish:
      - 1) Drexmet® 35 year color as selected by the Architect from Drexel's color chart.
      - 2) Drexlume® (Acrylic Coated Galvalume).
      - 3) Bare/Unpainted mill finish aluminum.
    - c. Gutter Length:
      - 1) Standard 10'-0"(3.048m), or up to 20'-0"(6.096m) maximum.
    - d. Gutter Attachment:
      - 1) #10 Pancake Head Woodscrew Stainless Steel provided by Drexel attached to substrate at 12" on center.
      - 2) Drexel Gutter Bracket made from .063" aluminum spaced to meet performance requirements and design loads. (30" max.)
      - 3) #9 Washered Drexmet Woodscrew Stainless Steel provided by Drexel attached through gutter bracket to substrate.
      - 4) Certified per ANSI/SPRI GD-1 Standard to a design pressure of XXX lbs./ft<sup>2</sup> (24GA Steel) and XXX lbs./ft<sup>2</sup> (.040" AL) to comply with the International Building Code.
- F. Metal Snap Gravel Stop: Decorative metal Snap Gravel Stop with continuous 22 Gauge Cleat. Cleat to be pre-punched by Drexel for precise attachment.

1. Construction:
  - a. Snap Gravel Stop Material:
    - 1) .040 inch (1 mm) thick formed aluminum.
    - 2) 24 gauge Galvalume coated steel.
  - b. Snap Gravel Stop Finish:
    - 1) Drexmet® 35 year color as selected by the Architect from Drexel's color chart.
    - 2) Drexlume® (Acrylic Coated Galvalume).
    - 3) Bare/Unpainted mill finish aluminum.
  - c. Snap Gravel Stop Length:
    - 1) Standard 10'-0"(3.048m), or up to 20'-0"(6.096m) maximum.
  - d. Snap Gravel Stop Attachment:
    - 1) 1-1/4" Stainless Steel Ring Shank Nails provided by Drexel attached to substrate at 12" on center through Cleat.
    - 2) Certified per ANSI/SPRI ES-1 Standard to a design pressure of 90 lbs./ft<sup>2</sup> (24GA Steel) and 75 lbs./ft<sup>2</sup> (.040" AL) to comply with the International Building Code.
  
- G. Metal Spring Tite Coping: Decorative metal Spring Tite Coping with continuous 22 Gauge Cleat. Cleat to be pre-punched by Drexel for precise attachment.
  1. Construction:
    - a. Spring Tite Coping Material:
      - 1) .040 inch (1 mm) thick formed aluminum.
      - 2) 24 gauge Galvalume coated steel.
    - b. Spring Tite Coping Finish:
      - 1) Drexmet® 35 year color as selected by the Architect from Drexel's color chart.
      - 2) Drexlume® (Acrylic Coated Galvalume).
      - 3) Bare/Unpainted mill finish aluminum.
    - c. Spring Tite Coping Length:
      - 1) Standard 10'-0"(3.048m), or up to 20'-0"(6.096m) maximum.
    - d. Spring Tite Coping Attachment:
      - 1) #10 Pancake Head Woodscrew Stainless Steel provided by Drexel attached to substrate at 12" on center through Cleat.
      - 2) Certified 16" maximum width per ANSI/SPRI ES-1 Standard to a design pressure of 105 lbs./ft<sup>2</sup> (24GA Steel) and 90 lbs./ft<sup>2</sup> (.040" AL) to comply with the International Building Code.
      - 3) Certified 20" maximum width per ANSI/SPRI ES-1 Standard to a design pressure of 90 lbs./ft<sup>2</sup> (24GA Steel) and 75 lbs./ft<sup>2</sup> (.040" AL) to comply with the International Building Code.

### 1.13 ACCESSORIES

- A. Miters, Termination Ends, and End Caps shall be fabricated by Drexel to suit the conditions indicated on the Shop Drawings.
- B. Provide Drexmet fasteners consistent with manufacturer's instructions for each product that is suitable for the substrate to which it is being installed.

## PART 3 EXECUTION

### 1.14 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.



- B. Verify that the substrate is dry, clean and free of foreign matter.
- C. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

#### 1.15 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the Manufacturer for achieving the best result for the substrate under the project conditions.
- C. Verify Manufacturer's roof edge details for application to fit the assembly prior to fabrication.

#### 1.16 INSTALLATION

- A. Install in accordance with Manufacturer's installation instructions.
- B. Use provided fasteners consistent with Manufacturer's instructions.
- C. Install water cut-off mastics and sealants, as recommended by the membrane manufacturer.

#### 1.17 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up scratched finish areas with Drexel "Drexmet® Touch-Up Paint Pen".
- C. Repair or replace damaged products before Substantial Completion.

END OF SECTION

# The qualities of **TRINAR**<sup>®</sup>

A versatile high-performance PVDF coil coating system



**AkzoNobel**  
Tomorrow's Answers Today

## Product information and performance specifications for TRINAR high-performance fluoropolymer finishes

### Product Information

TRINAR is a high-performance fluoropolymer coating containing 70% polyvinylidene (PVDF) resin. This unique resin is combined with other proprietary resins and the highest quality ceramic and select inorganic pigments for the finest metal finish available.

This two-coat system, which utilizes our High-Performance Primer, provides unparalleled protection against harsh environmental weathering for decades. It has a tough but flexible finish, and is perfectly suited for high-end residential, institutional and commercial applications. TRINAR meets or exceeds all requirements of AAMA 620/621 and AAMA 2605.

Test samples of TRINAR have been exposed for decades at weathering facilities in South Florida and around the world, with results that prove the superiority of this system. We are constantly evaluating these test panels to ensure that only the highest quality pigmentation is used. The result is a coating system formulated for and tested under real world conditions. Using TRINAR coatings will ensure your project will continue to look good for many years after installation.

AkzoNobel stands behind the performance of TRINAR and backs it up with years of research and experience. TRINAR coatings are providing protection on all types of buildings in locations around the globe. They have proven that they are more than capable of withstanding the harsh ultraviolet rays of the sun and the degrading effects of weather extremes.

### Field Performance

TRINAR is one component of a total paint system. When applied in accordance to specifications the following field performance can be expected.

|                |   |
|----------------|---|
| Film Integrity | 35 years  |
| Chalk          | No more than #8 for 35 years                        |
| Fade           | No more than 5 $\Delta E$ Hunter units for 35 years |

### General System Information

TRINAR is approved for use on the following substrates: Hot-Dipped Galvanized (HDG), Galvalume<sup>®</sup> and Aluminum.

TRINAR is a factory-applied finish that is applied through roll coating to properly cleaned and pre-treated first-quality substrates, and then oven-baked to cure. It is a two-coat system, composed of a topcoat over our High-Performance Primer.

### TRINAR COOL CHEMISTRY<sup>®</sup> Series

TRINAR is also available in our COOL CHEMISTRY Series, which contains ceramic infrared reflective pigments. These special pigments are designed to reflect infrared energy while still absorbing visible light energy, thus appearing as the same color yet staying much cooler. When COOL CHEMISTRY coatings are used on metal roofing, the result is a sustainable building material that can lower air conditioning costs, reduce peak energy demand, and help to mitigate urban heat island effects. All of our high-performance coatings for building products are also available in COOL CHEMISTRY versions.

**1.800.294.3361**

Mailing Address:  
PO Box 489  
Columbus, OH 43216

Physical Address:  
1313 Windsor Ave.  
Columbus, OH 43211



**TRINAR<sup>®</sup> Coatings.**

The color you spec is the color that stays.

## Application Characteristics

|                       |  |
|-----------------------|--|
| <b>Film Thickness</b> | Topside finish: Primer (dry) = 0.20 – 0.30 mils; Topcoat (dry) = 0.70 – 0.80 mils; Reverse side finish: Primer (dry) = 0.15 – 0.25 mils; Pigmented backer (dry) = 0.30 – 0.40 mils. Total DFT for system = 0.90 – 1.10 mils. All measurements per ASTM D 5796. |
| <b>Topside Color</b>  | Controlled to the Master Standard by an approved Color Difference Meter or Spectrophotometer, and by visual match under daylight and horizon light of a Macbeth Daylight Booth per ASTM D 1729.  |

## Physical Properties

|                             |   |
|-----------------------------|---|
| <b>Specular Gloss</b>       | 25% - 35%. Determined per ASTM D 523 at a glossmeter angle of 60°.  |
| <b>Pencil Hardness</b>      | Minimum pencil hardness, per ASTM D 3363, is "HB".  |
| <b>Solvent Resistance</b>   | Passes minimum of 100 double rubs of a MEK soaked cloth, per ASTM D 5402.   |
| <b>Cross-Hatch Adhesion</b> | No paint removal with Scotch #610 cellophane tape after cross-scoring with eleven horizontal and eleven vertical lines 1 mm apart, per ASTM D 3359.                             |
| <b>Impact Resistance</b>    | No visible paint removal with Scotch #610 cellophane tape after direct and reverse impact of 80-inch pounds, using 5/8" steel ball on a Gardner Impact Tester, per ASTM D 2794. |
| <b>T-Bend Adhesion</b>      | Per ASTM D 4145, no loss of adhesion when taped with Scotch #610 cellophane tape when subjected to a 2T-Bend.   |

## Testing Data

|                                   |  |
|-----------------------------------|--|
| <b>Humidity Resistance</b>        | No blistering, cracking, peeling, loss of gloss or softening of the finish after 2000 hours (HDG, Galvalume) or 3000 hours (Aluminum) of exposure to 100% humidity at 100°F ± 5°F, per ASTM D 2247.  |
| <b>Cleveland Condensing</b>       | No blistering, rusting or loss of adhesion of the finish after 1500 hours (HDG, Galvalume) or 3000 hours (Aluminum) of exposure at 120°F, per ASTM D 4585.   |
| <b>Water Immersion Resistance</b> | Samples immersed in distilled water at 100°F per ASTM D 870 will exhibit no loss of gloss, blistering, cracking or color change after 500 hours.   |
| <b>Salt Spray Resistance</b>      | Samples diagonally scored and subjected to 5% neutral salt spray for 1000 hours (HDG, Galvalume) or 3000 hours (Aluminum), per ASTM B 117, then taped 1 hour after removal from the test cabinet with Scotch #610 cellophane tape, exhibit no blistering, no loss of adhesion and scribe creep no greater than 1/8". |
| <b>Chemical Resistance</b>        | No significant color change after 24 hours exposure to 10% solutions of hydrochloric and sulfuric acids, per ASTM D 1308, Procedure 7.2 (spot test).   |
| <b>Kesternich Test</b>            | No significant color change after 10 cycles in a SO <sub>2</sub> chamber, per ASTM G 87.   |
| <b>Accelerated Weathering</b>     | 5 Hunter ΔE maximum color change, and at least #8 chalk rating after 10,000 hours exposure, per ASTM G 151 and G 154 using UVA-340 bulbs.  |
| <b>Exterior Weathering</b>        | Florida exposure (45° South), 5 Hunter ΔE maximum color change, per ASTM D 2244, and at least #8 chalk rating, per ASTM D 4214, Method A, after 20 years real-time exposure.   |
| <b>Abrasion Resistance</b>        | Per ASTM D 968, Method A, TRINAR passes 65 +/- 5 liters minimum of falling sand.   |
| <b>Flame Spread Rating</b>        | TRINAR displays a flame spread classification of A (Class 1) when tested in accordance with ASTM E 84.   |



[www.akzonobel.com/ccna](http://www.akzonobel.com/ccna)

AkzoNobel is the largest global paint and coatings company and a major producer of specialty chemicals. We supply industries and consumers worldwide with innovative products and are passionate about developing sustainable answers for our customers. Our portfolio includes well known brands such as Dulux, Sikkens, International and Eka. Headquartered in Amsterdam, the Netherlands, we are consistently ranked as one of the leaders in the area of sustainability. With operations in more than 80 countries, our 55,000 people around the world are committed to excellence and delivering Tomorrow's Answers Today™.

© 2012 Akzo Nobel NV. All rights reserved.

"Tomorrow's Answers Today" is a trademark of Akzo Nobel NV.  
TRINAR and COOL CHEMISTRY are registered trademarks  
of an AkzoNobel company.

Revision Date: September 2012



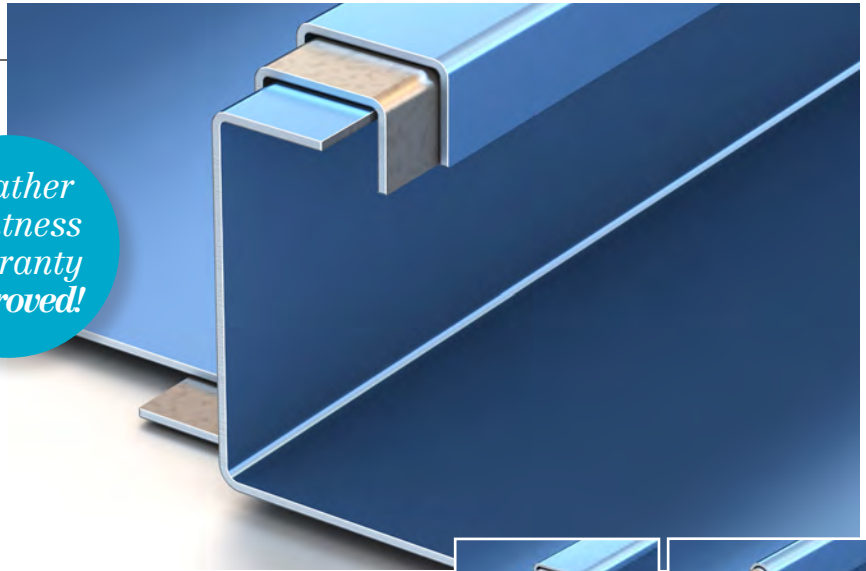
---

# Construction Details



The versatility of the DMC 200S roof system makes it an ideal choice for low to steep slope applications. Performance-engineered to handle heavy-duty commercial and industrial projects, this 2" mechanically seamed structural metal roof system will meet or exceed most windload and government requirements from coast to coast. Concealed fasteners and floating clip systems reduce panel stress from changes in temperature and help maintain a smooth, uniform appearance. This product can also be curved for large barrel roofs or small canopies.

*Weather  
Tightness  
Warranty  
Approved!*



*Ideal Application:*

*Commercial*

*Institutional*

*Structural*



Single lock panel



Double lock panel

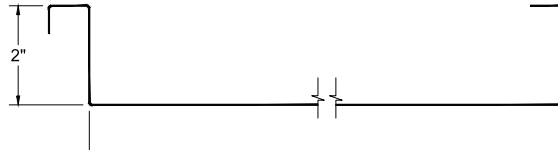


# DMC 200SS Profile

## Available widths:

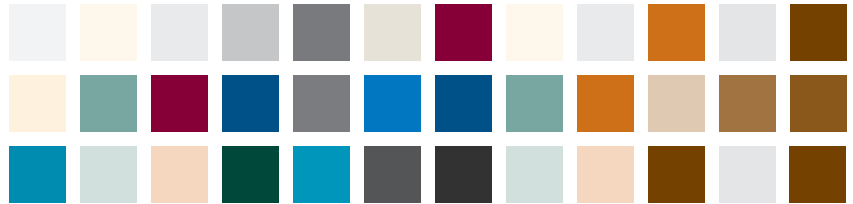
12", 14", 16" or 18"\*

\*Drexel Metals design pressures, wind uplifts and test reports are for specific deck attachments, material gauges, clip spacing and panel widths. A complete specification and listing is available online at [www.drexelmetals.com](http://www.drexelmetals.com)



## Substrates available:

- Galvalume® – 22ga and 24ga
- Drexlume® – 22ga and 24ga
- Aluminum – .040"



## Finishes and product warranty:

Available in a variety of coatings and colors by AkzoNobel. See the Drexel Metals color card for standard colors and paint specifications.



**Galvalume® Substrate:**  
High-performance painted metal roofing product, carefully tensioned leveled for superior flatness.

**35 YEAR WARRANTY**  
35-Year Non Pro-rated PVDF Paint Warranty

**Aluminum Substrate:**  
High-performance painted metal roofing product, carefully tensioned leveled for superior flatness.

**35 YEAR WARRANTY**  
35-Year Non Pro-rated PVDF Paint Warranty

**Drexlume® Substrate:**  
Mill finished Galvalume® with a two-sided, clear acrylic finish.

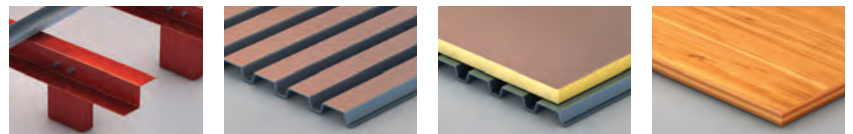
**25 YEAR WARRANTY**  
25-Year Non Pro-rated Drexlume Warranty (Acrylic Coated Galvalume)

## Production options:

Factory made or field rolled to exact lengths  
Optional: striation, beads, pencil ribs  
Available: Radius panel (single or double lock)

## Installation:

Can be installed over open frame steel purlins, steel decking, steel decking with Polyiso or plywood decking.



## Slope:

Minimum slope 1/2:12



Minimum Roof Pitch:  
1/2:12 – low roof pitch

## Allowable uniform:

### Inward load table – psf

| Span        | Deflection Ratio L/180 |      |      |      |      |      |      |  |
|-------------|------------------------|------|------|------|------|------|------|--|
|             | 2.00                   | 2.50 | 3.00 | 3.50 | 4.00 | 5.00 | 5.00 |  |
| 24 ga x 16" | 251                    | 201  | 145  | 108  | 83   | 66   | 53   |  |

### Outward load table – psf

| Span        | Deflection Ratio L/180 |      |      |      |      |      |      |  |
|-------------|------------------------|------|------|------|------|------|------|--|
|             | 2.00                   | 2.50 | 3.00 | 3.50 | 4.00 | 5.00 | 5.00 |  |
| 24 ga x 16" | 106                    | 95   | 83   | 72   | 60   | 49   | 37   |  |

## Testing:

In accordance with:



- UL 580 Wind Uplift (Class 90)
- TAS 125 Wind Uplift
- UL 1897 Extended Phase Wind Uplift
- UL 2218 Class 4 Hail Impact
- UL 790 Class A Fire Rating
- UL Environmental – SRI Third Party Verified
- ASTM E592 Uniform Static Air Pressure Uplift
- ASTM E1646 Water Infiltration
- TAS 100 Wind Driven Rain
- ASTM E1680 Air Infiltration
- ASTM E1886 Missile Impact
- ASTM 2140 Static Pressure Water Head
- Miami-Dade County Approved
- Florida Building Code Approved
- Texas Department of Insurance Approval

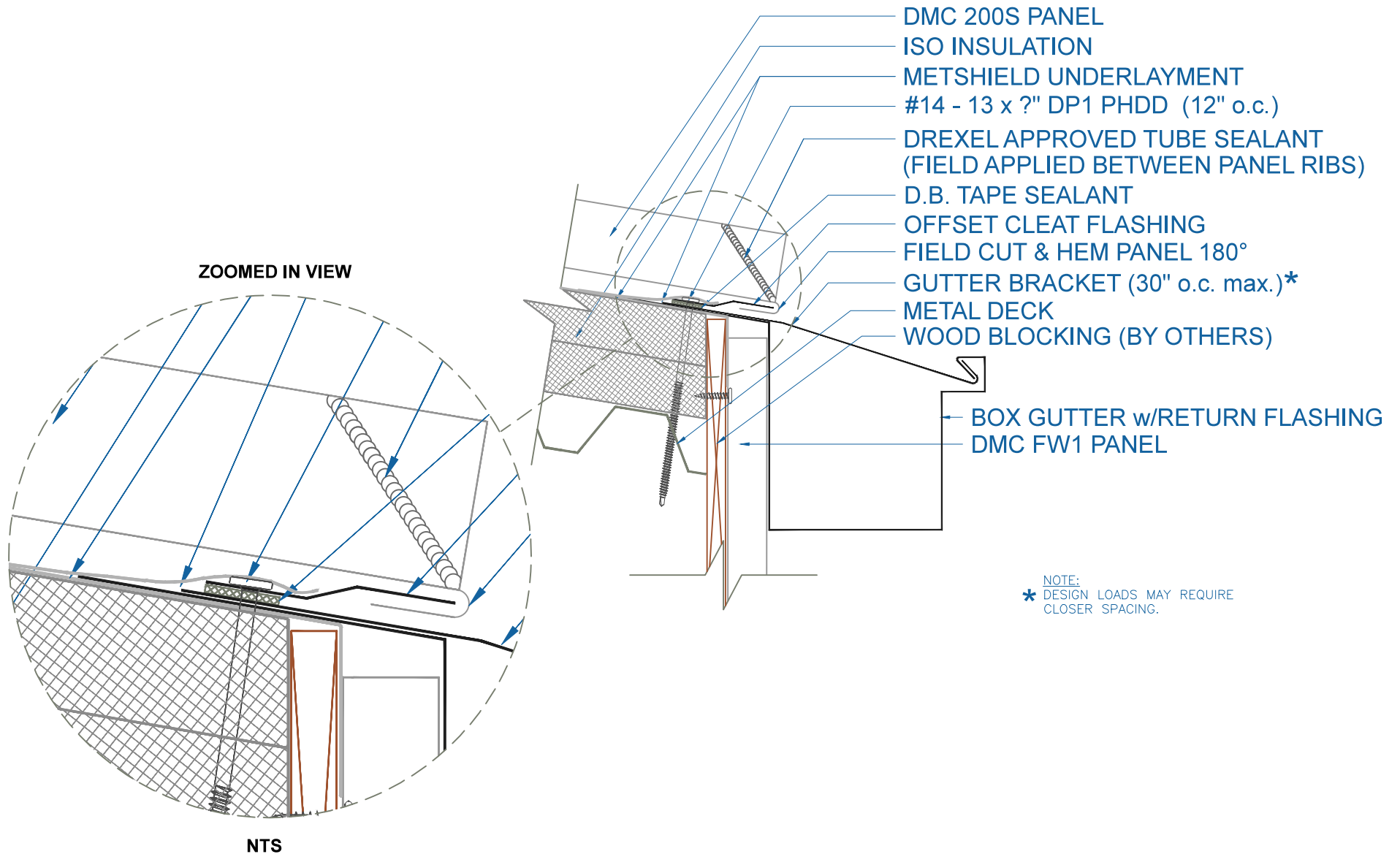


[www.drexelmetals.com](http://www.drexelmetals.com)

1234 Gardiner Lane, Louisville, KY 40213  
888-321-9630 toll-free • 502-690-6174 fax



# DMC 200S - ISO w/ METAL DECK



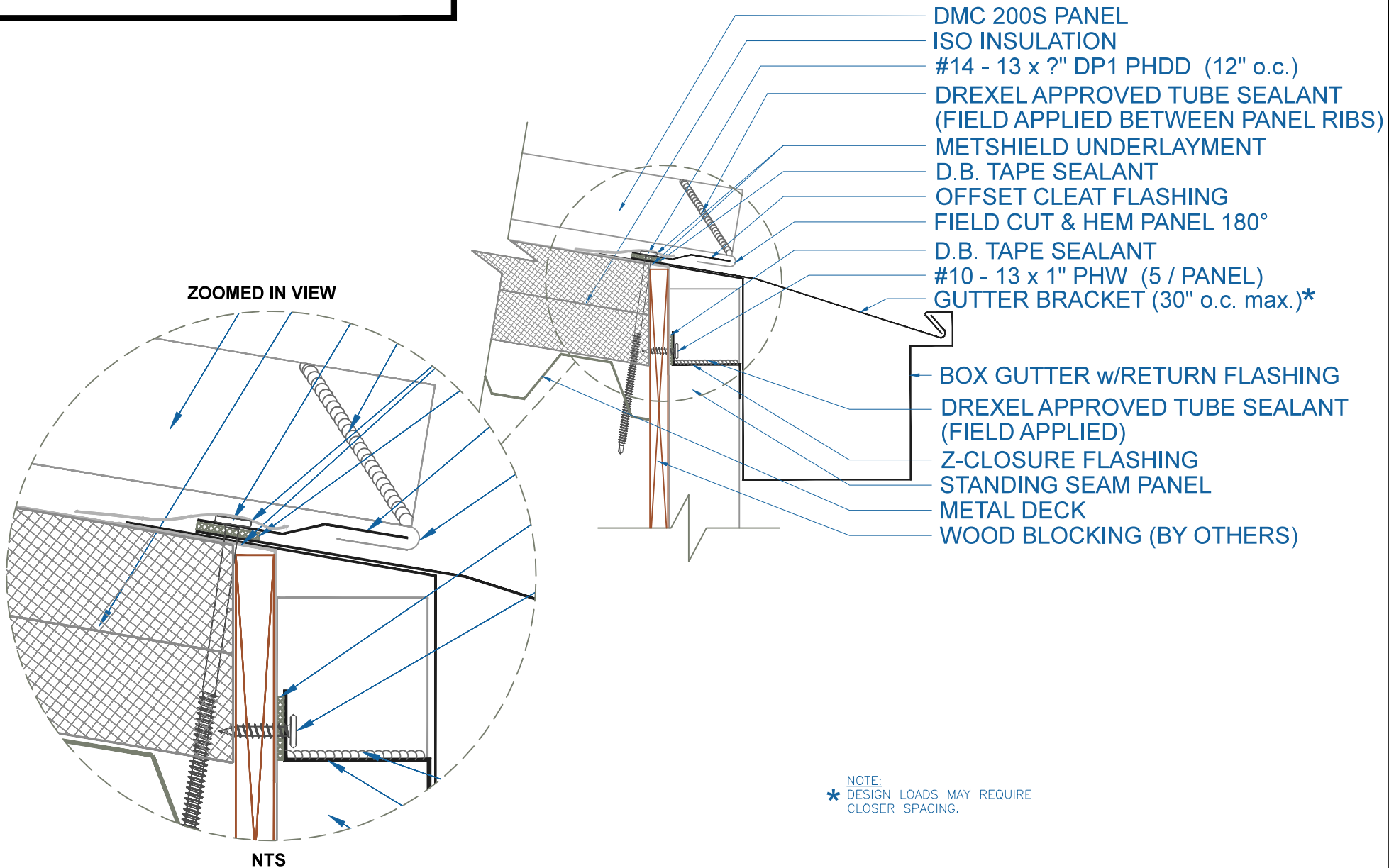
## BOX GUTTER - w/RETURN w/FLUSH PANEL

EFFECTIVE DATE: 03-08-2013  
SUBJECT TO CHANGE WITHOUT NOTICE

SCALE: 3" = 1'-0"



# DMC 200S - ISO w/ METAL DECK



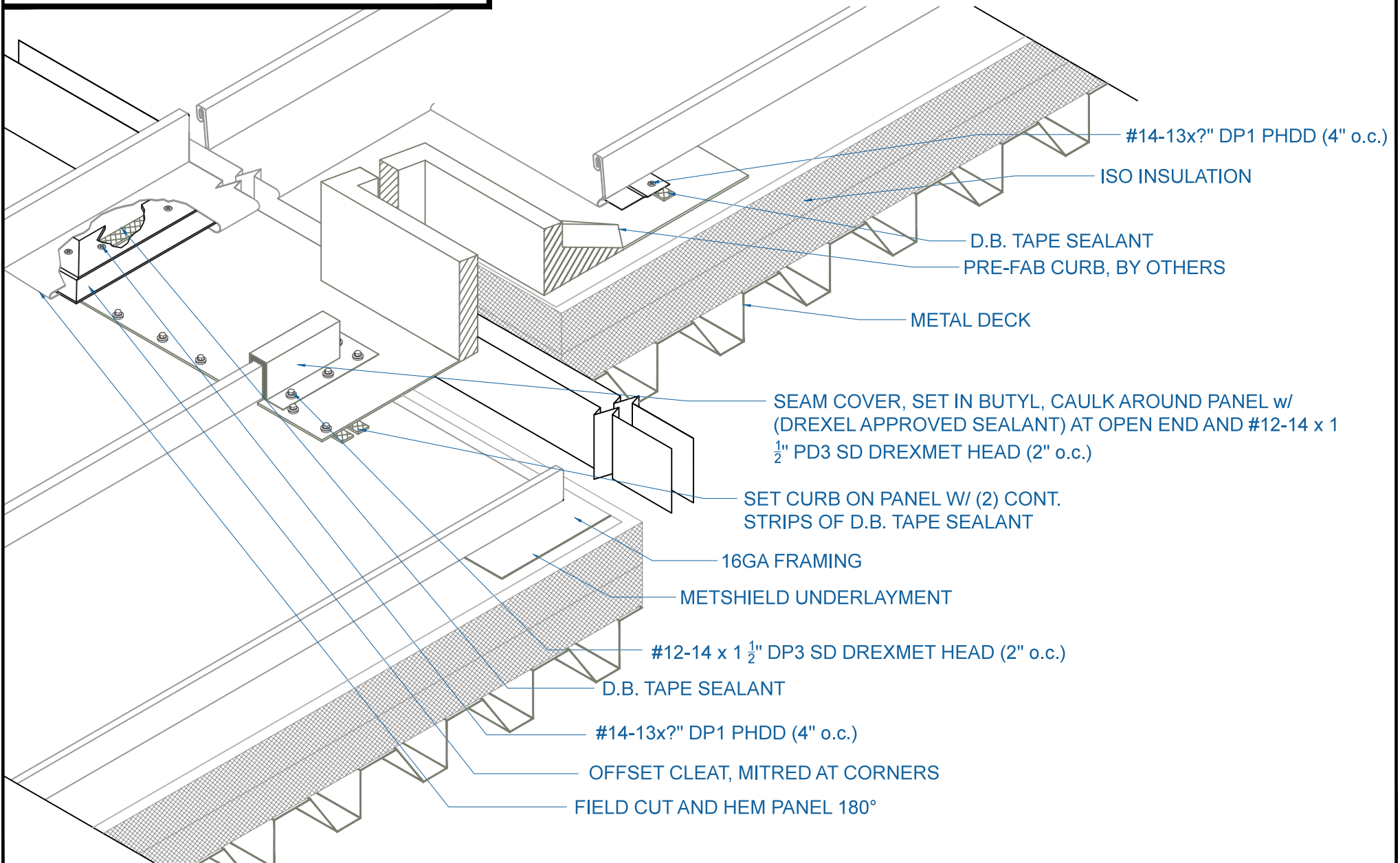
## BOX GUTTER w/RETURN w/STANDING SEAM PANEL

SCALE: 3" = 1'-0"

EFFECTIVE DATE: 03-08-2013  
SUBJECT TO CHANGE WITHOUT NOTICE



# DMC 200S - ISO w/ METAL DECK

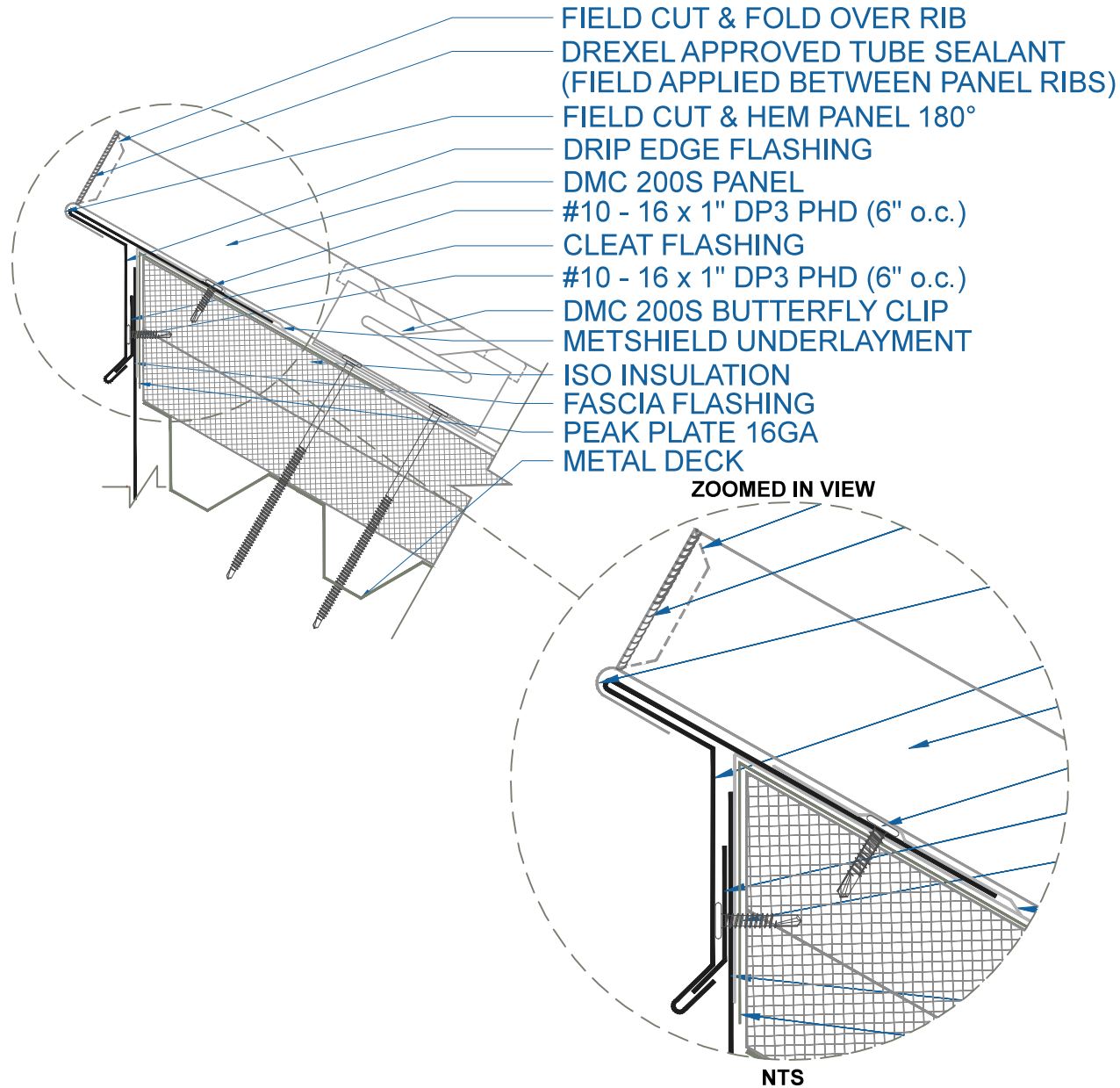


EFFECTIVE DATE: 05-22-2013  
SUBJECT TO CHANGE WITHOUT NOTICE

## CURB DETAIL

SCALE: NTS

# DMC 200S - ISO w/ METAL DECK



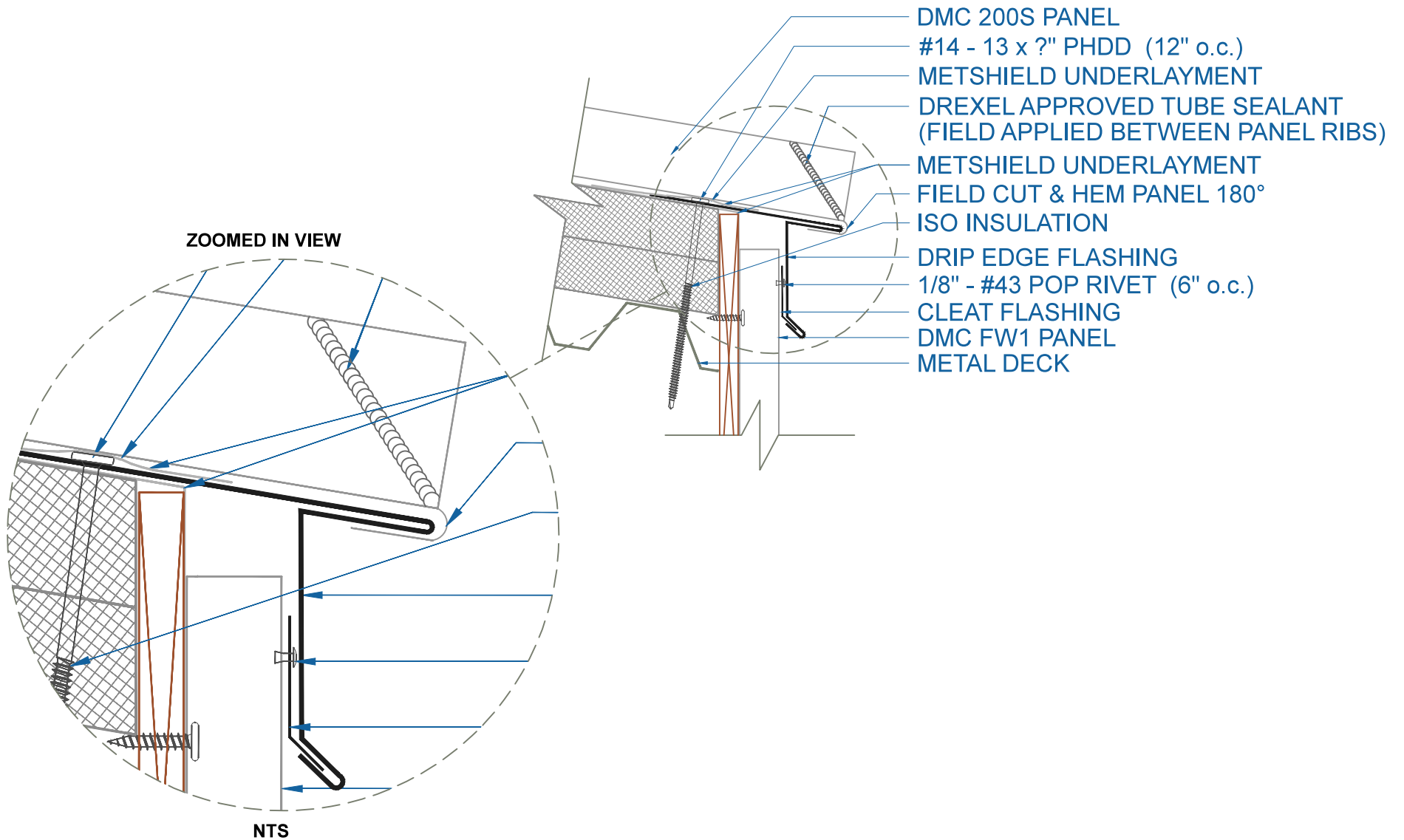
## DRIP EDGE PEAK

SCALE: 3" = 1'-0"

EFFECTIVE DATE: 03-22-2013  
SUBJECT TO CHANGE WITHOUT NOTICE



# DMC 200S - ISO w/ METAL DECK

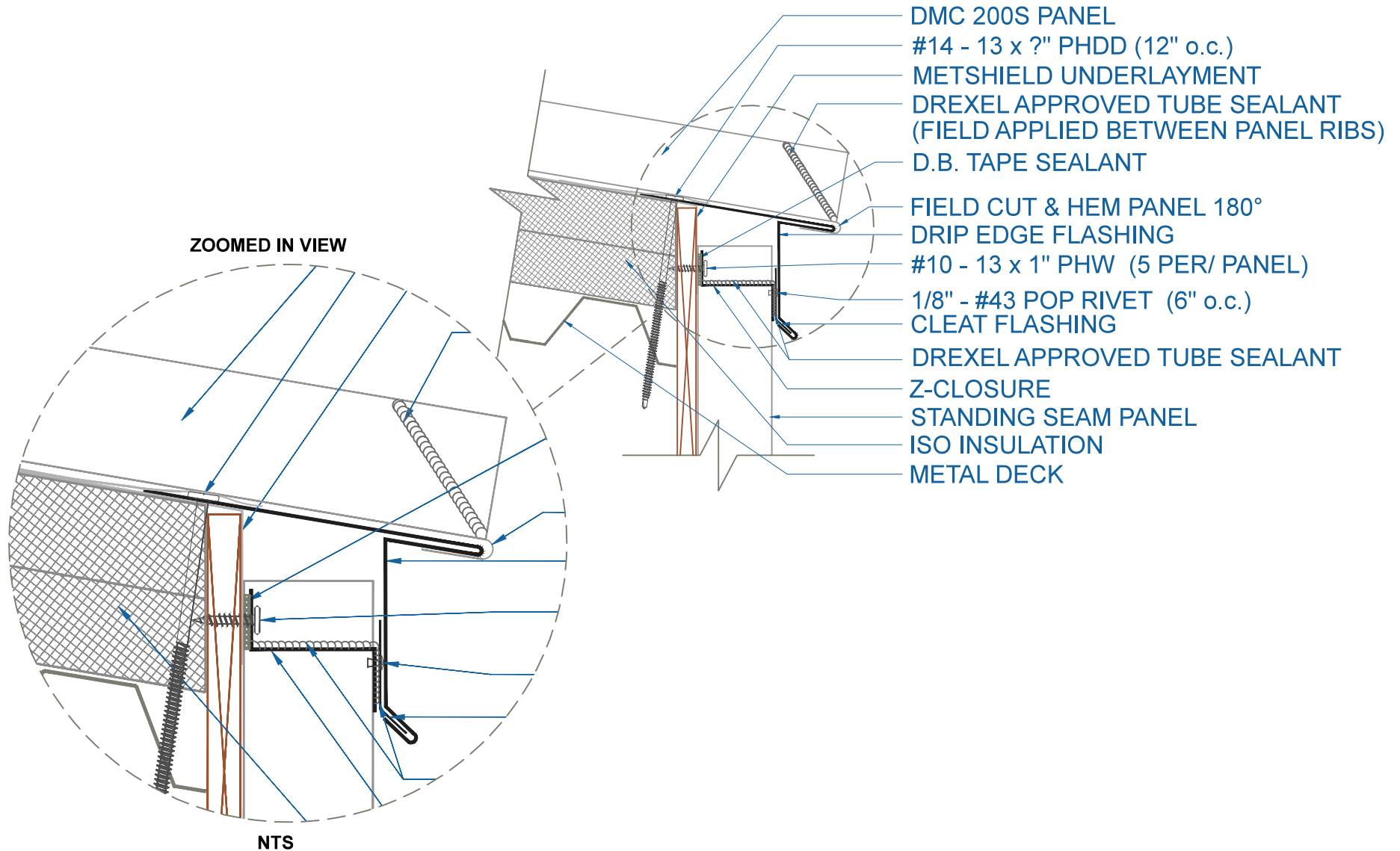


## DRIP EDGE w/ FLUSH PANEL

SCALE: 3" = 1'-0"

EFFECTIVE DATE: 03-22-2013  
SUBJECT TO CHANGE WITHOUT NOTICE

# DMC 200S - ISO w/ METAL DECK



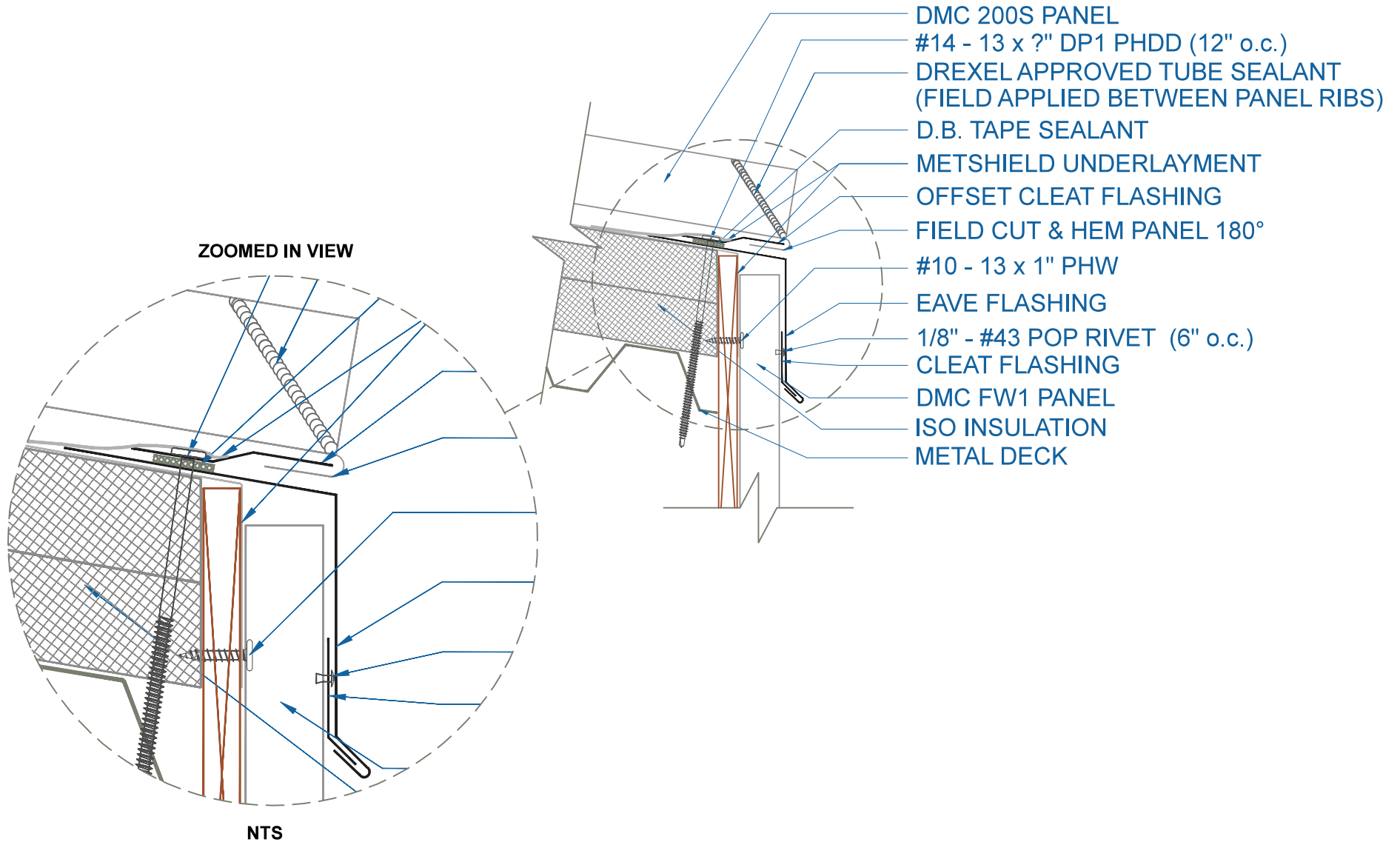
## DRIP EDGE w/STANDING SEAM PANEL

EFFECTIVE DATE: 03-22-2013  
SUBJECT TO CHANGE WITHOUT NOTICE

SCALE: 3" = 1'-0"



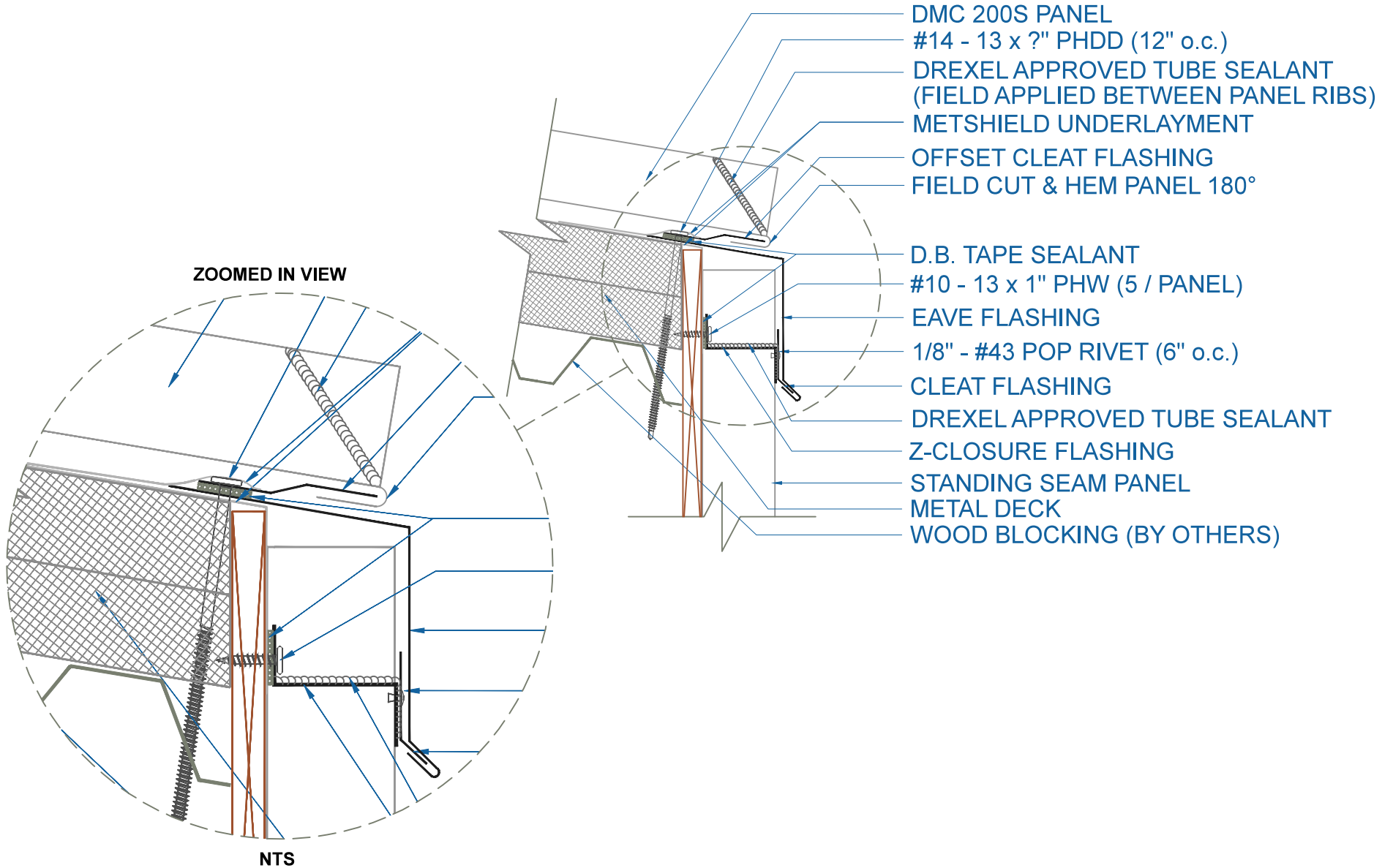
# DMC 200S - ISO w/ METAL DECK



## EAVE w/FLUSH PANEL

SCALE: 3" = 1'-0"

# DMC 200S - ISO w/ METAL DECK

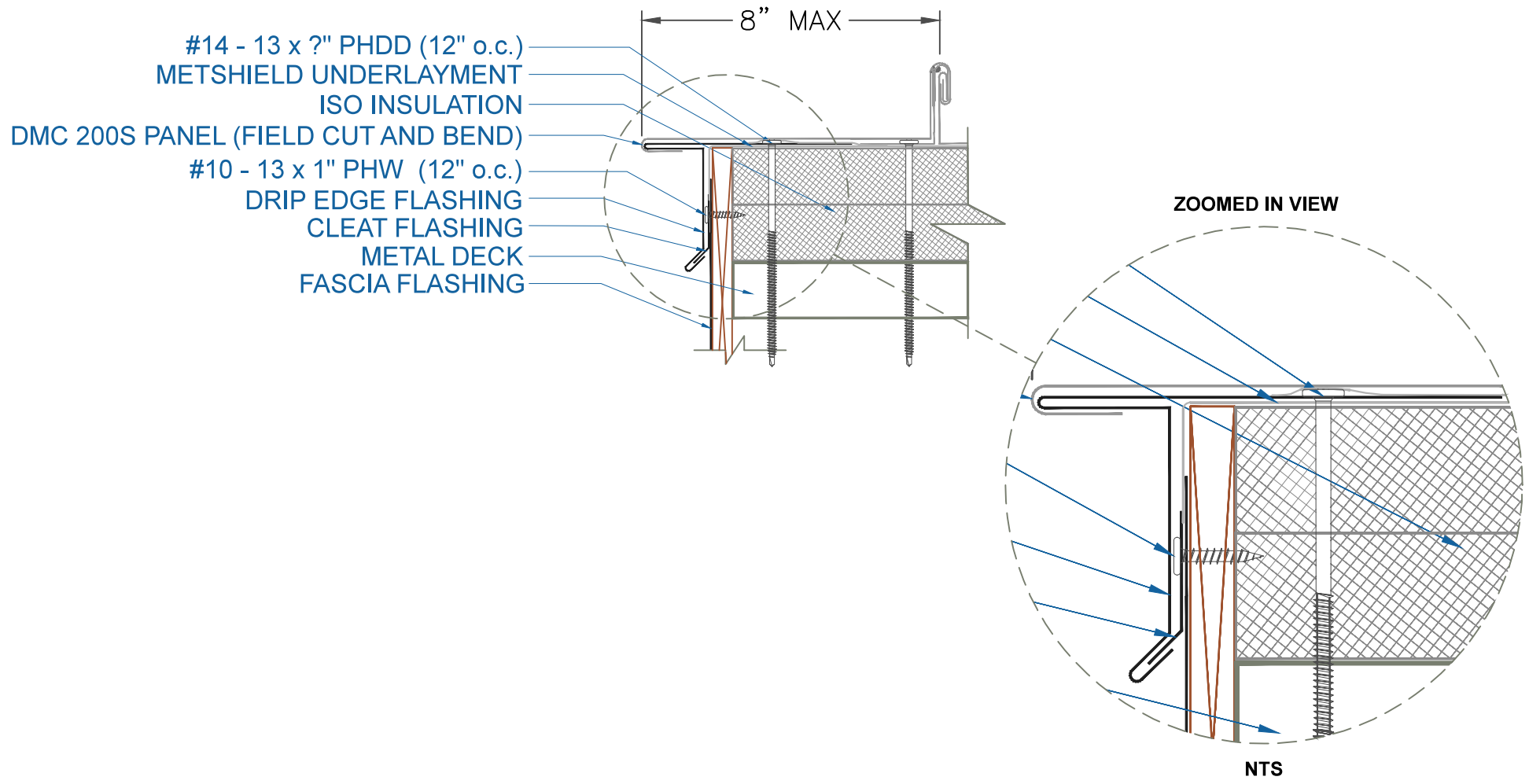


## EAVE w/STANDING SEAM PANEL

SCALE: 3" = 1'-0"

EFFECTIVE DATE: 03-22-2013  
SUBJECT TO CHANGE WITHOUT NOTICE

# DMC 200S - ISO w/ METAL DECK

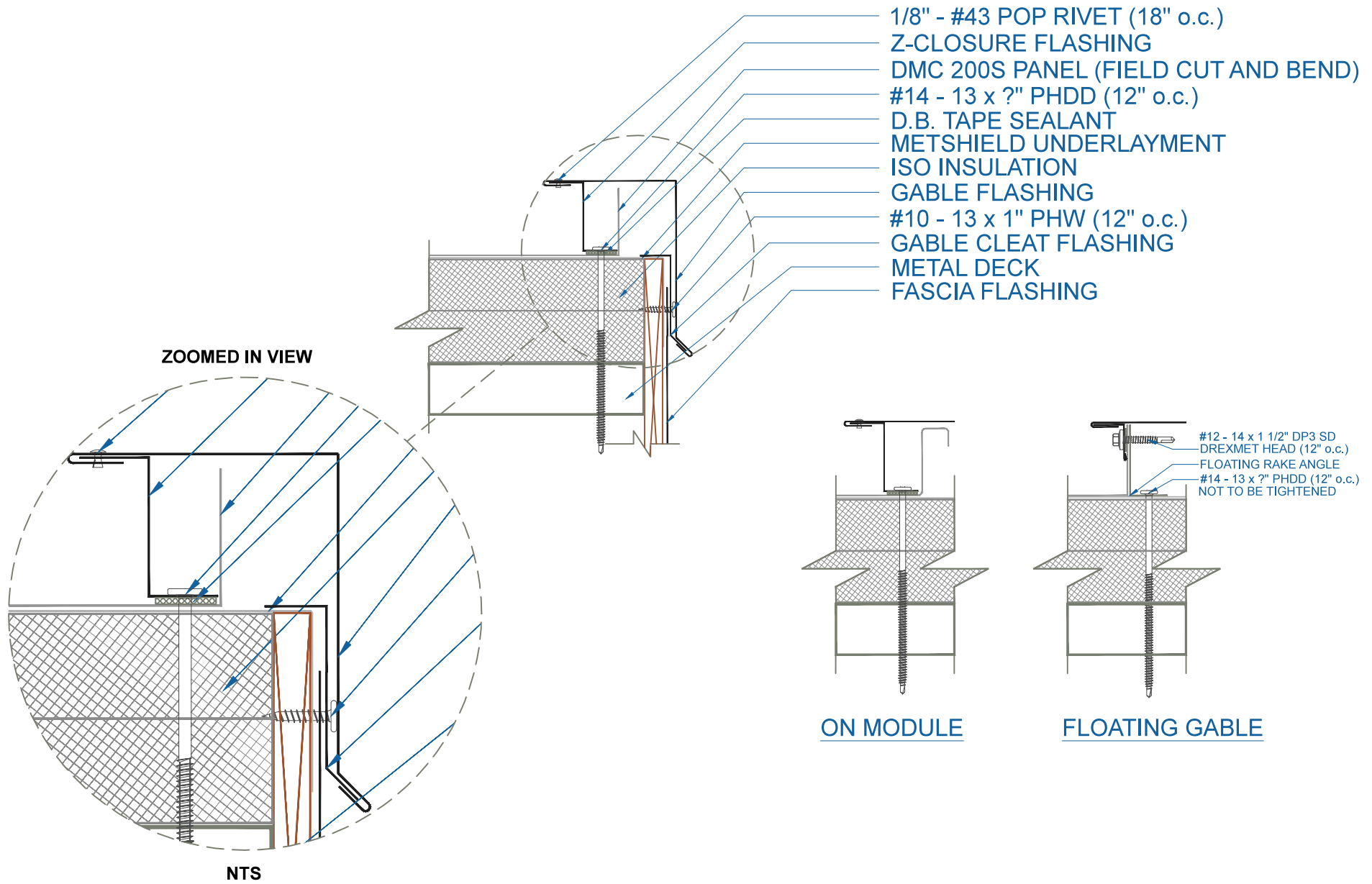


## GABLE ALTERNATE / CURVED

EFFECTIVE DATE: 03-22-2013  
SUBJECT TO CHANGE WITHOUT NOTICE

SCALE: 3" = 1'-0"

# DMC 200S - ISO w/ METAL DECK

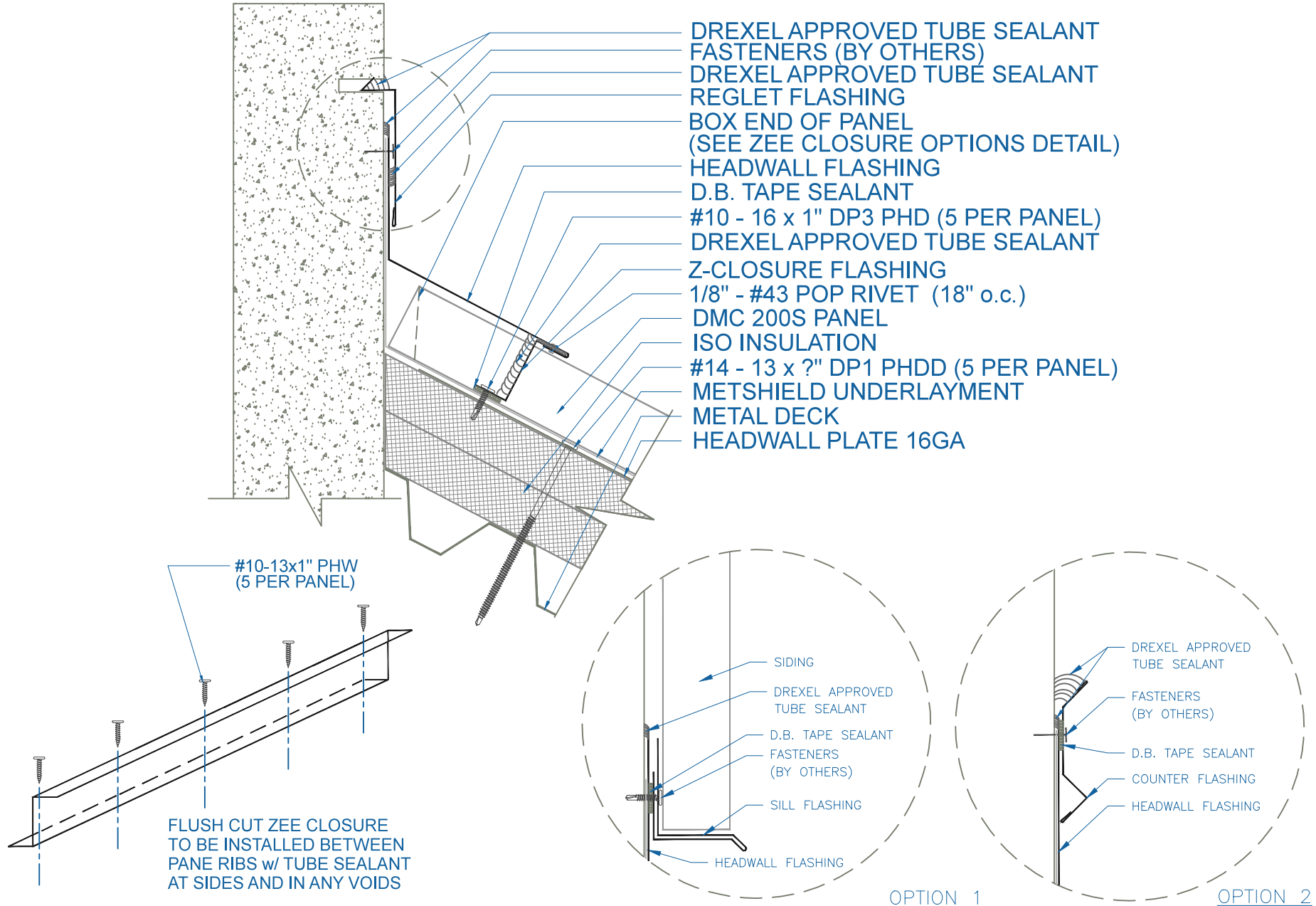


EFFECTIVE DATE: 04-10-2013  
 SUBJECT TO CHANGE WITHOUT NOTICE

**GABLE**  
 SCALE: 3" = 1'-0"



# DMC 200S - ISO w/ METAL DECK



EFFECTIVE DATE: 12-11-12  
 SUBJECT TO CHANGE WITHOUT NOTICE

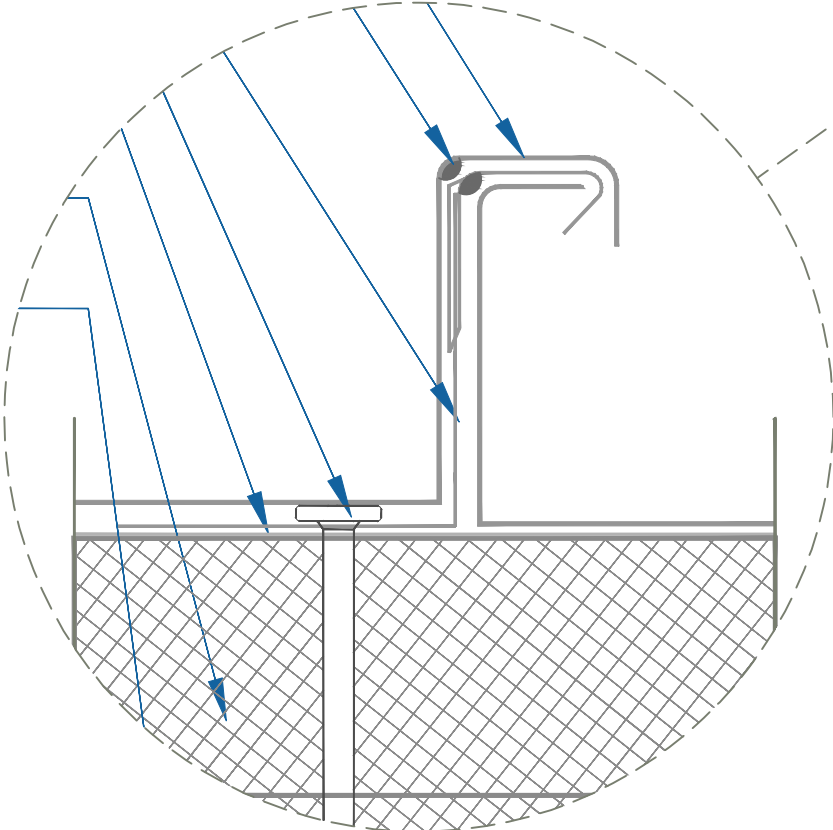
## HEADWALL

SCALE: 3" = 1'-0"

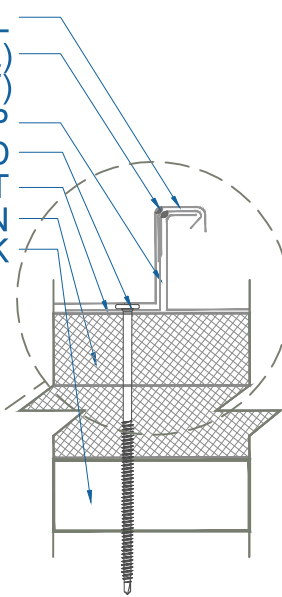
# DMC 200S - ISO w/ METAL DECK

- DMC 200S PANEL
- DREXEL APPROVED SEALANT (OPTIONAL)  
(FIELD OR MACHINE APPLIED SEALANT)
- DMC 200S BUTTERFLY CLIP
- (2) #14 - 13 x ?" PHDD
- METSHIELD UNDERLAYMENT
- ISO INSULATION
- METAL DECK

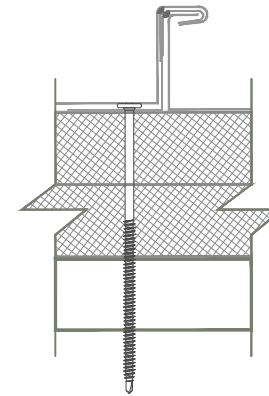
ZOOMED IN VIEW



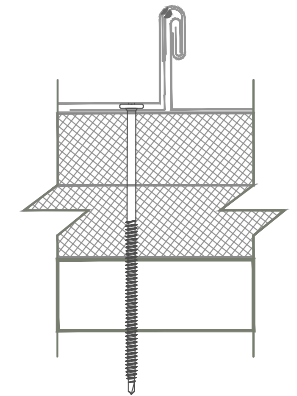
NTS



CROSS SECTION  
BEFORE SEAMING



CROSS SECTION  
90° SEAMING



CROSS SECTION  
180° SEAMING

SEAMER TOOL RENTAL  
SEAMER TOOLS, INC.  
8265 HIGHWAY 178  
OLIVE BRANCH, MS 38654  
PH:(662)895-1222  
FAX:(662)890-4775  
RENT@SEAMERTOOLS.COM

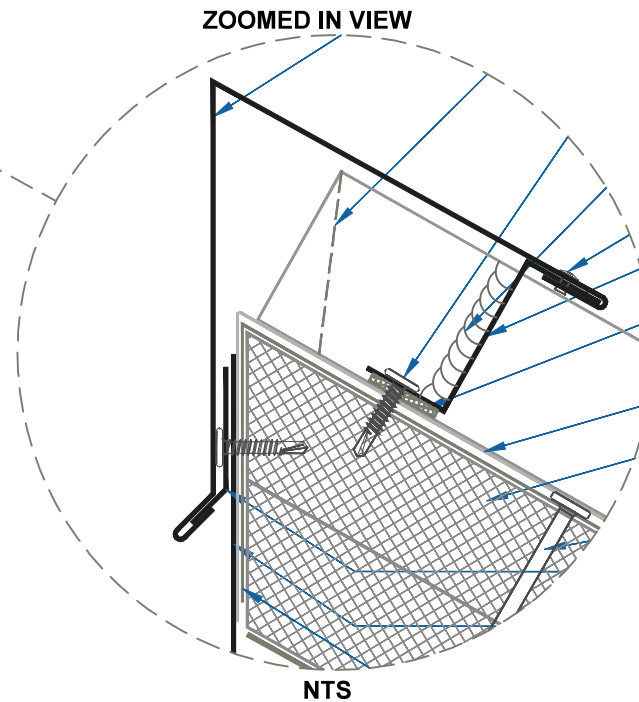
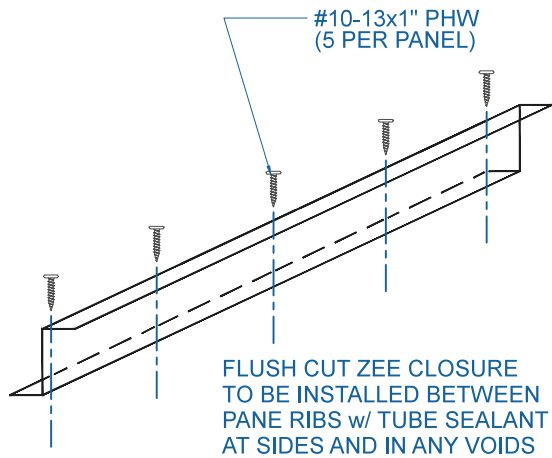
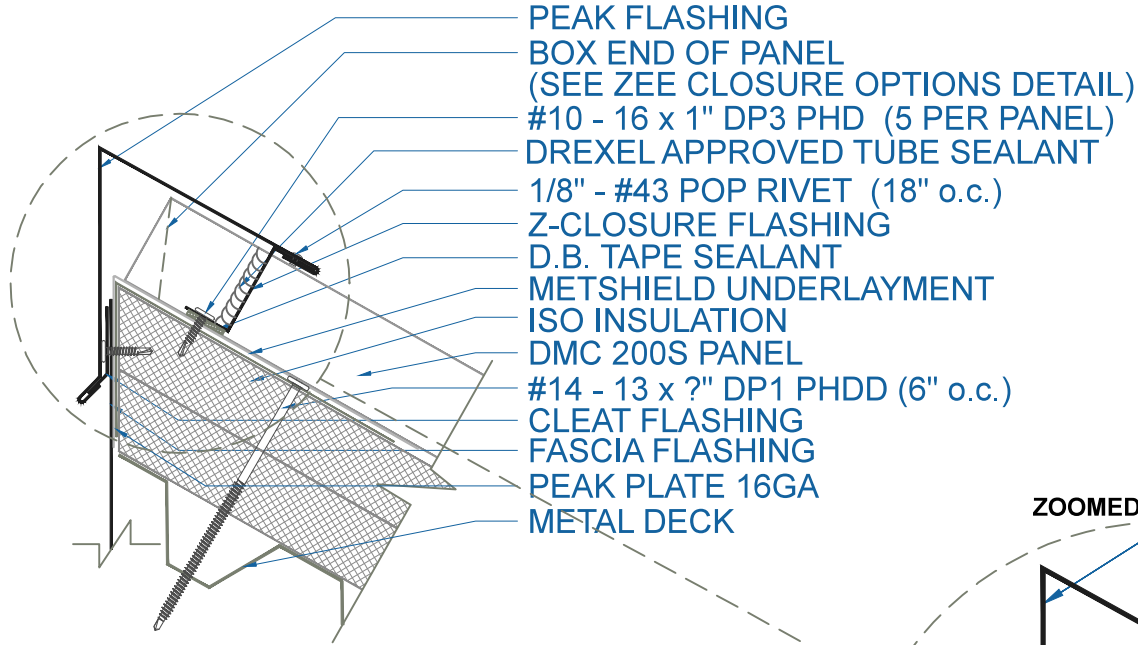
## INSTALLATION DETAIL

SCALE: 3" = 1'-0"



EFFECTIVE DATE: 04-12-2013  
SUBJECT TO CHANGE WITHOUT NOTICE

# DMC 200S - ISO w/ METAL DECK



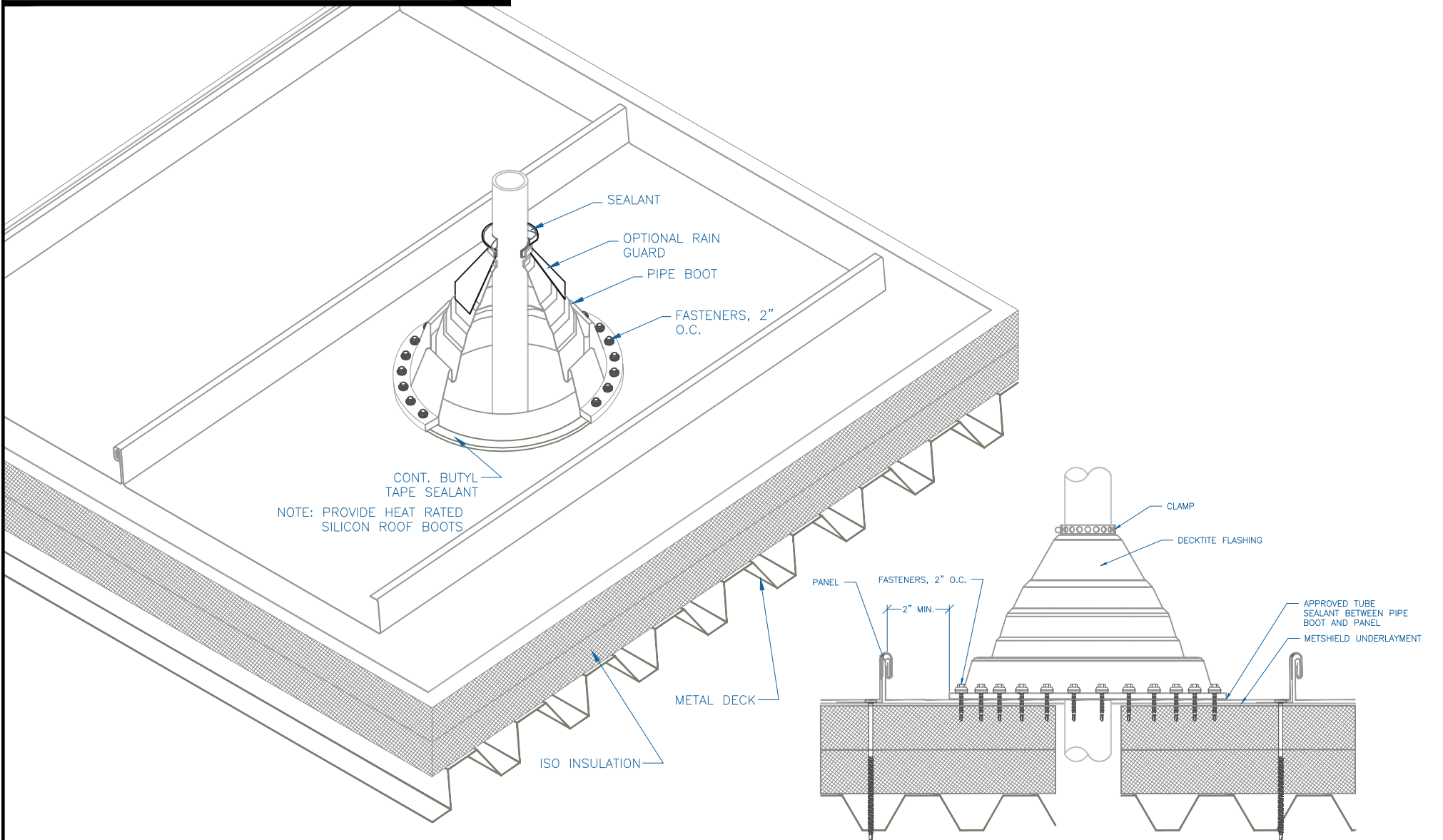
EFFECTIVE DATE: 05-21-13  
 SUBJECT TO CHANGE WITHOUT NOTICE

**PEAK**  
 SCALE: 3" = 1'-0"

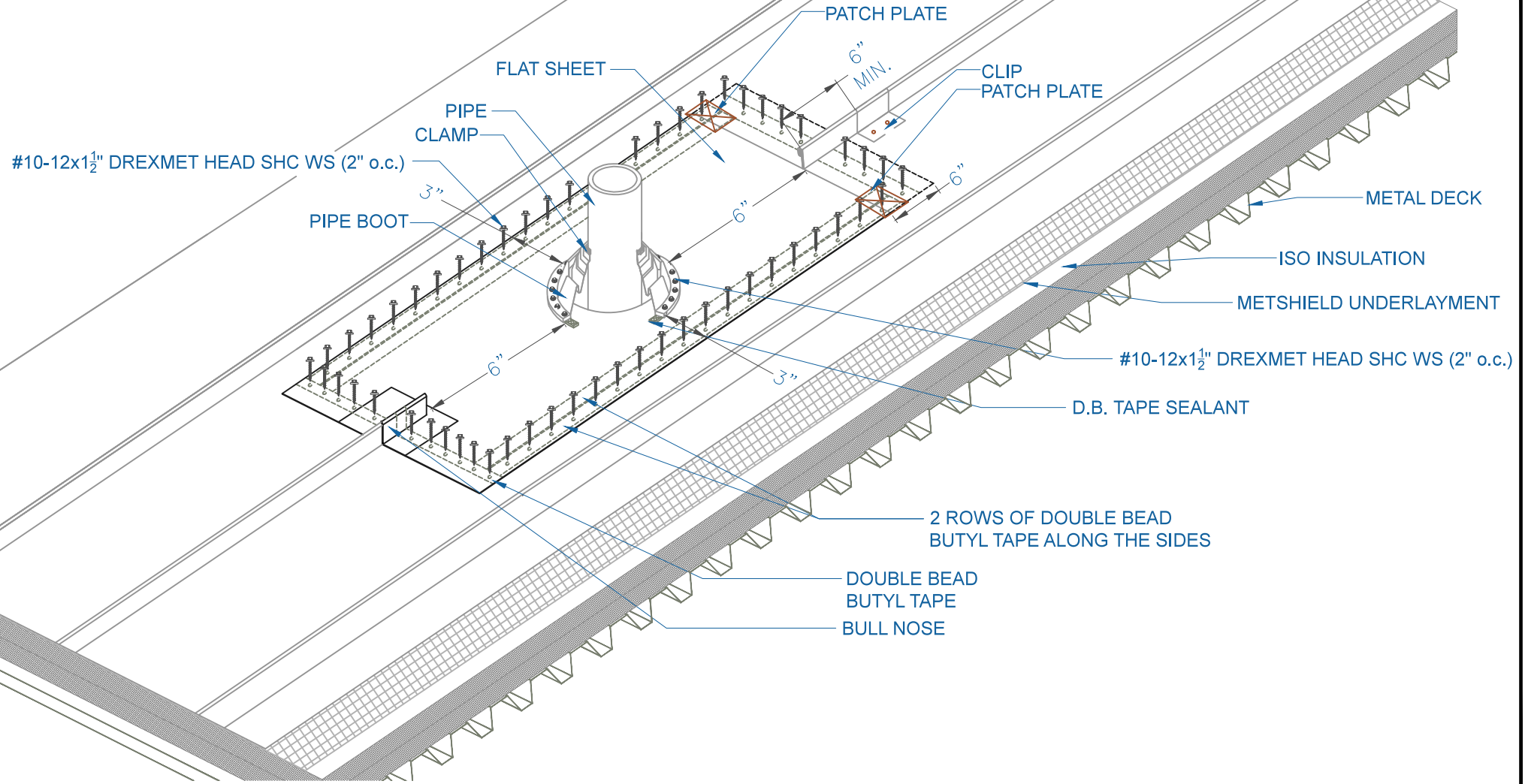
**DrexelMetals**  
 Roofing Systems + Custom Fabrication



# DMC 200S - ISO w/ METAL DECK



# DMC 200S - ISO w/ METAL DECK



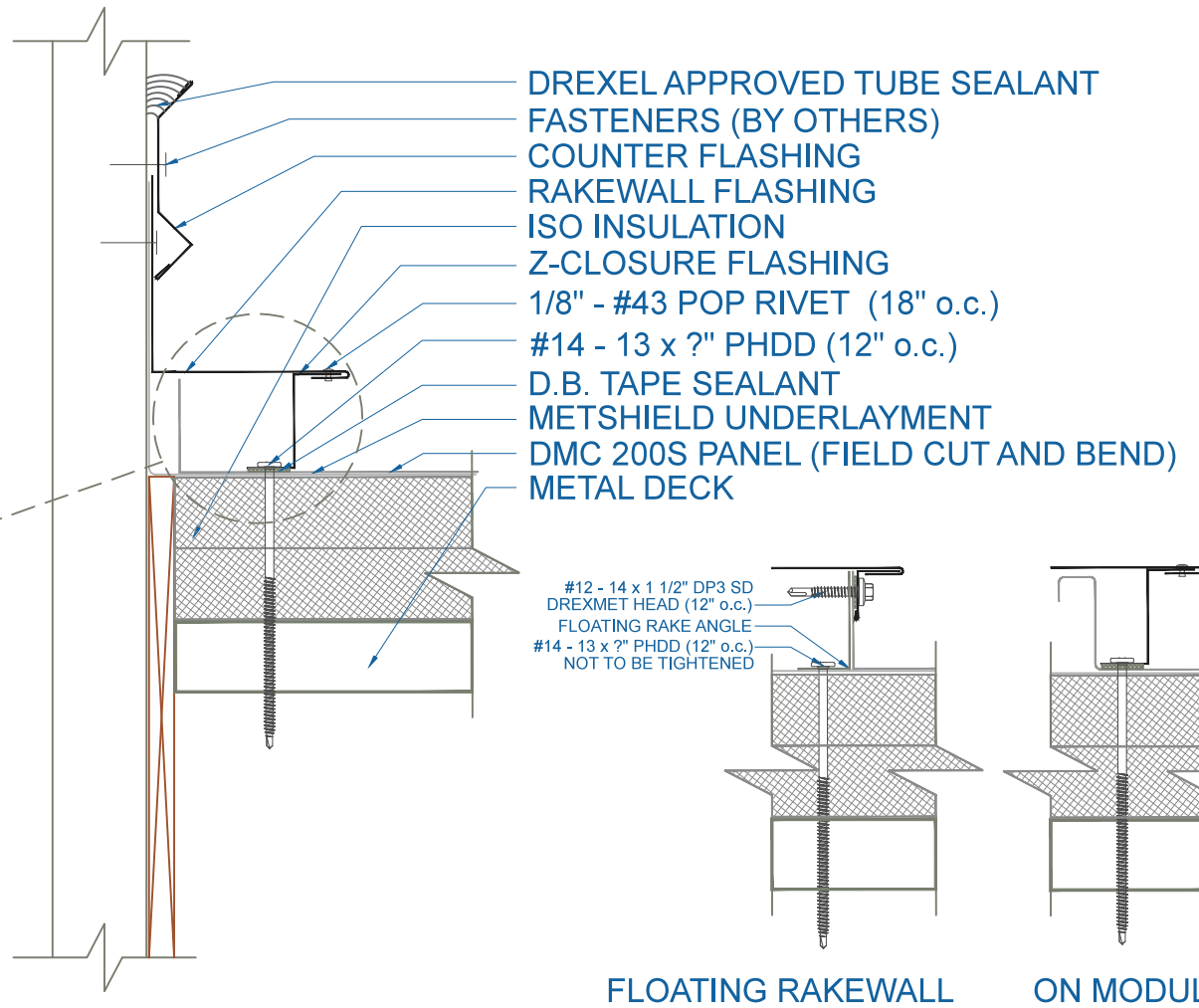
## PIPE FLASHING PAN DETAIL

SCALE: NTS

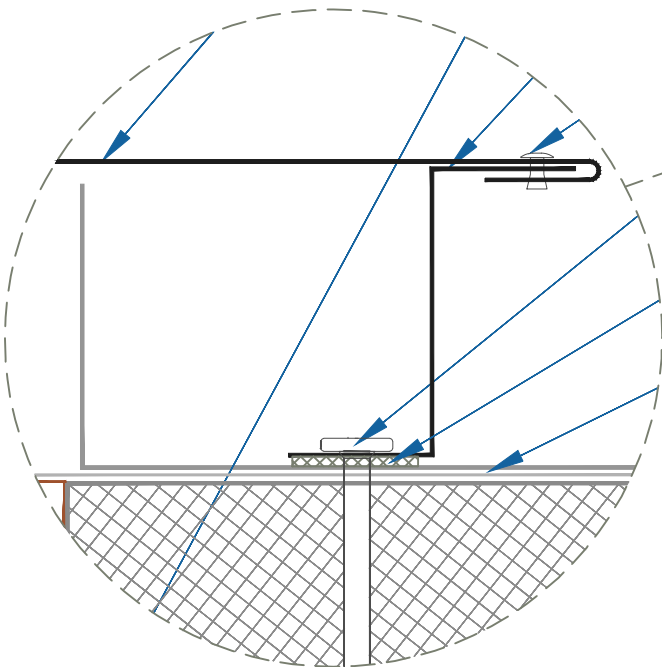
EFFECTIVE DATE: 05-22-2013  
SUBJECT TO CHANGE WITHOUT NOTICE



# DMC 200S - ISO w/ METAL DECK

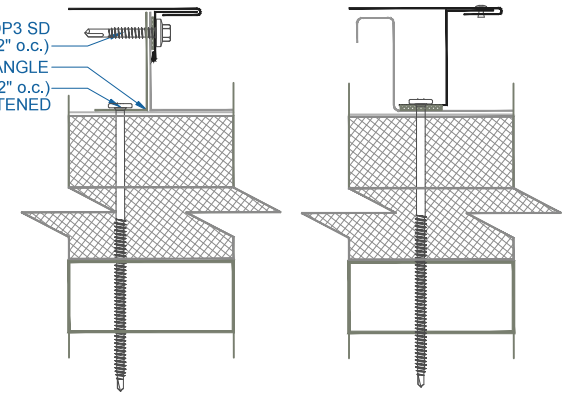


ZOOMED IN VIEW



NTS

#12 - 14 x 1 1/2" DP3 SD  
 DREXMET HEAD (12" o.c.)  
 FLOATING RAKE ANGLE  
 #14 - 13 x ?" PHDD (12" o.c.)  
 NOT TO BE TIGHTENED



FLOATING RAKEWALL

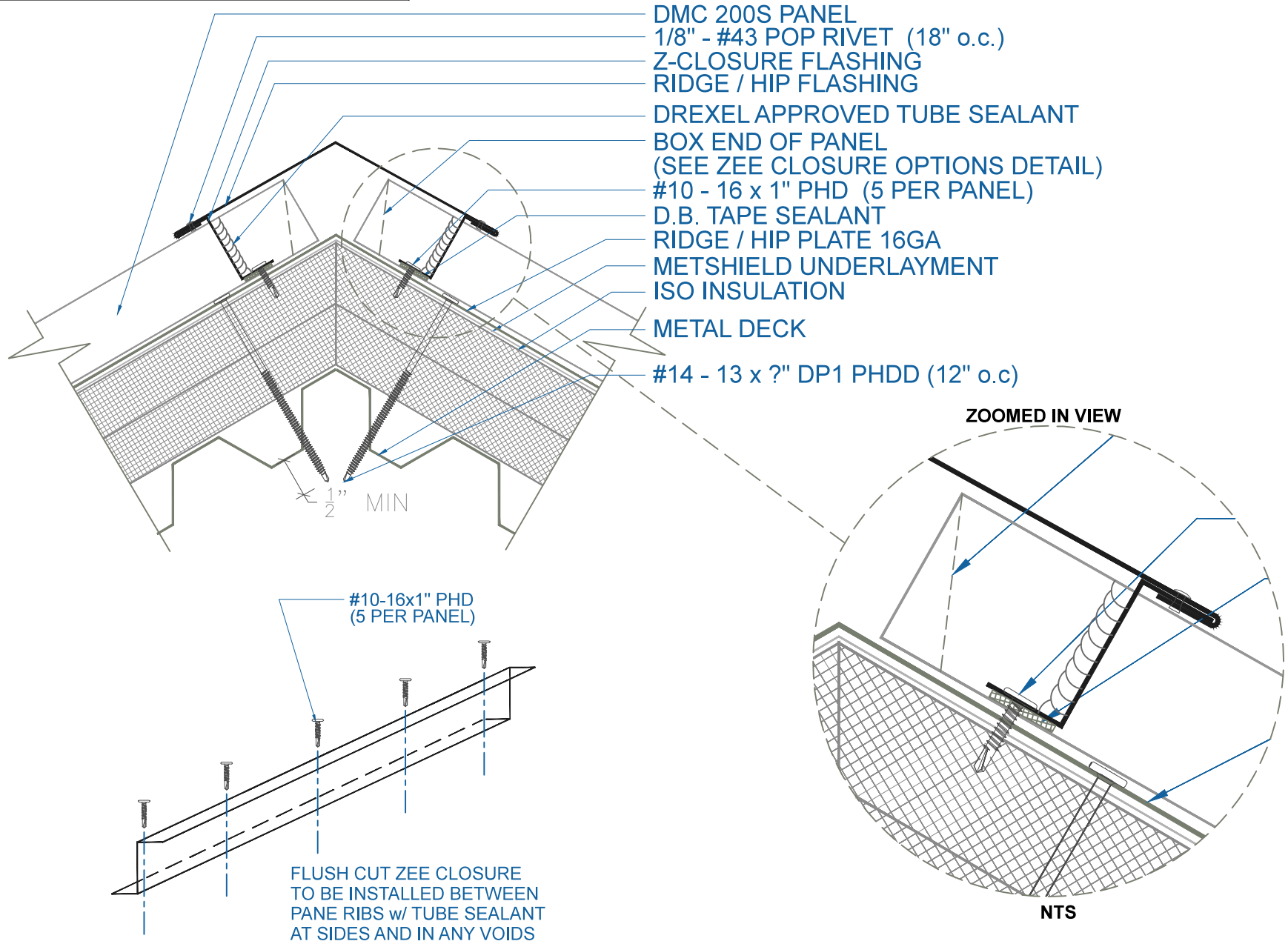
ON MODULE

EFFECTIVE DATE: 04-12-2013  
 SUBJECT TO CHANGE WITHOUT NOTICE

## RAKEWALL

SCALE: 3" = 1'-0"

# DMC 200S - ISO / METAL DECK

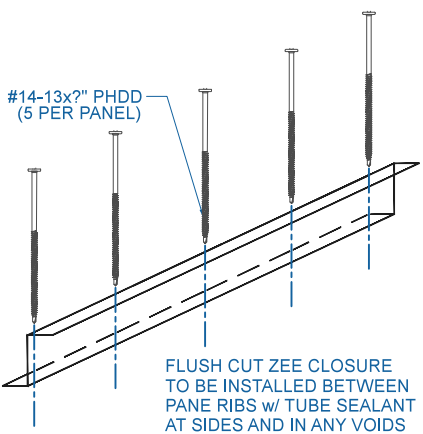
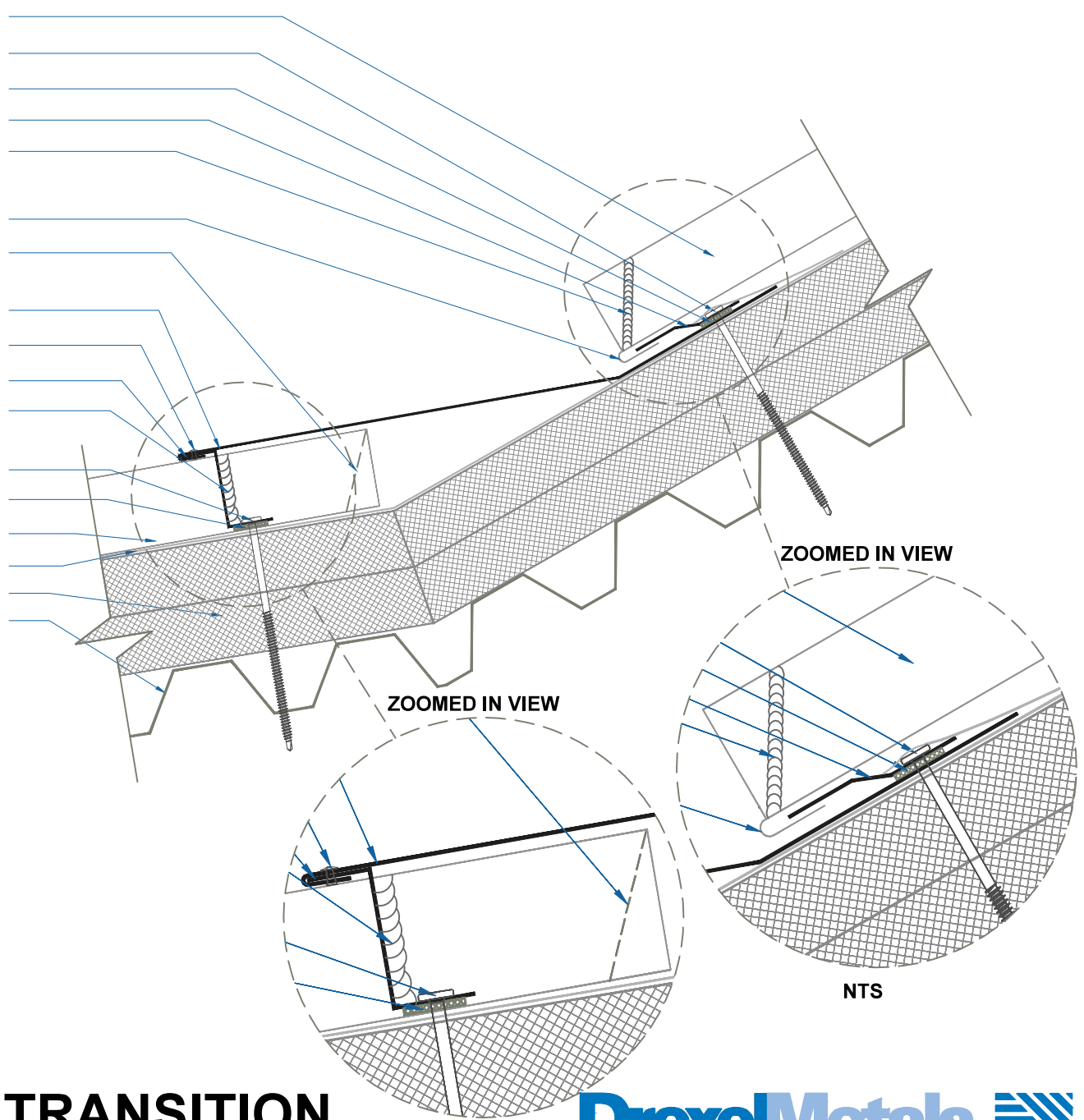


EFFECTIVE DATE: 02-17-13  
 SUBJECT TO CHANGE WITHOUT NOTICE

**RIDGE / HIP**  
 SCALE: 3" = 1'-0"

# DMC 200S - ISO w/ METAL DECK

- DMC 200S PANEL
- #14 - 13 x ?" PHDD (12" o.c.)
- D.B. TAPE SEALANT
- OFFSET CLEAT FLASHING
- DREXEL APPROVED TUBE SEALANT (FIELD APPLIED BETWEEN PANEL RIBS)
- FIELD CUT & HEM PANEL 180°
- BOX END OF PANEL (SEE ZEE CLOSURE OPTIONS DETAIL)
- TRANSITION FLASHING
- 1/8" - #43 POP RIVET (18" o.c.)
- Z-CLOSURE
- DREXEL APPROVED TUBE SEALANT (FIELD APPLIED BETWEEN PANEL RIBS)
- #14 - 13 x ?" PHDD (5 PER PANEL)
- D.B. TAPE SEALANT
- DMC 200S PANEL
- METSHIELD UNDERLAYMENT
- ISO INSULATION
- METAL DECK



## TRANSITION

SCALE: 3" = 1'-0"

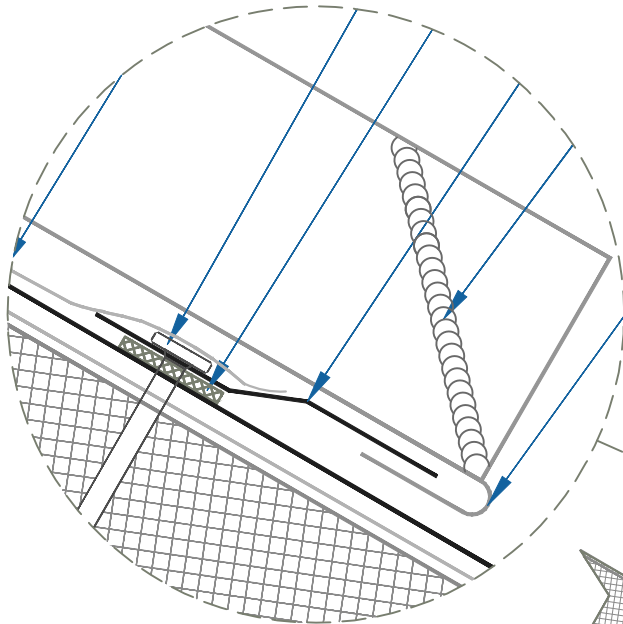
EFFECTIVE DATE: 04-12-2013  
SUBJECT TO CHANGE WITHOUT NOTICE





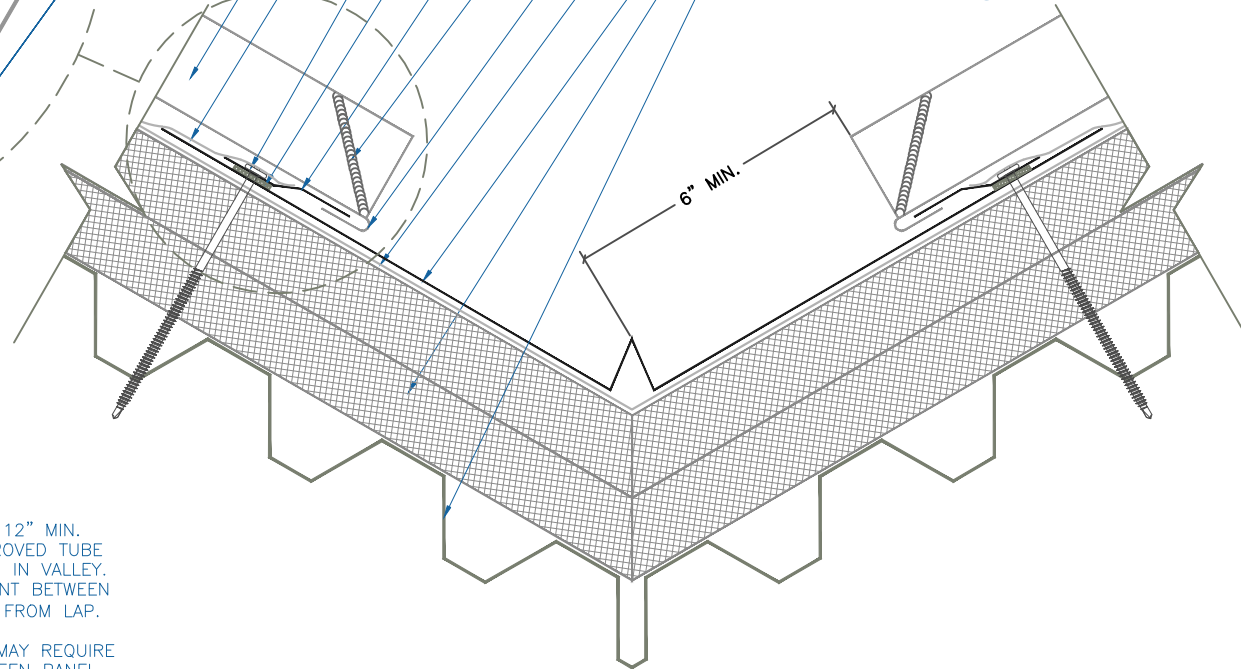
# DMC 200S - ISO w/ METAL DECK

ZOOMED IN VIEW



NTS

- DMC 200S PANEL
- METSHIELD UNDERLAYMENT
- #14 - 13 x ?" PHDD (12" o.c.)
- D.B. TAPE SEALANT
- OFFSET CLEAT FLASHING
- DREXEL APPROVED TUBE SEALANT  
(FIELD APPLIED BETWEEN PANEL RIBS)
- FIELD CUT & HEM PANEL 180°
- METSHIELD UNDERLAYMENT
- VALLEY W / DIVERTER FLASHING
- ISO INSULATION
- METAL DECK



NOTE:

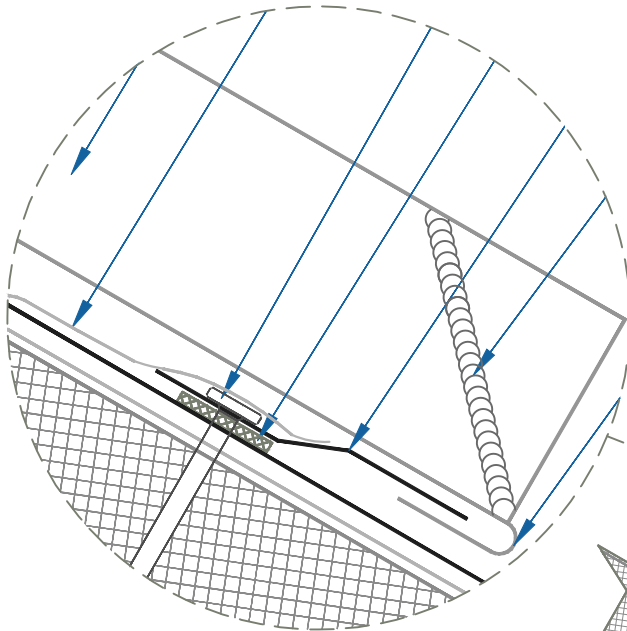
- 1.) LAPS IN VALLEY ARE 12" MIN.  
DREXEL METALS APPROVED TUBE  
SEALANT IN ALL LAPS IN VALLEY.  
TWO ROWS OF SEALANT BETWEEN  
VALLEY LAPS, 4" UP FROM LAP.
- 2.) LARGE ROOF AREAS MAY REQUIRE  
A LARGER GAP BETWEEN PANEL  
AND DIVERTER TO ALLOW FOR  
STORM WATER RUN OFF.

## VALLEY W / DIVERTER

SCALE: 3" = 1'-0"

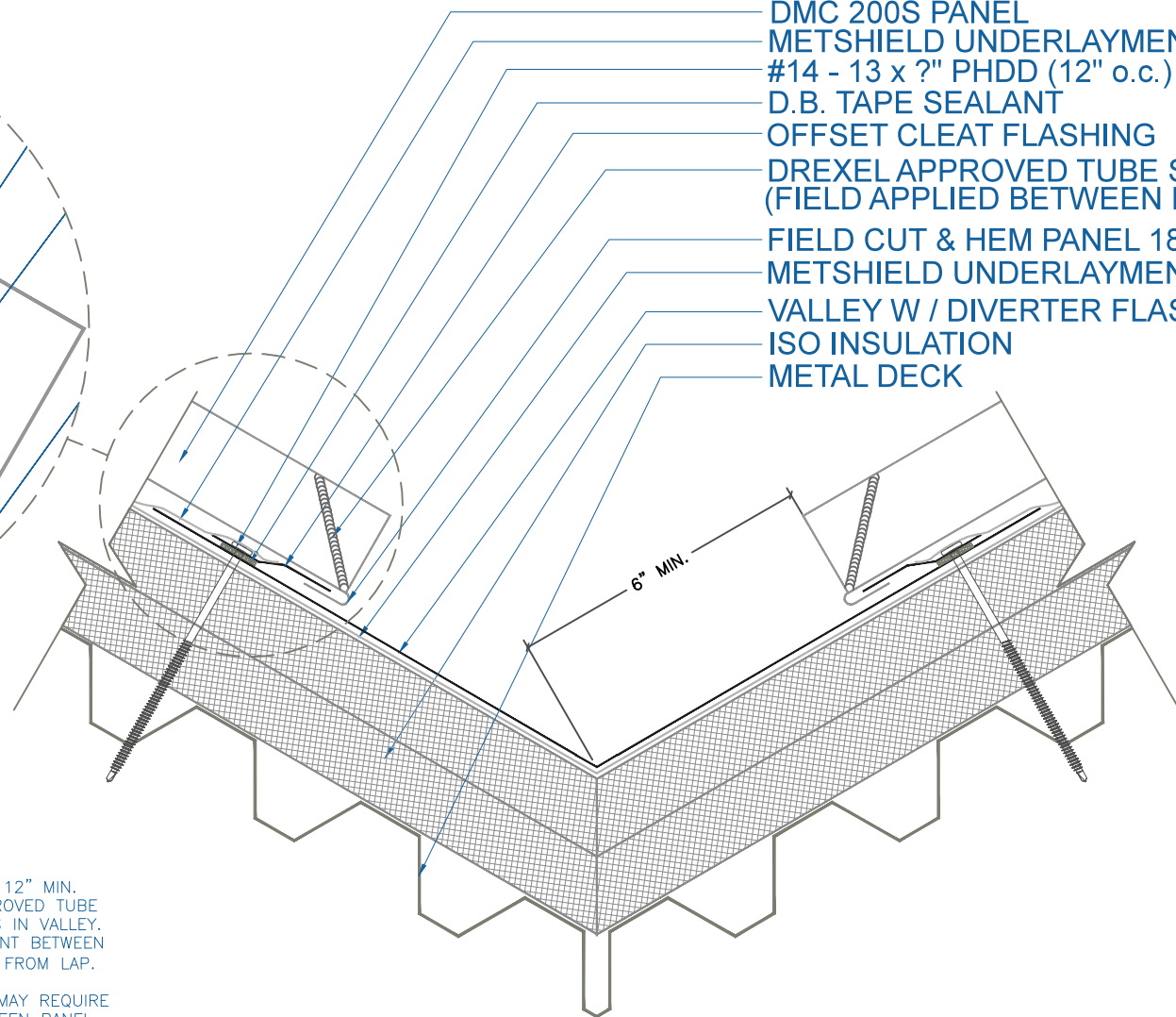
# DMC 200S - ISO w/ METAL DECK

ZOOMED IN VIEW



NTS

- DMC 200S PANEL
- METSHIELD UNDERLAYMENT
- #14 - 13 x ?" PHDD (12" o.c.)
- D.B. TAPE SEALANT
- OFFSET CLEAT FLASHING
- DREXEL APPROVED TUBE SEALANT (FIELD APPLIED BETWEEN PANEL RIBS)
- FIELD CUT & HEM PANEL 180°
- METSHIELD UNDERLAYMENT
- VALLEY W / DIVERter FLASHING
- ISO INSULATION
- METAL DECK

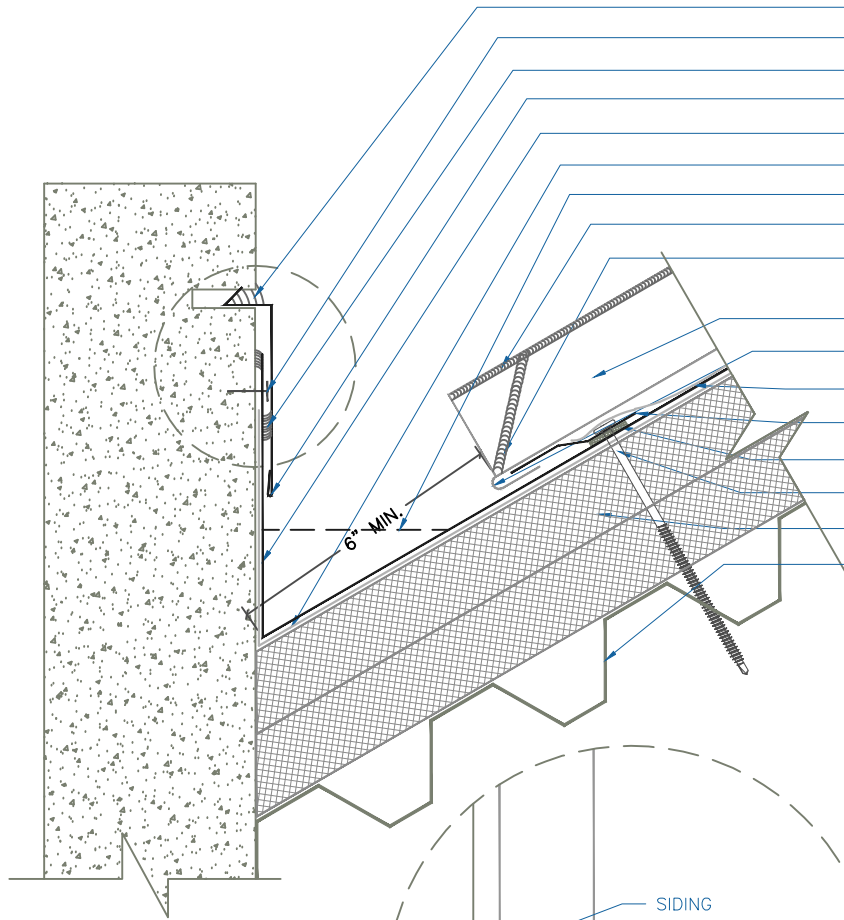


- NOTE:
- 1.) LAPS IN VALLEY ARE 12" MIN. DREXEL METALS APPROVED TUBE SEALANT IN ALL LAPS IN VALLEY. TWO ROWS OF SEALANT BETWEEN VALLEY LAPS, 4" UP FROM LAP.
  - 2.) LARGE ROOF AREAS MAY REQUIRE A LARGER GAP BETWEEN PANEL AND DIVERter TO ALLOW FOR STORM WATER RUN OFF.

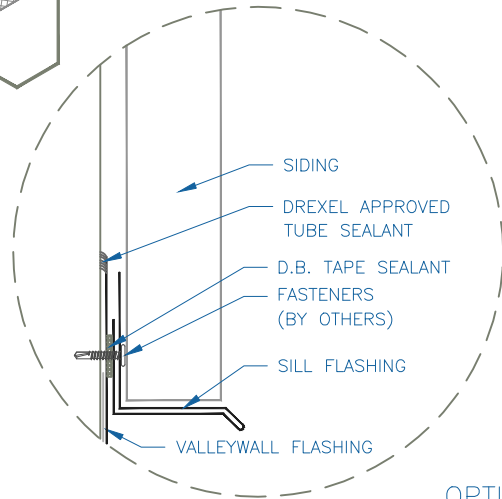
# DMC 200S - ISO w/ INSULATION

**NOTE:**

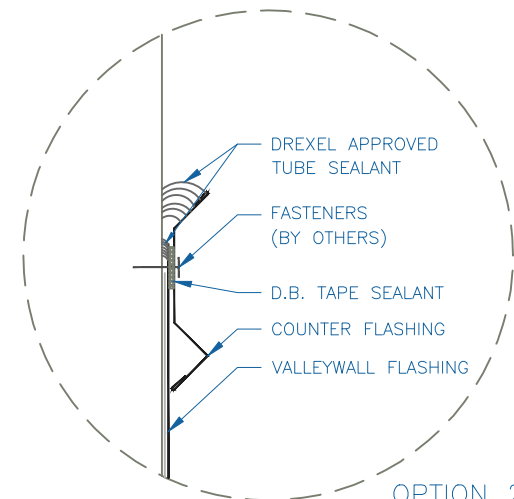
- 1.) LAPS IN VALLEYWALL ARE 12" MIN. DREXEL METALS APPROVED SEALANT IN ALL LAPS IN VALLEY. TWO ROWS OF SEALANT BETWEEN VALLEYWALL LAPS, 4" UP FROM LAP.
- 2.) LARGE ROOF AREAS MAY REQUIRE A LARGER GAP BETWEEN PANEL AND WALL TO ALLOW FOR STORM WATER RUN OFF.



- DREXEL APPROVED TUBE SEALANT
- FASTENERS (BY OTHERS)
- DREXEL APPROVED TUBE SEALANT
- REGLET FLASHING
- VALLEYWALL FLASHING
- METSHIELD UNDERLAYMENT
- CRICKET BEYOND
- SEAM SEALANT (3'-0" UP FROM RIB END)
- DREXEL APPROVED TUBE SEALANT (FIELD APPLIED BETWEEN PANEL RIBS)
- DMC 200S PANEL
- FIELD CUT & HEM PANEL 180°
- METSHIELD UNDERLAYMENT
- OFFSET CLEAT FLASHING
- D.B. TAPE SEALANT
- #10 - 13 x ?" PHDD (12" o.c.)
- ISO INSULATION
- METAL DECK



OPTION 1



OPTION 2

**VALLEYWALL**

SCALE: 3" = 1'-0"

---

# Underlayments



## High-Temperature Underlayment Applications



Best-in-class MetShield® ice and water underlayment protects the roof structure from water seepage caused by ice dams and wind-driven rain. Designed specifically for high-temperature applications of metal roof installations, it will resist temperatures up to 250° without degradation of the adhesive, and self-seals around roofing nails, screws and clips used to install the primary roofing system. This high-tensile strength underlayment is a 40 mil SBS modified bitumen with a UV-resistant anti-slip polyethylene woven top facer and is required under all Drexel Metals roof warranted systems.

### Features and Benefits

- Protects the roof structure from water seepage caused by ice dams and wind-driven rains
- Resists temperatures up to 250°F without degradation of the adhesive
- Seals around roofing nails, staples and screws
- Bonds directly to the roof substrate for fast and easy installation without the need for additional adhesives
- Split-release film provides easier, faster installation
- Resists cracking, drying and rotting, providing long-term waterproofing performance and low lifecycle cost
- Concealed waterproofing system will not detract from the architectural aesthetics of the primary roofing system
- Exposed rubberized asphalt bead along the membrane edge ensures watertightness of lap seams
- Made in USA

### Standards

- UL Classified
- ICC-ES ESR #2206
- 2009 and 2012 International Building Code™
- Florida Building Code Approved Product
- Meets ASTM D1970

### Storage

MetShield roofing underlayment rolls should be stored on end, under cover and in areas where the temperature is between 40° and 100°F (4.4° and 38°C). Do not double-stack pallets.

### Warranty

MetShield is backed by Drexel's industry-leading warranty. Visit our website for warranty details.

### Installation

MetShield underlayment is applied when the roof deck is dry and the substrate temperature is 40°F (4.4°C) or higher. At temperatures below 40°F, nailing or priming should be used to temporarily hold the membrane in place while adhesion develops. MetShield is designed to be covered with the primary roofing system and should not be exposed to sunlight for more than 120 days.

**Moisture:** Substrate must be free of any moisture. If moisture is present, it may inhibit adhesion.

**New construction:** Prepare the roof deck by removing all loose objects, dirt, dust and debris.

**Re-roofing:** Remove all old materials from the roof deck in the area to be covered with MetShield underlayment.

# MetShield® High-Temp Underlayment

Replace water-damaged sheathing and sweep roof deck thoroughly.

**Priming:** Priming is not required on clean, dry wood, metal or most polyisocyanurate surfaces. Masonry and exterior gypsum boards (such as DensDeck®) should be primed using an appropriate primer or adhesive. Some rigid insulation boards with porous or dusty surfaces may require priming to promote initial adhesion. Priming is required on all substrates when air or substrate temperatures are below 40°F (4.4°C). Adhesives such as CCW-702, CCW-702WB, CAV-GRIP™ and CCW-AWP are approved for use with Drexel MetShield. Refer to your local building codes to determine acceptable product for use in your region.

Selection of roof deck or insulation substrate and/or use of a primer or adhesive are the responsibility of the architect, specifier or roofing contractor to determine based on the roof assembly and environmental conditions.

**Valleys, hips and ridges:** Cut MetShield roofing underlayment into manageable lengths. Align over the center of the valley, hip or ridge. Remove release film. Press the middle of the membrane first before working toward the edges. For open valleys, cover MetShield roofing underlayment with metal valley liners.

**Eaves and rakes:** Cut MetShield underlayment into 10-15' pieces. Remove 2-3' of release film and align the edge of the membrane, sticky side down, so it overhangs the drip edge by 3/8" (10 mm). Continue to remove release film and press as you move across the roof. Use a hand roller and/or hand pressure to press into place. Overlap end laps a minimum of 6". MetShield roofing underlayment should reach a point 2' inside the interior wall line. Local codes may require additional courses. If additional courses are required, the top lap must be at least 3-1/2".

**Drip edges:** At the rake edge, apply MetShield underlayment first and place drip edge on top. At the eave, apply drip edge first and place MetShield underlayment on top of the drip edge so that it overhangs drip edge by 3/8" (10 mm). For standard installation details, follow the MetShield detail drawings. For non-standard installation instructions, contact your local Drexel Metals representative.

**Metal roof underlayment:** Under water-shedding metal roof systems or low-slope metal roofs with a minimum 1/2" slope, start at the low point and apply MetShield over the full surface of the roof deck. Review the metal roofing manufacturer's instructions for limitations and precautions. Beginning at the eaves, apply underlayment from the low point to the high point of the roof, running the roll horizontally.

## Limitations

- MetShield should be installed when air, roof deck and membrane temperatures are at or above 40°F (4.4°C).
- MetShield should not be left exposed to sunlight for more than 120 days.
- MetShield membrane should not be folded over the roof edge unless protected by a gutter or other flashing materials.
- The primary roof system must be ventilated to prevent excessive moisture build-up in the interior structure.
- Use caution during the installation of the membrane as it may become slippery when wet or covered with frost.
- MetShield must not be used in contact with flexible PVC material.
- MetShield not approved for use in foam set tile applications.

## Product Specifications

### Physical Properties

|          |   |
|----------|---|
| Surface  | Black/White Engineered Polyolefin Composite |
|          | Film with Factory-applied Anti-skid Coating |
| Membrane | Rubberized Asphalt                          |

### Product Characteristic

| Product Characteristic | Units  | Results |
|------------------------|--------|---------|
| Roll Length            | feet   | 66      |
| Roll Weight            | lbs    | 55      |
| Roll Size              | sq/ft  | 198     |
| Roll Width             | inches | 36      |

### Typical Performance Properties

| Typical Performance Properties           | Test Method | Results    |
|--|-------------|------------|
| Thickness                                | ASTM D1970  | 40 mils    |
| Low Temperature Flexibility              | ASTM D1970  | -45°F      |
| Adhesion to Plywood at 75°F              | ASTM D1970  | 35 lbs/ft  |
| Lap Seam Adhesion at 75°F                | ASTM D1970  | 21 lbs/ft  |
| Sealability Around Nail                  | ASTM D1970  | Pass       |
| Slip Resistance                          | ASTM D1970  | Pass       |
| Thermal Stability                        | ASTM D1970  | Pass       |
| Moisture Vapor Permeance                 | ASTM D1970  | 0.02 perms |
| Water Absorption                         | ASTM D1970  | 0.5%       |
| Tensile Strength Machine Direction       | ASTM D412   | 250 psi    |
| Tensile Strength Transverse Direction    | ASTM D412   | 1390 psi   |
| Elongation at Break Machine Direction    | ASTM D412   | 250%       |
| Elongation at Break Transverse Direction | ASTM D412   | 170%       |

### Packaging Information

|                          |    |
|--------------------------|----|
| Boxes (rolls) per pallet | 25 |
|--------------------------|----|



www.drexelmetals.com

1234 Gardiner Lane, Louisville, KY 40213  
888-321-9630 toll-free • 502-690-6174 fax



## Synthetic Underlayment Applications



### MetShield® Synthetic Underlayment

MetShield® Synthetic roof underlayments are among the safest, strongest, and best-performing roof underlayments on the market. Woven of heavyweight polymer fabric, MetShield® Synthetic offers superior strength and durability, dynamic steep slope traction, water resistance, a wrinkle-free surface, and resistance to UV-breakdown. The textured woven fabric surface offers dynamic traction and is ideal for steep slopes in a variety of weather conditions. MetShield® Synthetic is rated for commercial and residential applications using plastic caps and roofing nails (3/8" head), and is an ideal roof underlayment for asphalt shingles, metal, tile, slate, and a variety of other sloped roofing materials.

It's also available with the best printing in the industry, DM-ARM custom printing (additional fee applies – 36 roll minimum).

### Features and Benefits

**Safer:** Skid-resistant polymer coating and proprietary Fiber Claw™ walking surface offers dynamic steep slope traction.

**Stronger:** MetShield® Synthetic is stronger than Type 15 or 30 felt and resistant to tearing and stretching around fasteners in high traffic areas or during high winds.

**Lighter:** MetShield® Synthetic is lighter than Type 15 or 30 felt and easier to handle during all stages of installation.

**Simpler to Apply:** MetShield® Synthetic installs quickly, easily and with less risk. It's lighter, stronger and covers more area. Won't buckle, warp, or crack: Superior lay-flat properties and water resistance keeps MetShield® Synthetic from warping, wrinkling, and cracking in cold weather.

- Roll Size: 48" x 250'
- 35-Year Warranty
- Up to 6 month UV exposure
- Use 3/8" Roofing Nails instead of plastic caps:
  - MetShield Synthetic: 51 per SQ
  - Brand X – 180 per SQ
  - That's 129 less fasteners and SAVES LABOR!

### Code and Standards

- ASTM D 226, Type II
- ICC-ES AC 207
- CSA A 123.3
- ASTM E 108 / UL790 Assembly – Class A
- CSA A 220.1

### Product Specifications

| Property                  | Test Method          | Typical               |
|---------------------------|----------------------|-----------------------|
| Tensile Strength          | ASTM D146-04 (lb/in) | MD113<br>CD100        |
| Tear Resistance           | ASTM D1922-00 (g)    | MD >3200<br>CD > 3200 |
| Rupture Resistance        | ASTM D3462-.02       | 87                    |
| Bench Puncture            | ICC AC-08            | Pass                  |
| Long Term Sag             | ICC AC-08            | Pass                  |
| Liquid Water Transmission | ASTM D4869-02        | Pass                  |
| Ultra Violet Aging        | ICC AC 207           | Pass                  |
| Accelerated Aging         | ICC AC 207           | Pass                  |

Test Data is based on average results and should not be considered or interpreted as minimum or maximum values. Values are typical data and not limiting.

### Installation

**Before Installing MetShield® Synthetic:** Ensure the roof deck or substrate is properly fastened, has no significant delamination, warpage, bowing or separation from the rafters, trusses or support structures and is free of debris, clean and smooth before the underlayment is applied. MetShield® Synthetic shall be installed using compatible materials and conform to best building practices. Verify the application is

# MetShield® Synthetic Underlayment

compliant with applicable building codes.

MetShield® Synthetic is not designed or intended to be the final or primary roof. Consult with your local Drexel Metals sales representative for further information. As with all roofing materials, always observe safe roofing practices (OSHA) and local building and safety codes. Use caution when walking or standing on MetShield® Synthetic. Moisture, dust, snow, ice, debris and other job-site conditions may change the coefficient of friction of MetShield® Synthetic. Failure to use proper safety equipment and footwear can result in serious injury or death.

**Installation General:** Fastening methods and materials should conform to best building practices and local job-site conditions. Verify final application to be compliant with the requirements of applicable building codes. Verify compatibility according to geographical region, structure type and roof specification with applicable building codes and/or by review of a building professional. Install MetShield® Synthetic print side up, horizontal (parallel) to the eave, with minimum 4 inch (102 mm) horizontal laps and 6 inch (152mm) vertical laps. Overlaps shall run with the flow of water in a shingling fashion.

## Installation Guidelines and 35-Year Limited Warranty:

- Minimum finished roof slope is 2:12 (17%) for MetShield® Synthetic. In the cases where the roof pitch is less than 2:12 use MetShield® High Temp Peel and Stick by Drexel Metals. For roof slopes greater than 2:12 (17%) and less than 4:12 (33%), laps shall be increased to 25 inches (635 mm).
- In jurisdictions where the use of MetShield® Synthetic in valley applications is permitted by local building codes, Drexel Metals recommends that MetShield® Synthetic be applied as a valley liner in accordance with applicable building codes and industry standards/guidelines. Woven or closed-cut valleys are not recommended.
- Extend MetShield® Synthetic one inch past gable/rake edge, turn down over edge, fasten approximately 4 inches on center and cover with code-compliant flashing prior to the installation of the final roof covering.

## Short-Term Exposure:

- For short-term exposure (less than 24 hours before the primary roof installation is completed) without exposure to precipitation or high wind (any signs of underlayment uplifting), corrosive-resistant fasteners may be used to nominally attach the underlayment only as necessary to prevent distortion around fasteners in high traffic areas. The final roof covering will permanently affix the underlayment in place.

## Two to 29-Day Exposure:

- Applications that are not immediately covered (within 24 hours) by the primary roof covering or are subject to basic

wind speeds (fastest mile) in excess of 90 miles per hour (145 km/hour, Uniform Building Code) or basic wind speeds (3-second gust) in excess of 110 miles per hour (177 km/hour, International Residential Code and International Building Code) shall be attached using corrosive resistant mechanical fasteners, spaced 8 inches (203 mm) on center along both horizontal and vertical laps and 24 inches (610 mm) on center along the center of the roll in the field of the roof.

## Thirty to 180-Day Exposure:

- For underlayment applications that are not covered by the primary roof covering within 30 days and/or for applications in high wind (any signs of underlayment uplifting) zones, lap widths shall be doubled and fastening frequency increased to 4 inches (10.2 cm) on center for horizontal and vertical laps and 24 inches (61 cm) on center along the center of the roll. Additionally, it is recommended that a caulk or sealant material(1) be applied between laps before fastening to prevent moisture ingress in areas of high wind. For a primary roof covering requiring attachment through a batten system, the underlayment need only be preliminarily attached pending attachment of battens or counter battens. Battens or counter battens shall not be secured directly over raised fasteners, including plastic capped roofing nails.

## Repairs:

Repair damage to the underlayment with caulk or sealant material maintaining a water-tight seal around the damaged area and proper overlaps to run with the flow of water in a shingling fashion. Ensure any incorrectly applied fasteners are caulked and/or sealed to prevent possible moisture ingress.

## Precautions:

- MetShield® Synthetic can be exposed to ultraviolet conditions for up to 6 months.
- Severe weather and/or local job-site conditions may require a shorter exposure period. Please contact Drexel Metals for further information.
- MetShield® Synthetic is not designed to function as the primary roof covering and is intended to function as a secondary water shedding layer under most steep-sloped roofing materials.
- Verify final application to be compliant with applicable building codes.

A 35-YEAR LIMITED WARRANTY APPLIES TO DREXEL METALS. NO OTHER WARRANTY, EXPRESS OR IMPLIED, IS GIVEN AS TO THE MERCHANTABILITY, FITNESS FOR PARTICULAR PURPOSE OR OTHERWISE FOR APPLICATIONS OUTSIDE THE SCOPE OF THESE INSTALLATION GUIDELINES AND THE PUBLISHED 35-YEAR LIMITED WARRANTY.



www.drexelmetals.com

1234 Gardiner Lane, Louisville, KY 40213  
888-321-9630 toll-free • 502-690-6174 fax





# MetShield® Synthetic

## 35 YEAR LIMITED WARRANTY

Drexel Metals Inc. (the "Seller") warrants to the purchaser (the "Buyer"), that the product MetShield® Synthetic roofing underlayment (hereafter called "Product"), if installed in strict compliance with Seller's application guidelines, will shed water in sloped roof applications, except as noted below, for a period of thirty-five (35) years from the sales invoice date (the "Effective Date").

The above warranty shall be VOID if:

1. Any part of the Product is exposed to ultraviolet radiation after roof cladding installation;
2. The Product has been installed and left uncovered without roof cladding for more than 180 days; or
3. The Product is not installed in strict compliance with Seller's application guidelines.

As Buyer's sole remedy under this warranty, Seller shall, at its sole election, either:

1. repair the defective Product,
2. supply replacement Product for the portion of the Product that has been proven to be defective within the warranty conditions or
3. refund the purchase price for that portion of the Product proven to be defective.
4. Buyer shall pay all handling or transportation charges.

Buyer must give Seller written notice of any defects within 30 days from the date that the defect was discovered. Such notice shall be sent to Technical Director, Drexel Metals - 1234 Gardiner Lane - Louisville, KY 40213.

Failure to timely give Seller timely notice of a defect, or unauthorized repair, alteration, misuse or misapplication of the Product by Buyer, makes this warranty VOID.

This warranty shall apply only to water leakage resulting solely from the defective manufacture of the Product and from no other cause. Without limiting the foregoing, Seller shall have no liability for leaks or damage resulting from:

1. Defects in workmanship in the installation of the Product;
2. Inadequate or faulty structural design, structural defects, settlement distortion, cracking or failure of substrate or the roofing base over which the Product is applied, or inadequate performance of products not manufactured or sold by Seller;
3. Any damage if the roof is altered after initial installation of the Product, whether any such alteration is by structural additions, changes, replacement or equipment installations;
4. Use of the roof for any purpose for which it was not designed;
5. Chemical damage or defects caused by any chemical materials including but not limited to greases, solvents, oils, or other chemicals;
6. Failure of the Owner to exercise reasonable care in maintaining the roof assembly and/or the Product;
7. Infiltration or condensation of moisture in, through or around walls, coping, building structure or underlayment of surrounding material;
8. Damage resulting from condensation below or adjacent to the Product;
9. Standing, pooled or dammed water; drainage must meet National or Canadian Roofing Contractors Association (NRCA or CRCA) minimum recommendations as applicable;
10. Unusual traffic, or from use as a storage area or recreational surface or for any other purpose for which it was not designed;
11. Damage caused by penetrations (including penetrations by fasteners), animals, tears or rips, vandalism, abusive conditions, natural forces such as lightning, wind, tornados, hurricanes, and earthquakes, fire, acts of God, or any other cause beyond Seller's control;
12. Installation of the final roof covering over visibly degraded Product;
13. Shrinkage of the Product.

In furtherance of and not in limitation of the foregoing, Seller will have no liability under this warranty for:

1. Any variation in color or shading of the Underlay;
2. Any damage to the interior or exterior of any building or any property contained therein;
3. Any costs incurred for repair or disposal; or
4. Any costs related to the removal of any asbestos or other hazardous materials or waste present in the roof to which the Underlay is installed.

In all cases, the replacement Product is warranted only for the remainder of the original product Warranty. The Seller reserves the right to discontinue or modify any of its products, without notice to the Owner and shall not be liable to the Owner as a result of this modification or discontinuance. The Seller will have no liability in the event that replacement materials may vary in color in comparison to the original product as a result of product changes or normal weathering. Any refund or material replacement by The Seller shall constitute a full settlement and release of all claims of any covered person hereunder for damages or other relief. The warranties set forth herein are Seller's sole and exclusive warranties. In no event shall Seller be liable for other damages, including, without limitation, or for special, incidental, punitive or consequential damages.

THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

No part of this warranty may be changed or cancelled except by a written document signed by Seller and Buyer. No course of dealing or performance, usage of trade or failure to enforce any term shall be used to modify the warranty. Buyer may not assign or permit any other transfer of this warranty without Seller's consent. If any of the terms contained herein are unenforceable, such term shall be limited only to the extent necessary to make it enforceable, and all other terms shall remain in full force and effect. The warranty shall be governed by the laws of the state of Kentucky without regard to its conflicts of laws, provisions, and exclusive jurisdiction for any dispute arising from this warranty shall be in the state or federal courts in the Commonwealth of Kentucky.



---

# Environment



Thank you for choosing Drexel Metals for the reference LEED project! The following is a summary of the points that our product will qualify and contribute towards:



### **Credit: 7.2 – Qualifies for a direct point**

Drexel Metals products will qualify for one LEED credit for the steep slope (>2:12) LEED-NC 2.2 Credit 7.2 Heat Island Effect: The criteria for the point are that the roof must cover at least 75% (excluding skylights and equipment) of the roof surface and have a minimum SRI of 29.

### **Third Party Verified SR – Innovation Credit: Qualifies for a direct point**

Drexel Metals metal roofing qualified products have been reviewed through the UL Environment Environmental Claims Validation, Sustainable Product Certification, Environmental Product Declaration or Terrachoice EcoLogo programs will qualify for one innovation point.

### **Contribution Credits: (Our products contribute to improve the overall percentage)**

- Recycled Content: Drexel Metals uses coil manufactured by a basic oxygen furnace with 24.6% post consumer recycled content and 6.6% post industrial content. This can contribute to the material and resources 4.1 LEED credit.
- Contributes to MR Credit 1.1 or 1.2 – Building Reuse
- Contributes to MR Credit 2.1 or 2.2 – Construction Waste Management
- Contributes to EA Credit – Optimize Energy performance – Modeling /BIM will need to be completed
- Contributes to WE Credit 1 / 1.2 / 2 / 3.1 / 3.2 – Water Efficient Landscaping – The impervious nature of a metal roof can be used to capture rain water for non-potable water
- Drexel Metals Solar Roof Systems Contribute to EA Credit 2.1 / 2.2 / 2.3 – Renewable Energy offsets (if solar is used)

Drexel Metals products do not qualify for Regional Materials Extracted, Processed and Manufactured under MR credit 5.1 and 5.2. In order to qualify for this credit, the product must be extracted/harvested, processed and manufactured within 500 miles of the specific project site. We consider the Regional Manufactured” credit to be a “boutique” credit for adobe, concrete and other mined local products. However, since our products are being roll-formed at the project site, we do encourage you to apply for an additional innovation credit based on our local

manufacturing process which reduces the number of truckloads required to ship the finished good, the lack of packaging as a result and the use of local labor.



All Drexel Metals steel and aluminum products are –  
Made in the USA!

# Steel Takes LEED™ with Recycled Content

## steel beams and columns

## steel studs

## steel roofing

## steel decking

## steel doors

## ductwork

## steel siding

## corrugated steel pipe

## other steel components

Designers and builders have long recognized and lauded steel for its strength, durability, and functionality. Increasingly, however, architects are recognizing steel's important environmental attributes—especially its high recycled content and high reclamation rate.

For many years, there has been a strong economic motive to incorporate recycling into the process for making steel, but today's environmental concerns make recycling even more important. Recycling saves money while conserving energy and resources, as well as reducing solid, liquid, and gaseous wastes. Recycling also helps to spread the energy impact of the original extraction and manufacturing of the material over infinite generations of new steel.

The efficiency with which a material is recycled can be measured by either its *percentage of recycled content* or its *reclamation rate*. Recycled content is a measure of how much recycled material is contained in a finished product. The reclamation rate is a measure of how often a product is actually recycled at the end of its useful life. Steel is an exceptional performer by both measurements. In the construction industry, recent interest in recycling has been driven largely by the US Green Building Council's *Leadership in Energy and Environmental Design* (LEED™) rating system. The LEED rating system only promotes the use of materials with high levels of recycled content. The equally important reclamation rate of the materials is not currently considered.

Scrap consumption in the United States is maximized between the two types of modern steel mills, each of which generates products with varying levels of recycled content. One type of mill produces much of the steel for light flat-rolled steel products with about 30% *recycled content*. The other type of mill makes steel for a wide range of products, including flat-rolled, but is the only method used domestically for the production of structural shapes and has about 95% *recycled content*. (These processes are covered in detail on the following pages.)

The amount of recycled content in steel products varies over time, both as a function of the cost of steel scrap and its availability. As the world-wide demand for steel increases, the available scrap will be stretched between more and more steel products, meaning that more raw steel will have to enter the production stream to meet the demand. Fortunately, steel is the country's most widely recycled

material, and as more steel is used for construction and other products, more scrap is available for future recycling. About 88% of all steel products and nearly 100% of steel that is used in beams and plates in construction, are recycled into new steel products at the end of their useful life—an amazing reclamation rate!

In addition to recycled content, steel can contribute toward several other LEED credits, either directly or indirectly. Steel is dimensionally stable and, when properly designed, can provide an exceptionally tight building envelope, for less air loss and better HVAC performance over time. Steel is made to exact specifications, so on-site waste is minimized. Material from demolition or construction can be easily recycled, with the magnetic properties of steel greatly facilitating its separation from other materials. Thus, in addition to steel's outstanding recycled content and an enviable reclamation rate, steel's other functional properties contribute to the material's solid environmental performance.

As with any building process or material, there are areas for improvement. A great benefit of LEED is that it can help the steel industry recover even more scrap as contractors improve their recycling collection methods at the job site, so less incidental iron and steel scrap escapes to landfills. Similarly, commercial buildings and residential housing can have better disciplined recycling systems for increased recovery.

As steel products reach the end of their useful life, we want to see even more recycled into new steel products for future service to society.



**American  
Iron and Steel  
Institute**

## On-Line Steel Recycling Resources

### [www.recycle-steel.org](http://www.recycle-steel.org)

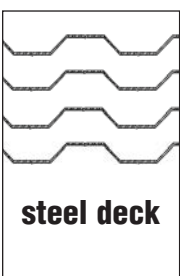
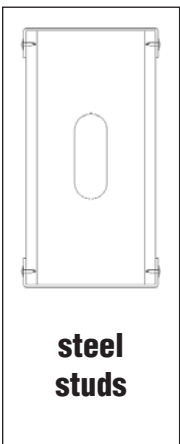
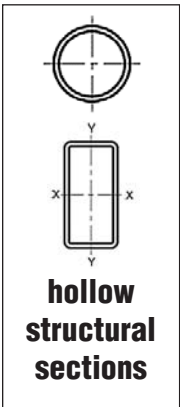
Includes detailed information on recycling rates, recycling databases, and the environmental benefits of steel for homes building, steel roofing, and bridges.

### [www.aisc.org/sustainability](http://www.aisc.org/sustainability)

Includes detailed information on how steel factors into the LEED™ rating system, steel mill recycled content documentation, and articles about the use of steel in sustainable projects.

# Modern Steel Production Technologies

## Typical BOF Products



- plate**
- purlins**
- wall studs**

Steel is the world's—as well as North America's—most recycled material. In the United States alone, almost 69 million tons of steel were recycled or exported for recycling in 2003. Modern steel production relies on two technologies, both of which utilize old steel to make new steel: the *basic oxygen furnace* (BOF) and the *electric arc furnace* (EAF).

- The basic oxygen furnace (BOF) process uses 25 to 35 percent old steel to make new. It produces products—such as automotive fenders, encasements of refrigerators, and packaging like soup cans, five-gallon pails, and 55-gallon drums—whose major required characteristic is drawability.
- The electric arc furnace (EAF) process uses 95-100 percent old steel to make new. It is primarily used to manufacture products—such as structural beams, steel plates, and reinforcement bars—whose major required characteristic is strength.

Steel recycling has both an economic and environmental benefit: It is less expensive to recycle steel than to mine virgin ore and move it through the process of making new steel. And today two out of every three pounds of new steel are produced from old steel. However, because steel is such a durable material (that is, cars, appliances, bridges and other steel products last a long time), it is necessary to continue to mine virgin ore to supplement the production of new steel. Economic expansion, domestically and internationally, creates additional demand that cannot be fully met by available scrap supplies.

Unlike other competing industries, recycling is second nature for the steel industry. The North American steel industry has been recycling steel scrap for over 150 years through the 1,800 scrap processors and some 12,000 auto dismantlers. Many of them have been in the business for more than 100 years.

The pre-consumer, post-industrial, post-consumer, and total recycled content of steel products in the United States can be determined for the calendar year 2003 using information from the American Iron and Steel Institute (AISI), the Institute of Scrap Recycling Industries (ISRI), and the U.S. Geological Survey. Additionally, a study prepared for the AISI by William T. Hogan, S.A., and Frank T. Koelble of Fordham University is used to establish pre- and post-consumer fractions of

purchased scrap. (Detailed information on these studies can be obtained from the Steel Recycling Institute (call 412.922.2772 or visit [www.recycle-steel.org](http://www.recycle-steel.org).)

Individual company statistics are usually not applicable or instructive since available scrap typically goes to the closest melting furnace. This open loop recycling allows, for example, an old car to be melted down to produce a new soup can, and then, as the new soup can is recycled, it is melted down to produce a new car, appliance, or structural beam.

## Basic Oxygen Furnace

BOF facilities consumed a total of 15,772,900 tons of ferrous scrap in the production of 50,941,700 tons of liquid steel during 2003. Based on U.S. Geological Survey statistics, 1,738,800 of these ferrous scrap tons had been generated as unsalable steel product within the confines of these steelmaking sites. In the steel industry, these tons are classified as "home scrap," but are a mix of pre-consumer scrap and post-industrial scrap. Estimates by the Steel Recycling Institute identify about 80% of this home scrap as post-industrial scrap, equating to 1,391,000 tons (1,738,800 x 80%). Additionally, these operations reported that they consumed 148,800 tons of obsolete scrap (buildings and warehouses dismantled on-site at the mill) during this time frame. This volume is classified as post-consumer scrap.

As a result of the above, based on the total scrap consumed, outside purchases of scrap equate to 13,885,300 tons [15,772,900 - (1,738,800 + 148,800)]. According to the Fordham University study, the post-consumer fraction of the purchased ferrous scrap would be 83.4 percent, while 16.6 percent of these purchases would be pre-consumer. This equates to 2,305,000 tons of pre-consumer scrap (13,885,300 x 16.6%). This "prompt scrap" is mainly scrap generated by manufacturing processes for products made with steel. It is also considered post-industrial scrap.

Therefore, the **total recycled content** to produce the 50,941,700 tons of liquid steel in the BOF is:

$$15,772,900 / 50,941,700 = 31.0\%$$

(Total Tons Ferrous Scrap / Total Tons Liquid Steel)

Also, the **post-consumer recycled content** is (13,885,300 - 2,305,000) + 148,800 = 11,729,100

and:

$$11,729,100 / 50,941,700 = 23.0\%$$

(Post-Consumer Scrap / Total Tons Liquid Steel)

Finally, the **post-industrial recycled content** is (1,391,000 + 2,305,000) / 50,941,700 and:

$$3,696,000 / 50,941,700 = 7.3\%$$

(Post-Industrial Scrap / Total Tons Liquid Steel)

## Electric Arc Furnace

EAF facilities consumed a total of 44,661,700 tons of ferrous scrap in the production of 46,310,300 tons of liquid steel during 2003. Based on U.S. Geological Survey adjusted statistics, 12,124,000 of these ferrous scrap tons had been generated as unsalable steel product within the confines of these steelmaking sites. Again, in the steel industry, these tons are classified as "home scrap," but are a mix of pre-consumer scrap and post-industrial scrap. Estimates by the Steel Recycling Institute identify about 80% of this home scrap as post-industrial scrap, equating to 9,699,200 tons (12,124,000 x 80%). Additionally, these operations reported that they consumed 28,700 tons of obsolete scrap (buildings and warehouses dismantled on-site at the mill) during this time frame. This volume is classified as post-consumer scrap.

As a result, based on the total scrap consumed, outside purchases of scrap equate to 32,509,000 tons [44,661,700 - (12,124,000 + 28,700)]. According to the Fordham University study, the post-consumer fraction of the purchased ferrous scrap would be 83.4 percent, while 16.6 percent of these purchases would be pre-consumer.

This equates to 5,396,500 tons of pre-consumer scrap (32,509,000 x 16.6%). This "prompt scrap" is mainly scrap generated by manufacturing processes for products made with steel. It is also considered post-industrial scrap.

Therefore, the **total recycled content** to produce the 46,310,300 tons of liquid steel in the EAF is:

$$44,661,700 / 46,310,300 = 96.4\%$$

(Total Tons Ferrous Scrap / Total Tons Liquid Steel)

Also, the **post-consumer recycled content** is (32,509,000 - 5,396,500) + 28,700 = 27,141,200 and:

$$27,141,200 / 46,310,300 = 58.6\%$$

(Post-Consumer Scrap / Total Tons Liquid Steel)

Finally, the **post-industrial recycled content** is (9,699,200 + 5,396,500) / 46,310,300 and:

$$15,095,700 / 46,310,300 = 32.6\%$$

(Post-Industrial Scrap / Total Tons Liquid Steel)

The above discussion and calculations demonstrate conclusively the inherent recycled content of today's steel in North America. To buy steel is to "Buy Recycled."

Understanding the recycled content of BOF and EAF steels, one should not attempt to select one steel producer over another on the basis of a simplistic comparison of relative scrap usage or recycled content. Rather than providing an enhanced environmental benefit, such a selection could prove more costly in terms of total life cycle assessment energy consumption, transportation impact, or other variables.

Steel does not rely on "recycled content" purchasing to incorporate or drive scrap use. It already happens because of the economics. Recycled content for steel is a function of the steelmaking process itself. After its useful product life, regardless of its BOF or EAF origin, steel is recycled back into another steel product. Thus steel with almost 100 percent recycled content cannot be described as environmentally superior to steel with 30 percent recycled content. This is not contradictory because they are both complementary parts of the total interlocking infrastructure of steelmaking, product manufacture, scrap generation and recycling. The recycled content of EAF relies on the embodied energy savings of the steel created in the BOF.

Steel is truly the most recycled material.

## Contact Us

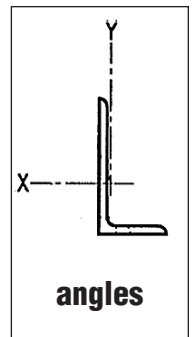
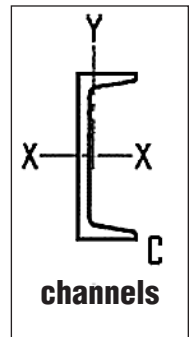
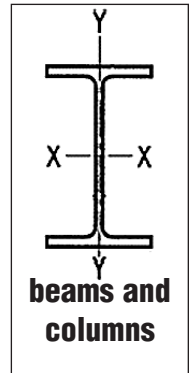
### Steel Recycling Institute

680 Andersen Dr. • Pittsburgh, PA 15220-2700  
412.922.2772 • sri@recycle-steel.org  
www.recycle-steel.org

### American Institute of Steel Construction, Inc.

One East Wacker Dr. • Chicago, IL 60601  
866.ASK.AISC • solutions@aisc.org  
www.aisc.org

## Typical EAF Products



plate

steel deck

piling

# To: Architects, Engineers, Designers, and Specifiers

## Re: LEED™ Version 2.1 Recycled Content Value of Steel Building Products

The U.S. Green Building Council Leadership in Energy & Environmental Design (LEED™) Green Building Rating System aims to improve occupant well-being, environmental performance and economic returns of buildings using established and innovative practices, standards and technologies.

**Materials & Resources Credit 4: Recycled Content** intends to increase demand for building products that incorporate recycled content materials, therefore reducing impacts resulting from extraction and processing of new virgin materials. As discussed and demonstrated below, steel building products contribute positively toward earning points under Credit 4.1 and Credit 4.2. The following is required by LEED Version 2.1:

**Credit 4.1 (1 point)** "Use materials with recycled content such that the sum of post-consumer recycled content plus one-half of the post-industrial content constitutes at least 5% of the total value of the materials in the project."

**Credit 4.2 (1 point)** "Use materials with recycled content such that the sum of post-consumer recycled content plus one-half of the post-industrial content constitutes at least 10% of the total value of the materials in the project."

"The value of the recycled content portion of a material or furnishing shall be determined by dividing the weight of recycled content in the item by the total weight of all material in the item, then multiplying the resulting percentage by the total value of the item." Since steel (the material) and steel (the building product) are the same, the value of the steel building product is directly multiplied by steel's recycled content, or:

$$\text{Steel Recycled Content Value} = (\text{Value of Steel Product}) (\text{Post-Consumer \%} + \frac{1}{2} \text{Post-Industrial \%})$$

The information contained within this brochure provides post-consumer and post-industrial recycled content percentages for North American steel building products. These percentages and values of steel building products are easily entered into LEED Letter Template spreadsheet for calculation. To illustrate the application of these steel recycled content values to LEED, manual calculations are shown below for typical Basic Oxygen Furnace (BOF) and Electric Arc Furnace (EAF) steel building products with nominal \$10,000 purchases, using 2003 data. Steel building products include steel stud framing, structural steel framing (wide flange beams, channels, angles, etc.), rebar, roofing, siding, decking, doors and sashes, windows, ductwork, pipe, fixtures, hardware (hinges, handles, braces, screws, nails), culverts, storm drains, and manhole covers.

### BOF Steel Recycled Content Value for Typical Product:

#### Steel Stud Framing

$$\text{Value} = (\$10,000) (23.0 \% + \frac{1}{2} 7.3 \%) = (\$10,000) (26.65 \%) = \$2,665$$

(Exceeds 5% and 10% goals)

### EAF Steel Recycled Content Value for Typical Product:

#### Wide Flange Structural Steel Framing

$$\text{Value} = (\$10,000) (58.6 \% + \frac{1}{2} 32.6 \%) = (\$10,000) (74.90 \%) = \$7,490$$

(Exceeds 5% and 10% goals)



**Steel Recycling Institute**  
680 Andersen Dr.  
Pittsburgh, PA  
15220-2700  
412.922.2772  
sri@recycle-steel.org



**American Institute of Steel Construction, Inc.**  
1 East Wacker Dr.,  
Suite 3100  
Chicago, IL  
60601-2000  
866.ASK.AISC  
solutions@aisc.org



**American Iron and Steel Institute**

**American Iron and Steel Institute**  
1140 Connecticut Ave., Suite 705  
Washington, DC  
20036  
202.452.7100

---

# Project Showcase



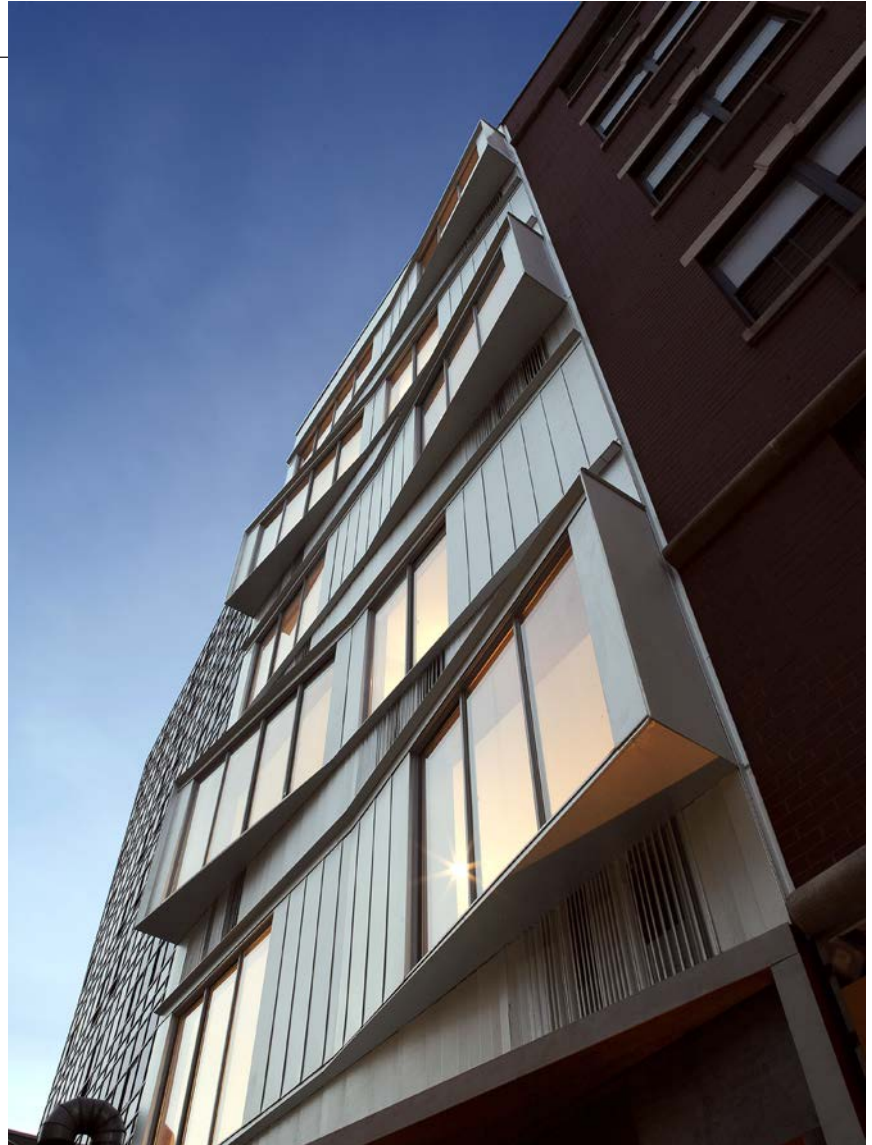


**Project:** Switch Building  
**Architect:** Eric Bunge  
**Firm:** narchitects, New York, NY  
**Project Site:** 109 Norfolk, NYC  
**Photography:** Frank Oudeman

Switch Building is a 7-story apartment and art gallery building at 109 Norfolk Street in the Lower East Side, completed in 2007. The building consists of four floor-through apartments, a duplex penthouse, and a double height art gallery on the ground and cellar levels. nARCHITECTS provided full architectural services for the project, including all interior design.

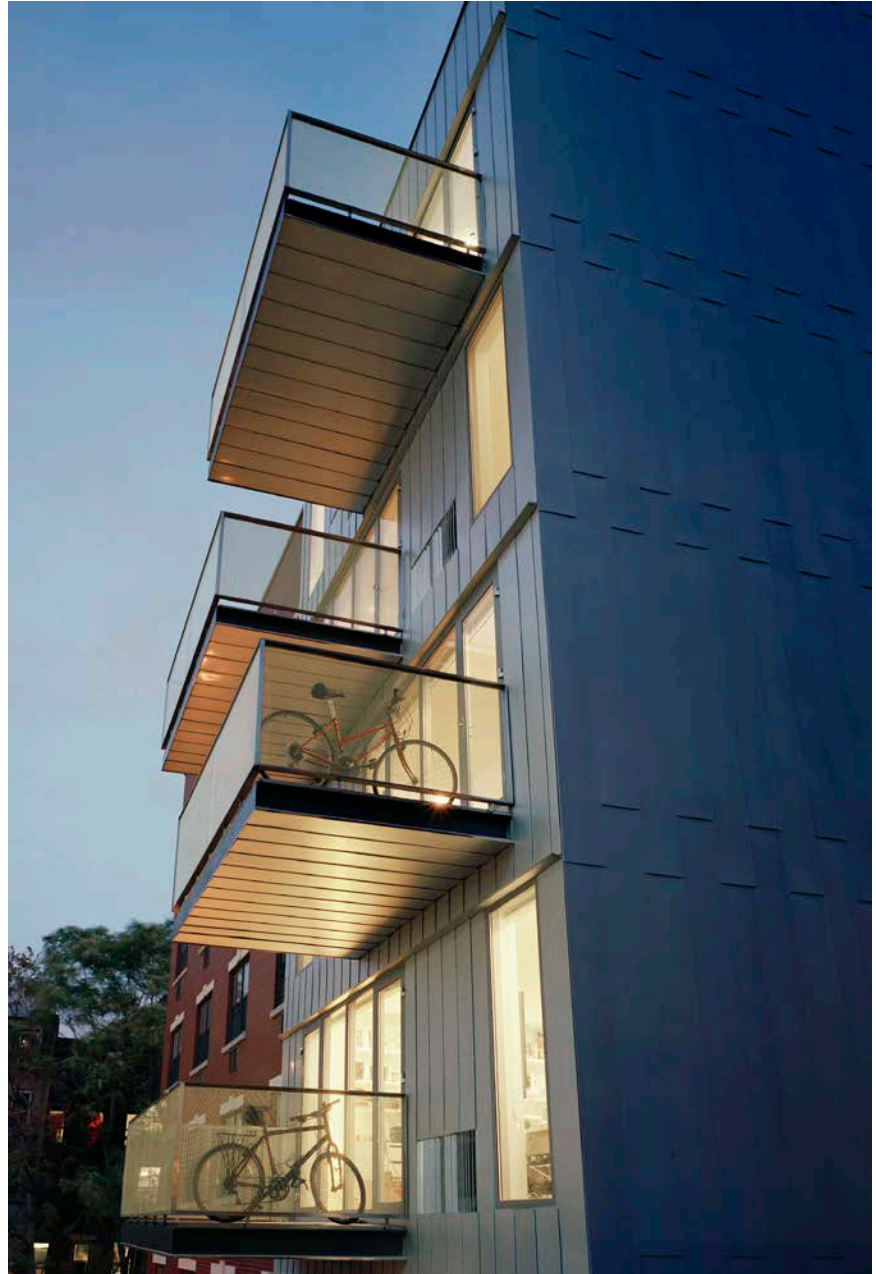
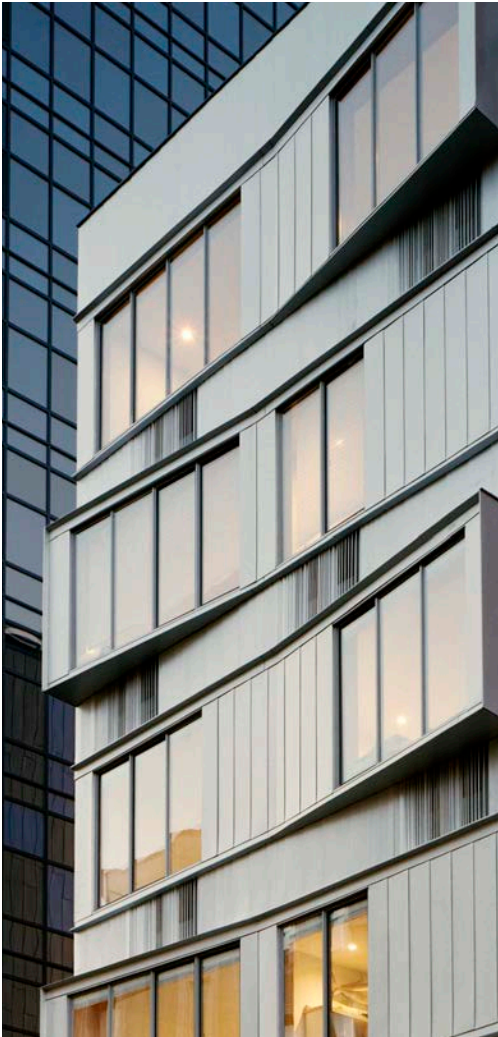
The project's design emerges from a creative interpretation of some of the narrow constraints imposed by zoning and the developer's needs. In a reinterpretation of a bay window, an angled front facade switches back and forth, allowing each floor-through apartment unique views up and down Norfolk Street. From the inside, the bay windows provide deep window seats surrounded by warm hardwood. At the rear of each apartment, the living space extends out to large balconies, which also shift side to side, creating "double height" spaces between balconies that maximize afternoon light. While the apartment plans are identical, these variations allow each apartment to be unique in its light qualities and views to the city. The 'switching' concept extends to the Galvalume® cladding panels, which alternate in direction from floor to floor, creating subtle differences in shadows and reflections. The project's standard PTAC units are disguised with custom AC grilles that are integrated with the cladding panels.

*Drexel Metals was chosen to work with the architect, to provide the custom wall panels and louvers specially crafted for the Switch Building.*



# Switch Building / New York, NY

Switch Gallery has a black hot-rolled steel and glass storefront and canopy that opens completely, allowing for openings to extend onto the sidewalk. At the rear of the gallery, visitors can descend into a double height volume, illuminated by a large skylight. The gallery introduces a larger scale into the Lower East Side's burgeoning art gallery scene, which has been primarily inserting cultural programs into former tenement buildings.



*Custom Wall Panels and Louvers  
created in metal . . . crafted to last.*

**DrexelMetals**   
Roofing Systems + Custom Fabrication

[www.drexelmetals.com](http://www.drexelmetals.com)

1234 Gardiner Lane, Louisville, KY 40213  
888-321-9630 toll-free • 502-690-6174 fax

©2013 Drexel Metals, Inc. All rights reserved. Galvalume® is a registered trademark of BEIC International, Inc. Colors shown represent the actual color as closely as possible. To ensure exact color for final approval, a metal color chip is available. Warranty statements mentioned are outlines: complete Limited Warranty information is available on request. No other warranty expressed or implied is applicable.

# Oriole Park Baseball Stadium



**Project:** Oriole Park at Camden Yards  
**Project Site:** Baltimore, MD

**Met-Fab**  
Premium  
Products

**Play Ball, Orioles!**  
**Drexel Metals Supplies Cornice,**  
**Ledges And Other Metal Products**  
**For Baseball Stadium.**

2012 marked the 20th anniversary of Orioles Park at Camden Yards and the Baltimore Orioles had a newly upgraded ballpark to mark the historic occasion thanks to Drexel Metals. Camden Yards used to be the railroad center of Baltimore, Maryland and has since transformed into a beautiful baseball facility where families can go to on summer afternoons to watch the Orioles play ball.

The Orioles Park is only two blocks from Babe Ruth's birthplace. The park opened on April 6, 1992 and was built on land that was once occupied by Ruth's father's café, which is now center field. Orioles Park quickly became a classic and since 1992 almost all ballparks have been designed in a similar fashion.

Drexel Metals is a supplier of fabricated metal products using the "Camden Green" color. During the 2011-2012 offseason the Orioles installed a new digital out-of-town scoreboard in right field. Aluminum provided by Drexel Metals was used for the coping atop the new scoreboard. Drexel Metals also supplied its own peel and stick waterproofing membrane called

*Drexel Metals was chosen to supply  
Cornice, Ledges And Other Metal Products  
for Orioles Park Baseball Stadium at  
Camden Yards.*



# Oriole Park at Camden Yards / Baltimore



MetShield®, which is designed for the high temperatures under metal roofing. This product is now installed under the new metal roof above the Centerfield Rooftop Deck Bar.

The most unique upgrade is the new Camden Green cornice and ledge around the upper perimeter of the famed Camden Yards Warehouse. The cornice was custom fabricated at Drexel Metals Jessup, MD location and exemplifies Drexel Metals incredible custom craftsmanship capabilities. 24-gauge Galvalume® material was used to create the three-part cornice, which consisted of multiple radius bends and totaled approximately 2,200 linear feet around the perimeter of the building. There is a ledge above the cornice that utilizes the Drexel Metals DMC100SS Historic roof panel system. Drexel Metals DMC150SS Historic is a 1-1/2" high, double lock, standing seam metal roof panel which was also fabricated with 24-gauge Camden Green Galvalume® material.

In addition to the cornice and ledge, Drexel Metals also fabricated and provided the drainage components including conductor heads, gutters, and downspouts. Drexel Metals said it is honored to have been able to upgrade such a famed and historic site.

Drexel Metals is, and continues to be, a company that values its artisan skills and working one on one with architects to meet the most exciting demands of modern structures and the specific requirements of historical restorations and custom trim.



*Cornice, Ledges and other Products  
created in metal . . . crafted to last.*



Roofing Systems + Custom Fabrication

[www.drexelmetals.com](http://www.drexelmetals.com)

1234 Gardiner Lane, Louisville, KY 40213  
888-321-9630 toll-free • 502-690-6174 fax



**Project:** East Lake High School  
**Project Site:** Tarpon Springs, FL



## **New Drexel Metals Roof Puts An End To Problems Plaguing Florida High School.**

Restoring a building to its former glory is a rewarding part of retrofit projects. Drexel Metals Inc. had an opportunity to be part of such an undertaking as the manufacturer of the metal roof system chosen to replace a failed one at East Lake High School in Tarpon Springs, FL.

East Lake High School is one of 17 schools in Pinellas County, FL, serving the communities of Tarpon Springs, East Lake, Palm Harbor, and Oldsmar. It ranked in the top ten percent of all high schools in the state of Florida in 2011 and was one of only two schools in the district to be recognized for academic excellence.

Drexel Metals was excited to be part of the project to give this deserving school a new roof. For this project Drexel Metals used its DMC 175S roof panel in Slate Blue. The color proved an ideal complement to the bright blue Florida sky.

The DMC 175S is Drexel Metals' most popular roof system. It features a 1-3/4" Snap Lock seam. The continuous interlocking system offers designers a concealed fastener and clip application that provides for expansion and contraction.

While the DMC 175's panels and attachment clips are easy to install – offering labor savings when compared to many other types of metal roof systems – the completed roof is engineered to resist hurricane force winds. The system is offered in both steel and aluminum, and is approved for use on Weather Tightness Warranty projects. The forensic architect, Robert Whitcomb of C.B. Goldsmith and Associates Inc., who won an award for the reroof of East Lake High School, chose the DMC 175S roof system because it eliminated the cost of seaming the roof panels. This allowed the contractor, Hennessy Construction Services, to remove or replace individual panels without having to disassemble a standing seam. This allowed greater flexibility when installing and saved time since they did not have to seam the panels.

# East Lake High School / Tarpon Springs, FL

The East Lake High School roof was investigated for metal finish failure ten years ago and was subsequently repainted. The traffic on the panels during the repainting work caused the roof to have leak problems so the roof was put on a list of school roofs to be replaced. This project was not a retrofit design in the normal roofing sense because the contractor reused some of the existing roof materials. They did this by tearing off the existing metal panels and salvaging the existing insulation. They also left the existing metal zee purlins used to support the old roof panels in place. They were able to use less landfill space by recycling 575,000 pounds of steel from the existing roof panels and saved \$60,000 in salvage cost.

Drexel Metals provided the contractor with a portable roll



forming machine so that they could roll form the roof panels on site, which was helpful since most panels were 80' long. Drexel Metals is a leading supplier of equipment, materials and technical support for the Regional Manufacturing of metal roofing. Drexel Metals supplies contractors and distributors with the equipment and materials to fabricate metal roofing panels on demand through a low-cost supply chain versus purchasing prefabricated metal roofing panels.



*Drexel Metals was chosen as winner for FRSA's S.T.A.R. Award*

*"Spotlight Trophy for the Advancement of Roofing"*

*East Lake High School  
Steep Slope Category  
Manufacturing Segment*

*FRSA: Florida Roofing Sheet Metal and Air Conditioning Contractors Association, Inc.*



**Drexel Metals**   
Roofing Systems + Custom Fabrication

[www.drexelmetals.com](http://www.drexelmetals.com)

1234 Gardiner Lane, Louisville, KY 40213  
888-321-9630 toll-free • 502-690-6174 fax



**Project:** Village at Odenton Station  
**Project Site:** Odenton, MD

Drexel Metals played a key part of the creation of the Village at Odenton Station, a new apartment and retail center. This exciting project undoubtedly brought new

challenges that Drexel Metals conquered in order to complete this brilliant new addition to Odenton, MD.

The Village at Odenton Station in Maryland is Anne Arundel County's first transit-oriented, mixed use development. It is comprised of 57,000 square feet of retail and 235 apartments.

The Village at Odenton Station is conveniently located less than two miles from Maryland's largest employer, Fort George G. Meade. About 109,000 people are at Fort Meade on any given day including more than 60,000 Department of Defense and National Security Agents and nearly 3,000 military families that are housed on

base. The Village is also about halfway between Baltimore and Washington, D.C. and is at the heart of the Odenton Town Center.

This project utilized various types of MetFab products including 7" custom box gutters with individual support straps and custom TIG welded outlet sleeves. Each of these components was fabricated out of .040 mill aluminum so that they could be welded and concealed to camouflage the bare finish. Drexel Metals also fabricated custom gutter covers, a two-piece custom cornice fascia that interlocked to form a continuous fascia of metal, and a custom rake cornice. All of the above items were hand cut into inside and outside miters by Drexel Metals seasoned craftsmen. Each item was then fit into a jig and

**Met-Fab**  
Premium  
Products



# Village at Odenton Station / Odenton, MD



pop riveted together. The entire cornice system on the facades was particularly challenging because they had to tie into the brick, siding, and windows of the buildings. This job took approximately 400 sheets (48" x 120") of metal or 8,800 pounds to complete. Many materials and hand cut and crafted miters were needed for this project, which would not have been possible if it weren't for the skill, artistry, and vast experience of Drexel Metals craftsmen.

RCS Construction Services partnered with Drexel Metals to complete The Village, which is comprised of four buildings, which were completed 60 days ahead of schedule. Joe Gretchen, the VP of commercial construction at RCS, said, "We all enjoyed working with Drexel Metals especially since they are a local manufacturer who could provide a great finished product, and when we hit snags, they always tried to accommodate our immediate material needs. This was a very challenging project and we are very happy with the finished systems on these buildings.



RCS could not have had such a successful project without Drexel Metals on this project."

Drexel Metals is, and continues to be, a company that values its artisan skills and working one on one with architects to meet the most exciting

demands of modern structures and the specific requirements of historical restorations and custom trim.

For more information, call 888-321-9630 or visit [www.drexelmetals.com](http://www.drexelmetals.com)



[www.drexelmetals.com](http://www.drexelmetals.com)

1234 Gardiner Lane, Louisville, KY 40213  
888-321-9630 toll-free • 502-690-6174 fax