



# A&EC Guidelines for Metal Roofs

9/24/20

## Related Connestee Falls Rules and Regulations

**Article XVII, paragraph 8.J.3:** Metals roofs must closely match approved roof colors established for Connestee Falls. Matte finish is required. High gloss and semi-gloss finishes are not acceptable.

The A&EC may disapprove the plans for any roof design considered to be inappropriate for or inconsistent with the natural environment of Connestee Falls.

## A&EC Metal Roof Guidelines

To provide a consistent basis for decision making on metal roofs, A&EC has reviewed literature on metal roof reflectance measurement techniques and has selected either of two generally accepted measurements that may be used to judge whether a material is matte: Initial Solar Reflectance (ISR) or Total Solar Reflectance (TSR).

After review of a number of available metal roofing products, the A&EC has chosen an ISR or TSR of .32 or less as a standard for whether a particular product should be judged a matte finish. In addition, some colors with .32 or less, such as blue or bright red, were judged as not compatible with other Connestee approved colors and were excluded from the final color list below.

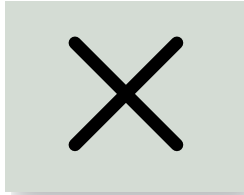
**Policy:** Products from any manufacturer in the range of colors below and meeting the .32 standard may be proposed for a metal roof. The A&EC application must include a sample and the ISR or TSR measurement from the manufacturer. Some companies offer metal roof choices designated as “matte”. These are the preferred choices for ensuring that a metal roof does not distract from the Connestee natural wooded environment, if in the color and reflectance ranges established.

Colors from Sheffield and Union listed below and attached are the approved metal roof colors.

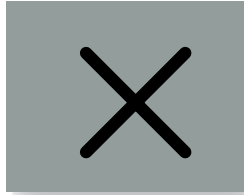
Sheffield	ISR	TSR	Union	ISR	TSR
Evergreen	.26	25	Charcoal Grey	.30	31
Medium Bronze	.30	30	Burnished Slate	.31	32
Antique	.28	27	Evergreen	.26	26
Dark Bronze	.26	24	Burgundy	.25	24
Mansard Brown	.27	27	Cocoa Brown	.28	29
Dark Grey	.32	33	Black	.25	24
Black	.28	27			



## 26 GA. Low Gloss Colors — Selection Guide



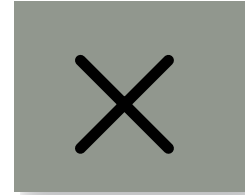
REGAL WHITE



DOVE GRAY



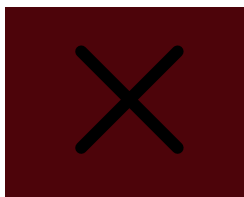
SLATE GRAY



ASH GRAY



DARK GRAY



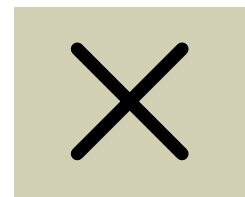
COLONIAL RED



EVERGREEN



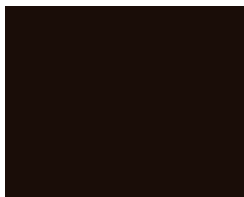
TERRA COTTA



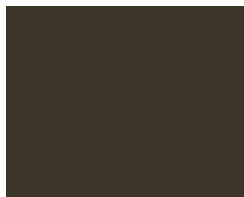
SANDSTONE



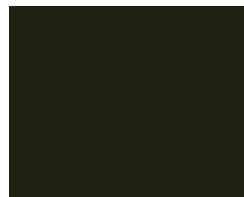
SIERRA TAN



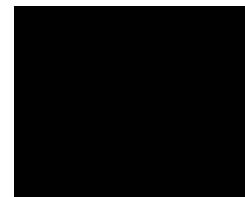
MANSARD BROWN



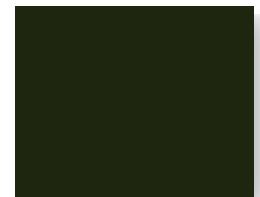
MEDIUM BRONZE



DARK BRONZE



BLACK



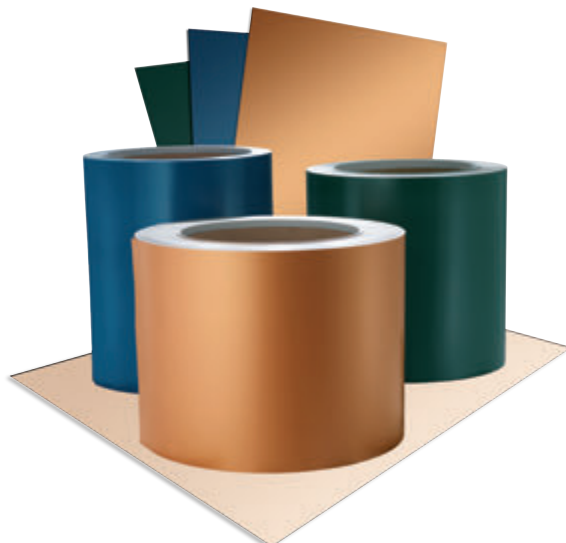
ANTIQUE



**Metallic**  
COPPER \*\*



**Non-Painted**  
ACRYLIC COATED GALVALUME<sup>®</sup>



### COOLR<sup>®</sup> Makes A Roof Cooler!

COOLR<sup>®</sup> is a family of sustainable, energy efficient roofing products comprised of 70% Kynar 500<sup>®</sup> or Hylar 5000<sup>®</sup> pre-painted metal and acrylic coated Galvalume<sup>®</sup>. COOLR<sup>®</sup> is available in a wide variety of colors, gauges, widths and substrates for low and steep slope applications.

### COOLR<sup>®</sup> Is:

- **Highly Reflective**—Available with emissivity as high as 90% and reflectivity exceeding 25%.
- **Exceptionally Durable**—Proven to last over 30 years with minimal maintenance and is offered with a non-prorated warranty for most applications. Paint colors retain 95% of their initial reflectance and emittance over time.
- **Made of Metal That Has Recycled Content & Is Recyclable**—Environmentally friendly, typically having a minimum recycled content of 25%. 100% recyclable at the end of a long, useful life.
- **Available Quickly**—Stocked in volume for fast delivery.

**Note:** For items not stocked in 27.5", customer may be subject to purchasing a 20" drop coil.

- \* Available at a slight price premium.
- \* Copper is a standard gloss product.

Colors shown are matched as accurately as possible, but may vary slightly from finished product. Please contact your representative for more information.

# Certified Laboratory Test Report Summary & Stock Availability Matrix

			ISR	EMI	3 Yr.	SRI	27.5"	40.375"	48.375"
L/S Regal White	★	L	0.66	0.87	0.66	80	●	●	●
L/S Dove Gray	★	L	0.49	0.87	-	56	●	●	●
L/S Slate Gray	★	L	0.40	0.85	0.40	43	●	●	●
L/S Ash Gray	★	L	0.49	0.87	-	56	●	●	●
L/S Dark Gray	★	L	0.32	0.86	0.33	33	●	●	●
L/S Colonial Red	★	-	0.29	0.85	0.27	28	●	●	●
L/S Evergreen	★	-	0.26	0.87	0.26	25	-	●	●
L/S Terra Cotta	★	L	0.37	0.88	0.36	40	●	●	●
L/S Sandstone	★	L	0.60	0.87	-	71	●	●	●
L/S Sierra Tan	★	L	0.29	0.86	0.30	29	●	●	●
L/S Mansard Brown	★	-	0.27	0.87	-	27	-	●	●
L/S Medium Bronze	★	L	0.30	0.86	0.32	30	●	●	●
L/S Dark Bronze	★	-	0.26	0.85	0.25	24	-	●	●
L/S Black	★	-	0.28	0.85	0.27	27	-	●	●
L/S Antique	★	-	0.28	0.85	0.27	27	-	●	●
Copper	★	L	0.49	0.86	0.47	56	-	●	●
Acrylic Coated Galvalume	-	-	0.67	0.14	0.55	56	●	●	●

	Accelerated Weathering ASTM G 23	Salt Spray ASTM B 117	Humidity ASTM D 2247	Formability ASTM G 522	Adhesion ASTM D 3359	Pencil Hardness ASTM D 3363	Specular Gloss ASTM D 523	Impact Resistance ASTM D 2794	Abrasion Resistance ASTM D 968	Tunnel Test ASTM E 84	Acid Resistance ASTM D Procedure 72 (Independent Of Substrate)
Galvalume®	2,000 Hours Chalk: #8 Color: 2AE	2,000 Hours Scribe: 7 1/16" Blisters Field: 10 No Blisters	2,000 Hours Rating: 10 No Blisters	1/8" Mandrel No Cracking No loss of adhesion	No loss of adhesion	HB Minimum	85° = 5-15	3x Metal Thickness in Inch-lb No loss of adhesion	Total Sand = 67 liters Plus or minus 10 liters	Class A Coating	20% Sulfuric Acid 18 hour - No Visible Change

## Notes:

- All of Sheffield's COOLR® metal is painted with a .20 mil primer and .70-.90 mil Top Coat of 70% Kynar 500® or Hylar 5000®. The reverse side has a .20 primer and .30-.40 backer coating.
- For low slope roofing to meet Energy Star requirements, the ISR must be ≥0.65. After 3 years, the solar reflectance must be ≥0.50.
- For steep slope roofing to meet Energy Star requirements, the ISR must be ≥0.25. After 3 years, the solar reflectance must be ≥0.15.
- For low slope roofing to meet LEED 2009 requirements, the SRI must be ≥78.
- For steep slope roofing to meet LEED 2009 requirements, the SRI must be ≥29.
- Low slope is defined as ≤2:12.
- Steep slope is defined as >2:12.
- For items not stocked in 27.5", customer may be subject to purchasing a 20" drop coil.

## Key:

- = Stocked Item
- ★ = Energy Star Compliant
- L = LEED 2009 Compliant
- ISR = Initial Solar Reflectance
- EMI = Emissivity
- SRI = Solar Reflectance Index

Represented on this chart are our most popular, high quality architectural finishes. We are proud to offer PVDF fluoropolymer coatings. These rich and vibrant colors are produced with either Kynar 500® or Hylar 5000® resins, which provides superior color retention, and allows us to offer non-prorated coating warranties for most applications.

We carry an extensive inventory of painted aluminum and Galvalume® steel, as well as, acrylic-coated Galvalume®. Custom color matching and specialty paint systems are available upon request. Your sales representative can supply you with additional information on these and our other products.

Oil canning is an aesthetic issue and is an inherent part of light gauge cold formed metal products. By using coil that has been processed properly, designing for thermal movement, following stringent specifications for installation and proper handling most oil canning can be eliminated. Oil canning is not grounds for coil/panel rejection.

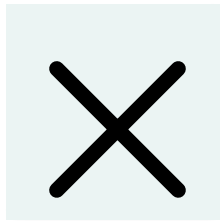
Galvalume® is a registered trademark of BIEC International Inc. | Hylar 5000® is a registered trademark of Solvay Solexis, Inc. | Kynar 500® is a registered trademark belonging to Arkema Inc.



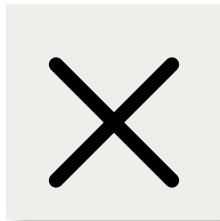
Your Roof. For Life!  
On Time and Complete!™

# Residential/Post Frame Color Chart

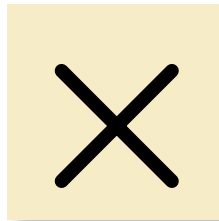
- SMP<sup>✓</sup> Paint System
- 29 & 26 Gauge Galvalume<sup>®</sup> Steel Substrate
- 45-Year Industry Leading, Written Warranty on Painted Products with No Coastal Set Back



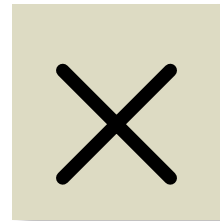
**Arctic White\***  
TSR† = 63%



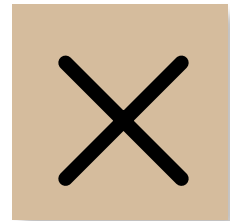
**White**  
TSR = 46%



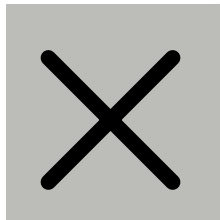
**Ivory**  
TSR = 58%



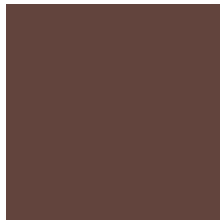
**Light Stone**  
TSR = 51%



**Sahara Tan**  
TSR = 36%



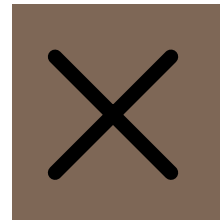
**Pearl Gray**  
TSR = 35%



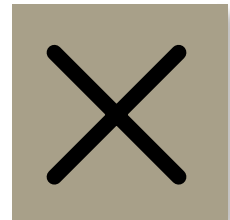
**Cocoa Brown**  
TSR = 29%



**Burnished Slate**  
TSR = 32%



**Light Brown**  
TSR = 36%



**Clay**  
TSR = 32%



**Charcoal Gray**  
TSR = 31%



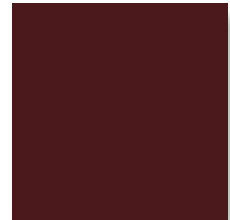
**Black**  
TSR = 25%



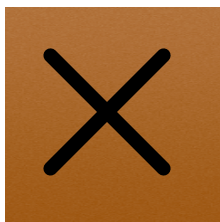
**Patriot Red**  
TSR = 36%



**Barn Red**  
TSR = 32%



**Burgundy**  
TSR = 25%



**Copper Metallic‡**  
TSR = 46%



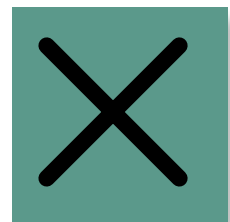
**Gallery Blue**  
TSR = 25%



**Royal Blue**  
TSR = 31%

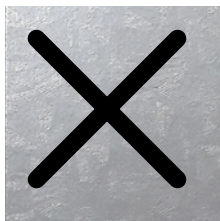


**Evergreen**  
TSR = 26%




**Marine Green**  
TSR = 30%

## Non-Painted



**Acrylic Coated Galvalume**  
TSR = 55%



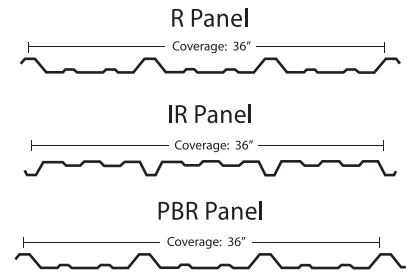
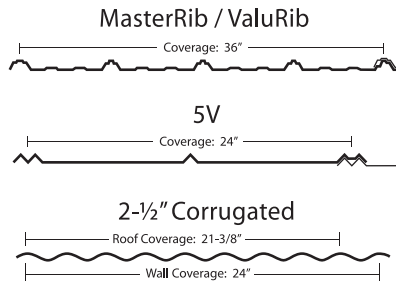
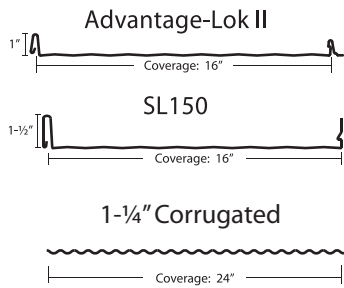
**Denotes Energy Star™ certified high reflectance color which can reduce cooling costs.**

✓ **Union utilizes the most advanced Siliconized Modified Polyester paint system in the industry, based on Akzo Nobel's Ceram-A-Star 1050 technology.**

**Note:** Colors shown have been matched as accurately as possible to actual finish. For exact color match, please request a metal color sample. Availability of colors and materials is subject to change. Most panels are available in bare galvanized or bare galvalume.

† TSR = Total Solar Reflectance. An Energy Star™ certified color must meet the following TSR requirements: 25% initial, 15% after 3 years of exposure testing.

‡ Premium color. To ensure proper color match, orders for metallic colors should be placed so that they come from the same batch.



PANEL	GAUGE	Arctic White*	Barn Red	Black	Burgundy	Burnished Slate	Charcoal Grey	Clay	Cocoa Brown	Copper Metallic	Evergreen	Gallery Blue	Ivory	Light Brown	Light Stone	Marine Green	Patriot Red	Pearl Gray	Royal Blue	Sahara Tan	White	Acrylic Coated Galvalume	
Advantage Lok II	26	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
SL150	26	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
MasterRib	29	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
MasterRib	26	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
<sup>s</sup> ValuRib	29	•																					
5V	29		•							•											•	•	
5V	26	•				•				•	•				•	•				•	•	•	•
1-1/4" Corrugated	29																						•
2-1/2" Corrugated	29		•							•											•	•	•
2-1/2" Corrugated	26	•				•				•	•				•	•				•	•	•	•
R Panel	26	•	•		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
IR Panel	26	•	•		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
PBR Panel	26		•			•	•	•	•	•			•	•			•	•	•	•	•	•	•

\*ValuRib is only offered in Arctic White at the following locations: Yukon, Janesville, Dayton and Scranton. Please see a Union Sales Representative for additional information.

<sup>s</sup>ValuRib colors are not Energy Star certified. Copper is a metallic paint with higher cost than SMP.

## PERFORMANCE DATA

COLOR	INITIAL SOLAR REFLECTANCE	3YR. TOTAL SOLAR REFLECTANCE	INITIAL THERMAL EMITTANCE	SOLAR REFLECTANCE INDEX
Arctic White	0.65	0.63	0.87	78
Barn Red	0.32	0.32	0.87	33
Black	0.25	0.25	0.85	24
Burgundy	0.25	0.25	0.87	24
Burnished Slate	0.31	0.32	0.88	32
Charcoal Gray	0.30	0.31	0.88	31
Clay	0.33	0.32	0.87	35
Cocoa Brown	0.28	0.29	0.89	29
Copper Metallic	0.46	0.46	0.86	52
Evergreen	0.26	0.26	0.88	26
Gallery Blue	0.25	0.25	0.87	24
Ivory	0.60	0.58	0.87	71
Light Brown	0.35	0.36	0.88	38
Light Stone	0.52	0.51	0.87	60
Marine Green	0.30	0.30	0.87	31
Patriot Red	0.35	0.36	0.88	38
Pearl Gray	0.37	0.35	0.87	40
Royal Bue	0.30	0.31	0.87	31
Sahara Tan	0.36	0.36	0.87	39
White	0.56	0.46	0.87	66
Acrylic Coated Galvalume	0.67	0.55	0.14	56

### ENERGY STAR Requirements

Initial Solar Reflectivity  
 Steep Slope Roofs (>2:12) ≥ 0.25  
 Low Slope Roofs (≤2:12) ≥ 0.65  
 3 Year Solar Reflectivity  
 Steep Slope Roofs (>2:12) = 0.15  
 Low Slope Roofs (≤2:12) = 0.50

### LEED 2.2 Requirements

Solar Reflectance Index (SRI)  
 Steep Slope Roofs = ≥29  
 Low Slope Roofs = ≥78

**Note:** Colors shown have been matched as accurately as possible to actual finish. For exact color match, please request a metal color sample. Availability of colors and materials is subject to change. Most panels are available in bare galvanized or bare galvalume.

## Plant Locations:

### Corporate Headquarters\*\*

701 S. King St.  
 Fayetteville, NC 28301  
 888-685-7663

### Vicksburg, MS

1463 Interplex Circle  
 Ceres Industrial Complex  
 Vicksburg, MS 39183  
 888-661-0577

### Morrison, TN\*\*

7747 Manchester Hwy.  
 Morrison, TN 37357  
 931-668-4393

### Dayton, OH

625 N. Third St.  
 Tipp City, OH 45371  
 877-615-9812

### Tifton, GA

3365 US Hwy 41 S.  
 Tifton, GA 31794  
 800-962-9131

### Oklahoma City, OK\*

600 N. Sara Rd. Ste B  
 Yukon, OK 73099  
 866-373-5286

### Orange, VA

12435 James Madison Hwy.  
 Orange, VA 22690  
 800-762-6785

### Scranton, PA\*

100 Keystone Industrial  
 Park Road  
 Suite 2B  
 Dunmore, PA 18512  
 866-695-6455

### Ocala, FL\*\*

490 Oak Rd.  
 Ocala, FL 34472  
 800-331-3584

### Janesville, WI\*\*

3920 Kennedy Rd.  
 Janesville, WI 53545  
 608-563-3226