

- Non Structural Metal Roofing Systems
 - Structural Metal Roofing Systems
 - Curved Panel Systems
 - Wall Panel Systems
 - Soffit Systems
 - Gutter Systems
 - Renewable Energy Systems

Why Choose Englert?

- Since its founding in 1966, Englert has evolved into one of the pre-eminent forces in metal roofing and gutter systems. Englert offers architects and builders the most innovative and advanced solutions that uniquely combine aesthetics and performance. Englert Inc. is widely recognized as the leader in jobsite rollforming, where materials are custom cut and fit on-site, to provide a seamless, high quality product, with far less waste, and at lower costs than pre-formed panels.
- Englert technicians provide parts and service to any portable gutter or roof panel machine anywhere in the world. To meet special requirements, Englert does offer factory formed products through a comprehensive network of authorized independent manufacturers.
- To give the architect nearly limitless creative freedom in colors and finishes, Englert's own in-house continuous paint line offers the lowest minimum quantities in the industry. With our coating expertise and resources, as well as our on-staff specialists, you can expect your Englert roofing system to provide unsurpassed durability throughout the long life of the product. Our dried-in-place pretreatment system allows Englert to provide the most environmentally friendly coating process-eliminating harmful chromates. We can apply an array of coatings including: Energy Star® compliant Kynars®, silicone polyesters, polyesters, plastisols and acrylics. Even better, we can apply these coatings to aluminum, Galvalume®, galvanized, or cold rolled steel.
- Englert offers one of the widest ranges of metal roofing solutions in the industry, with all the roof profiles, finishes, textures, architectural details and structural options your design would require.



Selecting Englert Metal Roof Systems

Aesthetics

- A wide range of seam profiles, panel widths and finishes to create the roof lines you desire.
- Narrow seams or wide batten-type profiles are available in both structural and non-structural systems.
- Optional ribs and striated patterns are also available to articulate the roof lines from ridge to eaves.
- The systems accommodate complex roof configurations, including hips, valleys, dormers and a broad range of pitches.
- Transitions between roof surfaces and other building elements, such as mansards, fascia, siding and soffits, can be cleanly and seamlessly detailed in a variety of profiles.
- Panel systems come in custom widths from 12" to 21".
- Flush seam panels can achieve flat surfaces on fascia walls and soffits.

Finishes

- Our exceptionally broad range of finishes, both custom and standard, can create anything from a natural weathered appearance to bright high-performance, full-strength fluorocarbon colors.

Structural Requirements

- Our 1000 series architectural roof systems are economical, non-structural profiles for application over decking in new construction or over existing roofs in retrofit applications.
- Englert's 2000 series roof systems meet UL and ASTM standards for structural roofing when applied directly over purlins or trusses.

Snap-Lock Versus Mechanical Seams

- Snap-lock systems offer easy, fast installation and uniform, clean-standing seam profiles, especially in transitions between roof surfaces to mansards and fascia. The locking panel profile continuously interlocks with the adjacent panel without mechanical seaming or additional caps. Panels are typically fastened to the substrate with concealed clips that provide clearance for thermal expansion and contraction. These systems have limited structural ratings and require a minimum slope of 3"/12".
- Mechanically-seamed systems are joined with a machine that folds each panel over the adjacent one to form a continuous, watertight seam. These systems are ideal for very low slopes, with pitches as shallow as 1/2"/12", and provide better air and water infiltration protection.

Product Selector

Product Selection Chart

Use this product selector to determine which Englert systems apply to your current project:

Englert System

Englert System	Structural	Architectural detail capability	Tight radius curving capacity	Shallow slope (less than 3°/12")	Narrow seam	Wide seam	Flush seam	Snap-lock seam	Mechanical seam	Good transition between roof and mansard or fascia	UL-90 tested	Florida Building Code Compliant	ASTM water & air infiltration tested	Dade County tested	ASTM E-1592 tested	Weather-tightness warranties	FM Tested
A1000		•			•			•		•	•					•	
A1100		•				•		•			•	•				•	
A1101		•				•		•			•	•				•	
A1300 (1 1/2")		•		•	•				•	•	•	•	•		•	•	
C1300 (1 1/2")		•	•	•	•				•	•	•	•	•	•	•	•	
A1500		•			•			•		•	•					•	
S2000	•	•			•			•		•	•		•	•	•	•	
S2400	•	•	•	•	•				•		•		•		•	•	
C2400	•	•	•	•	•				•		•		•		•	•	
S2500	•	•		•	•				•		•	•	•	•	•	•	•
S3000	•	•		•		•			•		•		•		•	•	•
A4000 (Flush-Wall Panel)		•					•										
B4000 (Flush-Soffit Panel)		•					•										

Contact Englert for specific materials tested, test parameters and limitations of each product before specifying from this chart.

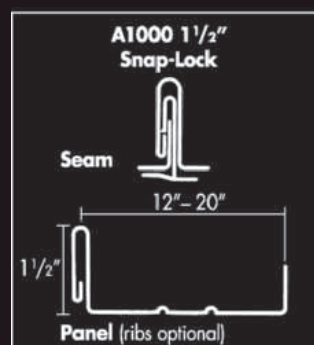
Non Structural Metal Roofing

Englert's 1000 series systems are designed for steep sloped roofs and other exterior surfaces of light commercial and residential projects. Conventional architectural details can be used to provide a smooth transition from roof surfaces to mansards, fascia, walls and soffits. These systems offer economical solutions for installing metal roofing over plywood or metal decking in new construction and over existing shingle roofs in retrofit construction.

A1000—1 1/2" Integral Snap-Lock Panel



The **Englert A1000 profile** is a cost-effective architectural system with concealed clips and fasteners, requiring no mechanical seaming or separate seam caps. The narrow standing seam can be notched and bent to provide a smooth transition from roof to fascia or mansard. Knee caps are applied over the notched seams to create visual continuity.

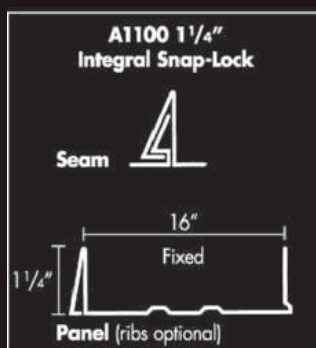


Non Structural Metal Roofing

A1100—1 1/4" Integral Snap-Lock Panel



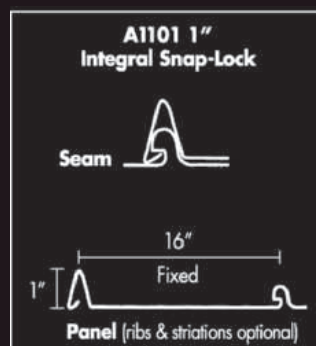
With only a 1 1/4" standing seam, **Englert A1100 snap-lock panels** offer the designer an architectural system for creating clean roof lines with a minimum of shadows and textures.



A1101—1" Integral Snap-Lock Panel



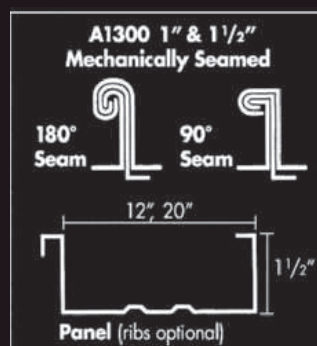
The **Englert A1101 series** panel system combines the clean lines of a low profile architectural system with the unique versatility of a clipless hidden fastener design. Ideal for light duty commercial, residential and mansard/canopy applications on a solid deck.



A1300—1" and 1 1/2" Mechanically Seamed Panel



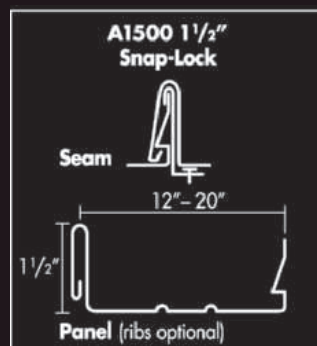
The **Englert A1300 series** offers the same architectural detailing capability as architectural snap-lock panels. Smooth transitions from the roof surfaces to mansards, fascia, walls and soffits—but with the structural strength and weathertightness advantage of a mechanically seamed system.



A1500—1 1/2" Integral Snap-Lock Panel



The **Englert A1500 series** is a 1 1/2" high integral snap-lock panel system comprised of an integral narrow batten cap that snaps over a rigid, continuous interlocking leg to create a rugged yet aesthetically pleasing architectural panel system.



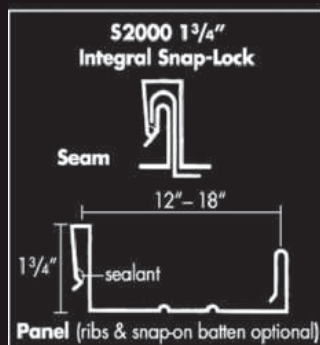
Structural Metal Roofing

Englert offers a full range of structural panel systems with profiles that are designed for architectural-quality details at eaves and other edge conditions. These systems are specifically designed for spanning roof purlins and rafters at various spacings, many with very low minimum slope requirements.

S2000—1 3/4" Mechanically Seamed Panel



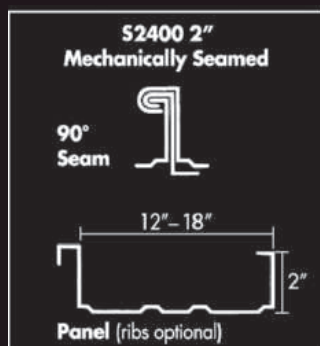
Englert's most popular system, this **integral snap-lock panel system** combines architectural versatility – for cleanly detailed, continuous seam transitions from roof to mansard, fascia, wall panel or soffit – with the dramatically increased spanning and uplift capabilities of a structural system. This system is also available with a snap-on architectural batten.



S2400—2" Mechanically Seamed Panel



Englert offers a structural panel system with a thin, **2" standing seam**. This is one of the strongest mechanically seamed systems. Available in both single-lock and double-lock details for increased spanning capability.

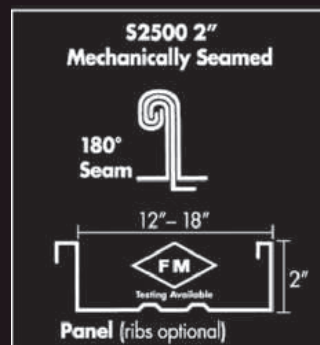


Our structural panels use a hidden fastener system and are mechanically seamed together making them weather-tight. All of these systems can be installed over open framing or over a solid deck. Our structural systems are available in several steel and aluminum gauges and in a wide variety of ULTRA-Cool standard colors.

S2500—2" Mechanically Seamed Panel



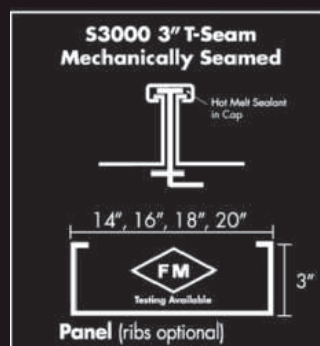
Designed particularly as a structural roof system for pre-engineered buildings, this Armco style panel is the industry's most extensively tested system, with over 50 years of history in the field. **The S2500 profile** incorporates a unique heavy-duty interlock clip that secures the system while allowing thermal expansion and contraction.



S3000—3" T-Seam Mechanically Seamed Panel



Englert's Series 3000 T-Seam is a nominal 3" deep structural roofing system designed to provide excellent structural spanning capabilities as well as insuring a high, weather-tight seam, even in the lowest, longest roof runs found in today's building designs.

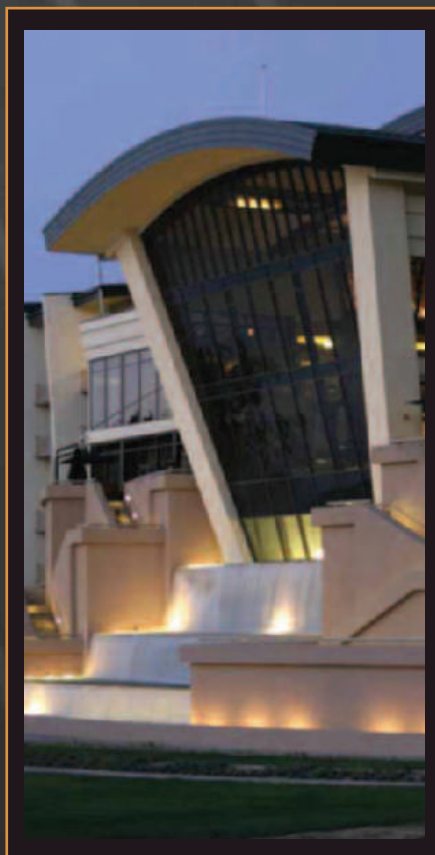


Curved Panels



C1300—1" or 1 1/2"
C2400—2" Mechanically Seamed Panel

Designed to accommodate arched canopies and walkway covers, Englert's curved version of the popular 1300 and 2400 profiles meet the needs of today's architects. The curved 1300 system, at 1 1/2" tall, can be brought down to a minimum radius of 24" in aluminum, or 100" in steel. This system, although rugged in design, requires a solid deck for installation, and carries the 1300 UL-90 listing with proper fastening. All three profiles (1", 1 1/2" and 2") can be locked with a 90-degree fold. The 1" and 1 1/2" profiles can be rolled to a slim 180-degree seam. Panel widths for this application are infinitely adjustable from 12" to 21" in all metals and seam configurations. (The 2" profile widths adjust from 13" to 26".)



Material	Minimum Radius			Convex Curve	Tapered Curve	Elliptical Curve
	1" Seam	1 1/2" Seam	2" Seam			
Aluminum (up to .040")	24"	24"	118"	Yes	Yes	Yes
Copper (up to 20 oz.)	24"	30"	118"	Yes	Yes	Yes
Steel (up to 24 ga.)	60"	100"	118"	Yes	Yes	Yes
Stainless Steel (up to 26 ga.)	120"	160"	118"	Yes	Yes	Yes

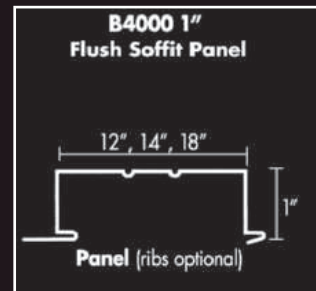
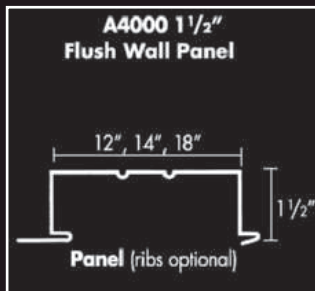
Wall Panels and Soffits



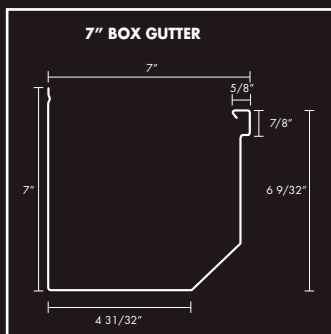
Englert Architectural Flush Soffit and Flush Wall Panel Profiles

Englert's flush interlock panel systems provide consistently smooth surfaces for fascia, soffits and ceilings. Unobtrusive vertical seams with concealed integral fasteners are secured without the need for additional clips or mechanical seaming. Optional stiffeners are available to ensure flat, level planes. The panels may also be detailed in combination with rigid insulation board to produce field insulated siding assemblies.

Englert offers concealed fastener soffit wall panel systems. These products are available in a wide range of colors and gauges, and are factory formed and shipped worldwide in lengths that are available to suit your design needs. Contact Englert for comprehensive load tables and design assistance with any of these profiles.

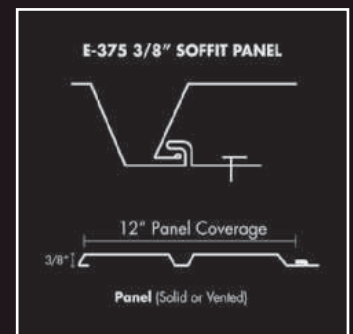


7" Box Gutter



The Englert 7" Box Gutter profile is designed for use in commercial and light industrial applications where an attractive, yet functional, rain carrying system is required. The large 7" trough is capable of handling high volumes of water that are typically found draining from larger commercial roof installations.

E-375 Soffit Panel System



The Englert E-375 Soffit Panel is designed for both commercial and residential applications. Available in solid or perforated the E-375 offers aesthetics, functionality and ease of installation.

Englert Environmental Renewable Energy Solutions



Renewable Solar Energy Systems From Englert

Englert Environmental offers two building integrated photovoltaic (BIPV) standing seam roofing technologies that work in conjunction with its metal roofing systems for delivering solar-generated electricity.

SunNet™ Building Integrated Photovoltaic Systems (BIPV)

Englert SunNet™ BIPV is a state-of-the-art thin-film solar photovoltaic laminate that easily integrates onto the surface of Englert standing seam panels. SunNet BIPV is an ideal fit for curved panel applications and over the apex of a roof, providing architects and designers with a new range of possibilities, all with a powerful, durable, energy generating solution. These systems offer an alternative or addition to polycrystalline photocells and provide 15 – 20% more power generation than other panels even in cloudy, low light conditions – capturing energy from dawn till dusk not



just during peak sunlight hours. When exposed to sunlight, these solar laminates produce electricity. This electricity is then fed back through the electrical meter into the power grid.

Crystalline Solar Energy Systems

Englert photovoltaic crystalline solar systems generate electricity which can be fed back through the electric meter to the power grid as well. These crystalline arrays boost the effectiveness of Englert's UltraCOOL roofing materials by shading the roof to reduce air conditioning loads.



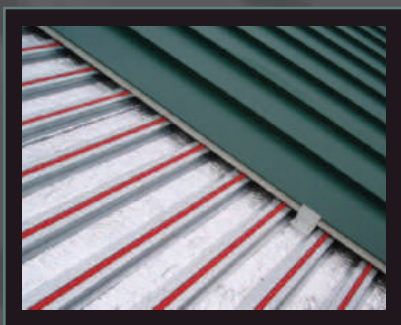
Englert Environmental is a provider of renewable resource solutions where metal roofing

and rainware systems play a pivotal role in capturing solar electric, thermal energy and harvested rainwater. Metal roofing by nature is an ideal platform for solar and renewable energy solutions.

Englert Environmental is a leading provider of solar photovoltaic and solar thermal roofing technology and commercial and residential rainwater harvesting systems that integrate with the world's finest metal roofing and rainware products. Because of its commitment to world leading, best-of-breed technology, products and services, Englert is able to provide the highest productivity, financial savings and return on investment.

Englert Environmental is a leader in the development and implementation of integrated roofing technologies that can cost effectively reduce fossil fuel energy usage and air pollution and better manage our dwindling water resources.

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Solar Thermal Energy Systems

Englert Environmental also offers an integrated solar thermal energy system mounted under the Englert standing

seam metal roofing panels which act as a component of the thermal system, radiating and providing heat to a grid work of purlins which hold and heat a water/glycol mixture that is circulated through cross-linked polyethylene tubing. Heat from the glycol mixture is cycled through conventional heat transfer and distribution systems, offsetting the need for fossil fuels and electricity used for heating domestic hot water. The system can be reversed in wintertime, pumping the hot glycol mixture back to the roof area where it can be used to melt snow.

When used in conjunction with integrated technologies like Englert SunNet BIPV or our Crystalline arrays this solar thermal system can reduce homeowner energy bills from 20 – 80% a year.

Rainwater Harvesting Systems

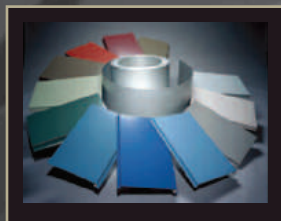
Population continues to grow in America but water resources in many areas are finite and engineers and architects must come up with new solutions to meet demands. Englert offers a solution that integrates its



roofing and rainware products with the most advanced rainwater harvesting systems in the country today. The Englert Rainwater Harvesting System integrates Englert's Kynar-coated UltraCool standing seam metal roof system, a choice of several extremely effective leaf protection systems and any one of Englert's residential or commercial rainwater harvesting systems that can capture water for a variety of non-potable uses including landscape irrigation, car washing and waste disposal. No longer must building professionals and homeowners gather components from different resources. Now they can order a single system from a single source with professional technical service support for installation. Englert also teams with large commercial builders and architects to provide systems for educational, government and retail applications.

Whether the project be solar or rainwater harvesting, Englert gets an understanding of what an architect or builder wishes to achieve, conducts an audit to determine if the structure is suitable for a resource recovery system and prepares a detailed proposal for a system including government and utility rebates and all required building and other permits.

Coatings and Technology



Englert's in-house continuous coil coating line processes product in five basic steps. The base metal is cleaned in an alkaline bath, rinsed with hot water, and chemically pretreated using a dried-in-place pretreatment. Next, a

primer is applied, and then baked on, followed by an oven cured top coat.

Typical substrates coated are aluminum, hot dipped galvanized steel, Galvalume®, and cold rolled steel. Coatings that can be applied are acrylics, polyesters, plastisol, siliconized polyesters, full strength 70% Kynar 500®/Hylar 5000® fluorocarbons. Finishes can be applied to either the top side or both sides of the substrate.

Englert's coil coating line is equipped with quick change heads, so color changes can be accomplished without line shutdown, facilitating the coating of a wide range of finishes in minimum quantities.

Englert's in-house paint line also has the ability to apply a thick film Kynar based paint system that is capable of withstanding 100 liters plus of falling sand as required in many government specifications.

Custom Colors

Englert offers a wide range of custom colors with short lead times and low minimum order requirements depending on the type of substrate. Englert can match the color of virtually any material, including brick, wood and fabric.

Perma Color 3500/PermaMetallics 3500

These low gloss ULTRA-Cool Kynar coatings are comprised of .7 to .9 mil full strength 70% Kynar 500®/Hylar 5000® fluorocarbon (Polyvinylidene fluoride PVDF) coating over a urethane primer of .2 to .3 mil on the finish side. Both carry a 35 year paint finish warranty. (The reverse side consists of a primer and a wash coat.)

ULTRA-Cool™ is state-of-the-art when it comes to energy-efficient metal roofing. Using BASF's ULTRA-Cool™ coatings, ULTRA-Cool™ colors meet Energy Star's® specs for Initial Solar Reflectance for Cool Roofs and not only saves energy but money as well because:

- Heat is reflected away from the building
- Smog is reduced when environmental temperatures are reduced
- Energy costs are saved because of cooler interior spaces
- Life expectancy of the roof is increased due to less expansion and contraction
- Monetary incentives are increasingly being offered for switching to reflective roofing products
- They meet the LEED® 2.2 Solar Reflective Index

Englert's PermaMetallics 2000

The following colors are offered in medium gloss range: Metallic Copper (non-aging), Preweathered Galvalume®, and Champagne. All three colors come with a 30 year paint finish warranty and are comprised of a .8 to .9 mil full strength, 70% Kynar 500®/Hylar 5000® fluorocarbon (Polyvinylidene fluoride PVDF) coating over a urethane primer of .2 to .3 mil on the finish side, with primer and a wash coat on the reverse side.

Galvalume-Plus®

Englert now offers the cutting edge in metal roof technology – a premium steel product known as Galvalume-Plus®. This product has the advantage of an acrylic coating to reduce mill finish discoloration and uneven weathering. This metal is available as a new hi-tech solution to standard uncoated steel.

Texturing

Englert has the capability to provide several textured effects in its various roof systems. Stucco embossing, the most popular, lends a unique patterned appearance greatly diminishing glare and unevenness in formed metal panels.

Striating

Striating is a process of adding light vertical lines to the broad face of the metal roof panels at the last stage of rollforming. This process induces a shadow form effect. Combined with our low gloss Kynar coating it helps reduce oil canning, giving the system a smooth, linear appearance.

Oil-Canning

The roll forming process can sometimes result in inherent surface unevenness. This is referred to as "oil-canning". This condition is also caused by thermal expansion and contraction, dark colors, high gloss finishes and uneven substrate. "Oil-canning" in and of itself is not sufficient cause for material rejection.

Kynar 500® is a registered trademark of Atofina Chemicals Inc.
Hylar 5000® is a registered trademark of Ausimont USA Inc.
Galvalume® and Galvalume Plus® are registered trademarks of BIEC Industries Inc.
ULTRA-Cool™ is a trademark of the BASF Corp.

Englert And LEED: Perfect Together



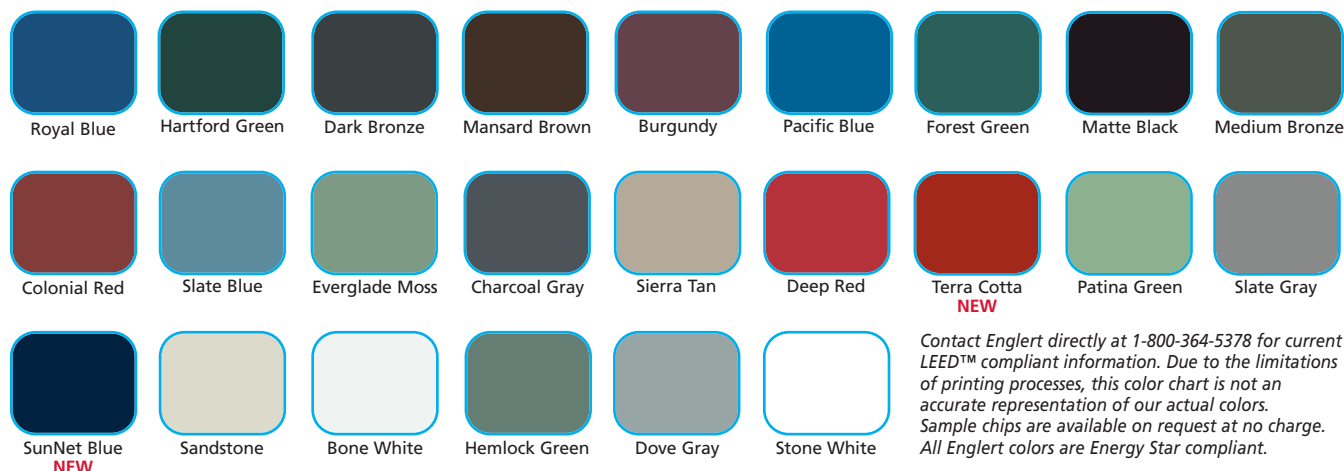
Englert metal roofing products contribute significantly to the sustainable building movement. The metal and ULTRA-Cool™ coatings in every Englert metal roof provide the energy efficiency, high recycled content and total recyclability necessary to qualify for points in the U.S. Green Building Council's LEED® (Leadership in Energy and Environmental Design) program. As an active member of the U.S. Green Building Council, we were one of the first roofing manufacturers in the

world to offer our customers an ULTRA-Cool™ roofing product. We have worked closely with renewable energy companies to manufacture metal roofing products that can conserve and recycle energy and water for a better environment.

An Englert metal roof presents architects and builders with the capability to collect more than a dozen credits in designing a LEED® accredited project. Our coatings have both the high reflectance and high emittance necessary to meet LEED® requirements for cool roofing. An Englert steel or aluminum standing seam roof qualifies for LEED® credit requirements for recycled content and recyclability. Our metal roofs are excellent for the recovery and reuse of non-potable water, an important factor in earning LEED® water efficiency credits. An Englert metal roof provides both the critical platform and the shelter for the new rooftop solar photovoltaic and thermal technologies that earn LEED® credits for energy efficiency.

Best of all, an Englert metal roof provides strength and versatility, is maintenance free and comes in dozens of standard and custom ULTRA-Cool™ colors to fit your personal preference.

PermaColor 3500—Full Strength 70% Kynar 500®/Hylar 5000®



*PermaMetallics 2000



Mill Finish



**PermaMetallics 3500



*These are premium priced paint systems that carry a 30 year paint finish warranty.

**These are premium priced paint systems that carry a 35 year paint finish warranty.

For the Architect



At Englert, we understand that the responsibility for delivering the best roofing solution for your client's new building or renovation is ours. Beyond our extensive line of architectural and structural roofing products and services, we also offer you the essential roofing information you need for an optimum roof design.

Based upon an understanding of the building requirements, we work with you and your contractor to properly prepare roofing specifications that meet your client's needs and budget. Englert is your roofing resource, providing state-of-the-art roofing information to architects and specifiers throughout the United States.

Our fully trained staff of architectural representatives and engineers is available to make sure your roofing projects run smoothly. We provide design professionals like you with services that make your lives easier, from education to spec development. With a variety of AIA registered programs to choose from, we offer architects the specific information they need about metal roofing materials and components as well as a focus on sound installation techniques to optimize a project and minimize architectural liabilities.

Englert AIA Accredited Seminars

- E101: Architectural and Structural Painted Metal Roof Systems
- E102: Best Practices for Metal Roof in a High Wind and Hurricane Environment
- E103: Architectural and Structural Re-Roofing – Metal as a Solution
- E104: Metal Roof Coatings: 50 Years of Development
- E105: Metal Roofing And the Environment: Staying On Top For The Future

Each of our educational programs offers one HS&W Learning Unit. And our team of architectural representatives is available to present these seminars at your office or in your local area upon request. All of our metal roofing profiles and components are available on ARCAT SpecWizard™, guiding you through the selection and design of a metal roof. It allows you to assemble a specification in the CSI 3-part Format, based on the decisions you made when selecting and configuring the product. You can then view, print and/or download the specification.

We are a member of the U.S. Green Building Council. Englert standing seam products have been incorporated in both commercial and residential LEED®-certified projects. And our technical and advisory staffs have authored numerous articles on metal roofing's contribution to the sustainable building movement including its energy efficiency, high recycled content, total recyclability, water efficiency and energy and atmosphere LEED® credit programs.

We also write "Peak Ideas," a periodic newsletter for Architects that focuses on state of the art issues and trends affecting metal roofing and design such as high wind and hurricane, solar and thermal energy technology, color and lighting.

