

SUSTAINABLE METAL COATINGS

OUR COMMITMENT TO YOU



SHERWIN-WILLIAMS®
Coil Coatings



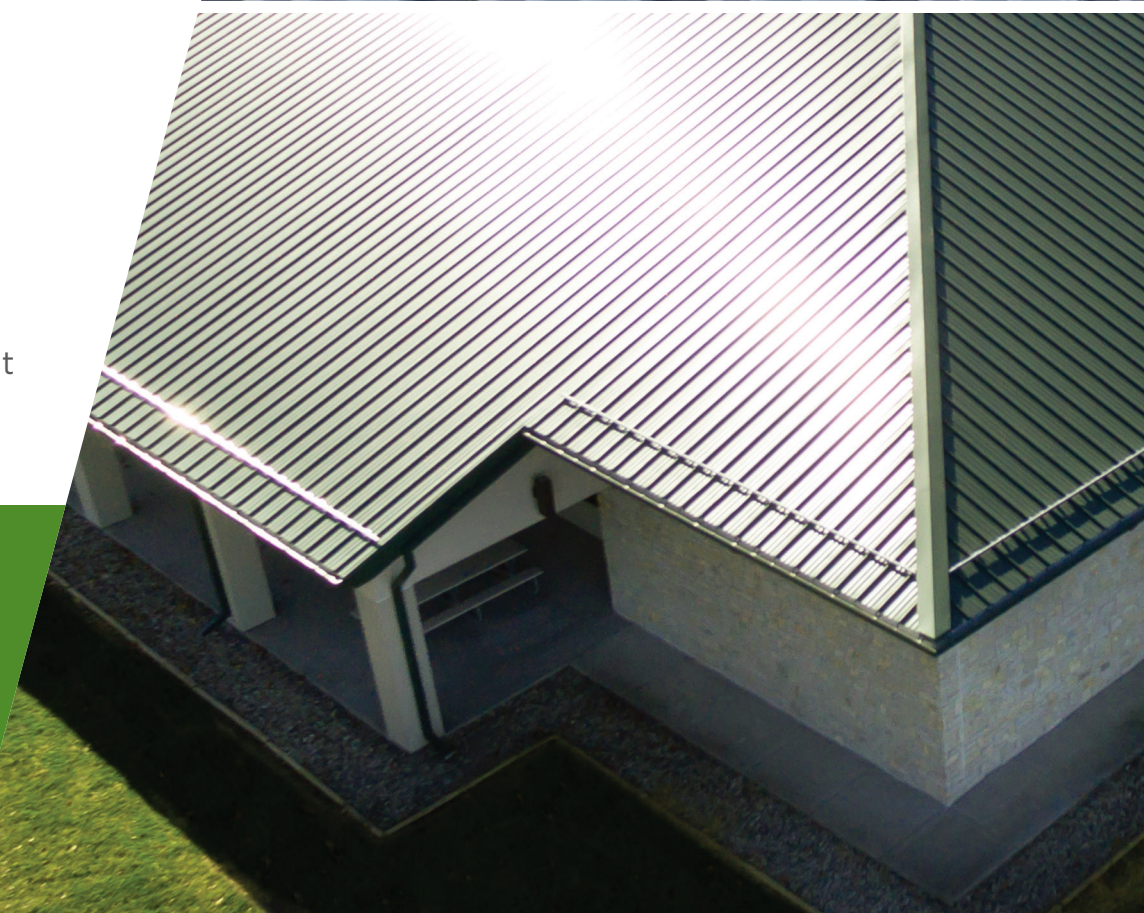
SETTING THE STANDARD

While Sherwin-Williams offers unlimited colors, green is our favorite. As a global leader of coatings, Sherwin-Williams sets the bar for an entire industry – a responsibility that we take quite seriously.

Incorporating best practices and using quality materials has been part of our coatings culture and innovation for more than 150 years. Today those same values remain at the center of everything we do. Sherwin-Williams Coil Coatings believes in the importance of good stewardship of our planet. We are leading the way creating sustainable products and manufacturing processes to ensure a better, cleaner tomorrow. Here are just a few ways in which we make a difference:

- Decreasing energy consumption
- Offering material transparency
- Using biorenewable and recycled materials
- Increasing durability

By partnering with Sherwin-Williams Coil Coatings, you can achieve green and sustainable status – and can do so without sacrificing performance.



North America leads the world in demand for green building materials, accounting for 40% of the total market share.

TAKING INITIATIVE

When you design with sustainability in mind, it is crucial to use products and suppliers that offer you the resources and solutions to help you meet your goals. At Sherwin-Williams Coil Coatings, we exceed expectations by working directly with our customers to help their projects meet or exceed the sustainability requirements of national and global initiatives.

LOWERING ENERGY COSTS

Sherwin-Williams Coil Coatings offers cool coating technologies that create more energy-efficient metal building products and help mitigate the urban heat island effect. Direct sunlight and heat are easily absorbed by dry, exposed man-made structures, which increases surface temperature and results in higher energy costs. Cool metal roofing can offset this effect with Sherwin-Williams Solar Reflective (SR) coatings. These coatings reflect UV rays, keeping the surface of the roof cooler and reducing the amount of heat transferred into the structure - resulting in decreased energy consumption needed to cool the building.

THE MATERIAL TRANSPARENCY YOU NEED

Continual changes in environmental regulations, industry and customer expectations affect all aspects of a building. Sherwin-Williams Coil Coatings works to formulate coatings with the most effective materials content to protect your buildings and future generations. Our chemists are dedicated to creating the most effective product solutions that provide a sustainable option to our standard coating systems. We offer material transparency for our Fluropon® Pure coating - disclosing content down to the 100ppm (parts per million) and chemical makeup - to show compliance with Living Building Challenge and LEED v4.1 requirements.



The term “heat island” is used to describe built-up urban areas that are hotter than their surrounding rural areas. The urban heat island effect is common to cities in industrialized nations where the outside temperature is 5-10°F hotter than outlying areas.

KEEPING IT COOL

COOL METAL ROOFING

A cool metal roof reflects and emits the sun's heat back to the sky instead of absorbing and conducting it to the building below. "Coolness" is measured by two properties, solar reflectance (SR) and thermal emittance (TE). Both properties are measured from 0 to 1 and the higher value, the "cooler" the roof. Solar Reflectance Index (SRI) calculates these two values (solar reflectance and thermal emittance) to determine the roof's ability to reject solar heat

Sherwin-Williams Coil Coatings offers coatings that contain solar reflective (SR) pigments that have been altered both physically and chemically to reflect infrared radiation while still absorbing the same amount of visible light. The result is that both the coating and the metal roof stay cooler. These environmentally friendly coatings are engineered to lower energy costs without sacrificing durability, performance and beauty that our customers have come to expect.

Our solar reflective "cool" coatings are available in a wide variety of formula technologies and energy-efficient colors that meet rigorous LEED, ENERGY STAR and Cool Roof Rating Council (CRRC) requirements.

70% PVDF

- Fluorpon®
- Fluorothane®

SMP

- WeatherXL™
- WeatherXL™ Crinkle Finish

ENERGY STAR requires SR testing of both new and aged (3 years) roof products. The SRI is used to determine compliance with LEED's heat island reduction credit.

SOLAR REFLECTANCE REQUIREMENTS FOR ENERGY STAR

ROOF TYPE	SLOPE	INITIAL SR	3 YR. SR
Low-Sloped	≤ 2 : 12	≤ 0.65	≤ 0.50
Steep-Sloped	> 2 : 12	≤ 0.25	≤ 0.15

HEAT ISLAND REDUCTION SOLAR REFLECTANCE INDEX VALUE FOR LEED

ROOF TYPE	SLOPE	INITIAL SRI	3 YR. SRI
Low-Sloped	≤ 2 : 12	82	64
Steep-Sloped	> 2 : 12	39	32

*Typical metal roof application is steep-sloped.



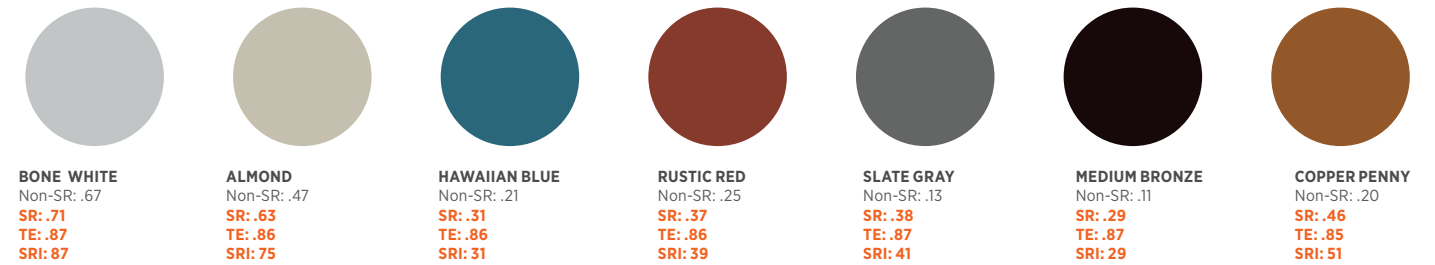
COOL METAL ROOF BENEFIT: LOWER ENERGY COSTS

*When asphalt roofs are converted to prepainted cool metal roofs, energy costs can decrease by up to 20%.

*Oak Ridge National Laboratory

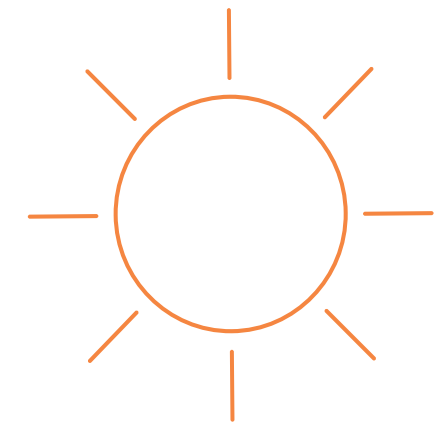
STANDARD VS. SOLAR REFLECTIVE PIGMENTATION VALUES

Lighter surfaces are cooler than darker surfaces. Solar reflective pigments can help darker colors keep a surface cooler.



WHAT COLORS ARE AVAILABLE?

Sherwin-Williams Coil Coatings offers the largest color palette in the industry. SR coatings are available in over a thousand color choices, including white to black and most color in between – all with delivering you the highest SR values for greater energy savings. Visit the ENERGY STAR and CRRC websites to find a list of Sherwin-Williams colors that meet these certifications.



SR

SOLAR REFLECTANCE

The ability to reflect a percentage of solar radiation from the surface back into the atmosphere.

SRI

SOLAR REFLECTANCE INDEX

A calculation method using solar reflectance and thermal emittance values to determine the roof's ability to reject solar heat.

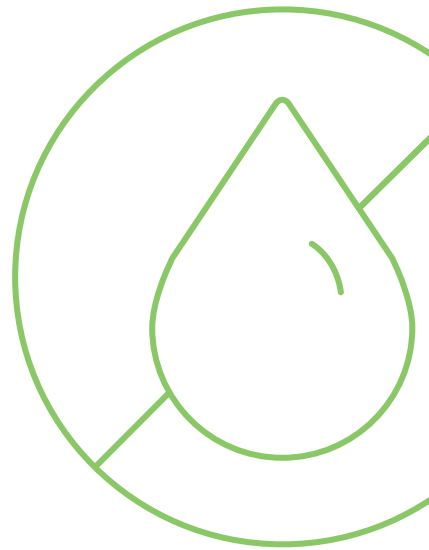
TE

THERMAL EMITTANCE

The ability to radiate a percentage of absorbed solar energy (heat) back into the atmosphere.



BUILDING FOR THE FUTURE WITH FLUROPON[®] PURE



Sherwin-Williams Coil Coatings doesn't only believe in protecting your buildings. We also believe it's our responsibility to help future generations. Designed with the environment and next generation in mind, Fluropon Pure provides material transparency by disclosing the ingredients in the product. As such, Fluropon Pure meets LEED v4.1 and the Living Building Challenge (LBC) Declare programs requirements. Fluropon Pure is the **first and only** Red List free coating when applied to the substrate, which enables our customers to meet the Red List imperative under LBC. This coating system eliminates the following ingredients without compromising performance to meet the certification requirements above:

- PFOA
- Hexavalent Chromium
- Lead
- Phthalates

Fluropon Pure is the next generation of coatings created with health and safety top-of-mind. Through sustainable coatings innovation, Sherwin-Williams Coil Coatings is making our planet a priority.

THE SUSTAINABLE COATING YOU WANT

Fluropon coatings are our flagship product. As part of the Fluropon family, Fluropon Pure coil and extrusion coatings are backed by the same trusted warranty that you've come to expect from the Fluropon name.

Fluropon Pure may be applied across a wide range of materials including Galvalume[®], aluminum and hot-dip galvanized (HDG) steel substrates. It's ideal for projects trying to meet LEED and Living Building Challenge program requirements and anywhere you may desire or require a sustainable product.

SOLAR REFLECTANCE

Fluropon Pure can also contain solar reflective pigments, which reflect UV rays, mitigate the heat island effect and decreasing the structure's energy use.

FLUROPON PURE REQUIREMENTS

It is important for Sherwin-Williams to work with your coil coater and extrusion applicator to successfully apply Fluropon Pure. We will provide the technical information and support they need. The Fluropon Pure specification process is simple.

- First select a color for inspiration and contact your Sherwin-Williams Coil Coatings representative to provide a Fluropon Pure color sample.
- Once the color is selected, your representative can work with you to provide a list of approved coaters (coil coatings) or applicators (extrusion coatings) that apply Fluropon Pure, so you have assurance that the end result will be successful.

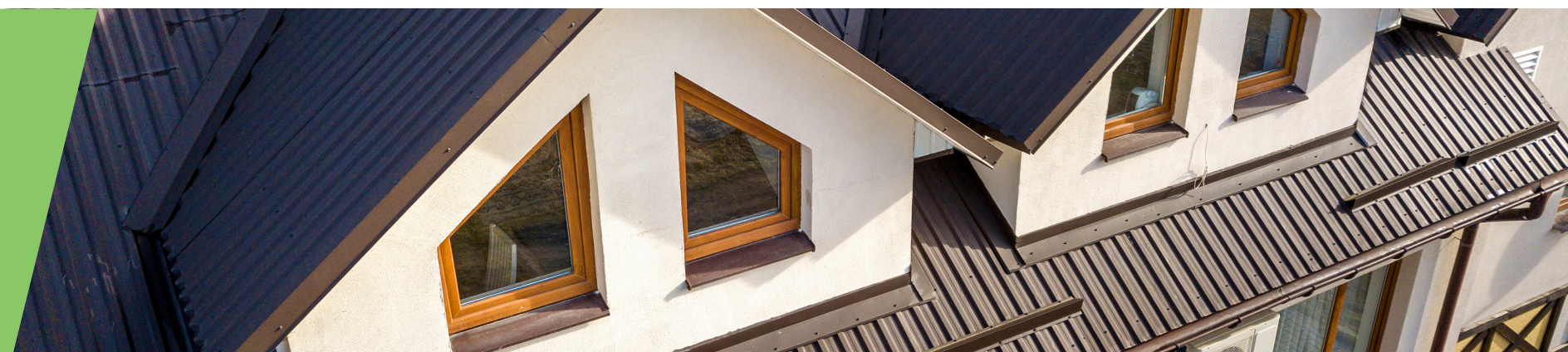
The coating process to apply Fluropon Pure is unique and requires strict controls to mitigate transfer between standard formulations, such as Fluropon, and red list free* formulations, such as Fluropon Pure. Each of the following items need to comply with Sherwin-Williams Coil Coatings instructions:

- Apply the coating on Galvalume[®], aluminum and hot-dip galvanized (HDG) steel substrate
- Clean the surface of the substrate to ensure it is free from impurities such as dirt, debris, and mill oils
- Use approved non-chrome pretreatment
- For the Fluropon Pure coil and extrusion coating systems, use a non-chrome primer, topcoat and backer (backer only for coil coatings as defined by the Sherwin-Williams Coil Coatings)
- Other instructions as designated by Sherwin-Williams Coil Coatings to ensure LBC compliance

*When applied to a substrate



Fluropon Pure is the **first and only** architectural metal coating that enables our customers to participate in Living Building Challenge projects.



WE BELIEVE IN THE HONESTY OF MATERIALS

ACHIEVING COMPLIANCE WITH METAL COATINGS



LEED CREDITS

LEED (Leadership in Energy and Environmental Design) is an environmentally focused verification program by the USGBC (U.S. Green Building Council). From design to construction and operations to maintenance, every aspect of a building's life cycle is analyzed to the most up-to-date environmental standards.

Metal components painted with Sherwin-Williams Coil Coatings Solar Reflective and/or Fluropon® Pure coatings can contribute to achieving the following LEED points.

MATERIALS AND RESOURCES (MR)

- Building product disclosure and optimization – material ingredients (Health Product Declarations (HPD), a product transparency report, and Declare Labels are used to achieve credit)
- Building product disclosure and optimization – Environmental Product Declarations (EPD)*
- Building life cycle impact reduction

SUSTAINABLE SITES (SS)

- Heat island reduction, roof

WHAT IS A HEALTH PRODUCT DECLARATION?

A Health Product Declaration is part of LEED v4.1 material transparency. An HPD discloses a material's contents and associated health information. Material composition must be reported down to 100 ppm (parts per million) in order to qualify for LEED. The function of the substance and any information regarding impurities or residuals is also reported. Sherwin-Williams Coil Coatings has Health Product Declarations available for Fluropon Pure coil and extrusion coatings.

*Because coatings are an ingredient to the end product, only an HPD declaration can be given. However, once the coating is applied to the substrate, the Manufacturer providing the end product can provide an EPD.

LIVING BUILDING CHALLENGE COMPLIANCE

Managed by the International Living Future Institute (ILFI), the Living Building Challenge (LBC) is a sustainable program with rigorous performance standards for built materials, that uses Declare Labels (product transparency labels) to certify products. This architectural program, while similar to LEED in its overall goal of sustainability, is more holistic in its approach. The LBC program consists of seven 'Petals,' which are mandatory for projects seeking certification under the Challenge. Certification requires actual, rather than anticipated performance demonstrated over 12 consecutive months. Fluropon Pure, by Sherwin-Williams Coil Coatings, meets the Red List Free imperative under the 'Materials' petal for the LBC and because it is an ingredient to the end product.

Fluropon Pure, as a coating, is a Red List Compliant ingredient due to proprietary material. Upon application to the substrate, the ingredient PPM (parts per million) are reduced by total volume. As a result, the End Product is classified as Red List Free, which qualifies the coating for use in LEED v4.1 and the Living Building Challenge.

WHAT IS A DECLARE LABEL?

A Declare Label addresses the material transparency requirements of LEED v4.1 and the Living Building Challenge. It is like a nutritional label for a product, which answers where a product came from, what it is made of, and where it goes at the end of its life. Sherwin-Williams Coil Coatings has Declare Labels available for Fluropon Pure for coil and extrusion coatings.

Sherwin-Williams Coil Coatings will work with you to provide the technical information you need to support your sustainable building practices and help you in meeting your green building standards.



Sherwin-Williams Coil Coatings will work directly with your end product manufacturer to supply the information needed for an EPD. Contact us today to discuss your next LEED or LBC project requirements.



HOW TO SPECIFY LEED AND LBC COMPLIANT COATINGS

When you design with sustainability in mind, either for a program or the goal to be more environmentally friendly, we have the coating that meets your needs. Your Sherwin-Williams Coil Coatings representative can assist you with the specification information required, for LEED or Living Building Challenge, and any color samples requests for your project. We will make sure that the coating meets the performance and aesthetic parameters needed to meet the program's standards.

INFORMATIONAL SITES

- LEED: usgbc.org/leed
- International Living Future Institute (IFLI) & Living Building Challenge (LBC): living-future.org
- ENERGY STAR: energystar.gov/productfinder/product/certified-roof-products
- CRRC: coolroofs.org
- Sustainable Minds: sustainableminds.com/showroom/sherwin-williams-coatings
- Metal Roofing Alliance (MRA): metalroofing.com



SELECT A COLOR

A Sherwin-Williams Coil Coating representative will work directly with you to get your color inspiration matched in a formulation that meets LEED or the LBC requirements you are trying to achieve and a color sample will be provided.

CHOOSE A COATER/APPLICATOR

When specifying Fluropon Pure, your representative can work with you to provide a list of approved coaters (coil coatings) or applicators (extrusion coatings) that apply Fluropon Pure coatings, so you have assurance that the end result will be successful.

FILL OUT LEED & LBC DOCUMENTATION

HEAT ISLAND REDUCTION: SOLAR REFLECTANCE

- Use metal roofing materials with a solar reflectance index (SRI) equal to or greater than the values in the table on page 5 for a minimum of 75% of the roof surface.
- Certification of SRI values will be provided by Sherwin-Williams or use certifications completed for specific color on CRRC or ENERGY STAR websites.

Use the Sherwin-Williams Coil Coatings material disclosure form as part of the documentation process if the coating is part of LEED v4.1 or the LBC requirements.

RED LIST FREE

- LEED documentation for coatings, first request the ingredient list document (Health Product Declaration or Declare Label). Then complete your LEED documentation forms and submit it to LEED.
- LBC Documentation for coatings, first request the ingredient documentation for the coating system. Complete the LBC documentation and submit it to LBC.
 - To request "Red List free" documentation, include the following:
 - Metal substrate
 - Pre-treat
 - Coating system (coil or extrusion)
 - Information above can be provided by the metal manufacturer, the pre-treatment supplier and coater and the coating system manufacturer.



THE ADVANTAGE OF USING METAL

WHY METAL MATTERS

Metal offers amazing opportunities when it comes to design. It's not only provides long-term durability and versatility, but the medium also provides the artistic freedom to create a dynamic facade through color. Metal can be formed into various shapes and profiles and with unlimited options for color and effects, it's the ultimate answer for performance and aesthetics. Metal is a smart material choice, it contains recycled content and is recyclable. In addition, metal has a long life expectancy of 50-60 years, producing extremely low life cycle costs.

SUSTAINABLE COATING PROCESS: THE FACT ABOUT FACTORY APPLIED FINISHES

Due to the highly-controlled factory applied coating process, the volatile organic compounds, also known as VOCs, are captured as they burn off during baking, and then recycled back into the system providing heat for the coater's and applicators oven. Less heat is required for manufacturing – reducing harmful emissions into the environment while saving energy at the same time.

SOLAR INITIATIVES

Solar power is fast gaining popularity as a source of renewable energy. Which has brought on an increase in sustainable initiatives that are requiring the use of alternative energy with the installation of solar panels. A few examples include:

- **California Energy Code Title 24:** Requires the use of solar power on new construction of single and multifamily homes under three stories high.
- **St. Louis Solar Roof Mandate:** Passed a green roof resolution, which specifies that roofs on new commercial and residential buildings must be solar ready.

Metal roofs are the best roof material to attached solar panels to, much more so than conventional roofing materials. With the passing of legislation across the country mandating the use of solar panels, metal roofs can be that aesthetic and performance solution to meet your needs. Here are several reasons why:

- **Longevity:** Unlike asphalt roofs with the average longevity of 20 years, metal can last 50 to 60 years. On average, solar panels can last 25-30 years.
- **Energy Efficiency:** Metal roofs that are pre-painted with solar reflective (SR) coatings keep the structure cooler, saving on energy costs. The combination of solar reflective metal roof and solar panels can enable a structure to attain higher levels of energy efficiency.
- **Ease of Installation:** A standing-seam metal roof is the easiest type of roof to install solar panels on as you install clamps on the seams to set the base for the racking that will hold up the solar panels.

Having a roof with a longer lifespan will eliminate additional expenses associated with having to remove and reinstall solar panels during a roof replacement. Overall, metal is durable, energy-efficient, cost efficient and sustainable for your building projects.



When coated with high-performance Sherwin-Williams Coil Coatings, metal roofs can last 50 to 60 years, which is up to three times longer than asphalt shingles.

BIORENEWABLES AND RECYCLED MATERIALS

We take our responsibility to the environment very seriously; we are always working to incorporate the best practices and materials into our coatings – while setting an example for the entire industry.

As environmental regulations continually change and become more complex in all aspects of a building, we are making it our responsibility to always look ahead. We continually research new and innovative approaches to sustainability, incorporating our advancements into coatings solutions that lessen the burden of compliance on our customers. This also serves to eliminate waste and broaden our supply chain, further enhancing our capabilities.

Today we have advanced the use of nondepletable, naturally replenishable and recycled materials with extraordinary results. In fact, we patented methods behind the technology. We were the first to use biorenewable materials that remains a part of the final coated metal building product by creating a heavy-metal free resin that doesn't burn off during the curing process. We are the first to offer a biorenewable polyester resin system for both interior and exterior coil applications. We also incorporate renewable materials into our products; for example, recovered vegetable oil can be used as a highly effective substitute for fossil fuels.

GOOD FOR THE EARTH AND YOUR BOTTOM LINE

As the leader in eco-friendly innovation, we're continually working toward making our products more sustainable, durable and economical to use. The result is environmentally responsible coatings solutions that can last longer and perform better.



*Our unique resin system is composed
of up to 30% biorenewable materials.*



BEAUTY THAT STANDS THE TEST OF TIME AND WEATHER

Sherwin-Williams Coil Coatings exposure site is a 6.25-acre test fence facility in Fort Myers, Florida. For more than 50+ years, over 100,000 panels have faced some of the toughest conditions Mother Nature can produce. Based on its subtropical location, this weathering site provides conditions that are perfect for natural exposure testing. In fact for a coating manufacturer, it's the most accredited natural exposure facility in the coil and extrusion industry.

Our test facility carries out a wide array of tests to measure saltwater and air corrosion, chemical degradation, UV damage, and other factors. We also perform extensive and continual testing on resins and pigments to ensure that we achieve the highest industry standards for material selection, solar reflectance, retention and gloss, adhesion and finish consistency, and quality.

In addition to the Fort Myers site, we leverage additional facilities around the world, where our coatings are tested in every possible weather condition.

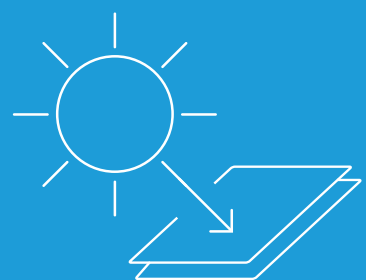
Sherwin-Williams Coil Coating

Testing Sites:

Fort Myers, FL
Marengo, IL
Guangdong, China
Shanghai, China

Third Party Testing Sites:

Daytona Beach, FL
Phoenix, AZ
Belmont Beach, Australia
Bohus-Malmö, Sweden
Brest, France (French Corrosion Institute)



**SHERWIN-WILLIAMS TEST FENCE
FORT MYERS, FL**

*Over 100,000 panels on exposure
facilitate accelerated weather tests.*

WE GO ABOVE AND BEYOND

Environmental regulations and performance expectations are continually evolving. We make it our responsibility to direct sustainability discussions and introduce coating solutions that make compliance as effortless as possible. At Sherwin-Williams Coil Coatings, we don't just comply with regulations, we sit on council boards and serve on committees to guarantee we help drive the conversation and are ahead of any changes.

Sherwin-Williams is also committed to researching, developing and testing our coatings to ensure they will withstand extreme weather conditions, meet environmental initiative requirements and still maintain the performance our customers expect. Our world-class laboratories carries out a wide array of tests to measure weathering performance to meet or exceed the highest industry standards.

ALL IN ON GREEN INITIATIVES

In addition to LEED and the Living Building Challenge, Sherwin-Williams Coil Coatings is involved with the following initiatives:

- ENERGY STAR
- REACH
- RoHS
- UL GREENGUARD
- Cool Roof Rating Council
- French Corrosion Institute

Sherwin-Williams Coil Coatings helps direct coating sustainability in many environmental initiatives, by serving on council boards and committees. Leveraging our state-of-the-art knowledge, we can keep our customers up-to-date on regulations, to help them meet desired certification requirements.





FLUROPON PURE CASE STUDY

MCLENNAN RESIDENCE BAINBRIDGE ISLAND, WA

As the founder of the Living Building Challenge, Jason F. McLennan prioritized sustainability while designing his dream home. McLennan and his team decided a metal roof would serve as an aesthetic statement and mindful decision in regard to the environment. They chose a durable and sustainable 22-gauge Vertical Seam roof panels. The product is made up of 30% recycled steel and is coated with Fluropon® Pure in the shade of Snowdrift White. This environmentally conscious architectural coating maintains exquisite color retention and durability, while introducing trustworthy sustainability.

Fluropon Pure offers complete transparency in disclosing the environmental capabilities and composition of the coating. Fluropon Pure also contains solar reflective pigments, which reflect harmful UV rays and lower the heat island effect – decreasing the structure's energy use. McLennan's residence registered as a 2.1 project with the Living Building Challenge green building rating system and is striving for a 3.0. The metal roof panels and coating used on the home are certified under the Materials Petal of the Living Building Challenge.

SOLAR REFLECTIVE COATINGS CASE STUDY

VINITA HEALTH CENTER VINITA, OK

In an effort to provide the Vinita community with a comprehensive medical center, Cherokee Nation Health System made plans to expand the building, ensuring it was built and equipped for primary care. The center embodies the Cherokee Nation, as it is influenced by the community, run by the community and serves the community.

To help increase the durability and expand the lifespan of the center, a standing seam metal roof was installed on the structure. The panels were finished in Fluropon® SR coating in the shade of Granite. The SR coating helped the center achieve LEED Silver Certification. Recognized for its durability, the Fluropon coating reflects the vision of strength and unity of the Cherokee Nation, and the cool granite color provides an earthy aesthetic.





WHAT'S NEXT

Sustainability will continue to be a key initiative of Sherwin-Williams Coil Coatings. As we look to the future, we're dedicated to a long-term vision for a more sustainable world. That is our commitment to you.

AT YOUR SERVICE

Let us help you meet your LEED, Living Building Challenge and other sustainability goals.

Coil Customer Service:

888-306-2645

coilhelp@sherwin.com

Extrusion Customer Service:

866-351-6900

extrusionhelp@sherwin.com

Visit us online at:
coil.sherwin.com



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