

Our Quality • Your Assurance

SWIFT SEAM



SWAN SWEE
CONSTRUCTION PTE LTD

ABOUT SWAN SWEE



SWAN SWEE CONSTRUCTION PTE LTD WAS ESTABLISHED IN 1992

Since its establishment in 1992, Swan Swee Construction Pte Ltd has been a trusted name in the manufacture and supply of premium color-coated steel building products. Our comprehensive product portfolio includes painted steel roofing, wall cladding, galvanized high-tensile purlins, and a wide array of additional steel solutions such as crimp curved profiles, flashings, louvre panels, ventilators, and translucent sheeting.

These high-performance products are engineered to meet the diverse needs of commercial, industrial, residential, and urban developments, ensuring reliability and durability across applications.

At Swan Swee, we take pride in delivering a seamless supply chain experience. With extensive stock levels and a well-established distribution network, we align our operations with our customers' construction schedules, ensuring materials are delivered on-site precisely when needed.

Our commitment to quality is underscored by a rigorous inspection and testing framework. We ensure every product complies with stringent regulatory requirements, technical standards, and codes of practice while exceeding customer expectations.

SWAN SWEE SWIFT SEAM

The Ultimate Roofing Solution

Swift Seam by Swan Swee is among the most versatile and widely adopted cladding systems, renowned for its ability to accommodate complex architectural forms while delivering clean, structural lines. Engineered for both roofing and wall faced applications, this profile offers exceptional flexibility – extending well beyond flat surfaces.

Its adaptive design allows seamless installation on a variety of geometrics, including curved, concave, convex, dome, conical, and hybrid configurations to achieve dynamic wave-like effects. This makes it an ideal solution for contemporary structures with intricate design requirements.

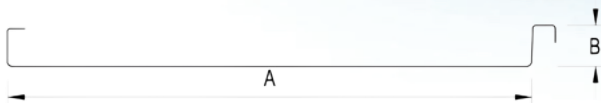
While modern in performance, the Swift Seam profile retains a timeless aesthetic, offering a refined alternative to the industrial appearance of other cladding systems – perfect for projects seeking elegance without compromise.



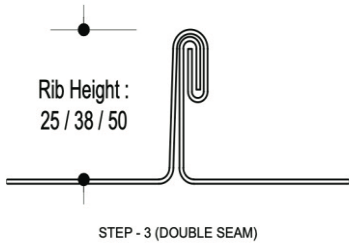
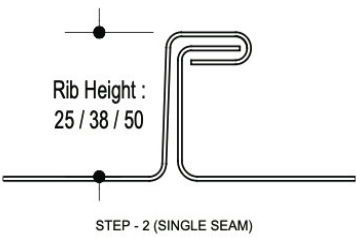
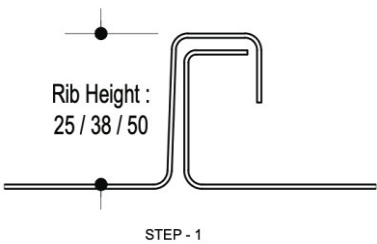
DESIGNED FOR **ARCHITECTURAL EXCELLENCE**

Swift Seam metal rods are characterized by wide, flat panels with raised, vertical legs on either end. Swift seam rods utilize a concealed fastener system, which provides their modern, sleek appearance and impressive durability.

Swift Seam comes in various height.



PANEL SIZE	
COVERING WIDTH (A)	RIB HEIGHT (B)
300mm, 320mm, 505mm, 530mm	25mm, 38mm or 50mm



Swift Seam 50mm – A Bold Evolution in Standing Seam Metal Roofing

Swift Seam with an increased rib height of 50mm introduces a striking new dimension to standing seam metal cladding. Bold. Refined, and architecturally expressive, the 50mm profile sets a fresh benchmark for modern façade and roofing applications.

Architects, builders, and installers will appreciate its elevated visual impact – perfect for projects seeking a strong architectural statements.

Enhanced structural strength

The increase rib height offers greater rigidity and stability, allowing for wider substrate spans. This reduces labour requirements and contributes to improved cost efficiency.

Low-pitch capability

Compatible with roof pitches as low as 2 degrees, giving designers greater freedom in form and function.

Concealed fixing system

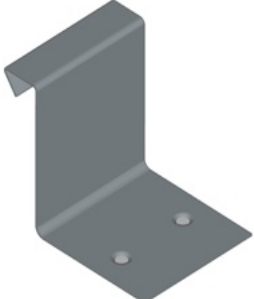
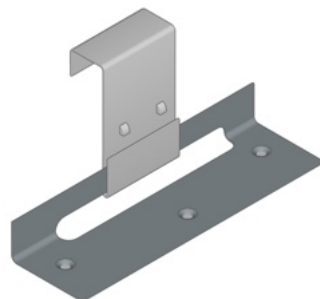
Panels are secured with a fixed or sliding concealed clip, creating a clean, uninterrupted finish.

Streamlined installation

Uses the same installation methodology as the 25mm and 38mm profiles, ensuring effortless adoption for installers already familiar with the Swift Seam system.

MECHANICAL LOCK PROFILES, CLIPS & FASTENERS

CONCEALED CLIPS

CONCEALED CLIPS	
FIXED CLIPS	SLIDING CLIPS
	

Sliding clips provide greater tolerance to temperature changes, as they slide during expansion and contraction. **Mechanical seams** done in the field also allow for curves using radius information.

MECHANICAL LOCK PROFILES

Mechanically seamed Swift Seam panels are roll-formed with specific edges that line up with each other. Once adjacent panels are engaged, a hand seamer or mechanical seaming machine bends and locks the seam, creating a continuous weather-tight joint.

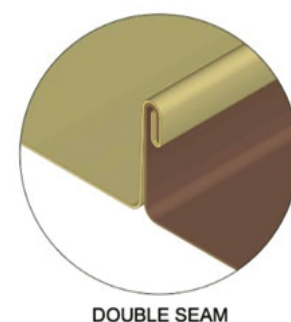
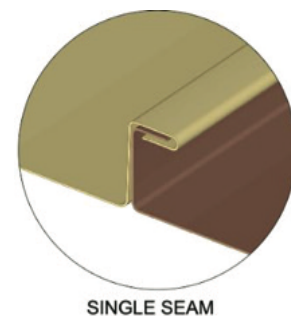
There are two primary mechanical seam configurations:

1. Single Lock (90° Seam)
 - A single lock consists of one fold, creating a 90-degree seam.
 - It is suitable for applications where accessibility and future maintenance are considerations.
 - Suitable for claddings as it reduce oil canning.
2. Double Lock (180° Seam)
 - A double lock consists of two folds, creating a 180-degree seam.
 - This system provides superior weather-tightness. Double lock seams also offer improved resistance to unseaming under wind load or thermal movement.
 - More pronounced oil canning.

Recommended Roof Pitch Capabilities

- Rib height (25mm, 38mm, 50mm) double lock profile: Minimum 3 or 5% of Roof Slope.

Double lock systems deliver enhanced overall performance, with reduced risk of seam disengagement under environmental stresses.



MATERIAL SPECIFICATION

BASE STEEL GRADE

The **Swan Swee Swift Seam** is roll-formed from **G300 MPa steel** ensuring high strength and durability for reliable performance.

BASE STEEL COATING

COATING TYPE	DEFINITION
AZ200	The base steel is coated with a coating of 55% aluminum, 43.3% zinc and 1.6% silicon (approximately), meeting the coating class requirements set by Australian Standards AS1397:2021. This advanced coating provides exceptional corrosion resistance and enhances the steel's durability.
ZM310	The base steel is coated with a special metallic composition of 5% aluminum, 1% magnesium(approximately) and 94% zinc as determined by EN10346:2015. The inclusion of magnesium creates a self-healing effect, improving corrosion resistance in aggressive conditions like C4 zones. This makes ZM310 a compelling alternative particularly in demanding projects.

PHYSICAL PROPERTIES

PROFILE	SWIFT SEAM 300	SWIFT SEAM 320	SWIFT SEAM 505	SWIFT SEAM 530
BASE METAL THICKNESS (mm)	0.55	0.55	0.55	0.55
TOTAL COATED THICKNESS (mm)	0.61	0.61	0.61	0.61
WEIGHT (kg/m ²)	6.10	5.72	5.49	5.23
EFFECTIVE COVER WIDTH (mm)	300	320	505	530
RIB HEIGHT (mm)	38	25	38	25

PAINT SYSTEMS

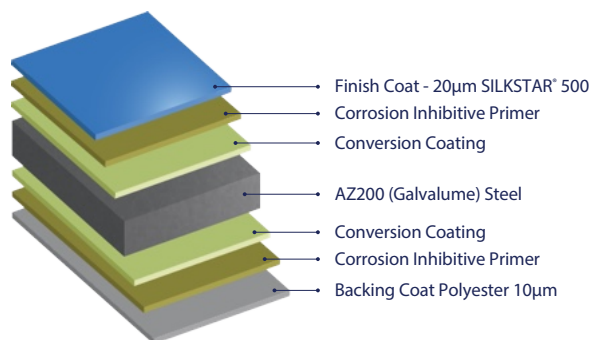
Swan Swee Swift Seam offers three premium paint systems, each engineered to meet distinct project demands. Whether you require exceptional durability, striking aesthetics or specialized environmental protection, our coatings provide superior performance and a flawless finish, ensuring longevity and reliability.

ColorLume® SMP (Silicone Modified Polyester) (SILKSTAR®500)#

SILKSTAR® 500, one of the high durable series, is a standard coil coating system designed exclusively for the metal roofing industry suited for climatic conditions in Singapore.

Top Coat: AkzoNobel SMP (SILKSTAR® 500) – a trusted industry-standard coating recognized for its versatility, durability, and lasting aesthetic quality.

Base Steel Coating: AZ200 – a premium alloy coating offering superior corrosion resistance and long-term durability in demanding conditions.



Applications: Well-suited for architectural, residential, commercial, and industrial projects.

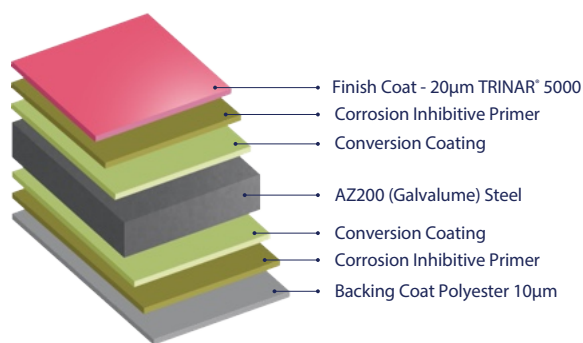
Benefits: A cost-effective yet high-performance solution that balances visual appeal with robust protection across diverse environments.

ColorLume® PVDF (TRINAR®5000)#

AkzoNobel TRINAR® 5000 brand is manufactured from raw materials which conform with 70/30 standard ratio (PVDF/ ACR) in market.

Top Coat: AkzoNobel PVDF (TRINAR®5000) (fluoropolymer coating with ≥70% PVDF).

Base Steel Coating: AZ200 – providing enhanced corrosion resistance for long-term durability.



Applications: Roofing systems requiring outstanding color retention, weather resistance, and long-term protection against fading and chalking.

Benefits: Maintains its aesthetic appeal even under intense UV exposure and extreme weather conditions, ensuring lasting vibrancy.

Key Considerations for Specifying PVDF Coatings

To ensure optimal performance: Choose a **70% PVDF coating system** that complies with **AAMA 621-02** for steel substrates. Testing confirms that PVDF coatings deliver peak durability at **70%** concentration - higher ratios do not offer additional benefits.

Beware of lower-quality formulations:

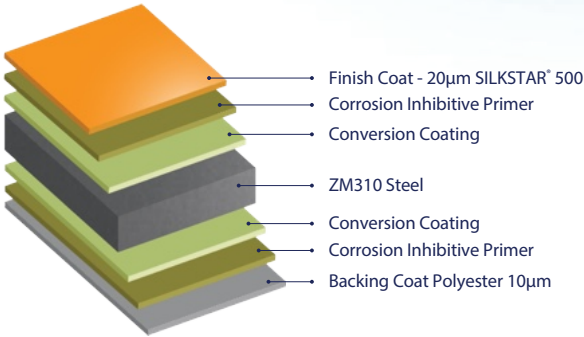
Some manufacturers offer 50% or even 30% PVDF coatings (which may contain Kynar or Hylar-branded PVDF), but these fail to meet AAMA 2605-13 standards and exhibit significantly reduced performance. (Source: AkzoNobel)

#ColorLume® SMP & PVDF - Trademark of Yieh Phui Taiwan

ColorMax® – High-Performance Coating for Harsh Environments#

Top Coat: AkzoNobel SMP (SILKSTAR® 500) – Delivers exceptional durability, weather resistance, and long-lasting color vibrancy.

Base Steel Coating: ZM310 – Provides superior corrosion protection, ensuring structural resilience in extreme environments.



Applications: ColorMax® is a specialized coil and substrate coating engineered to endure aggressive conditions, including C4 corrosion zones as classified by ISO 12944 - Atmospheric Environment Categories.

Benefits: Guaranteed Performance Warranty: 20-year warranty ensuring lasting film integrity 15-year coverage against fading and chalking.

#ColorLume® SMP & PVDF - Trademark of Yieh Phui Taiwan

THE FUNCTION OF SUBSTRATE COATING IN AN INTEGRATED PAINTING SYSTEM

SUBSTRATE COATING SYSTEM: 2C2B (TWO-COAT, TWO-BAKE) PROCESS

A two-sided 2C2B coating system (two coats, two bakes) offers superior durability and protection for steel substrates. This advanced process optimizes both finish quality and longevity through precise layering and curing.

Key Features:

- Two-sided application for complete protection
- Double-coating and double-baking process enhanced durability
- High-quality finish with extended service life

Optimized Pre-Treatment for Superior

Paint Adhesion:

To maximize adhesion, the paint film undergoes specialized pre-treatment tailored to the production equipment used:

Bonderite® (Chemical SA, France)

or

Surfcoat® (Nippon Paint, Japan)

These advanced treatments clean, coat, and protect the steel substrate, ensuring a strong foundation for paint adhesion and long-term durability.

Top Primer: Polyurethane (PU) Anti-Corrosion Layer

Type: High-performance polyurethane primer

Dry Film Thickness: 5 microns (nominal)

Key Benefits:

- Superior anti-corrosion protection
- Strengthens adhesion for topcoats
- Extends overall system lifespan
- Preserves surface integrity in harsh conditions

Back Primer & Back Coat

A PU back primer with strong anti-corrosion properties is applied, followed by a polyester backing layer that offers: 10-micron nominal dry film thickness

Key Benefits:

- Excellent anti-corrosion performance
- Added durability for the reverse surface
- Extended product lifespan

Inspired Colour for Your Roof

At Swan Swee, we believe your roof is more than just a cover—it is a statement. With ColorLume® SMP; ColorLume® PVDF and ColorMax®, we bring a full spectrum of vibrant and durable color options to complement your architectural vision.

No matter the hue you imagine, we provide a refined selection of colours designed to enhance both aesthetic appeal and long-term performance, ensuring your project stands out while enduring the elements.

(SMP / PVDF / ColorMax®)



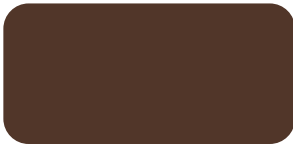
Prestige Titanium Grey
TDR: 11.60%
TE: 0.87 SRI: 26.60



Prestige Light Grey
TDR: 48.90%
TE: 0.85 SRI: 54.80



Prestige Red
TDR: 13.90%
TE: 0.87 SRI: 42.20



Prestige Brown
TDR: 9.90%
TE: 0.87 SRI: 28.20



Prestige Green
TDR: 9.20%
TE: 0.86 SRI: 10.40



Prestige Blue
TDR: 13.10%
TE: 0.87 SRI: 9.60

*To ensure accurate colour representation, we recommend requesting physical samples for verification.

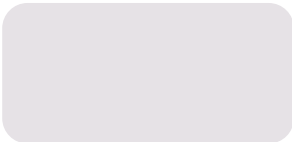
Non Standard Colours



Prestige Emerald Green
TDR: 23.40%
TE: 0.86 SRI: 35.27



Prestige Black
TDR: 3.80%
TE: 0.87 SRI: 5.60



Prestige Off White
TDR: 61.19%
TE: 0.87 SRI: 72.80



Prestige Grandeur Blue
TDR: 14.78%
TE: 0.86 SRI: 28.30



Prestige Truffle Brown
TDR: 19.42%
TE: 0.86 SRI: 36.35



Prestige Dark Grey
TDR: 18.14%
TE: 0.87 SRI: 10.70

*To ensure accurate colour representation, we recommend requesting physical samples for verification.

Ordering Guidelines

To ensure accuracy in manufacturing and supply, please specify the required paint system when placing your order. This helps prevent any misalignment between your specifications and the final product.

For example: • Prestige Blue (SMP) • Prestige Blue (PVDF) • Prestige Blue (Color Max)

The significance of Performance Testing in Roofing Coatings.

Conducting performance tests on roofing coatings is essential to ensure durability, weather resistance and overall effectiveness. These evaluations asses the coating’s ability to withstand environment factors such as UV exposure, moisture, temperature fluctuations and mechanical stress. By rigorously testing coatings, manufacturers and industry professionals can validate compliance with international standards, enhance material longevity, and optimise protective properties.

Performance Test Results

The following tests evaluate the **adhesion, durability, corrosion resistance, and overall performance** of the coating system:

Adhesion Tests

Reverse Impact (ASTM D2794):
A 500g hammer impacts the surface, followed by a tape peel test.

The film remains intact with no flaking.

T-Bend (ASTM D4145):
The material is bent 180° to a 3T diameter, then subjected to a tape peel test.

The film adheres well, without flaking.

Erichsen Test (ASTM 643):
A 7mm deep shape is formed at 12±6 mm/min velocity, followed by a 3M #600 tape peel test.

No flaking occurs.

Solvent & Chemical Resistance

Solvent Resistance (ASTM D5402):
100 wipes using M.E.K. solvent under 1kg pressure.

The painted steel substrate remains unaffected.

Chemical Resistance (Spot Test ASTM D1308):
Exposure to 5% H₂SO₄ and 5% NaOH for 24 hours

Shows no visible changes.

Durability & Corrosion Resistance

Salt Spray Test (ASTM B117/SS 5 Part G10): 1,000 hours exposure.

No red rust, blisters (better than 6F), or corrosion in the unscrapped area.

Weathering Test (QUV ASTM G154/SS 5 Part G9): 1,000 hours exposure.

No visible color change or chalking.

Resistance to Chalking (QUV 2,000 hours):
Chalk rating ≤ 4.

Demonstrating excellent durability.

Gloss Level & Fire Classification

Gloss Level
(ASTM D523/SS 5 Part E1/BS-2003/EN 13523-2):

Nominal gloss level of 25 GU at 60° reflection angle.

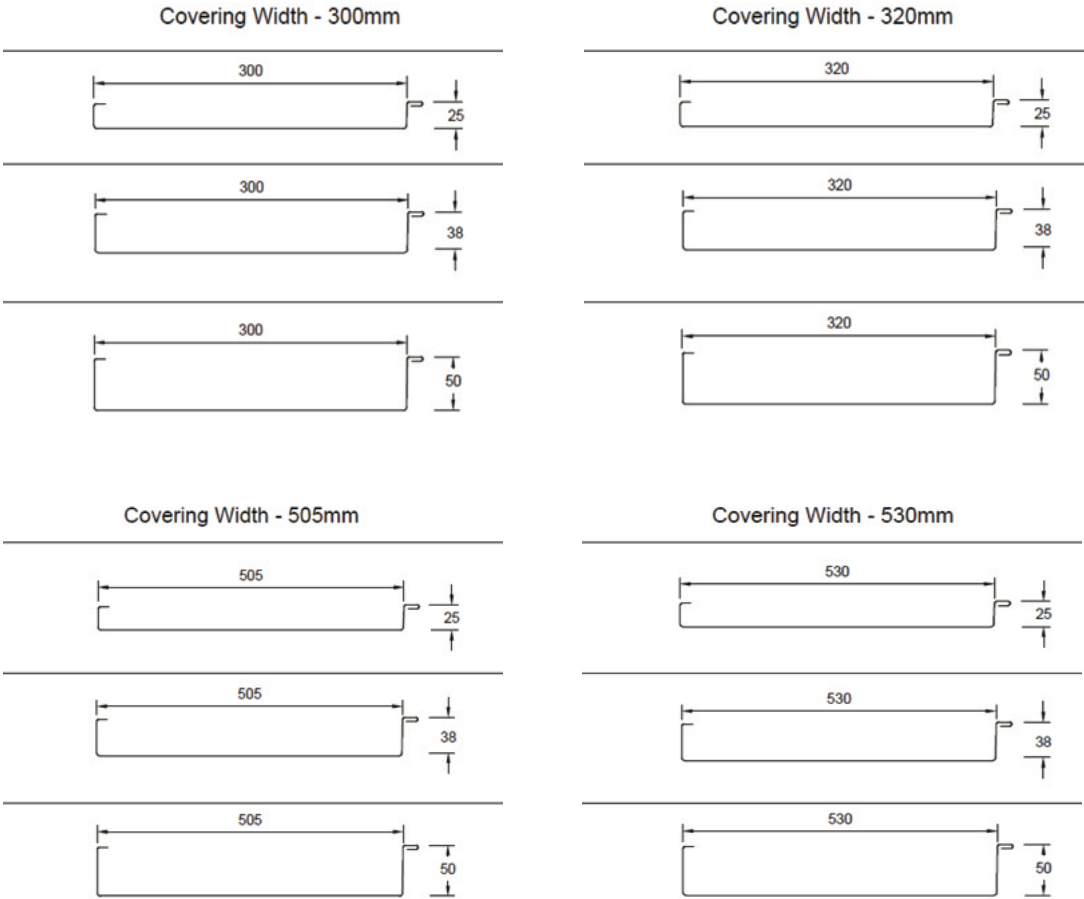
Fire Classification (EN 13501): Class A1 compliant.

Non-combustibility and no harmful smoke emissions.

These results confirm the high-performance capabilities of the coating system, offering long-term durability, adhesion strength, and environmental resistance.

MANUFACTURING QUALITY OF SWIFT SEAM

Swift Seam profiles are precision roll-formed using the Schlebach Profiling Machine, engineered by Schlebach GmbH – Germany’s globally recognized leader in standing seam technology. Supported by Schlebach’s proven expertise and continuous innovation spanning over 45 years, our systems embody the highest standards of accuracy, durability, and performance in metal roofing fabrication.

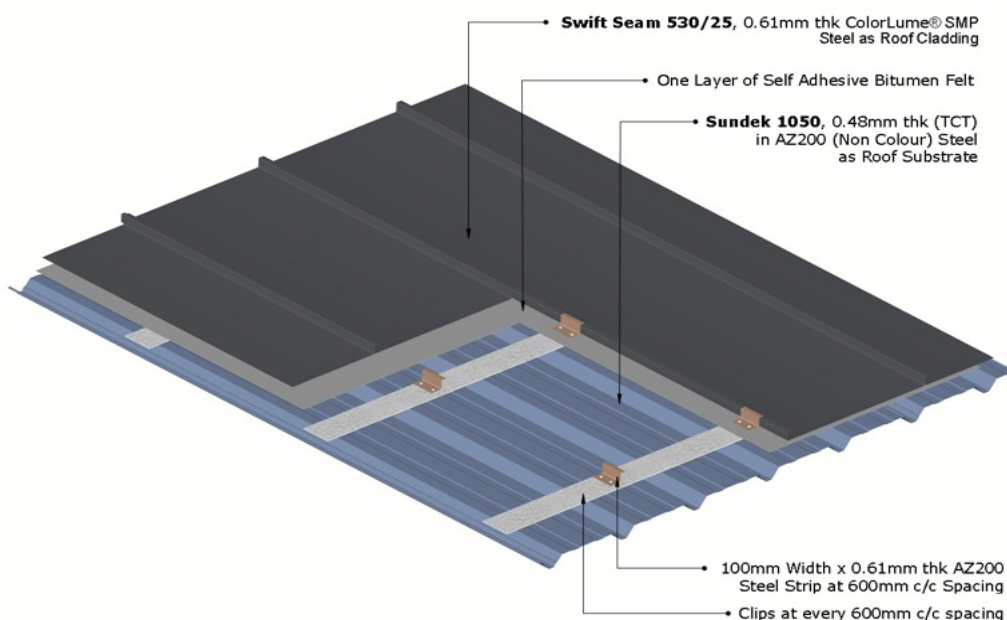
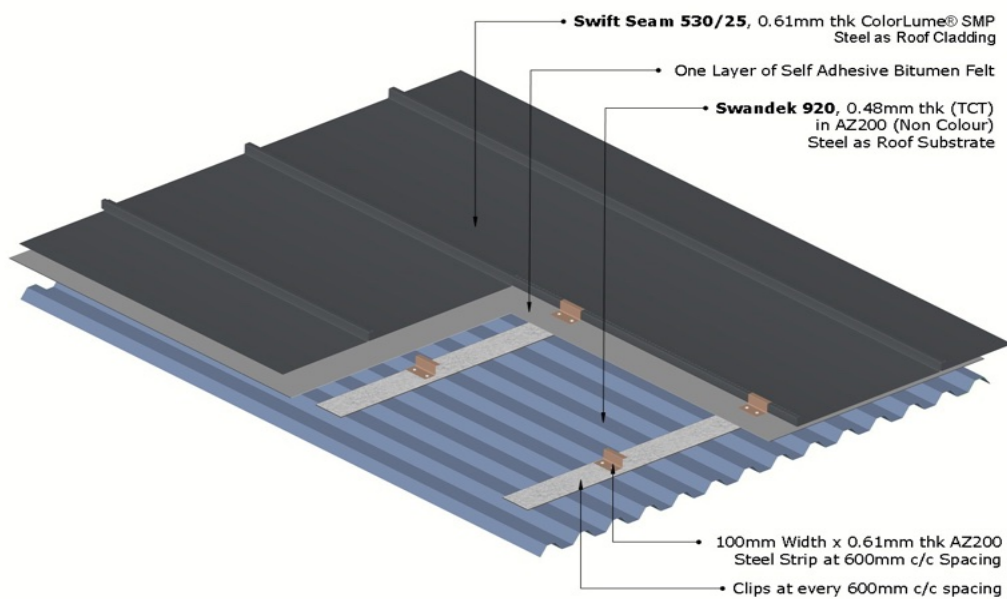


RIGID SUPPORT REQUIREMENT

Rigid Support Requirement for Swift Seam

The Swift Seam system must be installed over a structurally rigid underlay to ensure performance integrity. Suitable substrates include Swandek 920 or Sundek 1050, both engineered for dimensional stability and load-bearing capacity.

Typical buildup system schematics are provided below for reference.

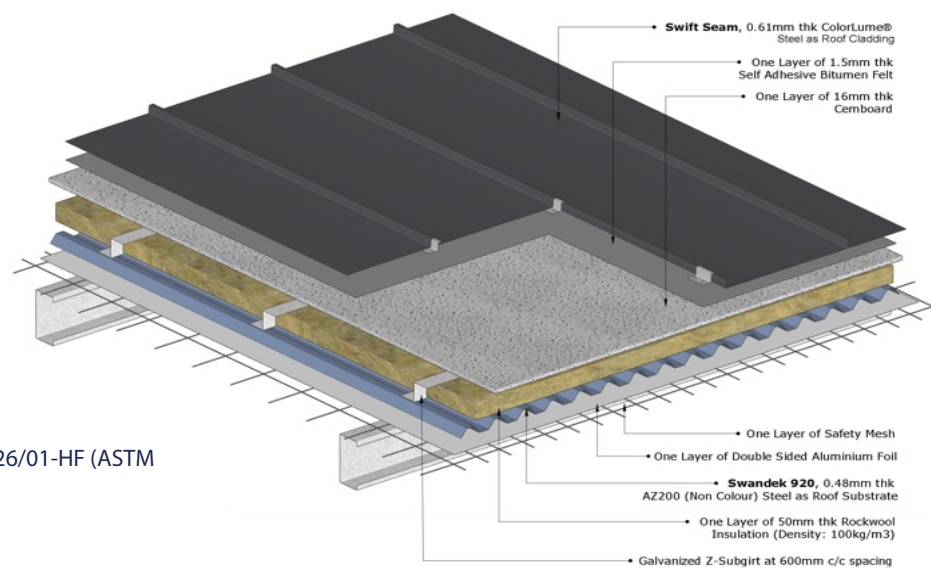


ACOUSTIC ROOF SYSTEM

Acoustic Roof System

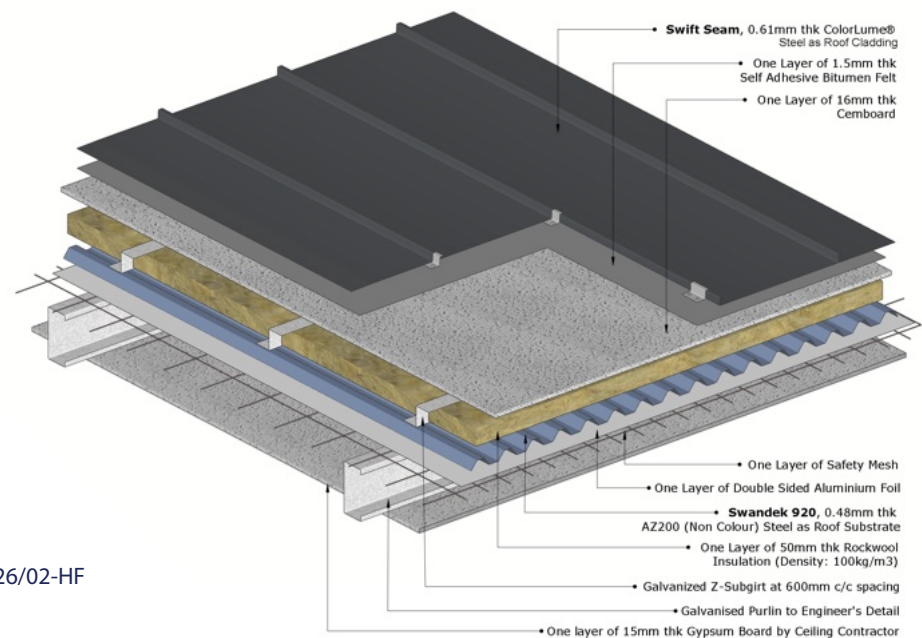
The following illustrations represent established industrial methodologies and construction practices adopted in the design and installation of acoustic roofing assemblies. These practices are applied across institutional, commercial, and residential projects to ensure compliance with performance specifications, acoustic attenuation requirements, and durability standards.

Sound Transmission Class
(STC-47)
Testing Body - TÜV SÜD



TÜV SÜD Report No. 7191380215-MEC 26/01-HF (ASTM E413)

Sound Transmission
Class (STC-56)
Testing Body - TÜV SÜD

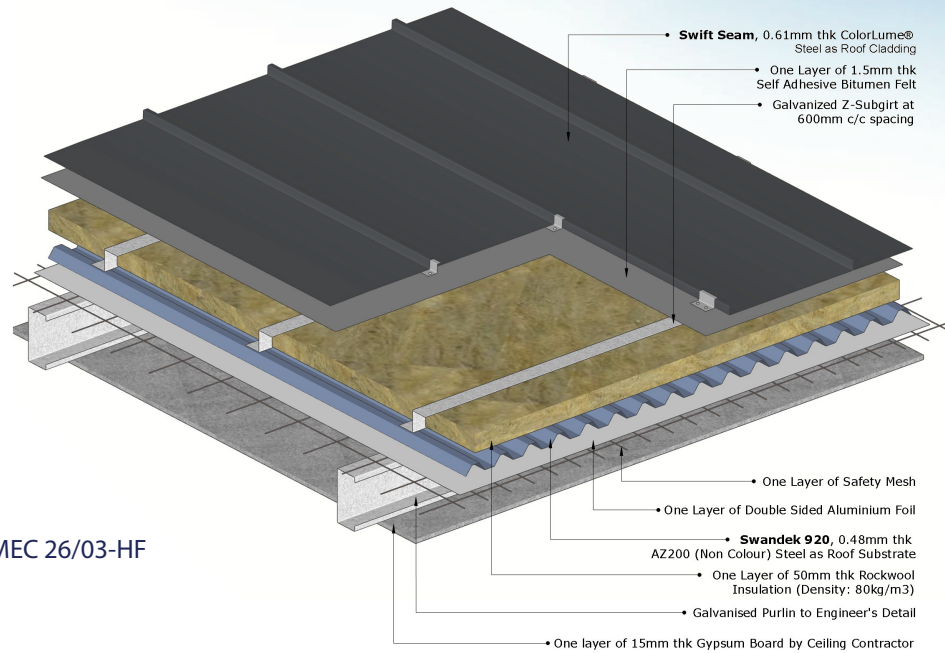


TÜV SÜD Report No. 7191380215-MEC 26/02-HF (ASTM E413)

ACOUSTIC ROOF SYSTEM

Sound Transmission
Class (STC-52)
Testing Body - TÜV SÜD

TÜV SÜD Report No. 7191380215-MEC 26/03-HF
(ASTM E413)



Caution: STC Testing Compliance Checklist

Sample Specification

Ensure all testing samples are Swift Seam (or similar seam profile). Confirm buildup matches the illustrated pictorial reference.

Reference Validation

Review comparable test reports. Verify the profile used (name of profile) aligns with published STC reports.

Third-Party Verification

Request a TÜV report for each test. Confirm authenticity and prevent false or misleading STC results.

CERTIFICATES



SGBC Certificate



Certificate of Conformity

Recommended Sealants

Neutral-cure silicone sealant has been successfully applied to various steel finishes used in roofing, walling, flashing, and cappings made from the same materials as the cladding.

Neutral-Cure Silicone Sealants:

- Exhibit strong adhesion to clean surfaces of all roofing and walling materials.
- Are water-resistant and non-corrosive.
- Maintain flexibility under extreme temperature variations.
- Offer high resistance to ultraviolet (UV) radiation (sunlight).
- Have a long service life.

It is essential to use only neutral-cure silicone with sheet steel. Other types of silicone sealants, which often emit vinegar or ammonia odors, release aggressive by-products during curing that can degrade sheet steel.

If uncertain, check the sealant packaging for a statement such as: "Suitable for use with galvanized and Galvalume steel products."

Surface Preparation

For optimal bonding, all surfaces must be clean, dry, and free from contaminants such as old sealant and oil.

Cleaning agents: Mineral turpentine is effective for cleaning surfaces, but all residual solvent must be completely removed using a clean, dry cloth.

White spirits can also be used as an alternative.

Application timing: Sealant should be applied on the same day the surface is cleaned to ensure proper adhesion.

Sealant Cleanup

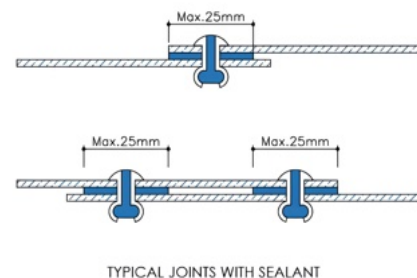
With experience, you will be able to gauge the appropriate bead size, minimizing excess sealant and reducing cleanup efforts.

Uncured sealant: Can be removed using a clean, dry rag. Any remaining residue can be wiped off with a cloth lightly dampened with mineral turpentine or white spirits.

Cured sealant: Should be carefully removed using a plastic spatula to prevent damage to the metal's surface finish.

Painting Considerations

Avoid smearing silicone on surfaces intended for painting, as it can interfere with paint adhesion. If smearing occurs, lightly abrade the affected area using a non-metallic scouring medium.



Removal of Metal Filings – Preventing Surface Damage

During installation, always remove metal debris resulting from sawing, drilling, or other construction activities by brushing or blowing it off from pre-painted roofing sheets.

If left unattended, metal filings will rust rapidly, causing staining or discoloration that affects the appearance and integrity of the roof's surface. Regular cleaning ensures a clean finish and prolongs the roof's aesthetic appeal and durability.

Oil Canning

Oil canning is the term used to describe the visible waviness or distortion in the reflectivity of flat metal surfaces. The degree of oil canning is primarily influenced by the sheet's ability to redistribute stresses, particularly those arising from thermal expansion and contraction.

This condition is inherent to flat sheet products and should be regarded as a natural characteristic rather than a defect; accordingly, it is not a valid basis for panel rejection.

To reduce the appearance of oil canning, Swift Seam panels may be roll-formed – upon client request – with two additional stiffening flutes incorporated into the flat section. These flutes increase the panel's structural rigidity, enabling stresses to dissipate more effectively than in a completely flat sheet, thereby minimizing the visual impact of oil canning.



Standard

With Flutes

Storage and Handling Guidelines

Ensure the product is kept dry and elevated off the ground to minimize the risk of damage.

Avoid dragging roof sheets to prevent scratches or harm to the painted surface.

Protect the material from debris and contaminants to maintain its quality and appearance during storage and handling.

Safe Roof Walking Practices

To minimize the risk of damage and ensure safety when walking on roofs: Always step on the pan and directly over structural supports for stability.

Wear smooth-soled shoes to prevent ribbed soles from collecting debris such as small stones, swarf, or other particles that could scratch or damage the roofing sheets.

Taking these precautions helps maintain both the integrity of the roofing system and personal safety.

Cutting Roof Sheets – Best Practices

When cutting roof sheets: Always cut on the ground, away from other materials, to prevent accidental damage.

Use a circular saw with a metal-cutting blade for safer and cleaner cuts. This method minimizes the production of damaging hot metal particles and reduces burr compared to using a carborundum disc.

Following these guidelines ensures a more precise cut and protects both the roofing sheets and surrounding areas.

Length and Transportation Guidelines

Custom Lengths: Swift Seam are supplied pre-cut to the required dimensions.

Standard Length Limitation: For standard deliveries, the material length should not exceed **12 meters**.

Special Transportation for Extended Lengths: Lengths greater than 12 meters necessitate specialized transportation and appropriate on-site handling facilities. **Additional transport charges may be imposed.**

Regulatory Compliance: Always confirm to the **transportation limits set by LTA** (Land Transport Authority) to ensure adherence to regulations for long products. Proper planning ensures safe, efficient delivery and handling of the materials.

IMPORTANT NOTE: The information published in this brochure is as far as possible accurate at the date of publication, however, prior to application in a particular situation, **Swan Swee Construction Pte Ltd.** recommends that you obtain qualified expert advice confirming the suitability of product(s) in question for the application proposed.

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**Formed with Galvalume® Base Steel
and ColorLume® Top Coat**



**Locally Produced & Custom-Cut
Using Modern Machinery**



FPC (BCI: 2023) Certified

Contact us

Talk to us about our competitive pricing and services. We are standing by to receive your call.

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