

Our Quality • Your Assurance

CompDek

Formwork



ENTERPRISE



Celebrating Singapore's
Enterprising Spirit 2024

30 years



SWAN SWEE
CONSTRUCTION PTE LTD

ABOUT SWAN SWEE



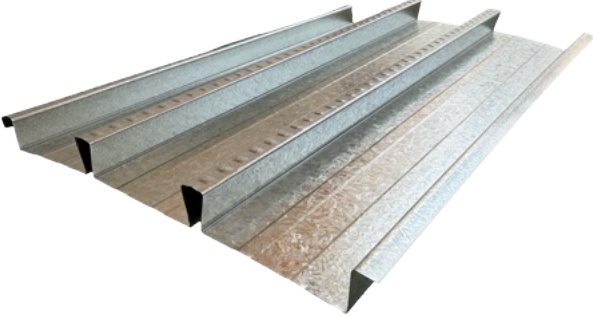
About Swan Swee Construction Pte Ltd

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 structural floor decking, 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.

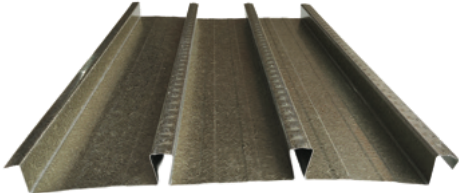
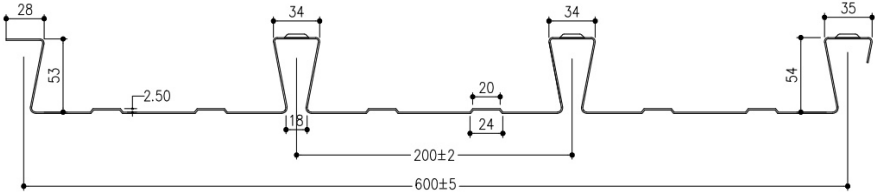
CompDek

CompDek is a high-performance dovetail re-entrant steel deck, precision-engineered from cold formed galvanized steel sheets. Its unique inward-curving ribs (dovetail profile) create a robust mechanical interlock with the concrete slab, ensuring superior structural integrity.

Thickness	0.75mm	1.00mm
Weight (kg/m ²)	10.28	13.55
Rib Height	54mm	
Cover Width	600mm	
Grade of Steel (MPa)	G550	
Coating (Galvanized)	275g/m ²	



Profile Dimensions & Specifications



Specification

Per metre of width

Thickness (BMT) mm	Cross-section area	Profile weight	Second moment of area	Section Modulus	Height to Centre Gravity	Moment Capacity		Ultimate Shear Capacity
						Sagging	Hogging	
	A mm ²	kN/m ²	I _x 10 ⁴ mm ⁴	Z _x 10 ³ mm ³	Y _{eg} mm	kNm	kNm	kN
0.75	1263	0.10	51.90	13.30	14.90	4.70	6.67	83.80
1.00	1685	0.14	69.20	17.60	14.80	7.10	9.41	149.00

Serviceability - FORMWORK

Vertical deflection

L_p/180 (but ≤ 20mm) When the effect of ponding is not considered.

L_p/130 (but ≤ 30mm) When the effect of ponding is not considered.

where L_p is the effective span of the profiled steel sheets, which is the smaller of: distance between centres of permanent or temporary supports; and clear span between permanent or temporary supports plus overall depth of the profiled sheets

Load Span Table

Slab Depth (mm)	110	115	120	125	130	135	150	175	200
0.75mm CompDek									
Single Span	2390	2350	2300	2250	2250	2200	2150	2040	1950
Double Span	2970	2920	2860	2820	2780	2750	2650	2500	2350
1.00mm CompDek									
Single Span	2640	2600	2550	2530	2500	2450	2380	2250	2150
Double Span	3450	3400	3380	3320	3280	3250	3100	2950	2800

The basic construction loads on one span of sheeting specified in EN 1991-1-6 consisting of a moving 3 m × 3 m working area (or the length of the span if less), with an intensity of 10% of the self-weight of the concrete but ≤ 1.5kN/m² and ≥ 0.75kN/m²; this load represents the concreting operation and heaping of concrete locally. Outside the working area, an imposed load of 0.75kN/m² should be applied to the profiled steel sheeting.

Key Features and Advantages

- **Permanent Formwork:** Eliminate the cost and time of stripping traditional timber formwork. Unlike timber formwork, which poses fire hazards during curing periods (up to 28 days), CompDek remains in place as a safe permanent solution.
- **Safe Working Platform:** Once secured, CompDek provides a stable, immediate platform for construction traffic, enhancing site safety.
- **Speed of Construction:** Lightweight, pre-cut sheets (to length) are easy to transport and install, enabling rapid floor cycles and improved efficiency.
- **Durability and Corrosion Resistance:** A galvanised coating (275g/m²) protects against moisture and deterioration, ensuring long-term performance.
- **Easy M&E Integration:** The dovetail recess supports wedge nuts or proprietary hangers directly, eliminating the need for drilling into concrete.

Design & Construction Considerations

The use of CompDek requires careful planning to ensure structural performance and safety during construction.

- **Load calculation:** During the build phase, the deck must support wet concrete, reinforcement, construction traffic and workers. Actual design loads depend on project codes and requirements.
- **Propping Requirements:** CompDek is generally designed for unpropped use. However, temporary props may be required for longer spans, heavier loads, or thicker slabs to control deflection during concrete placement. For propping, one line of 100mm wide props at mid-span is required.
- **Concrete Placement:** Concrete should be poured evenly and progressively to avoid localized overloading or excessive deck deflection.
- **Fixing and Safety:** Sheets must be securely fastened to supporting members (via welding or mechanical fixing) to prevent movement. Safety measures such as fall protection and careful handling of sharp edge are essential.

Potential Issues and Limitations

- **Ponding:** Excessive deflection during pouring can create low points where concrete accumulates. This “ponding effects” increase dead load and may overstress the deck, potentially leading to failure if not accounted for in design.
- **Corrosion and White Rust:** While galvanized coating provides corrosion resistance, prolonged exposure to standing water or poor storage before placement can cause zinc oxidation (“white rust”), potentially reducing durability and affecting appearance.

Openings in Slabs

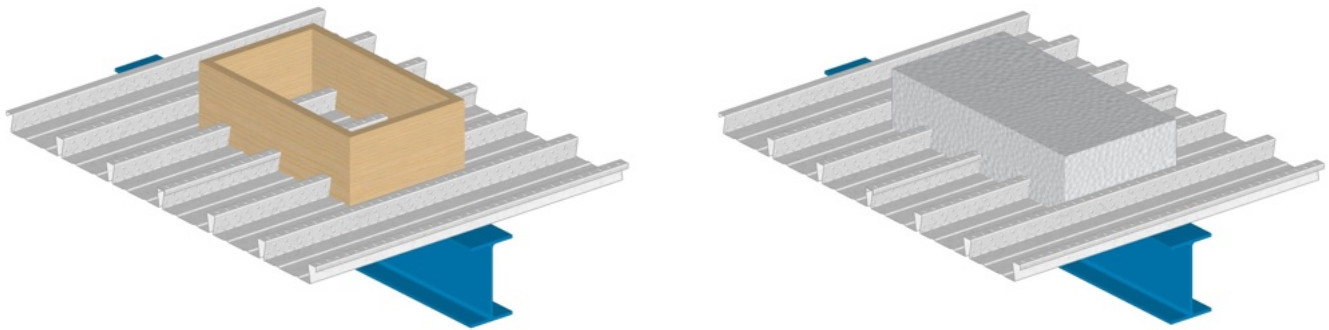
Openings can be readily incorporated into composite slabs by boxing out before pouring the concrete and cutting the deck once the concrete has fully cured.

Small Openings ($\leq 300\text{mm}$):

Openings up to 300mm square generally do not require additional reinforcement.

Medium to Large Openings ($> 300\text{mm}$):

Openings greater than 300mm must be designed by a qualified engineer, with additional reinforcement placed around the perimeter. **Openings up to 700mm** can be accommodated using the same boxing-out method before pouring concrete, followed by cutting the deck after curing.



Important Note:

The steel deck must not be cut before concreting or before the concrete has fully cured, as this could compromise structural integrity.

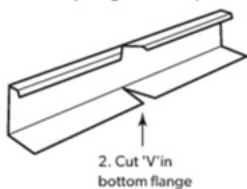
Cutting and Installing Edgeform

Edgeform is a streamlined **C-shaped** section designed to simplify the installation of most CompDek slabs. It securely fastens to the CompDek sheeting, effectively retaining the concrete while providing a smooth top edge for precise and efficient screeding. Engineered to accommodate any slab thickness. Edgeform enhances both accuracy and ease of installation. The section can be easily spliced and bent to form internal and external corners at any angle. It must be properly positioned and fully secured as the sheets are installed.

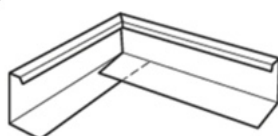
For unsupported CompDek panels, Edgeform should be fastened to the underside at **300mm** intervals. Additionally, its top flange must be tied to the ribs every **600mm** to ensure stability. Typically, Edgeform is made from galvanized steel, 1mm thick (275g/m^2), offering corrosion protection equivalent to the steel deck.

External corner

1. Notch top flange for the required angle

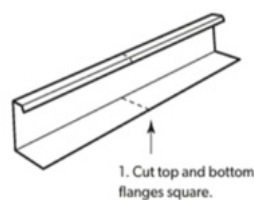


2. Cut 'V' in bottom flange



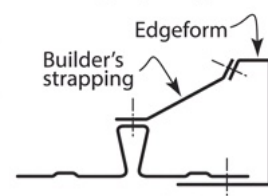
3. Bend corner of Edgeform to the required angle, overlapping bottom flanges.

Internal corner



1. Cut top and bottom flanges square.

Fastening top flange of Edgeform



Deck Fixing

Once the deck is laid, it must be secured through its trough to the tops of the supporting structure without delay. Fixing is typically done using powder-actuated pins or self-drilling screws. Additionally, side lap fixings should be installed at 100mm intervals to ensure stability.

Fixing Spacing:

End Fixing: 2 fixings per sheet

Immediate Supports: 1 fixing per sheet

Side Fixing onto Support: 1 fixing at 600mm intervals

Laying of CompDek

CompDek sheets must be installed with their sheeting ribs aligned in the direction of the designed spans to ensure structural integrity.

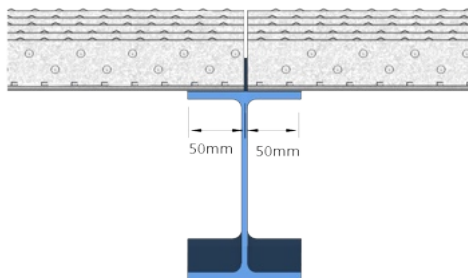
Installation Guidelines:

Slab supports must be properly prepared to accommodate bearing and slip joints as required. Lay CompDek sheets continuously across each slab span without intermediate splicing or jointing to maintain structural performance. Position sheets end to end, ensuring that joints are centralized at slab supports. If jointing material is necessary, sheets may be butted against the joining material.

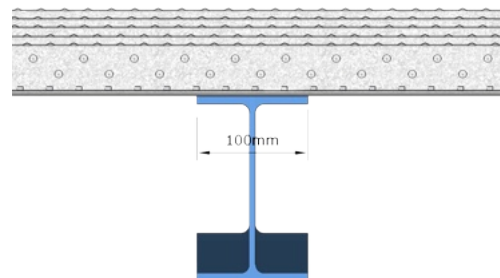
To support wet concrete and construction loads, the minimum bearing must be:

- **50 mm** at the ends of CompDek sheets
- **100 mm** at intermediate supports where the sheeting is continuous

End Bearing and sheared bearing
(Minimum 50mm)



Continuous bearing
(Minimum 100mm)



For exposed applications, the end, and edges of CompDek sheets must be treated with a suitable edge protection to prevent moisture ingress.

Casting Concrete

Before pouring concrete, ensure that the decking is free from dirt and grease, as contaminants can negatively impact the hardened slab's performance. However, residual oil from the roll-forming process does not require removal.

Concrete should be poured uniformly, following a consistent directional (in the direction of span) sequence to maintain structural integrity. Care must be taken to prevent excessive accumulation of concrete in any area during the casting process. Construction and day joints should be positioned over a support beam, ideally aligning with deck joints for optimal load distribution. For composite beam, it is preferable to create the joint to one of the line of shear connectors, to ensure sound concrete around the studs.

Preventing Slurry Leakage

To maintain a clean underside on the decking during the concrete pour, it is crucial to prevent slurry leakage, which can cause unsightly stains. To minimize leakage under the sheets, apply foam tape beneath the deck edges where they meet the supporting structure. This ensures a tight seal, preventing concrete from seeping through gaps and preserving the integrity of the deck's appearance.

Care and Storage Before Installation

CompDek is delivered in strapped bundles. If not required for immediate use, stack sheets or bundles neatly and elevated from the ground on a slight slope to facilitate water drainage. If stored outdoors, ensure they are covered with waterproof protection. Prevent rainwater or condensation from becoming trapped between sheets, as this may lead to material degradation. To minimize the risk of damage, open bundles only when installation is about to commence. Verify that all necessary temporary supports are in place before proceeding with the decking installation.

When lifting bundles, the use of appropriate lifting equipment is recommended. Unprotected chain slings may damage the bundle during hoisting. When using synthetic slings, be cautious of potential severing at the edges of the decking sheets. If timber packers are utilized, they must be securely fastened to the bundle before lifting to the ground. Bundles must never be lifted using the metal banding, as this may compromise safety and structural integrity.

Length and Transportation Guidelines

Custom Lengths: **CompDek** is supplied pre-cut to the required dimensions.

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

Special Transportation for Extended Lengths: Lengths greater than 12 metres necessitate specialized transportation and appropriate on-site handling facilities.

Regulatory Compliance: Always conform 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.



**Formed from
Galvanised Steel**



**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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