

BuildDeck52

**Structural
Decking System**



Buildco

Unlocking Excellence with BuilDeck52 Structural Decking System



Elevate your construction projects with the innovative BuilDeck52, a high-strength zinc-coated steel decking system meticulously crafted for composite floor slabs. Tailored specifically for the dynamic needs of the Asian Construction Industry, BuilDeck52 stands as one of the most economical and efficient structural steel decking solutions in the region.

At the core of BuilDeck52 is a commitment to quality that aligns seamlessly with the principles of trust and reliability embodied by Buildco Lanka (Pvt) Ltd. This high-quality structural decking system not only meets industry standards but surpasses them, setting a new benchmark for performance and durability.

BuilDeck52 is your go-to solution for typical construction applications, offering the widest cover per weight of steel and minimizing the need for additional reinforcement. Serving as a permanent formwork for composite concrete slabs, this system transforms into a versatile working platform during assembly. From supporting wet concrete and construction materials to facilitating various trades, BuilDeck52 excels at every stage of construction.

As the concrete sets, BuilDeck52 seamlessly transitions into a vital component of the structure, acting as the bottom tensile reinforcement. This complete structural steel decking system is engineered for concrete, masonry, and steel frame construction, delivering exceptional composite performance that ensures the success of your projects.

Choose BuilDeck52 for a construction experience that goes beyond expectations — where innovation meets reliability, and excellence is the foundation of every build.

Crafted to Precision

BuilDeck52 emerges as a beacon of innovation with its distinctive "W" profile, setting a new standard in structural steel decking systems. Precision-engineered for optimal performance, it not only unlocks greater economy but also grants unparalleled design freedom to architects and builders alike.

This cutting-edge system is more than a mere construction solution; it is a testament to ease of use and safety. BuilDeck52 is crafted with meticulous attention to detail, ensuring a seamless and secure installation process. The result is a decking system that not only meets but exceeds industry standards, promising a construction experience marked by efficiency and reliability.

BuilDeck52 goes beyond the ordinary, boasting excellent spanning capacities that guarantee enhanced strength and minimal deflection. This translates into a structure that not only meets but surpasses performance expectations, offering a robust foundation for your projects.

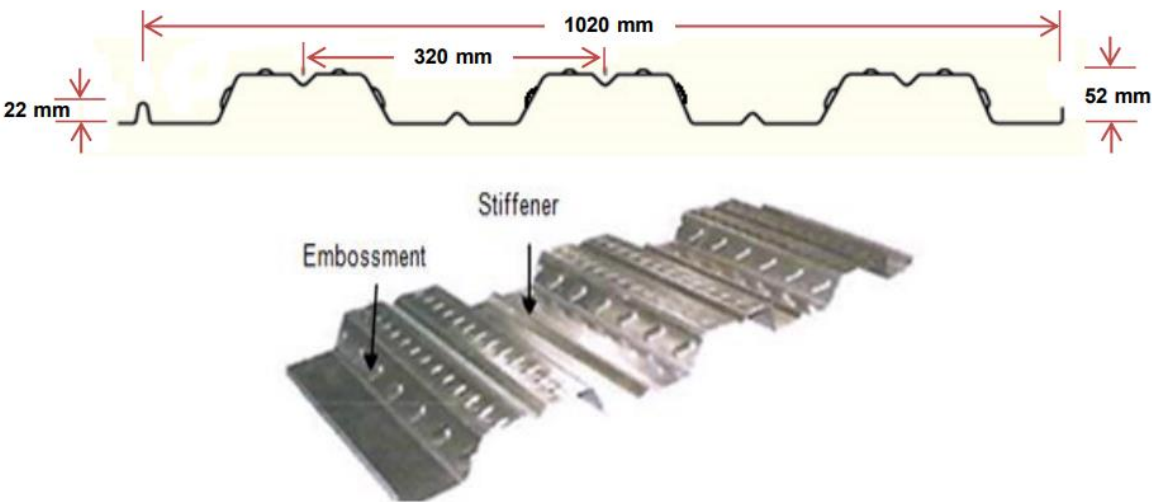
Choose BuilDeck52 for a structural decking system that combines innovation, precision engineering, and superior performance. Experience the freedom to design

Experience the Power of Precision with BuilDeck52

BuilDeck52, with its 52 mm rib depth, defines structural excellence. Offering an effective cover width of 1020 mm, this panel is meticulously designed for optimal performance, as illustrated in Figure A.

The embossments atop the flange aren't just details; they create a symphony of mechanical interlocking, ensuring an unyielding bond between steel and concrete. In its assembled state, BuilDeck52 boasts a profile featuring intermediate male and female ribs, seamlessly intertwining for every side-lap joint.

Unlock the potential of your construction projects with BuilDeck52 — where precision meets power, and every detail is a testament to structural perfection.



Forged in Strength: BuilDeck52 Unveiled

The BuilDeck52 panel is a testament to robust engineering, meticulously manufactured from hot-dipped zinc-coated high-strength steel. Boasting an impressive 550 MPa yield strength, this panel is built to endure the rigors of construction.

With a coating mass of Z275 (min 275g/m² total on both sides), BuilDeck52 ensures a resilient shield against the elements. The available thickness ranges from 0.70 mm to 1.2 mm BMT (Base Metal Thickness), providing versatility for a range of applications.

In adherence to industry standards, the steel used in BuilDeck52 conforms to AS1397 and BS EN 10147:2000, guaranteeing not just strength but compliance with the highest quality benchmarks.

Choose BuilDeck52 for a foundation forged in strength and resilience — where every layer speaks volumes about durability and precision

BuilDeck52 Span Table Formwork Stage

Span Type	Single			Continuous End			Continuous Interior			
	0.7	1	1.2	0.7	1	1.2	0.7	1	1.2	
BMT	0.7	1	1.2	0.7	1	1.2	0.7	1	1.2	
Slab Thickness (mm)	100	125	150	175	200	1860	1700	1610	1500	1280
	1860	2100	2150	1880	2270	2320	2050	2500	2550	
	1700	1950	2050	1730	2180	2270	1900	2400	2500	
	1610	1850	1950	1630	2090	2180	1770	2300	2400	
	1500	1750	1900	1540	1950	2090	1650	2150	2300	
	1280	1720	1820	1330	1850	1940	1400	2000	2100	

Table 01

Note to Table 01

- 0.50 kPa live load considered for stacked wet concrete during construction.
- Spans are calculated on the basis of limiting deflection of L/180 and ration of 2 adjacent spans is considered as 1.
- The above design is performed considering no supports of the props.
- BMT stands for Base Metal Thickness.
- Please contact Maxroof before adopting the design.

Comparison between conventional RCC and structural Decking slab

Conventional RCC Slabs:

In the realm of traditional construction, Conventional Reinforced Concrete (RCC) slabs have long been a staple. These slabs are primarily cast in situ, involving the on-site pouring and curing of concrete. While offering structural robustness, the conventional approach typically entails heavier floor systems, necessitating more extensive use of concrete and reinforcement. This can contribute to increased dead loads on the structure.

Structural Decking Slabs:

On the other hand, Structural Decking Slabs present an innovative alternative. These prefabricated systems combine the strength of steel and concrete, resulting in a lightweight yet robust flooring solution. The reduced weight not only facilitates faster construction but also minimizes the need for additional supports. This efficiency extends to a notable reduction in concrete usage and slab thickness, leading to economic benefits and substantial savings in reinforcement steel.

Comparative Advantages:

Weight Efficiency:

Conventional RCC slabs tend to be heavier due to the inherent characteristics of in-situ casting. Structural Decking Slabs, in contrast, offer a substantial reduction in floor weight, enhancing overall structural efficiency.

Economic Considerations:

Structural Decking Slabs demonstrate economic advantages by eliminating the requirement for extra supports, reducing concrete usage, and decreasing the need for reinforcement steel. This contributes to cost savings in both materials and labor.

Speed of Installation:

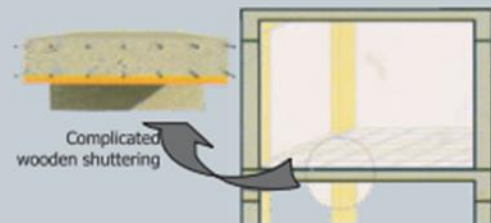
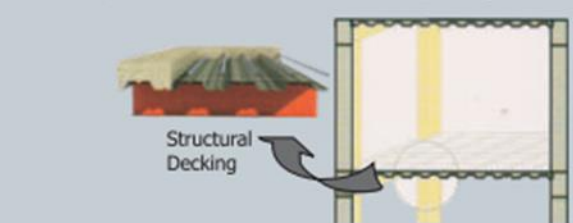
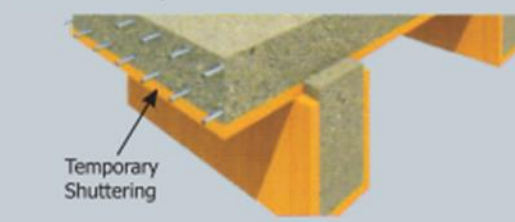
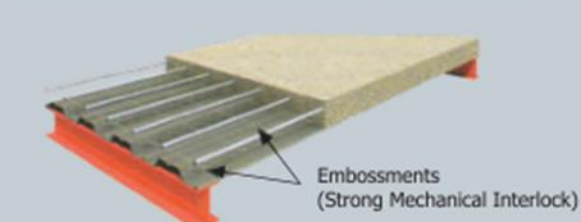
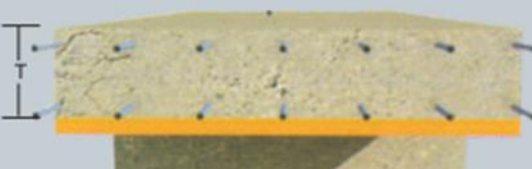

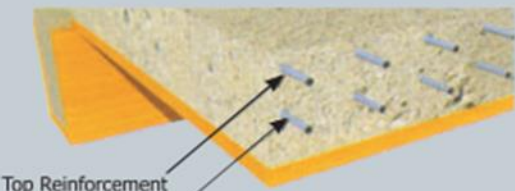
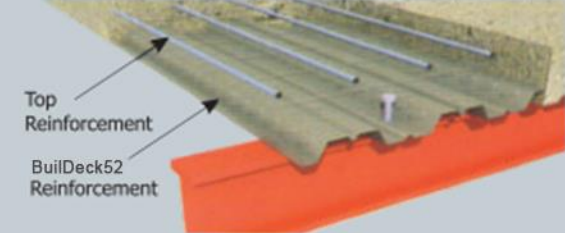
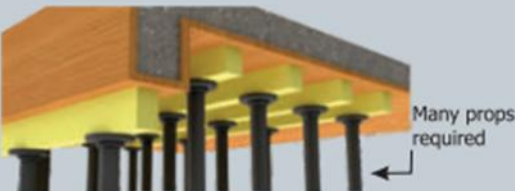
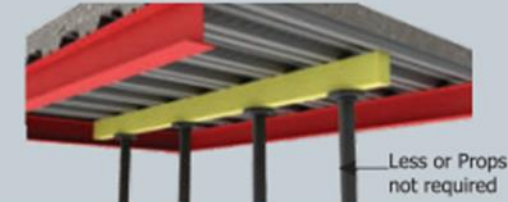
The prefabricated nature of Structural Decking Slabs results in quicker and more straightforward installations compared to the time-intensive process of on-site casting associated with conventional RCC slabs.

Versatility:

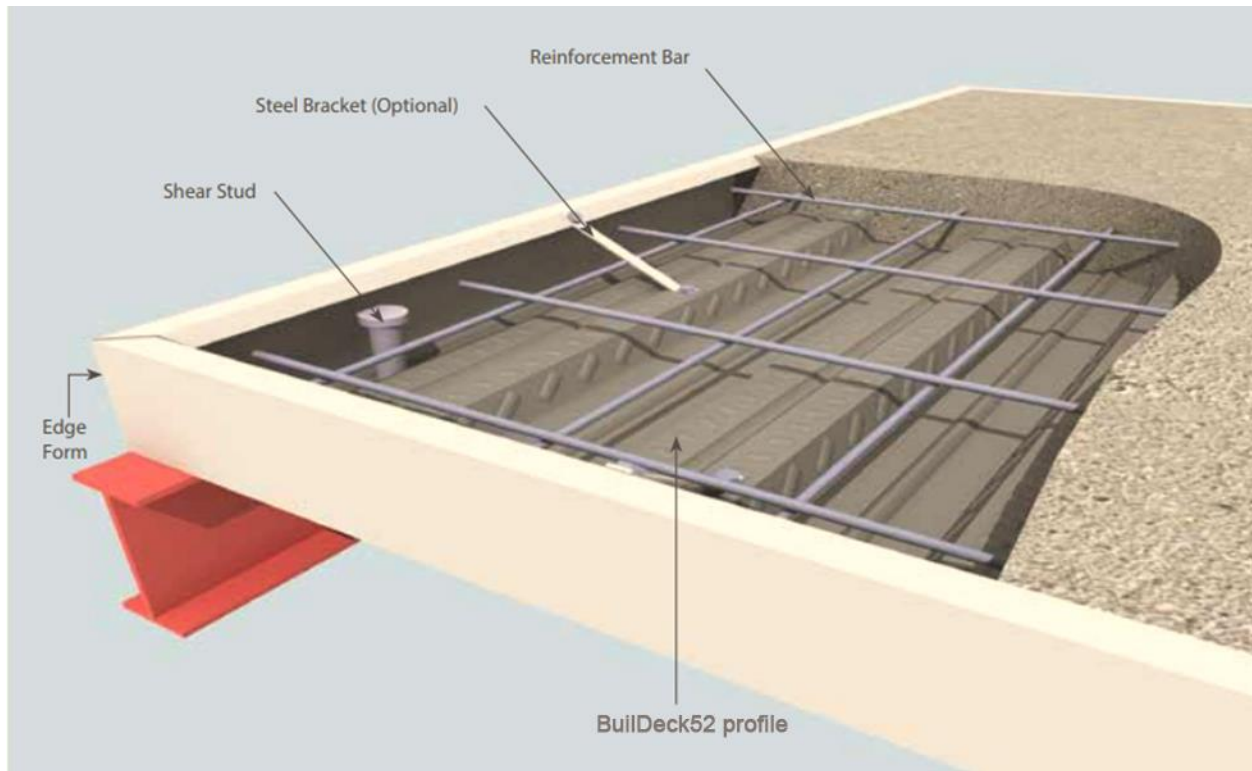
While both systems find application in a variety of structures, Structural Decking Slabs exhibit versatility across different construction scenarios, including multistory buildings, industrial facilities, and commercial spaces.

Aesthetic Considerations:

Structural Decking Slabs, with their streamlined design and polished finish, offer aesthetic appeal without the need for internal plastering, providing a visually pleasing and functional surface.

	Conventional RCC Slab	Structural Decking Slab
Structural Element	<p>Wood Shuttering are removed after concrete curing period.</p>  <p>Complicated wooden shuttering</p>	<p>Becomes a part of slab and makes it structurally strong.</p>  <p>Structural Decking</p>
Composite Action	<p>Wooden shuttering removed after slab is cured.</p>  <p>Temporary Shuttering</p>	<p>Embossment provide shear bond between steel & concrete</p>  <p>Embossments (Strong Mechanical Interlock)</p>
Concrete Saving	<p>Volume of Concrete as per slab depth</p>  <p>T = More thickness of concrete</p>	<p>Concrete saving makes construction economical</p>  <p>Trapezoidal shape of BuilDeck52 saves concrete T1 = Less thickness of concrete</p>
Steel Saving	<p>Reinforcement steel as required</p>  <p>Top Reinforcement Bottom Reinforcement</p>	<p>Act as bottom tensile reinforcement-steel saving</p>  <p>Top Reinforcement BuilDeck52 Reinforcement</p>
Prop Arrangement	<p>Complicated prop arrangement</p>  <p>Many props required</p>	<p>High tensile steel provides large unpropped spans</p>  <p>Less or Props not required</p>

BuiDeck52_Connection Details



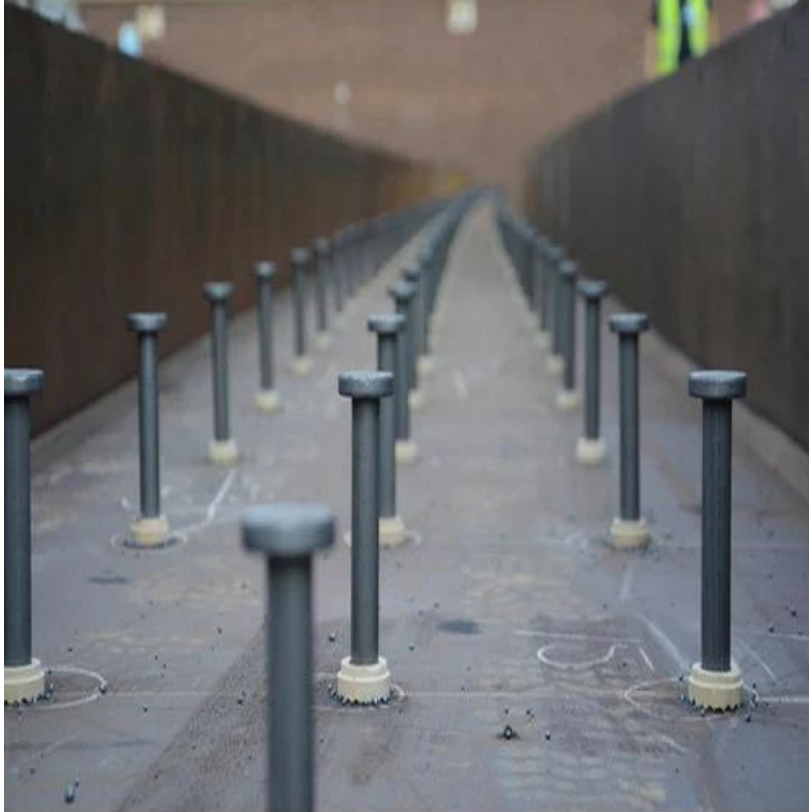
Role of Shear Stud

composite beams in construction consist of hot-rolled steel sections seamlessly integrated with a concrete slab, forming a powerful alliance in structural design. This amalgamation of materials creates a composite system that capitalizes on the strengths of both steel and concrete. Vital to this synergy are shear studs, essential components designed to facilitate the effective transfer of forces between the steel section and the concrete slab.

Shear studs play a pivotal role in ensuring the integrity and stability of composite beams. These studs are strategically welded to the steel beams, typically through the deck sheet, forming a robust connection. By penetrating the concrete slab, shear studs establish a secure bond, enabling the efficient transmission of shear forces between the steel and concrete components.

This collaborative arrangement enhances the load-bearing capacity and performance of the composite structure, effectively resisting both bending and shear forces. The utilization of shear studs facilitates composite action, where the steel and concrete work together as a unified system, providing optimal strength and structural efficiency.

In summary, composite beams, featuring hot-rolled steel sections and concrete slabs, epitomize a sophisticated structural solution. Shear studs, meticulously integrated through welding, serve as the linchpin for the seamless collaboration between steel and concrete, ensuring the composite system's resilience and overall effectiveness in diverse construction applications.



Shear studs of Type SD1 represent a pinnacle of engineering precision, meticulously crafted from low carbon steel boasting a minimum yield strength of 350 N/mm² and a minimum ultimate tensile strength of 450 N/mm². Manufactured in strict accordance with the exacting standards set forth by BS EN ISO 13918, these shear studs exemplify a commitment to quality and reliability in structural applications.

With available diameters of 16 mm and 19 mm, and heights spanning from 75 mm to 125 mm, these shear studs offer a versatile solution tailored to the specific demands of composite construction. The 16 mm and 19 mm diameter options provide

flexibility, allowing engineers to fine-tune the selection based on the unique requirements of the project at hand.

In adherence to the stringent guidelines of BS EN ISO 13918, these shear studs ensure not only robust performance but also a steadfast adherence to industry standards. The utilization of low carbon steel underscores a balance between strength and malleability, ensuring that these shear studs seamlessly integrate into composite beam systems, contributing to the overall structural resilience and load-bearing efficiency.

In summary, the Shear studs of Type SD1, characterized by their adherence to BS EN ISO 13918, stand as a testament to precision engineering. With a range of diameters and heights, these studs provide a tailored solution for composite construction, embodying strength, durability, and a steadfast commitment to quality craftsmanship.





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To obtain more details about the necessary components for BuilDeck52 Decking, including Edge Foam, Decking Fasteners, and Steel Brackets, it is recommended to reach out to the Buildco Tech Technical team. You can visit the official Buildco Tech website for contact information or use customer support channels such as phone, email, or online contact forms. Providing specific details about your requirements will help the technical team offer accurate and helpful information regarding the Edge Foam, Decking Fasteners, and Steel Brackets needed for BuilDeck52 Decking.