

Formsteel™



WORLD CLASS STEEL BUILDINGS SINCE 1972

**UNIFLOOR®
PRODUCT SPECIFICATION**

<https://formsteel.steelspec.co.nz>

UNIFLOOR®

MANUFACTURED TO THE LATEST NZ BUILDING STANDARDS, UNIFLOOR® IS AN ADAPTABLE & EASY TO INSTALL FLOORING SOLUTION FOR A RANGE OF PROJECTS.

**Use the Composite Steel Decking online design tool
<https://formsteel.steelspec.co.nz>**

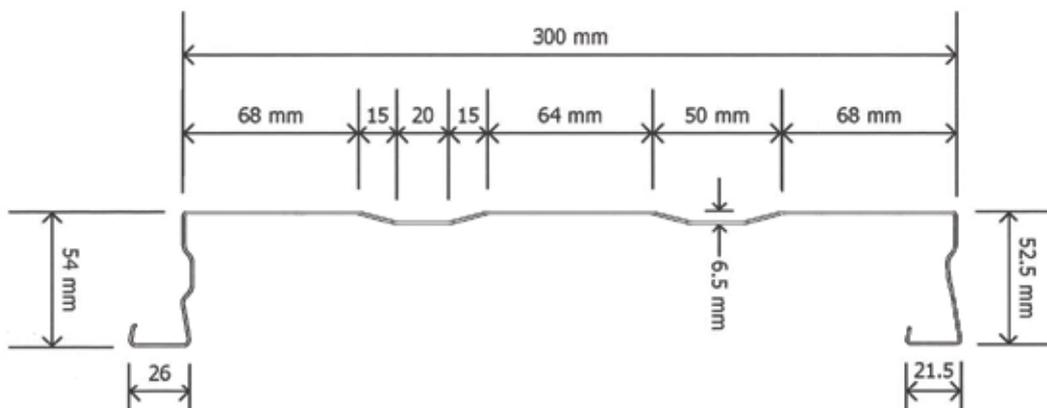
UNIFLOOR® is a long span Flat Soffit profile with a 300 mm cover. It's an interlocking and adaptable and easy to install floor solution for a range of building & construction projects. Engineered with a unique profile that has an interlocking edge lap, the Unifloor design complements that of vertical tilt panels. Their combined use allows design for commercial, industrial and residential buildings to be combined, utilising diaphragms to connect to vertical shear walls in their major orientation.

All our profiles are manufactured from the highest grade steel, and designed utilizing up to date design standards including:

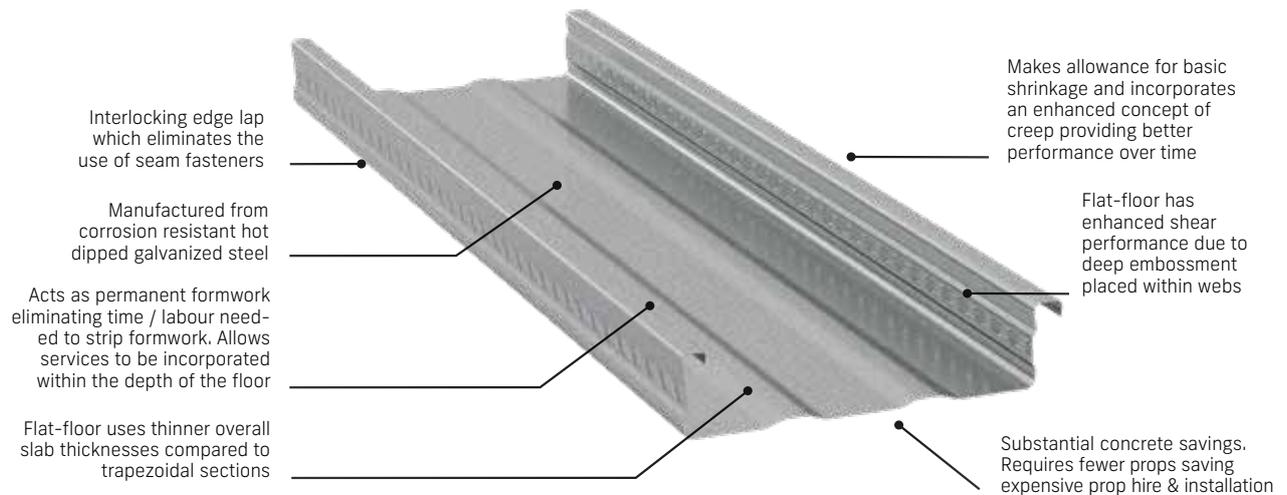
- AS/NZS 4600 "Cold formed structures code"
- AS/NZS2327:2017 Composite Structures - Composite Steel concrete construction in Buildings

UNIFLOOR® flat deck profile section panels are manufactured from G550 (550MPa yield stress) steel with a base metal thickness of 0.752mm, 0.95mm & 1.15mm. The steel panel is protected with a galvanized coating of Z275. UNIFLOOR® is delivered to site pre-cut to the correct sizes and ready to fix, reducing on site work. Cost effective & easy to install, UNIFLOOR® composite steel decking system delivers longer spans, requires less concrete, and ultimately drives down project cost.

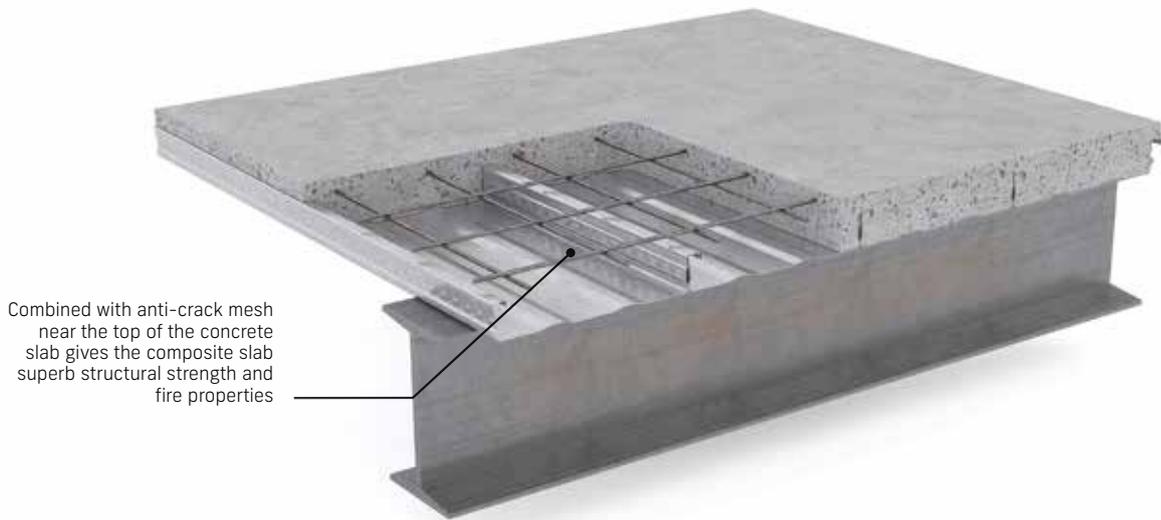
UNIFLOOR® PROFILE



UNIFLOOR® PROFILE & FEATURES



UNIFLOOR® INSTALLED CROSS SECTION



UNIFLOOR® DESIGN NOTES

INTRODUCTION

UNIFLOOR® has been engineered to offer outstanding performance in the design for commercial, industrial and residential multi-storey buildings. The shallow floor depth produces a slim floor, which results in significant savings on the amount of concrete required. It offers excellent shear bond performance.

The nestable profile shape of UNIFLOOR® reduces transport and handling costs. Delivered to site pre-cut to the correct sizes and ready to fix, reducing on site work. Cost effective & easy to install, UNIFLOOR® composite steel decking system makes an excellent flooring solution for your projects. **Use the Composite Steel Decking online design tool: <https://formsteel.steelspec.co.nz>**

LATEST TECHNICAL SPECIFICATIONS

As the last word in quality, Formsteel® composite tray decking systems apply the best of current technical thinking. This results in peerless performance, including:

- Enhanced shear performance due to deep embossing
- No rolling lube used to maintain concrete/steel bond
- Super concrete/steel indent in profile for superior bond
- Tested for concrete/steel bond and vibration, creep and shrinkage
- The formed stop end at the transition of floor and beam resists crack-forming sharp ends. It also assists laying and blends into beams
- All profiles 550mpa base steel strength
- 0.75, 0.95 are standard in G550.

LONG-SPAN CAPABILITY

The exceptional profile designs of UNIFLOOR® deliver outstanding unpropped spanning capability and strength. Ultimately this helps to reduce both project structural steel requirements and costs. Design software is available to give unpropped double span options. Longer deck spans broaden beam spacing and reduce the number of the support beams, resulting in rapid erection and savings on the cost of the supporting steelwork

QUALITY & COST EFFICIENCIES

Formsteel's composite flooring solutions are designed to be adaptable, easy to install and cost-effective on any project. All our profiles are manufactured from the highest grade steel, and designed utilizing up to date design standards including:

AS/NZS 4600 "Cold formed structures code"

AS/NZS 2327:2017 "Composite Structures

'Composite Steel concrete construction in Buildings'

Panels are manufactured from G550 (550MPa yield stress) steel with a base metal thickness of 0.752mm, 0.95mm & 1.15mm. The steel panel is protected with a galvanized coating of Z275.

RELIABILITY & DEPENDABILITY

Our machinery is run by automated data controlled systems to make sure 100% accuracy and control across the manufacturing process. We also have capability to produce Pre-formed crushed ends using extra tooling connected to our machinery. Once the decking profiles are made, the product is packed with the sheet description. This ensures the smooth delivery of our products to site without mistakes. The sheets are carefully loaded and transported to site on time and to your exact specification. Our team are experts, and fully-trained to execute to the standards that you demand. Quality control check's, and regular maintenance of our production facility ensure that we stay on track to your brief.

SHEAR INTERACTION & PERFORMANCE

UNIFLOOR® has enhanced shear performance due to deep embossment placed within webs. This guarantees shear stud positioning to optimise composite action, reducing the requirement for on-site checking.

EXCELLENT ACOUSTIC & FIRE PERFORMANCE

The Flat-floor manual concentrates on the use of fire emergency reinforcement (FER). Flat-floor has an inherent 30 minute FRR and requires no additional reinforcement at this rating. Fire designs are available for 60 min, 90 min, 120 min and 180 min FRR. Design live loadings used have been rationalized to 1.5 kPa, 3.0 kPa, 4.0 kPa and 5.0 kPa.



SAFE MANUAL HANDLING

UNIFLOOR® is engineered to 600mm width sheets, is lightweight and easy to handle, which makes them a safer option, especially when working at heights.

SHRINKAGE CONSIDERATION

The degree of cracking will be determined in part by the amount of steel provided and the tensile stress within the negative reinforcement bars. Only shrinkage associated with restraint provided to concrete by the tray floor itself is considered in this brochure. Where the floor is supported on stiff walls advice is to be sought from Formsteel.

CREEP INCORPORATION

Composite floor design uses the notion of transformed area and modular ratio to determine the combined member properties of the steel and concrete elements. Modular ratio values can vary between 8 and 26 depending on the nature and magnitude of loading.

DESIGN SOFTWARE TOOL - STEELSPEC™

Formsteel developed this tool so that Engineers are efficiently and quickly able to specify the right product. Steelspec™ has been designed to the latest standard AS/NZS2327:2017 Composite Structures – Composite Steel concrete construction in Buildings. A unique feature of the Steelspec™ tool, is the ability to optimise different solutions and provide you with the best suited design option.

REDUCED CONCRETE USAGE

The profile design of UNIFLOOR® minimises the depth required for fire, acoustic and structural design. As this requires less concrete volume for slab depth, UNIFLOOR® delivers a more sustainable & cost efficient solution through the reduction of concrete loads across all foundations and relating structures.

INSTALLATION

UNIFLOOR® is delivered to site pre-cut to the correct sizes ready to fix, reducing on site work. It acts as permanent formwork eliminating time and labour needed to strip formwork. The state-of-the-art profile has been developed using modern roll-forming techniques, drawing on our 20 years of experience in designing

advanced composite floor systems. Engineered with a lower rib height UNIFLOOR® provides excellent acoustic performance, fire protection and improved vibration dampening properties. Its profile has been specially designed with trough stiffeners and side laps positioned to guarantee centrally placed shear studs, ensuring the best possible stud performance. The cover width is just 600mm, creating lightweight sheets that are easy to handle – delivering significant on-site safety benefits. UNIFLOOR® has a wide range of applications, is fast to construct, lightweight, and provides a safe working platform so that the building process can continue without delay.