FIELDERS STEEL
Ideas to Shape the Future

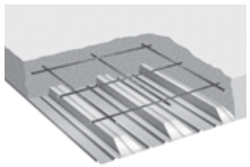
KingFlor®

Composite Steel Flooring Solution

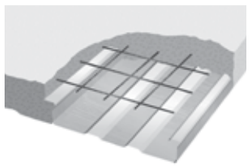
STEEL FORMWORK SOLUTIONS FOR CONCRETE & STEEL FRAME BUILDINGS

Each of the five profiles in Fielders KingFlor® steel decking range have been developed to provide the most optimal flooring solution in the wide range of building construction types found in Australia.

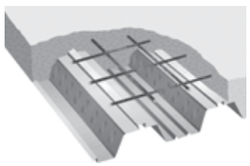
KingFlor® steel decking provides the designer the ability to tailor a flooring solution whilst accessing the inherent benefits of steel decking over labour and material intensive ply timber and lost formwork alternatives. KingFlor® is manufactured from DECKFORM® by Bluescope.



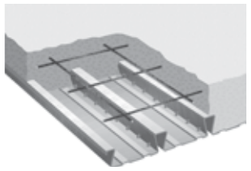
KF40® An economical profile for real savings! *A unique alternative to ply formwork providing concrete savings up to 40kg/m².*



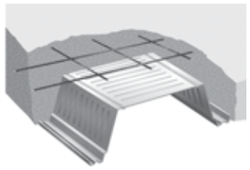
KF57® Quick, easy and accommodating! *Provides unrivaled performance in fire rated slab applications.*



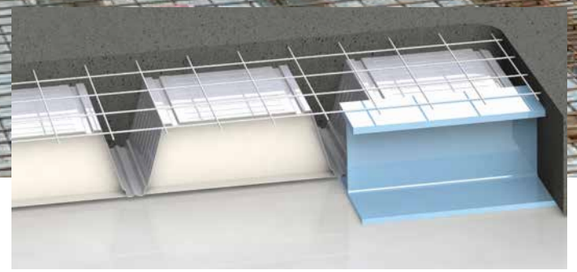
KF70® Larger spans for greater savings! *Provides for longer unpropped spans and concrete savings due to the high performance trapezoidal profile.*

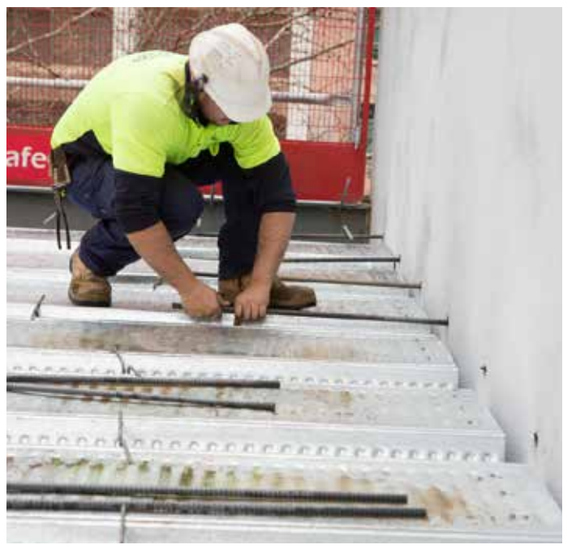


RF55® A Strong and Reliable Solution! *The industry leader in both concrete and steel frame construction.*



CF210® Long spans with lower floor construction depths! *SlimFlor® utilises Fielders CF210 flooring profile in conjunction with asymmetric steel beam sections (ASB) to provide a long spanning, cost effective integrated steel flooring system.*





SLIMFLOR®

ENGINEERED STEEL FLOORING SOLUTION

SlimFlor® utilises Fielders CF210® flooring profile in conjunction with asymmetric steel beam sections (ASB) to provide a long spanning, cost effective integrated steel flooring system. The CF210® profile and ASB steel sections are constructed in plane with the steel decking supported on the bottom flange of the steel beam providing a floor depth construction zone much less than conventional down-stand beam construction. The deep ribs of the CF210® decking provide a zone for the running of services.

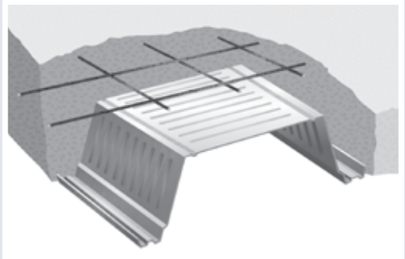
- > INTEGRATED ALL STEEL FLOORING SYSTEM
- > REDUCED FLOOR CONSTRUCTION DEPTH
- > LONG SPANNING CF210 DECKING

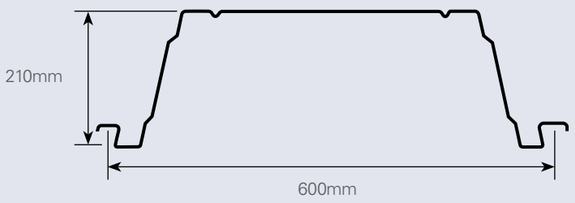
The SlimFlor® system has a minimum construction depth of 290mm with an equivalent weight of a 120mm concrete slab (comparison only, taking slab weights into consideration), due to the CF210® profile displacing the equivalent of 170mm of concrete from the slab profile.

CF210® LONG SPANS AND LOWER FLOOR DEPTHS

Fielders CF210® is a long spanning decking profile capable of achieving unprecedented unpropped spans during construction of up to 5.5m and propped spans of over 8m. When combined with Fielders SlimFlor® construction system, floor construction depth can be reduced to as little as 290mm.

- Unique profile: Concrete savings of up to 60% when compared to alternative formwork products.
- Large unpropped spans: Less propping congestion and easy access to the underside of the slab.
- Reinforcing mesh can be laid directly onto the ribs. In many applications there is no need for mesh support stools
- SlimFlor® construction: Floor system depths as low as 290mm
- Concrete savings: CF210® effectively saves 170mm off the overall slab depth when compared to conventional concrete slabs. This represents significant savings in concrete costs, supporting framework and foundation loads.
- Fire and acoustic floor system solutions





CF210® is manufactured from G550 (550 MPa Yield Stress) DECKFORM® steel with a Base Metal Thickness (BMT) of 1.21mm. The galvanised coating thickness is a Z350 (275 g/m2) in accordance with AS 1397:2001.

Material Properties	1.21 BMT
Mass Area – Average mass of fitted deck per plan area (kg/m^2)	16
Mass Linear – Mass of individual length (kg/m)	9.6
Zinc Coating (g/m^2) (Z350)	275
Yield Strength (MPa)	500

CF210® IN THE MARKET - MERITON NORTH SYDNEY

PROJECT SPECIFICS

20,000m^2 of KingFlor® CF210®

MATERIALS:

KingFlor® CF210®

SYSTEM:

Fielders CF210® SlimFlor® system

BUILDER:

Meriton

INSTALLER:

Santana Stud Welding

THE PROJECT

Fielders collaborated with Meriton, Enstruct and Tony Caro Architects to provide 20,000m^2 of KingFlor® CF210® decking at the luxury Meriton apartment tower in North Sydney.

Heralded a 'game-changer' for industry construction methods, the $200m development is the first high-rise residential building in Australia to be constructed purely from structural steel, eliminating the use of the traditional concrete frame building method.

The Arthur Street tower provides unparalleled luxury, with 218 stylish short-stay apartments across 30 levels with sweeping views of the Harbour, Opera House and Sydney's skyline.

THE SOLUTION

The CF210® SlimFlor® system was chosen due to its ability to reduce the construction depth of the flooring from the traditional steel construction depth of 450mm to 650mm, down to 290mm. This allows the construction method of steel to compete favourably with concrete framed buildings and in comparison, contributed to a significantly faster construction time and reduced costs.

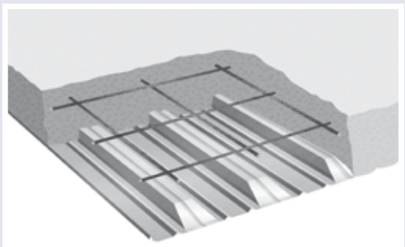
THE PROCESS

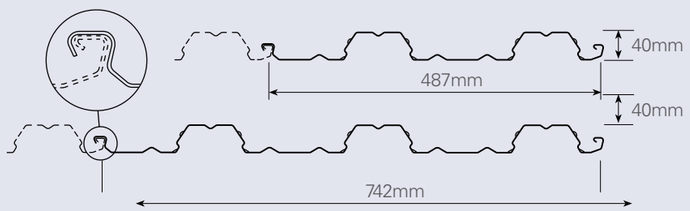
The supply of Fielders CF210® commenced in June 2015 and was completed early February 2016. The entire development was completed in late 2016 with the stylish apartments opened up to residents thereafter.

KF40® ECONOMICAL PROFILE FOR REAL SAVINGS!

Fielders KF40® is a revolutionary steel formwork solution suitable for concrete slabs in all types of construction. KF40® combines the performance of a traditional flat pan profile with the unmatched economy and concrete saving of a trapezoidal deck.

- SquashCut™ ends: No end caps needed. Also provides rigid and secure platform during construction.
- Unique off-set lap: Enables shear studs to be placed centrally in the pan in the most optimal position.
- Unique profile: Concrete savings up to 40kg/m² (16mm off slab depth).
- Lower 40mm height: Suitable for post-tensioning ducts.
- Wide 487mm or 742mm cover: Economical deck.
- Strong re-entrant features: KF40® has been specifically designed to provide a strong and reliable shear bond performance giving strong composite slabs..





KF40® is manufactured from G550 (550 MPa Yield Stress) DECKFORM® steel in a 2 pan or 3 pan profile* with a Base Metal Thickness (BMT) of 0.60mm, 0.75mm and 1.00mm. The galvanised coating thickness is a Z350 (350 g/m2) in accordance with AS 1397:2001.

Material Properties	0.60 BMT	0.75 BMT	1.00 BMT
Mass Area – Average mass of 2-PAN deck per plan area (kg/m²)	7.04	8.67	11.39
Mass Area – Average mass of 3-PAN deck per plan area (kg/m²)	6.78	8.35	10.97
Mass Linear – Mass of individual 2-PAN length (kg/m)	3.43	4.22	5.55
Mass Linear – Mass of individual 3-PAN length (kg/m)	5.03	6.19	8.14
Zinc Coating (g/m²) (Z350)	350	350	350
Yield Strength (MPa)	550	550	550

KF40® IN THE MARKET - V BY CROWN

PROJECT SPECIFICS

70,000m² of KingFlor® KF40®

MATERIALS:

KingFlor® KF40®

ARCHITECT:

Koichi Takada

Allen Jack + Cottier

CONTRACTOR:

Crown International

THE PROJECT

V by Crown is a world-class apartment tower currently under construction in Parramatta, NSW, offering sweeping views of the Sydney skyline and heritage parklands. The $309m residential apartment building is set to soar 29 storeys high and will be superbly finished with a luxurious glazed mirrored exterior

Fielders were contracted by Crown International and Allen Jack & Cottier Architects to provide multiple solutions including 70,000m² of KingFlor KF40® steel framework for the new development.

THE SOLUTION

KingFlor KF40® was chosen for this project due to its trapezoidal shape saving the project 16 millimetres of concrete across the entire project of 70,000m2. KF40®'s unique design with wider coverage will not only save on preparatory costs, it also allows for the floor laying to be executed faster.

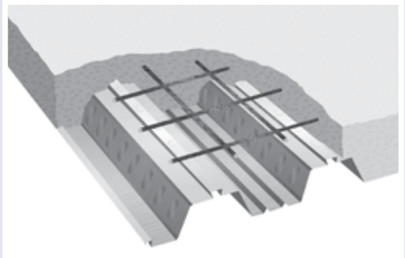
THE PROCESS

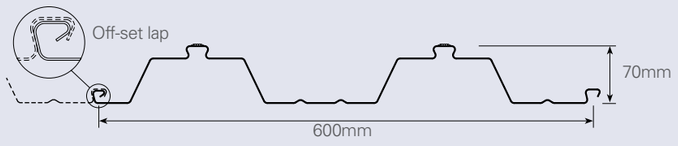
The supply of the KingFlor KF40® decking profile commenced in January 2015. The entire development was completed and open to residents in late 2016.

KF70® LARGER SPANS FOR GREATER SAVINGS!

Fielders KF70® is a revolutionary steel formwork solution for composite concrete slabs in concrete and steel-framed construction. It's the answer to increased market demand for a lightweight profile capable of large spans. The KF70® profile displaces 26mm of concrete from the total slab depth to achieve a lightweight slab.

- Significant saving in concrete costs, supporting framework and foundation loads.
- SquashCut™ ends: No end caps needed. Also provides rigid and secure platform during construction.
- Unique off-set lap: Enables shear studs to be placed centrally in the pan in the most optimal position.
- Large unpropped spans: Less propping congestion and easy access to the underside of the slab.
- Supplied pre-cut to length, with 600mm wide cover: Quick install.
- Dovetail rib provides a simple hanger solution: Economic and easy suspension of services from an insert in the dovetail rib.
- Strong re-entrant features: KF70® gives a strong and reliable shear bond performance making strong composite slabs.
- KF70® effectively saves 26mm of concrete off the overall slab depth by concrete volume when compared to conventional concrete slabs.





KF70® is manufactured from G550 (550 MPa Yield Stress) DECKFORM® steel with a Base Metal Thickness (BMT) of 0.75mm and 1.00mm. A thickness of 0.60mm BMT is also available upon request, subject to stock availability and order quantities. The galvanised coating thickness is a Z350 (350 g/m2) in accordance with AS 1397:2001.

Material Properties	0.75 BMT	1.00 BMT
Mass Area – Average mass of fitted deck per plan area (kg/m^2)	8.97	11.78
Mass Linear – Mass of individual length (kg/m)	5.38	7.07
Zinc Coating (g/m^2) (Z350)	350	350
Yield Strength (MPa)	550	550

KF70® IN THE MARKET - ADELAIDE CONVENTION CENTRE

PROJECT SPECIFICS

6,000m^2 of KingFlor® KF70®

MATERIALS:

KingFlor® KF70®

BUILDER:

Lend Lease

INSTALLER:

Mitcon Formwork

THE PROJECT

The $350 million redevelopment of the Adelaide Convention Centre in South Australia is set to boost the state's economy by more than $1.92 billion over 25 years, elevating Adelaide as a true competitor on the global conferencing and exhibition stage.

With Stage 1 completed in 2014, Stage 2 of the Centre's redevelopment is currently in progress which replaces the original Plenary Building constructed in 1987. When complete in 2017, the facility will boast a capacity increase of 3,500 seats with state-of-the-art, world-class convention and exhibition space.

Fielders were contracted by Lend Lease and Mitcon to supply over 6,000m^2 of KingFlor® KF70® steel flooring throughout the development.

THE SOLUTION

KingFlor® KF70® was chosen for this project due to its longer spanning capability as compared to other steel decks on the market. KF70®'s unique design with wider coverage will not only save on preparatory costs, but also mean that the laying of the floor will overall be executed faster.

THE PROCESS

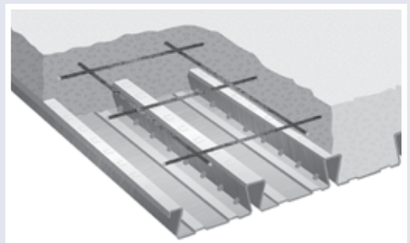
The supply of KF70® at the Adelaide Convention Centre commenced in September 2015 with an estimated supply completion date of March 2016. The entire development is due to be completed and open for business in June 2017.

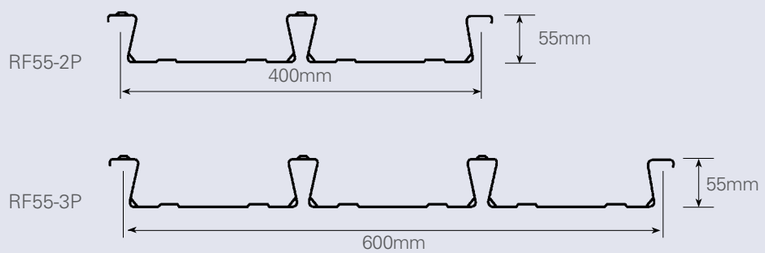
RF55® A STRONG AND RELIABLE SOLUTION!

Fielders RF55® is a traditional flat pan or 're-entrant' profile, it provides unmatched performance in suspended concrete slabs. Used in both concrete and steel frame construction it utilises patented technology to achieve superior spanning capabilities, less deflection and greater composite strength than similar re-entrant profiles.

RF55® comes complete with a range of accessories allowing for easy suspension of ceilings and services.

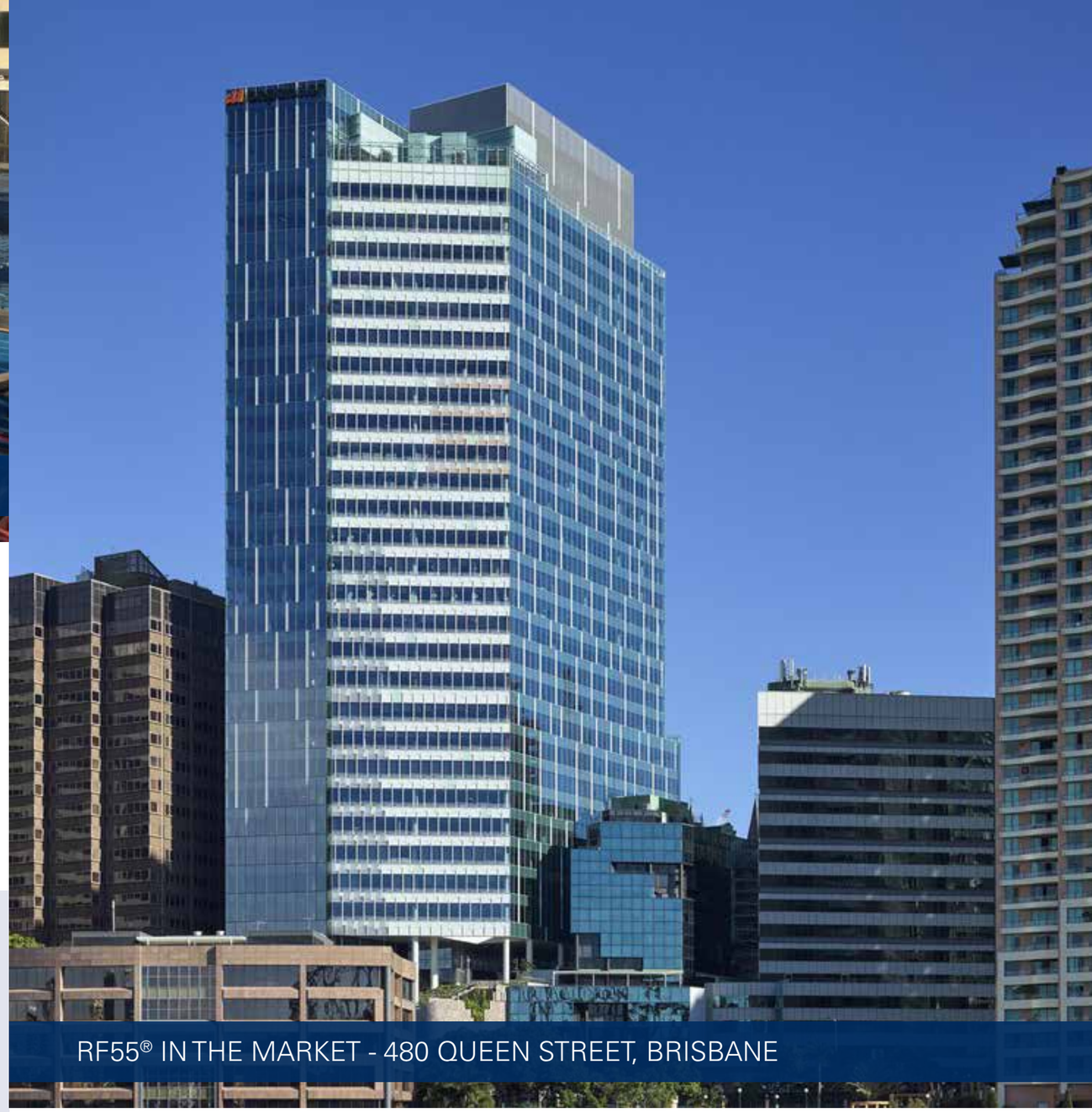
- Stronger composite strength: RF55® is stronger than similar decks due to the patented ReLok corner embossments. ReLok develops a strong mechanical interlock with the concrete slab.
- Greater spanning capacities: RF55® is stronger than similar decks in positive bending and end shear due to the dovetail ribs which resist lateral deflection.
- RF55® is available in two sheet widths. The traditional 600mm wide cover, 3 pan, and the easy to handle, 400mm wide cover, 2 pan.
- The RF55-2P is equivalent in all aspects technically to the RF55-3P. Similarly, the recommendations for RF55® in construction also apply to both RF55-3P and RF55-2P.





RF55® is manufactured from G550 (550 MPa Yield Stress) DECKFORM® steel with a Base Metal Thickness (BMT) of 0.60mm, 0.75mm, and 1.00mm. The thicknesses of 0.90mm and 1.20mm BMT are also available on request. The galvanised coating thickness is a Z350 (350 g/m2) in accordance with AS 1397:2001.

Material Properties	0.60 BMT	0.75 BMT	0.90 BMT	1.00 BMT
Mass Area – Average mass of 2-PAN deck per plan area (kg/m^2)	8.57	10.56	12.55	13.87
Mass Area – Average mass of 3-PAN deck per plan area (kg/m^2)	8.38	10.32	12.27	13.56
Mass Linear – Mass of individual 2-PAN length (kg/m)	3.43	4.22	5.02	5.55
Mass Linear – Mass of individual 3-PAN length (kg/m)	5.03	6.19	7.36	8.14
Zinc Coating (g/m^2) (Z350)	350	350	350	350
Yield Strength (MPa)	550	550	550	550



RF55® IN THE MARKET - 480 QUEEN STREET, BRISBANE

PROJECT SPECIFICS

68,000m^2 of KingFlor® RF55

MATERIALS:

KingFlor® RF55

ARCHITECT:

BVN

STRUCTURAL ENGINEER:

Aurecon

THE PROJECT

Constructed as Brisbane's first steel tower in 30 years, 480 Queen Street is a premium grade commercial office development incorporating a publicly accessible pedestrian street and elevated park that establishes a new office building typology for Brisbane's Central Business District.

Termed a 'Campus Tower', the development is designed to incorporate a carefully considered commercial and public realm solution meeting the brief for 'Premium' grade office accommodation.

THE SOLUTION

KingFlor® RF55® was chosen for the Queen Street project due to its superior spanning capability and lower preparatory costs. RF55®'s reduced need for temporary props allowed a fast-track construction to assist the builders in on-time completion.

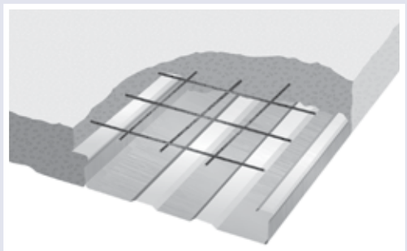
THE PROCESS

The supply of the KingFlor RF55® decking profile commenced in 2014. The entire development was completed and open to the public in February 2016.

KF57® INSTALLATION MADE EASY!

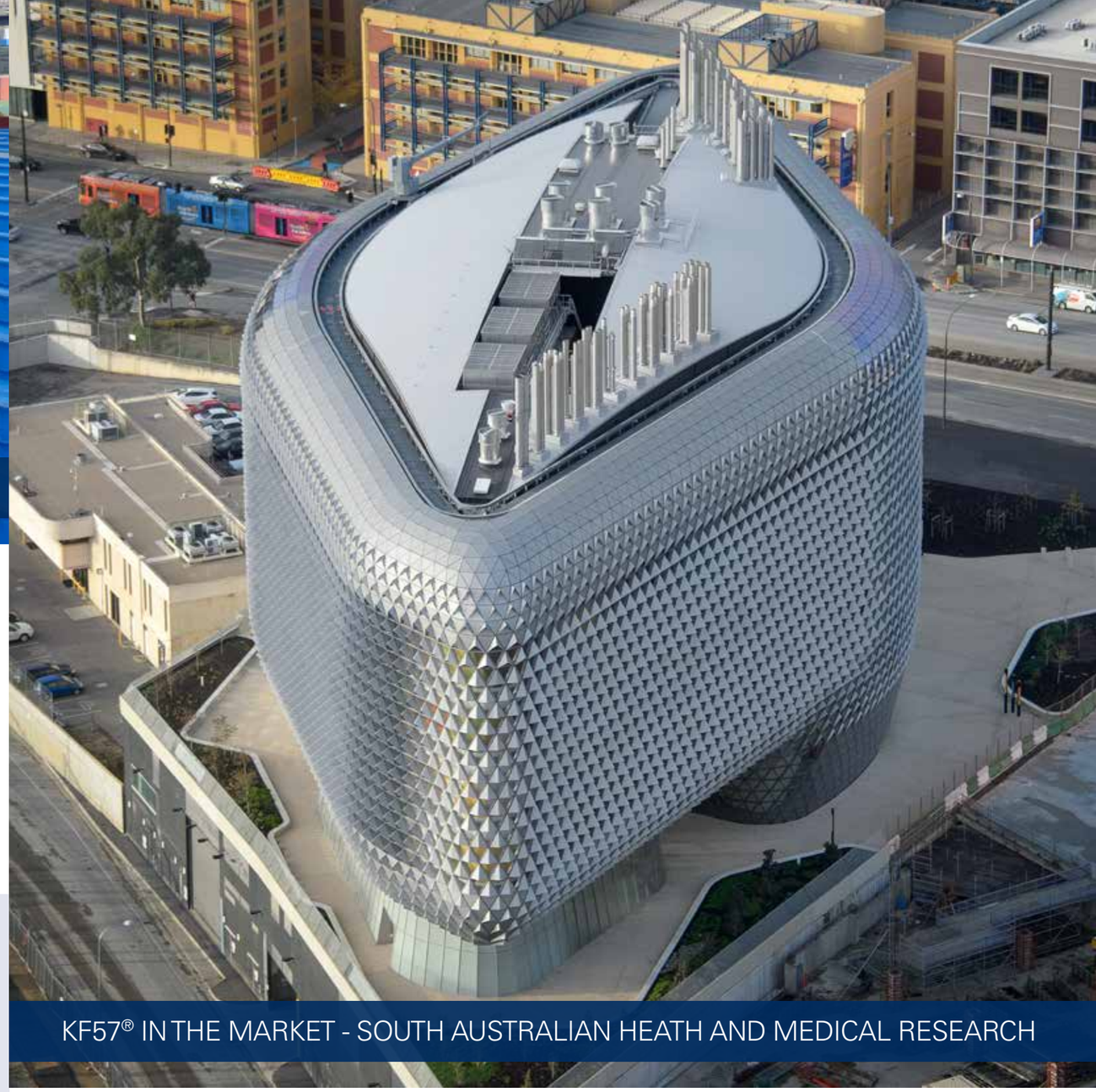
Fielders KF57® is a steel formwork solution suitable for composite concrete slabs in concrete and steel framed construction. Light, easy to use, steel decking designed to combine with a concrete slab to produce a composite concrete slab system. KF57® incorporates an improved deck profile with deeper pan stiffeners.

- Permanent composite formwork system: Once laid, KF57® becomes a permanent part of the slab, eliminating formwork stripping.
- Unique profile: Wide pans allow for clear access for in-floor services.
- Minimal propping: Less propping congestion and easy access to the underside of the slab.
- Supplied pre-cut to length, with 300mm wide cover: Quick to install.
- Reinforcing mesh can be laid directly on to the ribs: In many applications there is no need for mesh support stools.
- Closed rib profile, fully embedded in concrete slab: Major reduction in fire reinforcement.



KF57® is manufactured from G550 (550 MPa Yield Stress) DECKFORM® steel with a Base Metal Thickness (BMT) of 0.60mm, 0.75mm and 1.00mm. The galvanised coating thickness is a Z350 (350 g/m2) in accordance with AS 1397:2001.

Material Properties	0.60 BMT	0.75 BMT	1.00 BMT
Mass Area –Average mass of fitted deck per plan area (kg/m^2)	8.09	9.97	13.10
Mass Linear – Mass of individual length (kg/m)	2.43	2.99	3.93
Zinc Coating (g/m^2) (Z350)	350	350	350
Yield Strength (MPa)	350	350	350



KF57® IN THE MARKET - SOUTH AUSTRALIAN HEATH AND MEDICAL RESEARCH

PROJECT SPECIFICS

3,000m2 of KingFlor® KF57®
KF57 1.00mm

MATERIALS:

KingFlor® KF57®

ARCHITECT:

Woods Bagot

CONTRACTOR:

Formwork: System Formwork,
Roofer: S&LJ Roofing

THE PROJECT

Heralded a 'game-changer' for architecture in South Australia, the $200 million South Australian Health and Medical Research Institute (SAHMRI) building in Adelaide's CBD has redefined the city's north-western skyline. Designed by architectural firm Woods Bagot, the world-class building was constructed to house up to 700 researchers as the state's leading medical research facility, being the first stage of a new health and bio-medical precinct.

Fielders were contracted to provide 3,000m^2 of KingFlor® KF57® structural formwork, for the new development.

THE SOLUTION

KingFlor® KF57® was chosen for the SAHMRI building due to its longer spanning capability and lower preparatory costs. KF57®'s reduced need for temporary props allowed a fast-track construction to assist the builders in on-time completion.

THE PROCESS

KingFlor® KF57® was installed in the SAHMRI building throughout the floor-by-floor construction of the complex.

PT PLUS™ DESIGN SOLUTIONS

Limited research has previously been conducted in the world, into the behaviour of prestressed composite floors incorporating steel decking, and yet in recent times it has become a popular form of construction in Australia due to the economic advantages of using steel decking as a substitute for conventional formwork systems in post-tensioned, concrete-frame buildings. Structural design engineers normally completely ignore the presence of the steel decking, foregoing some of its benefits and ignoring potential problems, although sometimes they are making arbitrary decisions about the extent to which the steel decking might act as main tensile reinforcement in the direction of the sheeting ribs, in order to justify their designs. With the development and general acceptance of reliable and efficient partial shear connection strength theory for composite slabs incorporating steel decks that develop strong mechanical resistance, it has been possible to develop a **sound method for strength design of post-tensioned composite slabs**, with Fielders' KingFlor profiles leading to more efficient economical slab designs.

PT Plus™ – Moment Capacity Tables

Fielders' world first research has lead to the development of PT Plus™, a completely new set of design positive moment capacity tables to assist with the design of one-way, post-tensioned composite slabs incorporating Fielders' KingFlor composite steel formwork profiles and bonded prestressing strands as tensile reinforcement in the slab bottom face. Fielders are able to assist structural design engineers in incorporating a PT Plus™ solution to their project, thereby **accessing potential savings by utilising the KingFlor's contribution to the slab**.

KingFlor Designer Software

Fielders KingFlor Designer Suite 5.4 Software is the most **comprehensive and reliable** way to design and specify every aspect of your suspended composite slab in both steel frame and concrete frame construction.

KingFlor Designer 5.4 includes KingBeam for composite beam design with KingFlor profiles. KingSlab and KingFire is also available on KingFlor Designer Suite 5.4 for the optimal design of KingFlor in concrete frame construction.

For more information visit fielders.com.au/KingFlor

PT PLUS
Composite Deck PT Solution

Ideas to Shape the Future
fielders.com.au

Deckform®