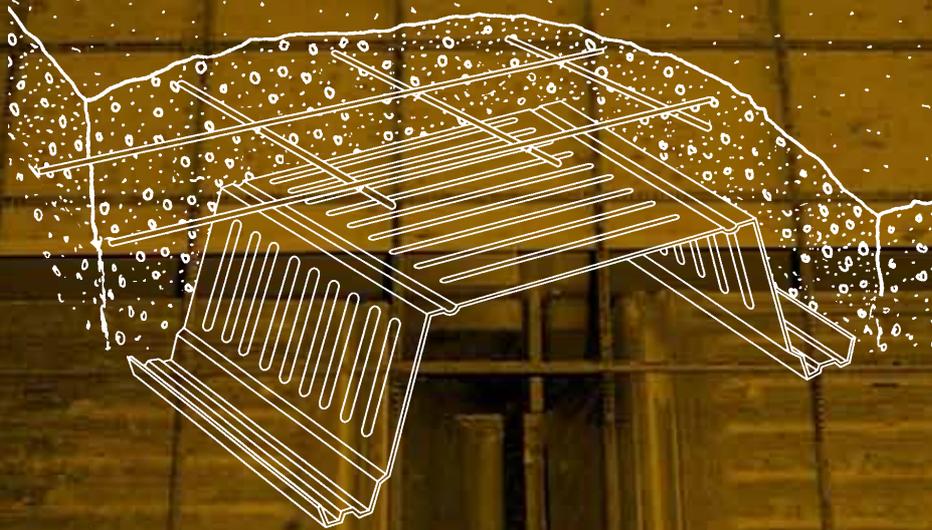


KingFlor[®]
Composite Steel Formwork System

CF210[®]

User and
Installation Guide



THE FIRST SELECTION IN STEEL

CF210®, from the Fielders KingFlor® range, is a new deep deck composite floor system. As a result of the large depth and effective cross sectional area, CF210® is capable of achieving unprecedented unpropped spans of up to 5.5 metres and propped spans up to 8.0 metres. Additional benefits of this system are realised when implemented using Slimflor® construction, achieved by combining the CF210® profile with universal beams fitted with a suitable bottom flange seating plate to result in a total structural floor zone as little as 300mm.

CF210® Features and Benefits.

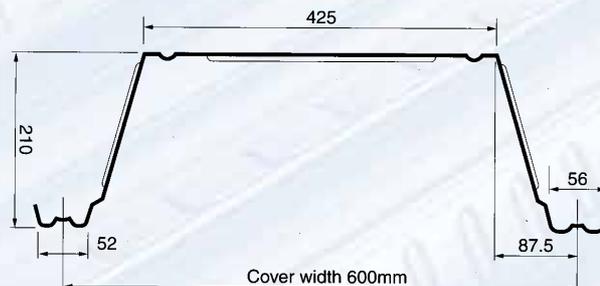
Feature	Benefit
• Unique profile	★ Concrete savings of up to 60% when compared to alternative formwork products
• Less concrete by volume	★ Lower overall dead load of flooring, and reduced frame and foundation loads
• Large unpropped spans	★ Less propping congestion and easy access to the underside of the slab
• Reinforcing mesh can be laid directly onto the ribs	★ In many applications there is no need for mesh support stools
• Slim floor construction	★ Floor system depths as low as 300mm

Concrete Savings.

CF210 effectively saves 170mm of concrete off the overall slab depth when compared to conventional concrete slabs. This represents significant savings in concrete costs, supporting framework and foundation loads.

CF210® Material Specifications.

CF210 is manufactured from G500 [500 MPa Yield Stress] steel with a base metal thickness [BMT] of 1.21mm. The galvanised coating thickness is a Z350 [350 g/m²] in accordance with AS 1397.



CF210® General Product Data

Gauge BMT [mm]	Mass Area kg/m ²	Mass Linear kg/m	Zinc Coating [g/m ²]	Yield Strength MPa
1.21	16.3	9.78	Z350	500

CF210® Integration with Services

The unique profile allows services to be run efficiently within the depth of the floor space when combined with penetrations through the web of the Slimflor® beam.



Installing CF210®.

Temporary propping.

If temporary propping is required [refer to the quick reference tables on the back page], they should be placed at the correct centres prior to laying the **CF210** sheets. Generally timber or steel bearers with a minimum dimension of 100mm x 100mm are used on vertical props. The props should be installed so as to prevent settlement during loading by wet concrete and other construction loads.

Temporary props should only be removed after the slab has reached sufficient strength [at least 75% of the specified 28 day strength]. The full design load may only be applied once the slab has achieved its 28 day strength.

Edge Infill/End Diaphragms.

Galvanised steel edge diaphragms for the **CF210** profile are installed prior to laying the sheets when using the Slimflor® system. The end diaphragm aligns with the edge of the lower flange of the beam and aids in achieving the beams fire rating.

Laying CF210®.

1. Place the **CF210** sheets on the asymmetric beam or beam fitted with an additional bottom flange seating plate ensuring 200mm bearing is achieved.
In the situation where **CF210** is supported by a brick or masonry wall, a separating strip such as malthoid is recommended.
2. Engage subsequent sheets of **CF210** by locking the larger female rib over the male rib as shown in the diagram opposite.
3. Once engaged, the **CF210** side laps are to be stitched at 350mm centres with 5.5mm diameter self drilling screws, the location is marked by an indentation in the overlap tail. Every side lap fastener must fix and locate a trough shear connector clip into position. The clip is partly responsible for the composite action of the decking and must not be omitted unless the **CF210** is being used as formwork only.

Fasteners and Locations.

The decking must be positively fixed to the supporting floor beam or wall in order to avoid movement and excessive deflection during the pouring of concrete.

When fixing to a steel support structure, shot fired pins or self-drilling/tapping fasteners should be used. Provide one fastener in each pan at every support.

In the case of other support systems, such as brickwork, blockwork and concrete, the **CF210** must be fixed using pre drilled holes and self tapping fixings suitable for masonry or concrete.

Reinforcement.

Place all reinforcement in strict accordance with the Structural Engineers drawings and specification.

The decking becomes part of the slab reinforcement with the remainder formed by a bar in each decking trough and a mesh placed near the slab top. Normally, circular plastic spacers position the bars 70mm from the base of the trough. This distance can increase to 90 or 120mm respectively when 90 or 120 minutes fire resistance are required.

Concrete placement.

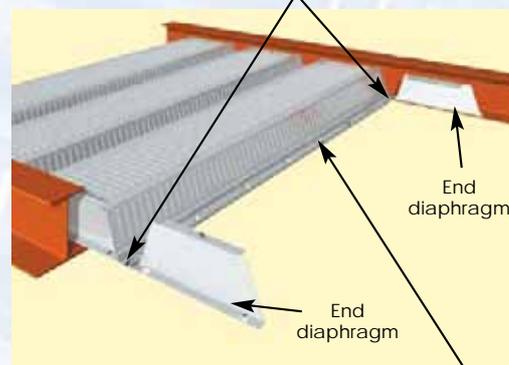
The specified grade of concrete and any chemical admixtures must be in strict accordance with AS3600 and the Structural Engineers drawings and specification. The deck must be clear of any excess dirt, grease or debris as this inhibits bonding between the deck and concrete. Ensure that concrete is applied evenly over the decking surface, as mounding of the wet concrete will cause excessive local loading.

Temporary support using an "Acrow" type prop



Temporary Propping

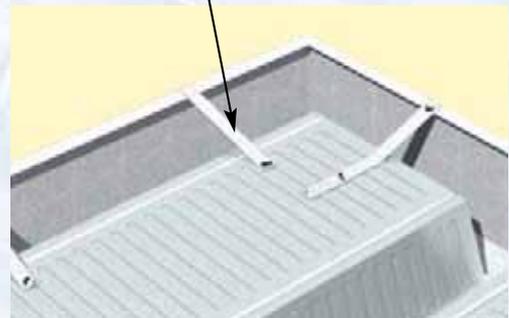
1 heavy duty shot fired pin per trough for fixing into steelwork



Fixing CF210

Side laps stitched at 350mm centres including trough shear bond clip

Restraint straps at 600mm centres to prevent any bowing of edge trim



Edge Trim



Reinforcement



Finish On Top With Fielders



CF210[®]

Composite Steel Formwork System

CF210[®] Normal Weight Concrete - quick reference tables

CF210 Span Table - Normal Weight Concrete																
Props	Span	Fire Rating	Slab Depth (mm)	Mesh	MAXIMUM SPAN (m)											
					Total Applied Load (kN/m ²)											
					3.0kN/m ²				5kN/m ²				10kN/m ²			
				Bottom Bar Size (mm)												
				12	16	20	25	12	18	20	25	12	16	20	25	
0	Simple Span Slab	1 hr	280	SL92	4.8	5.4	5.4	5.4	4.3	5.4	5.4	5.4	3.4	4.5	5.4	5.4
			300	SL82	4.8	5.2	5.2	5.2	4.4	5.2	5.2	5.2	3.5	4.6	5.2	5.2
			350	SL81	4.7	4.7	4.7	4.7	4.5	4.7	4.7	4.7	3.7	4.7	4.7	4.7
		1.5 hr	290	SL82	3.7	4.9	5.3	5.3	3.4	4.4	5.3	5.3	2.7	3.5	4.3	5.3
			300	SL82	3.7	4.9	5.2	5.2	3.4	4.5	5.2	5.2	2.7	3.6	4.4	5.2
	2 hr	350	SL81	3.8	4.7	4.7	4.7	3.5	4.6	4.7	4.7	2.8	3.8	4.6	4.7	
		305	SL82	2.0	2.7	3.3	4.1	1.8	2.4	3.0	3.7	1.5	1.9	2.4	3.0	
		350	SL81	2.1	2.7	3.4	4.2	1.9	2.5	3.1	3.6	1.5	2.0	2.5	3.1	
		400	SL81	2.1	2.7	3.4	4.2	1.9	2.6	3.2	3.9	1.6	2.1	2.6	3.3	
		1	Simple Span Slab	1 hr	280	SL81	4.9	6.4	7.3	7.3	4.4	5.8	7.2	7.3	3.4	4.5
300	SL81				4.9	6.5	6.7	6.7	4.5	5.9	6.7	6.7	3.5	4.7	5.8	6.6
350	2xSL81				5.1	5.6	5.6	5.6	4.6	5.6	5.6	5.6	3.7	4.9	5.6	5.6
1.5 hr	290			SL81	3.7	5.0	6.2	7.0	3.4	4.5	5.5	6.9	2.7	3.5	4.4	5.4
	300			SL81	3.8	5.0	6.2	6.7	3.4	4.5	5.6	6.7	2.7	3.6	4.4	5.5
2 hr	350		2xSL81	3.8	5.1	5.6	5.6	3.5	4.7	5.6	5.6	2.9	3.8	4.7	5.6	
	305		SL81	2.0	2.7	3.3	4.1	1.8	2.4	3.0	3.7	1.5	1.9	2.4	3.0	
	350		2xSL81	2.1	2.7	3.4	4.2	1.9	2.5	3.1	3.9	1.5	2.0	2.5	3.1	
	400		2xSL81	2.1	2.8	3.4	4.3	1.9	2.6	3.2	3.9	1.6	2.1	2.6	3.3	
	Continuous Span Slab		1 hr	280	SL81	5.7	7.1	7.3	7.3	5.1	6.3	7.3	7.3	4.0	4.9	5.9
300		SL81		5.8	6.7	6.7	6.7	5.3	6.5	6.7	6.7	4.2	5.1	6.2	6.7	
350		2xSL81		5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	4.6	5.6	5.6	5.6	
290		SL81		4.3	5.4	6.5	7.0	3.9	4.8	5.8	7.0	3.0	3.8	4.6	5.6	
300		SL81		4.4	5.4	6.6	6.7	3.9	4.9	5.9	6.7	3.1	3.9	4.7	5.7	
1.5 hr		350	2xSL81	4.7	5.6	5.6	5.6	4.3	5.3	5.6	5.6	3.5	4.2	5.1	5.6	
		305	SL81	2.6	3.1	3.7	4.4	2.3	2.8	3.3	4.0	1.9	2.2	2.6	3.2	
		350	2xSL81	2.8	3.4	3.9	4.6	2.6	3.1	3.6	4.3	2.1	2.5	2.9	3.4	
		400	2xSL81	3.1	3.6	4.2	4.8	2.9	3.4	3.9	4.5	2.4	2.8	3.2	3.7	
		2	Simple Span Slab	1 hr	280	SL81	4.9	6.4	7.6	7.8	4.4	5.8	7.2	7.4	3.4	4.5
300	SL81				4.9	6.5	7.7	8.0	4.5	5.9	7.3	7.7	3.5	4.7	5.8	6.6
350	2xSL81				5.0	6.6	8.0	8.3	4.6	6.1	7.6	8.2	3.7	4.9	6.1	7.4
1.5 hr	290			SL81	3.7	5.0	6.2	7.6	3.4	4.5	5.6	6.9	2.7	3.5	4.4	5.4
	300			SL81	3.8	5.0	6.2	7.7	3.4	4.5	5.6	6.9	2.7	3.6	4.4	5.5
2 hr	350		2xSL81	3.8	5.1	6.3	7.8	3.5	4.7	5.8	7.2	2.9	3.8	4.7	5.6	
	305		SL81	2.0	2.7	3.3	4.1	1.8	2.4	3.0	3.7	1.5	1.9	2.4	3.0	
	350		2xSL81	2.1	2.7	3.4	4.2	1.9	2.5	3.1	3.9	1.5	2.0	2.5	3.1	
	400		2xSL81	2.1	2.8	3.4	4.3	1.9	2.6	3.2	3.9	1.6	2.1	2.6	3.3	
	Continuous Span Slab		1 hr	280	SL81	5.7	7.1	8.0	8.3	5.1	5.3	7.8	7.9	4.0	4.9	5.9
300		SL81		5.8	7.2	8.3	8.5	5.3	6.5	7.8	8.1	4.2	5.2	6.2	7.1	
350		2xSL81		6.2	7.5	8.7	8.7	5.7	7.0	8.6	8.7	4.6	5.6	6.7	7.5	
290		SL81		4.3	5.4	6.5	7.9	3.9	4.8	5.9	7.1	3.0	3.8	4.6	5.6	
300		SL81		4.4	5.4	6.6	8.0	3.9	4.9	5.9	7.4	3.1	3.9	4.7	5.2	
1.5 hr		350	2xSL81	4.7	5.7	6.9	8.3	4.3	5.3	6.3	7.6	3.5	4.3	5.1	5.8	
		305	SL81	2.6	3.1	3.7	4.4	2.3	2.8	3.3	4.0	1.9	2.2	2.6	3.2	
		350	2xSL81	2.8	3.4	3.9	4.6	2.6	3.1	3.6	4.3	2.1	2.5	2.9	3.4	
		400	2xSL81	3.1	3.6	4.2	4.9	2.9	3.4	3.9	4.5	2.4	2.8	3.2	3.7	

Parameters assumed for quick reference span tables

Spans

Measured centre to centre of supports.

Bearing width

The width of the support is assumed to be 200mm.

Prop width

Assumed to be 100mm.

Deflection

Construction stage L/130 or 30mm (ponding has been taken into account).

Composite stage L/350.

Concrete grade

The concrete is assumed to be Grade 32 with a maximum aggregate size of 20mm. The wet weight of concrete is taken to be 2400kg/m³.

Construction load -

contact your Fielders Representative. No allowance is made for heaping of concrete during the construction phase.

All cases require properly anchored L bars at the supports, except for those shaded - these can have straight bars with an anchorage length of 70mm from the edge of the support.

The product information presented in this brochure is intended as a guide only. It is recommended that you obtain qualified expert advice when seeking confirmation of product application.

More comprehensive information can be sourced from Specifying Fielders - KingFlor Manual and KingFlor Designer Suite Software.



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