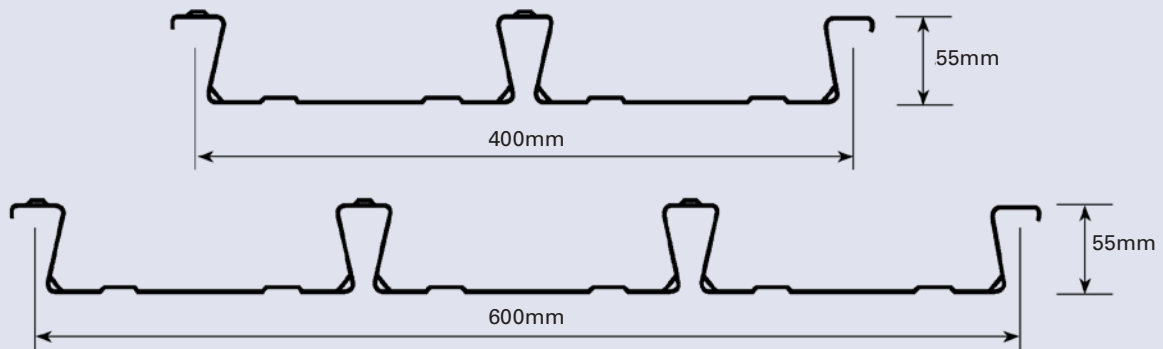




KingFlor<sup>®</sup> RF55<sup>®</sup>

# Features and Benefits



Fielders RF55® is a traditional flat pan or 're-entrant' profile that provides unmatched performance in suspended concrete slabs. RF55® is used in both concrete and steel frame construction and 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.

## RF55® Features and Benefits

Feature	Benefit
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® Material Specifications

RF55® is manufactured from G550 (550 MPa Yield Stress) 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/m<sup>2</sup>) in accordance with AS 1397:2001.

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. Please check with your local branch as to which version applies in your state.

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 <sup>2</sup> )	8.57	10.56	12.55	13.87
Mass Area – Average mass of 3-PAN deck per plan area (kg/m <sup>2</sup> )	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 of individual 3-PAN length (kg/m)	5.03	6.19	7.36	8.14
Zinc Coating (g/m <sup>2</sup> ) (Z350)	350	350	350	350
Yield Strength (MPa)	550	550	550	550

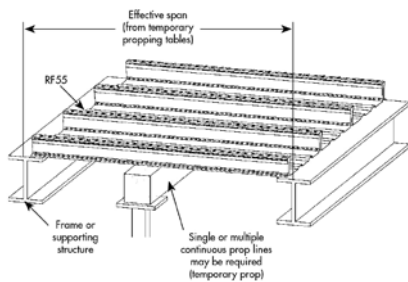
# Installing RF55®

## Temporary Propping

If temporary propping is required (refer to the temporary propping tables), props should be placed at the correct centres prior to laying the RF55® sheets. Generally, timber or steel bearers with a minimum dimension of 75mm x 75mm are used on vertical props. The props should be installed so as to prevent settlement during loading by wet concrete and other construction loads.

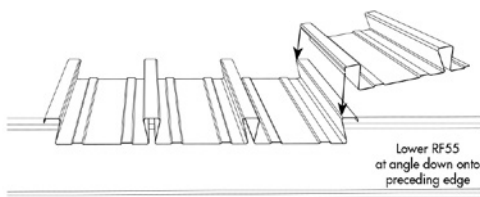
Wide ply strips, of 300mm wide, may be positioned above the header bearers to assist in dispersing the load and minimise any local deformation of the decking due to the headers.

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 28-day strength.

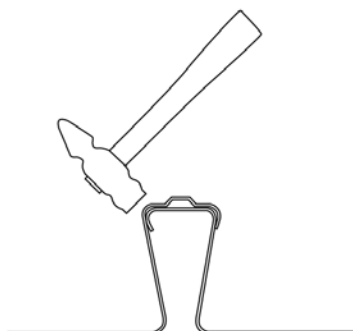


## Laying RF55®

1. Place the RF55® sheet over the supports ensuring a minimum end bearing of 50mm. If supporting on a brick or masonry wall, provide a separating strip such as malthoid.



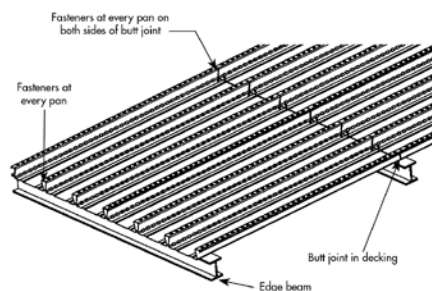
2. Tap the female rib with a hammer at a 45° angle to lock it into place.



## Fasteners and Locations

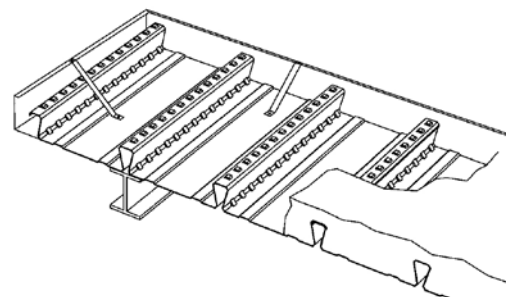
The decking must be secured to the supporting structure in order to avoid movement and excessive deflection during the pouring of concrete. When fixing to a steel support structure, shot fired pins or self-drilling/tapping fasteners should be used. Provide one fastener in each pan at every support.

In the case of other support systems, such as brickwork, block work and concrete, the RF55® sheets must be temporarily held in place against wind and other effects until the concrete is poured.



## Edge-trim

Galvanised steel edge trims can be used for the retention of wet concrete to the correct level at the decked floor perimeters. Edge-trim is usually shot-fired to the steel support structure or to the RF55® deck and the top of the trim is connected back to the decking with restraint straps at approximately 600mm centres using either pop-rivets or self-drilling screws.



## Reinforcement

Place all reinforcement in strict accordance with the structural engineer's drawings and specification.

## Concrete placement

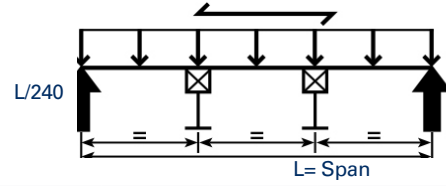
The specified grade of concrete and any chemical admixtures must be in strict accordance with AS 3600:2001 and the structural engineer's drawings and specification. The deck must be clear of any excess dirt, grease or debris as this inhibits bonding between the deck and concrete.

Ensure that concrete is applied evenly over the decking surface, as mounding of the wet concrete will cause excessive local loading.

# RF55<sup>®</sup> Temporary Propping Tables

## RF55<sup>®</sup> Equally Spaced Props – Single Spans

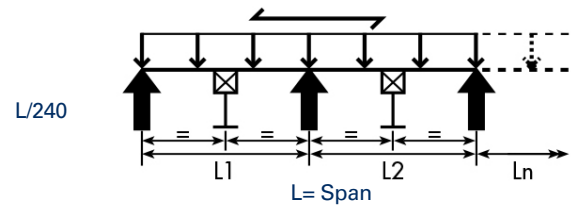
Maximum Spans (mm) for Deflection L/240



Dcs (mm)	Unpropped				1 Row of Props				2 Rows of Props			
	0.60 BMT	0.75 BMT	0.90 BMT	1.00 BMT	0.60 BMT	0.90 BMT	0.75 BMT	1.00 BMT	0.60 BMT	0.75 BMT	0.90 BMT	1.00 BMT
100	2,000	2,250	2,350	2,450	[4,800]	[5,950]	[6,250]	[6,500]	[7,000]	[8,250]	[8,650]	[9,000]
110	2,000	2,200	2,300	2,400	[4,800]	[5,750]	[6,050]	[6,300]	[7,000]	[8,000]	[8,400]	[8,750]
120	1,950	2,150	2,250	2,350	[4,800]	[5,600]	[5,900]	[6,150]	[7,000]	[7,800]	[8,200]	[8,550]
130	1,900	2,100	2,200	2,250	[4,800]	[5,500]	[5,750]	[6,000]	[6,900]	[7,600]	[8,000]	[8,300]
140	1,850	2,050	2,150	2,200	4,550	[5,350]	[5,650]	[5,850]	[6,650]	[7,400]	[7,800]	[8,150]
150	1,800	1,950	2,100	2,200	4,300	[5,250]	[5,500]	[5,750]	[6,400]	[7,200]	[7,650]	[7,950]
160	1,750	1,900	2,050	2,150	4,100	5,100	5,400	[5,650]	[6,200]	[6,950]	[7,500]	[7,800]
170	1,700	1,850	2,000	2,100	3,900	5,000	5,300	5,500	[6,000]	[6,750]	[7,300]	[7,650]
180	1,650	1,850	1,950	2,050	3,700	4,850	5,200	5,400	5,800	[6,550]	[7,100]	[7,550]
190	1,600	1,800	1,900	2,000	3,550	4,750	5,100	5,350	5,600	6,350	[6,900]	[7,400]
200	1,600	1,750	1,850	2,000	3,400	4,600	5,050	5,250	5,300	6,200	6,750	[7,200]
210	1,550	1,700	1,850	1,950	3,300	4,500	4,950	5,150	5,150	6,050	6,550	7,000
220	1,550	1,700	1,800	1,900	2,900	4,400	4,850	5,100	4,950	5,900	6,400	6,850
230	1,500	1,650	1,750	1,850	2,850	4,300	4,750	5,000	4,450	5,750	6,250	6,700
240	1,450	1,600	1,750	1,850	2,750	4,200	4,650	4,950	4,300	5,600	6,150	6,550
250	1,450	1,600	1,700	1,800	2,700	4,150	4,550	4,850	4,200	5,500	6,000	6,400

## RF55<sup>®</sup> Equally Spaced Props – Single Spans

Maximum Spans (mm) for Deflection L/240



Dcs (mm)	Unpropped				1 Row of Props				2 Rows of Props			
	0.60 BMT	0.75 BMT	0.90 BMT	1.00 BMT	0.60 BMT	0.90 BMT	0.75 BMT	1.00 BMT	0.60 BMT	0.75 BMT	0.90 BMT	1.00 BMT
100	2,350	2,700	2,850	2,950	[4,650]	[5,550]	[5,900]	[6,050]	[7,000]	[8,150]	[8,650]	[8,900]
110	2,350	2,650	2,800	2,900	[4,650]	[5,400]	[5,750]	[5,900]	[7,000]	[7,950]	[8,400]	[8,700]
120	2,350	2,550	2,700	2,800	4,650	[5,250]	[5,600]	[5,750]	[7,000]	[7,750]	[8,200]	[8,450]
130	2,250	2,500	2,650	2,750	4,650	5,150	[5,450]	[5,600]	[6,800]	[7,550]	[8,000]	[8,250]
140	2,200	2,450	2,600	2,700	4,500	5,000	5,300	5,500	[6,550]	[7,350]	[7,800]	[8,100]
150	2,100	2,350	2,550	2,600	4,350	4,900	5,200	5,400	[6,350]	[7,100]	[7,650]	[7,900]
160	2,050	2,300	2,500	2,550	4,200	4,750	5,100	5,300	6,100	[6,900]	[7,500]	[7,750]
170	2,000	2,200	2,450	2,500	4,000	4,600	5,000	5,200	6,050	6,650	[7,300]	[7,600]
180	1,900	2,150	2,350	2,500	3,850	4,450	4,900	5,100	5,750	6,450	7,100	[7,500]
190	1,800	2,100	2,300	2,450	3,650	4,350	4,750	5,000	5,500	6,300	6,900	7,300
200	1,750	2,050	2,250	2,350	3,500	4,200	4,650	4,900	5,300	6,150	6,750	7,100
210	1,650	2,000	2,200	2,300	3,400	4,100	4,550	4,800	5,100	5,950	6,550	6,950
220	1,500	1,950	2,150	2,250	3,250	4,000	4,400	4,650	4,900	5,950	6,400	6,800
230	1,450	1,900	2,100	2,200	2,900	3,900	4,300	4,550	4,400	5,900	6,250	6,600
240	1,400	1,850	2,050	2,150	2,850	3,850	4,250	4,450	4,250	5,750	6,150	6,500
250	1,350	1,800	2,000	2,100	2,750	3,750	4,150	4,350	4,150	5,650	6,000	6,350

# RF55<sup>®</sup> Temporary Propping Tables

## RF55<sup>®</sup> Frame Propping - 1200mm Frame Size

Maximum Spans (mm) for Deflection L/240

Dcs (mm)	1 Frame				2 Frame			
	0.60 BMT	0.75 BMT	0.90 BMT	1.00 BMT	0.60 BMT	0.75 BMT	0.90 BMT	1.00 BMT
100	[5,300]	[6,000]	[6,300]	[6,400]	[8,400]	[9,600]	[10,200]	[10,200]
110	[5,100]	[5,800]	[6,100]	[6,300]	[8,250]	[9,300]	[9,900]	[10,050]
120	[5,000]	[5,600]	[6,000]	[6,100]	[8,100]	[9,000]	[9,600]	[9,900]
130	[4,900]	[5,400]	[5,800]	[6,000]	[7,950]	[8,850]	[9,300]	[9,600]
140	4,800	[5,300]	[5,600]	[5,900]	[7,800]	[8,550]	[9,150]	[9,450]
150	4,800	5,200	[5,500]	[5,700]	[7,650]	[8,400]	[9,000]	[9,300]
160	4,700	5,100	5,400	5,600	[7,500]	[8,250]	[8,700]	[9,000]
170	4,600	5,000	5,300	5,500	[7,350]	[8,100]	[8,550]	[8,850]
180	4,500	4,900	5,200	5,400	[7,350]	[7,950]	[8,400]	[8,700]
190	4,500	4,800	5,100	5,300	[7,200]	[7,800]	[8,250]	[8,550]
200	4,400	4,700	5,000	5,200	[7,050]	[7,650]	[8,100]	[8,400]
210	4,300	4,600	4,900	5,100	7,050	[7,650]	[7,950]	[8,250]
220	4,300	4,600	4,800	5,000	6,900	7,500	[7,800]	[8,100]
230	4,200	4,500	4,800	4,900	6,750	7,350	7,800	[8,100]
240	4,200	4,400	4,700	4,900	6,750	7,350	7,650	7,950
250	4,100	4,400	4,600	4,800	6,600	7,200	7,650	7,800

## RF55<sup>®</sup> Frame Propping - 1500mm Frame Size

Maximum Spans (mm) for Deflection L/240

Dcs (mm)	1 Frame				2 Frame			
	0.60 BMT	0.75 BMT	0.90 BMT	1.00 BMT	0.60 BMT	0.75 BMT	0.90 BMT	1.00 BMT
100	[5,500]	[6,400]	[6,800]	[6,800]	[8,850]	[10,350]	[10,950]	[10,950]
110	[5,400]	[6,200]	[6,600]	[6,600]	[8,700]	[10,050]	[10,650]	[10,800]
120	[5,300]	[6,000]	[6,400]	[6,500]	[8,550]	[9,900]	[10,350]	[10,650]
130	[5,200]	[5,900]	[6,200]	[6,400]	[8,250]	[9,600]	[10,200]	[10,350]
140	[5,100]	[5,700]	[6,100]	[6,300]	[8,100]	[9,450]	[9,900]	[10,200]
150	4,900	[5,600]	[5,900]	[6,200]	[7,950]	[9,300]	[9,750]	[10,050]
160	4,900	5,500	[5,800]	[6,000]	[7,950]	[9,150]	[9,600]	[9,900]
170	4,800	5,400	5,700	5,900	[7,800]	[9,000]	[9,450]	[9,750]
180	4,700	5,300	5,600	5,800	[7,650]	[8,850]	[9,300]	[9,600]
190	4,600	5,200	5,500	5,700	[7,350]	[8,700]	[9,150]	[9,450]
200	4,500	5,100	5,400	5,600	[7,200]	[8,550]	[9,000]	[9,300]
210	4,300	5,100	5,400	5,500	7,050	[8,400]	[8,850]	[9,150]
220	4,200	5,000	5,300	5,500	6,900	[8,400]	[8,700]	[9,000]
230	4,100	4,900	5,200	5,400	6,750	[8,250]	[8,700]	[8,850]
240	4,000	4,900	5,100	5,300	6,600	8,100	[8,550]	[8,850]
250	3,900	4,800	5,100	5,300	6,450	8,100	8,400	[8,700]

### Temporary Propping Tables Notes

- The tables above denote maximum allowable centreline to centreline span in millimetres between permanent supports after temporary propping is removed.
- The practical limit for span to slab depth ratio is considered to be 35 for single span slabs, or 40 for continuous slabs. Values above these limits have been listed in brackets "[ ]". The use of the results in brackets must be confirmed with the structural engineer or a Fielders representative as the long term serviceability and composite performance of the resulting concrete slab may not be suitable for the project application.
- Allowance has been made for ponding of wet concrete due to decking deflection, density 2400kg/m<sup>3</sup>.
- Loading is considered in accordance with AS 1170.0:2002, AS 2327.1:2003, AS 3610:1995 with a Stage III construction live load allowance of 1.0kPa in accordance with AS 2327.1:2003 Appendix F.
- The requirements for Stage II & IV material stacking loads in accordance with AS 2327.1:2003 Appendix F are assumed to be zero.
- It is recommended that an experienced structural engineer design the composite slab to ensure sufficient capacity to meet strength and long term deflection requirements.
- The temporary propping tables have been prepared for a span/240 deflection criteria. A span/240 deflection is generally considered aesthetically satisfactory for exposed soffits.
- These tables are based upon effective section properties of the sheeting calculated in accordance to AS 4600:2005.
- Care must be exercised when placing concrete to avoid mounding.
- Wide ply strips, of 300 mm wide, shall be provided to prevent any concentrated loads being applied to the sheeting, particularly for exposed soffits, to avoid direct point loading of the sheet overlap ribs and unsupported edges of the sheeting.
- When using the table for two or more spans the adjacent spans should not differ in length by more than 5%.
- A maximum sheet length of 12m has been considered.
- A minimum bearing width of the permanent support has been considered to be 50mm.
- Fielders recommend a gauge of 1.00 mm BMT for exposed soffits in propped applications to avoid creasing of steel decking. Please contact your local KingFlor<sup>®</sup> representative for further information.



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