





# THE CORE OF THE MATTER

High quality, durable floor solutions.

PRECAST HOLLOWCORE FLOOR SOLUTIONS

# THE ADVANTAGES OF PRECAST PRESTRESSED HOLLOWCORE FLOORS

- Factory cast by machine off site
- ☑ Rapid site construction reduces site work
- ✓ No propping required clear uninterrupted work areas
- ☑ Efficient lightweight sections spans up to 18 metres
- ✓ Design flexibility all services can be located within cores
- ✓ Durability compliant with AS 3600
- ✓ Insulation excellent Fire and Sound Resistance qualities
- ✓ Quality manufactured to AS/NZS 9001:2008















# ADDED VALUE FROM SERVICE AND TECHNICAL SUPPORT

It is important to emphasise that PRECAST HOLLOWCORE not only sells floor slabs but also provides solutions. Technical advice and faultless service form an integral part of the extended range of floor solutions and other products that PRECAST HOLLOWCORE offers to its customers and specifiers.

## HIGH QUALITY DURABLE FLOOR SOLUTIONS

PRECAST HOLLOWCORE high quality floor solutions represent the *fastest, most economical* and *most efficient* way of installing floors and they guarantee extremely reliable quality for end users.

PRECAST HOLLOWCORE products help **shorten construction** schedules due to their rapid installation, the possible absence of any need for further finishing and the fact that the floors are then immediately ready for use.

Another advantage is their relatively large spans, which allow the number of support points to be reduced. This yields optimal design flexibility.

Cores can be used for services and for passive heating and cooling.

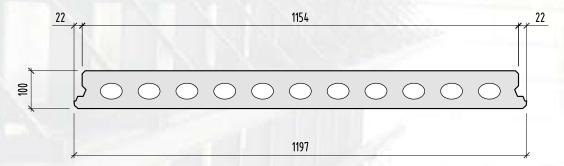
Hollowcore floors are used in *all types of* public buildings, industrial buildings, parking structures, apartments and in single family dwellings. Slabs can span up to 18 metres. Thickness of the slab can vary from 100 to 400 mm.

The prestressed hollowcore floor slab has a *guaranteed quality* due to continuous infactory process controls complying with *AS/ANZ* 9001:2008 requisites.









Self Weight 228 kg/Lin.m
Self Weight 190 kg/m²
Cross Section Area 95,100 mm²
Specific Gravity 2450 kg/m³
Percentage of Concrete 76.7%

Notes:

Concrete f'c

50 MPa 25 MPa at 28 days at transfer

Other strand configurations are possible Refer PCP for project specific deflection estimates.

FRL's based on simply supported spans



#### Hollowcore floor panels

#### 100x1200 11 core floor panel untopped

Strand pattern	FRL		Allowable	e live load	l (kPa)				
	minutes	$\phi M_u$	Span (m)	)					
		kNm	2.5	3.0	3.5	4.0	4.5	5.0	5.5
6/0.5	60	26.0	111	10.4	0.0	F 0	4.2	2.2	0.4
6/9.5	60	26.8	14.4	10.4	8.0	5.9	4.3	3.2	2.4
10/9.5	60	38.0	22.1	16.6	12.2	9.0	6.8	5.2	4.0

FRL 60/60/60 with 30 mm axis distance

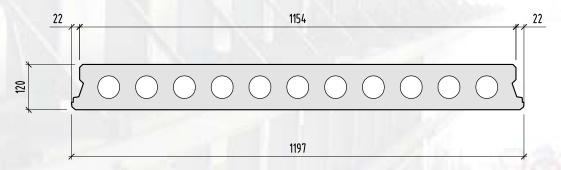
#### 100x1200 11 core floor panel with 75 mm topping, N32

Strand pattern	FRL		Allowable	e live load	l (kPa)				
	minutes	$\phi M_u$	Span (m)	)					
		kNm	2.5	3.0	3.5	4.0	4.5	5.0	5.5
6/9.5	90	58.1	27.5	16.7	10.5	6.5	3.6		
10/9.5	90	89.0		25.0	17.0	11.2	7.3	4.6	2.5

FRL 90/90/90 with 40 mm axis distance

Panels unpropped at erection (2 kPa LL allowance in addition to wet concrete).





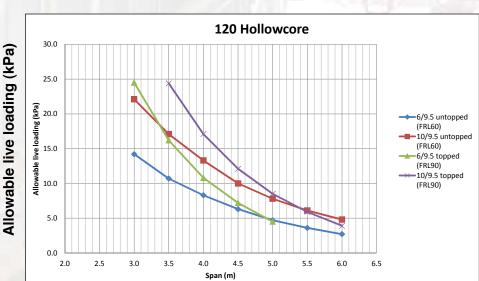
Self Weight 259 kg/Lin.m
Self Weight 216 kg/m²
Cross Section Area 108,100 mm²
Specific Gravity 2450 kg/m³
Percentage of Concrete 78%

Notes:

Concrete f'c

50 MPa at 28 days 25 MPa at transfer

Other strand configurations are possible Refer PCP for project specific deflection estimates. FRL's based on simply supported spans



#### Hollowcore floor panels

#### 120x1200 11 core floor panel untopped

	от тот ра								
Strand patter	n FRL		Allowable	live load	l (kPa)				
	minutes	$\phi M_u$	Span (m)						
		kNm	3.0	3.5	4.0	4.5	5.0	5.5	6.0
6/9.5	60	36.4	14.2	10.7	8.3	6.3	4.7	3.6	2.7
10/9.5	60	53.5	22.1	17.1	13.3	10.0	7.8	6.1	4.8

FRL 60/60/60 with 30 mm axis distance

#### 120x1200 11 core floor panel with 75 mm topping, N32

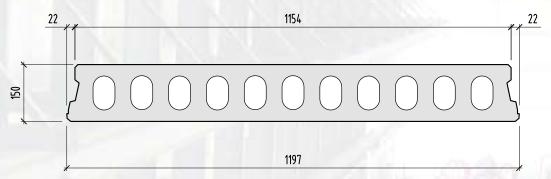
Strand pattern	FRL		Allowable	live load	l (kPa)				
	minutes	$\phi M_u$	Span (m)						
		kNm	3.0	3.5	4.0	4.5	5.0	5.5	6.0
6/9.5	90	67.8	24.5	16.2	10.8	7.2	4.5		
	120	62.9	20.6	13.4	8.7	5.5			
10/9.5	90	105		24.4	17.1	12.1	8.5	5.9	3.9
	120	97.0		19.8	13.6	9.3	6.3	4.0	

FRL 90/90/90 with 40 mm axis distance

FRL 120/120/120 with 50 mm axis distance

Panels unpropped at erection (2 kPa LL allowance in addition to wet concrete).





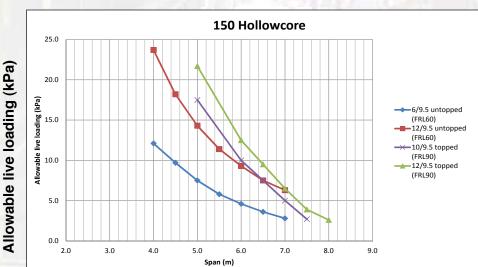
Self Weight 296 kg/Lin.m
Self Weight 247 kg/m²
Cross Section Area 123,300 mm²
Specific Gravity 2450 kg/m³
Percentage of Concrete 70.7 %

Notes:

Concrete fc 50 MPa at 28 days 25 MPa at transfer

Other strand configurations are possible

Refer PCP for project specific deflection estimates FRL's based on simply supported spans



#### Hollowcore floor panels

#### 150x1200 11 core floor panel untopped

Strand pattern	FRL		Allowable	e live load	l (kPa)					
	minutes	$\phi M_u$	Span (m)	)						
		kNm	4.0	4.5	5.0	5.5	6.0	6.5	7.0	
6/9.5	60	53.1	12.1	9.7	7.5	5.8	4.6	3.6	2.8	
	90	48.3	11.4	8.6	6.6	5.1	4.0	3.1	2.4	
10/9.5	60	82.9	19.4	16.2	12.8	10.2	8.3	6.5	5.3	
	90	74.9	18.8	14.5	11.3	9.0	7.3	5.7	4.6	
12/9.5	60	96.3	23.7	18.2	14.3	11.4	9.3	7.5	6.3	
	90	86.7	21.4	16.2	12.8	10.2	8.2	6.7	5.5	

FRL 60/60/60 with 30 mm axis distance

FRL 90/90/90 with 40 mm axis distance

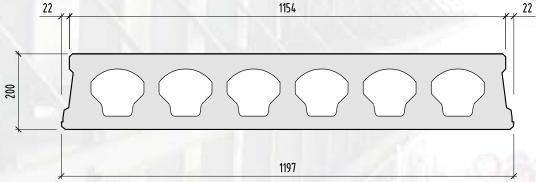
#### Deflection exceeds L/250

150x1200 11 co	ore floor pa	nel with 7	5 mm topping, N3	2					
Strand pattern	FRL		Allowable live load	d (kPa)					
	minutes	$\phi M_u$	Span (m)						
		kNm	5.0	6.0	6.5	7.0	7.5	8.0	
0/0 5	00	00.4	40.4	- 0					
6/9.5	90	82.4	10.4	5.0					
	120	77.5	8.9	3.0					
10/9.5	90	130	17.5	10.0	7.5	5.0	2.7		
	120	121	15.5	8.3	5.8	4.0	1.8		
12/9.5	90	150	21.7	12.5	9.5	6.5	3.9	2.6	
	120	141	18.3	10.3	7.6	5.0	2.8		
		L							

FRL 90/90/90 with 40 mm axis distance

FRL 120/120/120 with 50 mm axis distance Panels unpropped at erection (2 kPa LL allowance in addition to wet concrete).





Self Weight 372 kg/Lin.m
Self Weight 310 kg/m²
Cross Section Area 151,980 mm²
Specific Gravity 2450 kg/m³
Percentage of Concrete 65.5 %

Allowable live loading (kPa)

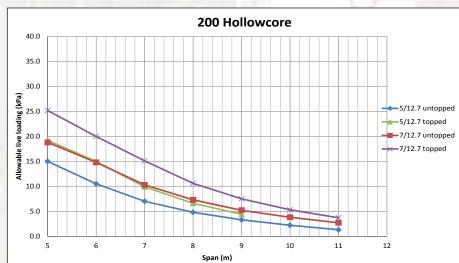
#### Notes:

Concrete f'c 50 25

0 MPa at 28 days 5 MPa at transfer

Other strand configurations are possible Refer PCP for project specific deflection estimates

FRL's based on simply supported spans



#### **Hollowcore slabs**

#### 200x1200 6 core floor panel untopped

Strand pattern	FRL		Allowable	e live load	d (kPa)					
	minutes	$\phi M_u$	Span (m	)						
		kNm	4	5	6	7	8	9	10	11
5/12.7	90	104.6	19.9	15.0	10.5	7.0	4.8	3.3	2.2	1.3
	120	97.3	18.0	13.6	9.5	6.3	4.2	2.8	1.8	
7/12.7	90	140.1	24.7	18.8	14.8	10.3	7.3	5.2	3.8	2.7
	120	129.9	22.2	16.9	13.5	9.3	6.5	4.6	3.3	

FRL 90/90/90 with 40 mm axis distance FRL 120/120/120 with 50 mm axis distance

#### 200x1200 6 core floor panel with 75 mm topping, N32

Strand pattern	FRL		Allowable	e live load	d (kPa)					
	minutes	$\phi M_u$	Span (m	)						
		kNm	4	5	6	7	8	9	10	11
5/12.7	90	154.3	25.7	19.2	15.0	9.9	6.6	4.4		
	120	147.0	23.5	17.5	13.7	9.2	6.1	4.0		
7/12.7	90	206.7	33.4	25.2	20.0	15.1	10.6	7.5	5.3	3.7
	120	196.5	30.5	23.0	18.2	13.7	9.6	6.7	4.7	

FRL 90/90/90 with 40 mm axis distance

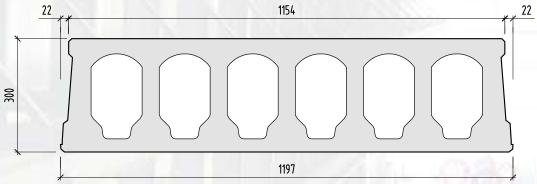
FRL 120/120/120 with 50 mm axis distance

Panels unpropped at erection (2 kPa LL allowance in addition to wet concrete).

Legend:

Shear governs
Deflection exceeds L/250





Self Weight 465 kg/Lin.m
Self Weight 380 kg/m²
Cross Section Area 190,000 mm²
Specific Gravity 2450 kg/m³
Percentage of Concrete 54.2 %

Notes:

Concrete f'c

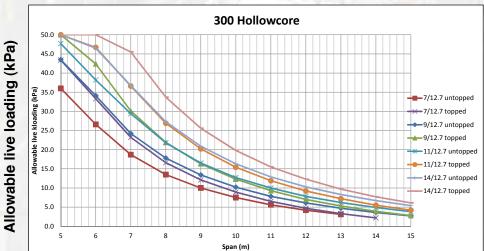
50 MPa 30 MPa

at 28 days at transfer

Other strand configurations are possible Refer PCP for project specific deflection estimates

FRL's based on simply supported spans

11 and 14 strand units have 2/9.3 dia strands top Seek design advice for loadings higher than 50 kPa



#### Hollowcore slabs

#### 300x1200 6 core floor panel untopped

Strand pattern	FRL		Allowable	e live load	l (kPa)									
	minutes	$\phi M_u$	Span (m)	)										
		kNm	4	5	6	7	8	9	10	11	12	13	14	15
7/12.7	90	242	47.8	36.0	26.6	18.7	13.5	10.0	7.5	5.6	4.2	3.1		
	120	232	44.8	33.8	25.4	17.8	12.8	9.5	7.0	5.2	3.9	2.8		
9/12.7	90	303	50.0	43.5	34.1	24.2	17.8	13.4	10.2	7.8	6.1	4.7	3.6	2.7
	120	290	50.0	40.8	32.5	23.0	16.9	12.6	9.6	7.4	5.7	4.3	3.3	2.4
11/12.7	90	361	50.0	47.7	38.2	29.4	21.8	16.5	12.7	10.0	7.8	6.2	4.9	3.8
	120	345	50.0	44.7	35.7	28.0	20.6	15.6	12.0	9.4	7.3	5.8	4.5	3.5
14/12.7	90	440	50.0	50.0	46.5	36.7	27.3	20.9	16.3	12.9	10.3	8.3	6.7	5.4
	120	420	50.0	50.0	43.5	34.8	25.9	19.8	15.4	12.1	9.7	7.8	6.2	5.0

FRL 90/90/90 with 40 mm axis distance FRL 120/120/120 with 50 mm axis distance

#### 300x1200 6 core floor panel with 75 mm topping, N32 $\,$

Strand pattern	FRL		Allowable	e live load	l (kPa)									
	minutes	$\phi M_u$	Span (m)	)										
		kNm	4	5	6	7	8	9	10	11	12	13	14	15
740 7	00	000	50.0	10.1	00.0	00.0	40.0	40.4		0.5	4 -		0.0	
7/12.7	90	309	50.0	43.4	33.3	23.2	16.6	12.1	8.9	6.5	4.7	3.3	2.2	
	120	299	50.0	41.0	32.0	22.2	15.9	11.5	8.4	6.1	4.4	3.0	1.9	
9/12.7	90	385	50.0	50.0	42.4	30.1	21.9	16.3	12.3	9.3	7.0	5.3	3.9	2.8
	120	372	50.0	50.0	40.1	28.9	21.0	15.6	11.7	8.8	6.6	4.9	3.6	2.5
11/12.7	90	457	50.0	50.0	46.7	36.6	26.9	20.2	15.4	11.9	9.2	7.2	5.5	4.2
	120	441	50.0	50.0	44.0	35.1	25.8	19.3	14.7	11.3	8.7	6.7	5.1	3.9
14/12.7	90	555	50.0	50.0	50.0	45.5	33.7	25.6	19.8	15.5	12.3	9.7	7.7	6.1
	120	535	50.0	50.0	50.0	43.6	32.3	24.5	18.9	14.8	11.7	9.2	7.3	5.7

FRL 90/90/90 with 40 mm axis distance

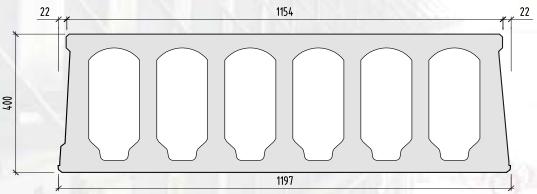
FRL 120/120/120 with 50 mm axis distance

Panels unpropped at erection (2 kPa LL allowance in addition to wet concrete).

Legend:

Shear governs
Deflection exceeds L/250





Self Weight 548 kg/Lin.m

Self Weight 458 kg/m²

Cross Section Area 223,800 mm²

Specific Gravity 2450 kg/m³

Percentage of Concrete 48.4 %

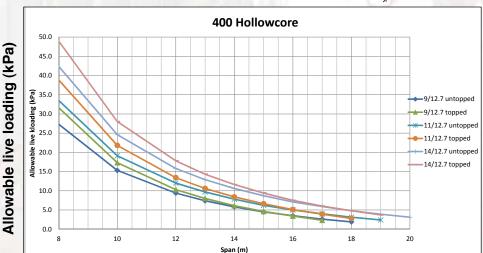
Notes:

Concrete fc

50 MPa at 28 days 30 MPa at transfer

Other strand configurations are possible Refer PCP for project specific deflection estimates FRL's based on simply supported spans

11 and 14 strand units have 2/9.3 dia strands top Seek design advice for loadings higher than 50 kPa



#### Hollowcore slabs

#### 400x1200 6 core floor panel untopped

Strand pattern	FRL		Allowable	e live load	l (kPa)									
	minutes	$\phi M_u$	Span (m)	)										
		kNm	5	7.5	10	12	13	14	15	16	17	18	19	20
9/12.7	90	435	66.7	30.3	15.3	9.4	7.4	5.8	4.5	3.5	2.6	1.9		
11/12.7	120 90	422 521	63.7 76.3	29.3 37.1	14.7 19.1	9.0 12.0	7.0 9.7	5.5 7.8	4.3 6.2	3.3 5.0	2.4 4.0	1.7 3.1	2.4	
14/12.7	120 90	505 644	72.8 93.0	35.9 46.8	18.4 24.6	11.5 15.8	9.2 12.9	7.4 10.6	5.9 8.7	4.7 7.1	3.7 5.9	2.9 4.8	2.2 3.9	3.1
	120	623	88.8	45.2	23.6	15.2	12.4	10.1	8.3	6.8	5.5	4.5	3.6	2.9

FRL 90/90/90 with 40 mm axis distance FRL 120/120/120 with 50 mm axis distance

#### 400x1200 6 core floor panel with 75 mm topping, N32

Strand pattern	FRL		Allowable	e live load	l (kPa)									
	minutes	$\phi M_u$	Span (m)	)										
		kNm	5	7.5	10	12	13	14	15	16	17	18	19	20
9/12.7	90	517	77.6	35.2	17.3	10.3	8.0	6.1	4.6	3.4	2.3			
	120	504	74.3	34.2	16.8	9.9	7.6	5.8	4.3	3.1	2.1			
11/12.7	90	617	89.3	43.1	21.8	13.4	10.6	8.4	6.6	5.1	3.9	2.8		
	120	601	85.5	41.8	21.1	12.9	10.2	8.0	6.3	4.8	3.6	2.6		
14/12.7	90	758	110.0	54.2	28.0	17.8	14.3	11.6	9.4	7.5	6.0	4.8	3.7	
	120	737	105.3	52.6	27.1	17.1	13.8	11.1	9.0	7.2	5.7	4.5	3.5	
	120	737	105.3	52.6	27.1	17.1	13.8	11.1	9.0	7.2	5.7	4.5	3.5	

FRL 90/90/90 with 40 mm axis distance

FRL 120/120/120 with 50 mm axis distance

Panels unpropped at erection (2 kPa LL allowance in addition to wet concrete).

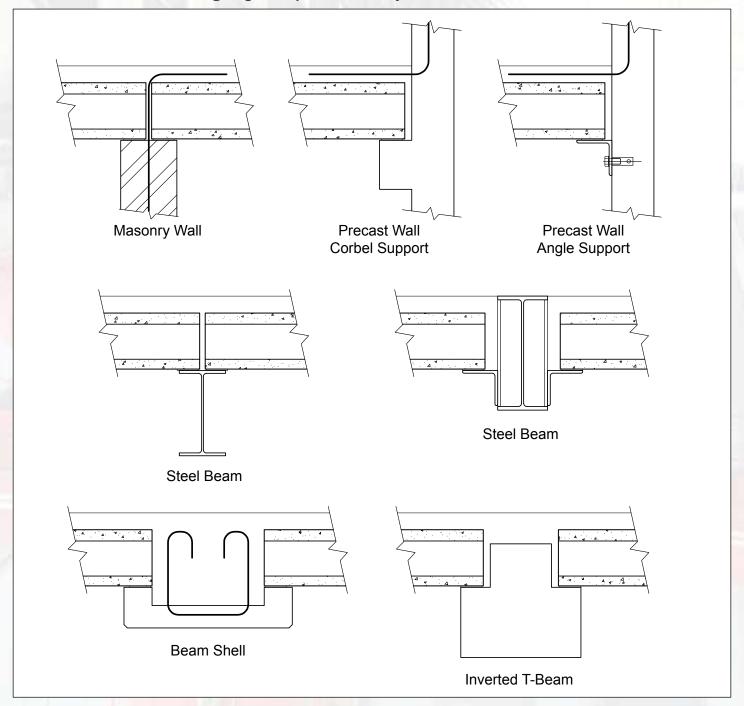
Legend:

Shear governs

Deflection exceeds L/250



## High quality, durable floor solutions.



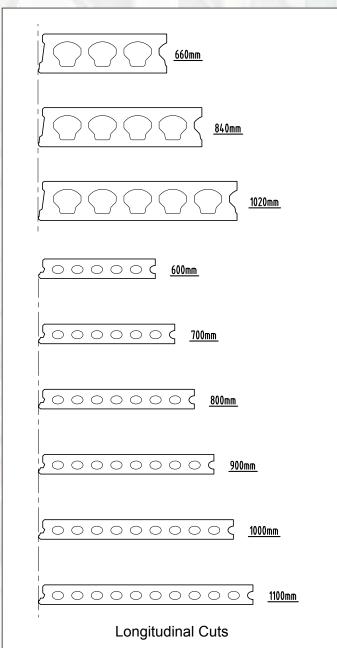
Precast Hollowcore Planks should have a minimum bearing of at least 75mm on steel and 100mm on masonry support.

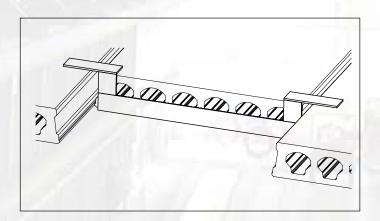


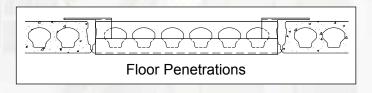




### High quality, durable floor solutions.

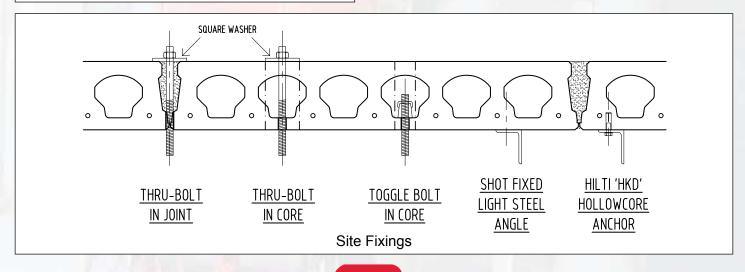








Notching & Core Openings





## High quality, durable floor solutions.







NATIONAL PRECAST CONCRETE ASSOCIATION AUSTRALIA



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