



FABPANEL™ 200 6 Cores

1195 mm Wide
Cover = 30 mm

Fire = 60 minutes
Topping = 0 mm

T +27 11 706 4560
F +27 11 463 5589
134 Eccleston Crescent, Bryanston, Sandton
PO Box 364 Paulshof 2056
www.concreteslabs.co.za
slabs@iafrica.com

Designed to Eurocodes and EN1168

SECTION

Hollow core slab	FabPanel 200	N° Cores	6	$A_b =$	2321.3 cm ²	$A_n/A_b =$	57.5%
	$b_{mod} =$	1200 mm		$A_n =$	1334.5 cm ²	$A_{jnt} =$	76.8 cm ²
	$h_p =$	200 mm		$I_{yc} =$	64584.4 cm ⁴	$e_{z1} =$	101.04 mm
Support depth	70 mm			$b_w =$	292.9 mm	$e_{zb} =$	98.96 mm
Topping	0 mm			$A_{top} =$	0.00 cm ²		

MATERIALS

Concrete

Hollow core slab	C50	Code ref.	EN206-1		
In situ joint/topping	C30	Density	2400 kg/m ³	Aggregate	Limestone
		Density	2400 kg/m ³	Aggregate	Quartzite

Prestressing reinforcement

				Code ref.	EN10138		
Type	Diam.	A_p	Grade	f_{pk}	$f_{p0.1k}$	E_p	$F_{p0.1k}$
	(mm)	(mm ²)		(N/mm ²)	(N/mm ²)	(N/mm ²)	(kN)
S7	Ø9.53	54.8	Y1860	1860	1674	201000	91.8
S7	Ø12.7	98.7	Y1860	1860	1674	201000	165.2

S7 = 7-wire strand

Prestressing of <u>top</u> reinforcement	70%	• f_{pk}			
Prestressing of <u>bottom</u> reinforcement	70%	• f_{pk}			
Concrete cover on <u>bottom</u> reinforcement	30 mm		$\Delta c =$	0 mm	

Mild reinforcement

				Code ref.	EN10080		
Type	Diam.	A_s	Grade	f_{uk}	f_{yk}	E_s	
	(mm)	(mm ²)		(N/mm ²)	(N/mm ²)	(N/mm ²)	
RB	N/A	N/A	B500	550	500	200000	

RB = Ribbed bar

UTILITY FEATURES

User Category :	A	Domestic and residential areas
Exposure class :	XC1	
Fire resistance :	60 min.	

DESIGN FACTORS

Load safety factors

Permanent load :	$\gamma_g =$	1.35
Variable load :	$\gamma_q =$	1.50

Combination factors

$\psi_0 =$	0.7
$\psi_1 =$	0.5
$\psi_2 =$	0.3

DEFLECTION CRITERIA

Total long term deflection: variable load	with $\psi_2 =$	30%		
$UZ < L /$	250	loads = $SW_{slab} + SW_{top} + \Sigma PL + \psi_2 \cdot \Sigma VL$		SW = self weight
Additional long term deflection: variable load	with $\psi_2 =$	30%		PL = permanent load
$\Delta UZ < L /$	500	loads = $\Sigma PL + \psi_2 \cdot \Sigma VL$		VL = variable load



FABPANEL™ 200 6 Cores

1195 mm Wide
Cover = 30 mm

Fire = 60 minutes
Topping = 0 mm

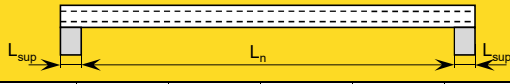
T +27 11 706 4560
F +27 11 463 5589
134 Eccleston Crescent, Bryanston, Sandton
PO Box 364 Paulshof 2056
www.concreteslabs.co.za
slabs@iafrica.com

Designed to Eurocodes and EN1168

This Load Span Table is for guidance only and should not be considered as a complete calculation.

Reinforcement type	STR 01	STR 02	STR 03							
Top reinforcement			2xØ9.53							
Bottom reinforcement	4xØ12.7	5xØ12.7	7xØ12.7							
Reinforcement (kg/m ²)	2.58	3.23	5.24							
M _{Rd} (kNm/m)	81.9	98.2	128.8							
V _{nc,Rd} (kN/m)	57.4	60.5	62.6							
V _{c,Rd} (kN/m)	43.0	59.0	74.2							

Permanent load g (kN/m ²)	Variable load q (kN/m ²)	CLEAR SPAN (IN METERS)								
1.50	1.50	9.15	9.21	9.71						
1.50	2.00	8.74	9.01	9.48						
1.50	2.50	8.38	8.82	9.28						
1.50	3.00	8.06	8.65	9.09						
1.50	3.50	7.78	8.49	8.91						
1.50	4.00	7.52	8.24	8.75						
1.50	5.00	7.08	7.75	8.45						
1.50	6.00	6.70	7.34	8.19						
1.50	7.00	6.38	6.99	7.95						
1.50	8.00	6.10	6.68	7.41						
1.50	9.00	5.86	6.42	6.85						
1.50	10.00	5.64	6.16	6.36						
1.50	12.50	4.99	5.25	5.42						
1.50	15.00	4.36	4.58	4.72						
1.50	20.00	3.49	3.66	3.78						



SECTION - self weight

Precast slab :	2.62	kN/m ²				
Joint :	0.15	kN/m ²	--> Sum =	2.77	kN/m ²	(slab + joint)
Topping :	0.00	kN/m ²	--> Sum =	2.77	kN/m ²	(slab + joint + topping)

UTILITY FEATURES

User Category :	A	Domestic and residential areas
Exposure class :	XC1	Fire resistance : 60 min.

DEFLECTION CRITERIA

- Long term part of variable load $\psi_2 = 0.3$
- Long term TOTAL deflection under self weight of the slab + total permanent load + 30% of the variable load $< L / 250$
 - Long term ADDITIONAL deflection under total permanent load + 30% of the variable load $< L / 500$



FABPANEL™ 200 6 Cores

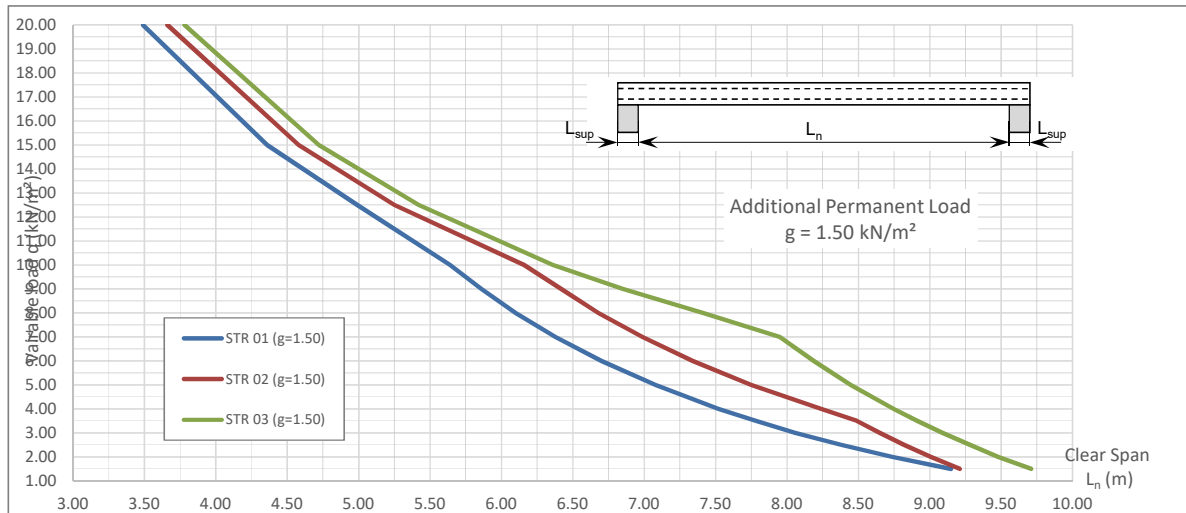
1195 mm Wide
Cover = 30 mm

Fire = 60 minutes
Topping = 0 mm

T +27 11 706 4560
F +27 11 463 5589
134 Eccleston Crescent, Bryanston, Sandton
PO Box 364 Paulshof 2056
www.concreteslabs.co.za
slabs@iafrica.com

Designed to Eurocodes and EN1168

Reinforcement type	STR 01	STR 02	STR 03						
Top reinforcement			2xØ9.53						
Bottom reinforcement	4xØ12.7	5xØ12.7	7xØ12.7						
Reinforcement (kg/m ²)	2.58	3.23	5.24						
M _{Rd} (kNm/m)	81.9	98.2	128.8						
V _{nc,Rd} (kN/m)	57.4	60.5	62.6						
V _{c,Rd} (kN/m)	43.0	59.0	74.2						



MATERIALS

Concrete Precast slab : **C50** Density = **2400** kg/m³
Joint/Topping : **C30** Density = **2400** kg/m³

Prestressing steel

Strand Ø9.53 **Y1860** $f_{pk} = 1860 \text{ N/mm}^2$ $f_{p0.1k} = 1674 \text{ N/mm}^2$
Strand Ø12.7 **Y1860** $f_{pk} = 1860 \text{ N/mm}^2$ $f_{p0.1k} = 1674 \text{ N/mm}^2$

Prestressing of top reinforcement **70%** $\cdot f_{pk}$

Prestressing of bottom reinforcement **70%** $\cdot f_{pk}$

Concrete cover on bottom reinforcement **30** mm $\Delta c = 0$ mm

SECTION - self weight

Precast slab : **2.62** kN/m²
Joint : **0.15** kN/m² --> Sum = **2.77** kN/m² (slab + joint)
Topping : **0.00** kN/m² --> Sum = **2.77** kN/m² (slab + joint + topping)

UTILITY FEATURES

User Category : **A** **Domestic and residential areas**
Exposure class : **XC1** Fire resistance : **60** min.

DEFLECTION CRITERIA

Long term part of variable load $\psi_2 = 0.3$
- Long term TOTAL deflection under self weight of the slab + total permanent load + 30% of the variable load $< L / 250$
- Long term ADDITIONAL deflection under total permanent load + 30% of the variable load $< L / 500$