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FABPANEL™ 150 8 Cores

1195 mm Wide **Fire = 60 minutes**
Cover = 25 mm **Topping = 50 mm**

Designed to Eurocodes and EN1168

SECTION

Hollow core slab		FabPanel 150		N° Cores	8	A_b =	1741.0 cm²	A_n/A_b =	64.1%
	b_{mod} =	1200	mm			A_n =	1115.3 cm²	A_{jnt} =	57.2 cm²
	h_p =	150	mm			I_{yc} =	28844.1 cm⁴	e_{zt} =	75.77 mm
Support depth		70	mm			b_w =	348.8 mm	e_{zb} =	74.23 mm
Topping		50	mm			A_{top} =	600.00 cm²		

MATERIALS

Concrete Code ref. **EN206-1**

Hollow core slab	C50	Density	2400 kg/m³	Aggregate Limestone
In situ joint/topping	C30	Density	2400 kg/m³	Aggregate Quartzite

Prestressing reinforcement Code ref. **EN10138**

Type	Diam. (mm)	A_p (mm²)	Grade	f_{pk} (N/mm²)	$f_{p0.1k}$ (N/mm²)	E_p (N/mm²)	$F_{p0.1k}$ (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 top reinforcement **70%** • f_{pk}
Prestressing of bottom reinforcement **70%** • f_{pk}

Concrete cover on bottom reinforcement **25** mm Δc = **0** mm

Mild reinforcement Code ref. **EN10080**

Type	Diam. (mm)	A_s (mm²)	Grade	f_{uk} (N/mm²)	f_{yk} (N/mm²)	E_s (N/mm²)
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 : γ_g = **1.35**
Variable load : γ_q = **1.50**

Combination factors

ψ_0 = **0.7**
ψ_1 = **0.5**
ψ_2 = **0.3**

DEFLECTION CRITERIA

Total long term deflection: variable load with ψ_2 = 30%
UZ < L / **250** loads = $SW_{slab} + SW_{top} + \Sigma PL + \psi_2 \cdot \Sigma VL$

Addtitional long term deflection: variable load with ψ_2 = 30%
ΔUZ < L / **500** loads = $\Sigma PL + \psi_2 \cdot \Sigma VL$

SW = self weight
PL = permanent load
VL = variable load

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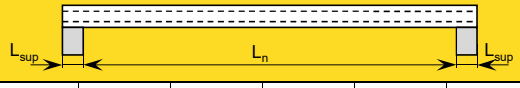
This Load Span Table is for guidance only and should not be considered as a complete calculation.

Reinforcement type		STR 01	STR 02	STR 03							
Top reinforcement				2xØ9.53							
Bottom reinforcement		5xØ9.53	7xØ9.53	9xØ9.53							
Reinforcement (kg/m²)		1.80	2.52	3.96							
M_{Rd} *(kNm/m)*		57.4	76.3	96.7							
$V_{nc,Rd}$ *(kN/m)*		62.4	65.0	69.3							
$V_{c,Rd}$ *(kN/m)*		45.3	63.7	80.4							

Permanent load g (kN/m²)	*Variable load* q (kN/m²)	*CLEAR SPAN (IN METERS)*										
1.50	**1.50**	7.85	8.59	8.54								
1.50	**2.00**	7.51	8.41	8.37								
1.50	**2.50**	7.19	8.24	8.20								
1.50	**3.00**	6.90	7.95	8.04								
1.50	**3.50**	6.65	7.66	7.89								
1.50	**4.00**	6.42	7.40	7.76								
1.50	**5.00**	6.02	6.95	7.51								
1.50	**6.00**	5.70	6.57	7.30								
1.50	**7.00**	5.42	6.25	7.03								
1.50	**8.00**	5.18	5.97	6.71								
1.50	**9.00**	4.96	5.72	6.44								
1.50	**10.00**	4.78	5.50	6.19								
1.50	**12.50**	4.38	5.05	5.69								
1.50	**15.00**	4.08	4.70	5.29								
1.50	**20.00**	3.60	4.06	4.29								



SECTION - self weight

Precast slab :	**2.19**	**kN/m²**				
Joint :	**0.11**	**kN/m²**	--> Sum =	2.30	**kN/m²**	(slab + joint)
Topping :	**1.18**	**kN/m²**	--> Sum =	3.48	**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 ψ_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

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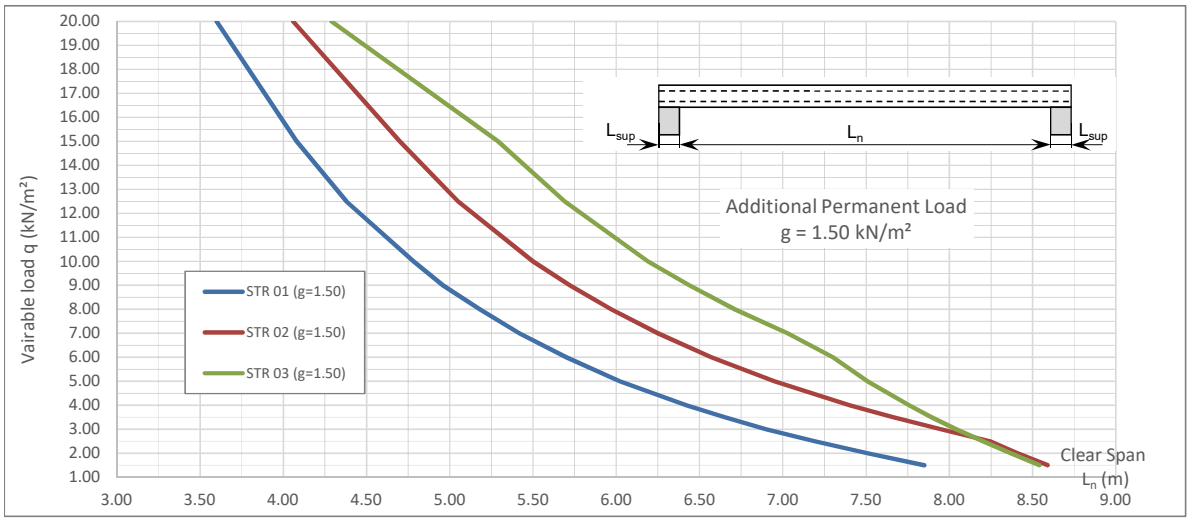

MATERIALS

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

Prestressing steel

Strand Ø9.53 **Y1860** f_{pk} = **1860** N/mm² $f_{p0.1k}$ = **1674** N/mm²
Strand Ø12.7 **Y1860** f_{pk} = **1860** N/mm² $f_{p0.1k}$ = **1674** N/mm²

Prestressing of top reinforcement **70%** • f_{pk}
Prestressing of bottom reinforcement **70%** • f_{pk}

Concrete cover on bottom reinforcement **25** mm Δc = **0** mm

SECTION - self weight

Precast slab : **2.19** **kN/m²**
Joint : **0.11** **kN/m²** --> Sum = 2.30 **kN/m²** (slab + joint)
Topping : **1.18** **kN/m²** --> Sum = 3.48 **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 ψ_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