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FABPANEL™ 250+ 7 Cores

1245 mm Wide **Fire = 60 minutes**
Cover = 30 mm **Topping = 50 mm**

Designed to Eurocodes and EN1168

SECTION

Hollow core slab		**FabPanel 250+**		N° Cores	**7**	A_b =	**2987.7** cm²	A_n/A_b =	59.0%
	b_{mod} =	**1250**	mm			A_n =	**1763.7** cm²	A_{jnt} =	**135.0** cm²
	h_p =	**250**	mm			I_{yc} =	**134576.5** cm⁴	e_{zt} =	**126.15** mm
Support depth		**70**	mm			b_w =	**305.0** mm	e_{zb} =	**123.85** mm
Topping		**50**	mm			A_{top} =	625.00 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 **30** 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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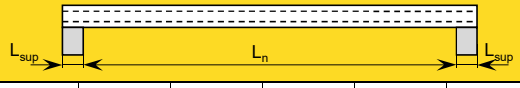
This Load Span Table is for guidance only and should not be considered as a complete calculation.

Reinforcement type		STR 01	STR 02								
Top reinforcement		2xØ9.53	2xØ9.53								
Bottom reinforcement		6xØ12.7	8xØ12.7								
Reinforcement (kg/m²)		4.41	5.65								
M_{Rd} *(kNm/m)*		178.4	226.2								
$V_{nc,Rd}$ *(kN/m)*		83.6	87.2								
$V_{c,Rd}$ *(kN/m)*		87.2	100.5								

Permanent load g (kN/m²)	*Variable load* q (kN/m²)	*CLEAR SPAN (IN METERS)*										
1.50	**1.50**		12.31	12.83								
1.50	**2.00**		12.02	12.59								
1.50	**2.50**		11.59	12.37								
1.50	**3.00**		11.20	12.17								
1.50	**3.50**		10.85	11.97								
1.50	**4.00**		10.53	11.79								
1.50	**5.00**		9.96	11.21								
1.50	**6.00**		9.48	10.67								
1.50	**7.00**		9.06	10.20								
1.50	**8.00**		8.69	9.71								
1.50	**9.00**		8.37	9.04								
1.50	**10.00**		8.08	8.46								
1.50	**12.50**		7.08	7.28								
1.50	**15.00**		6.23	6.41								
1.50	**20.00**		5.05	5.19								



SECTION - self weight

Precast slab :	**3.32**	**kN/m²**				
Joint :	**0.25**	**kN/m²**	--> Sum =	3.58	**kN/m²**	(slab + joint)
Topping :	**1.18**	**kN/m²**	--> Sum =	4.75	**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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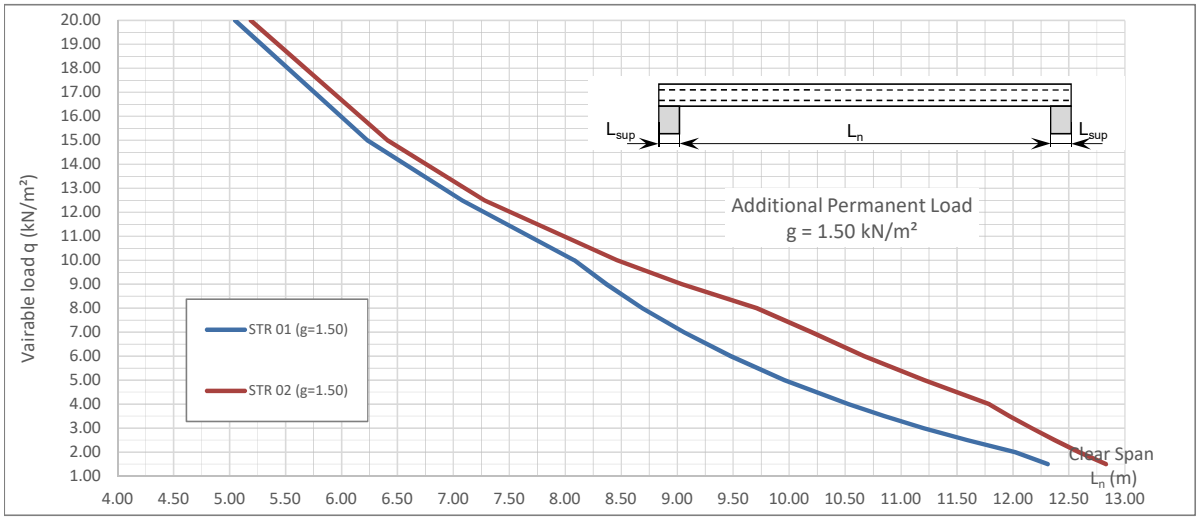

MATERIALS

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 **30** mm Δc = **0** mm

SECTION - self weight

Precast slab : **3.32** **kN/m²**
Joint : **0.25** **kN/m²** --> Sum = 3.58 **kN/m²** (slab + joint)
Topping : **1.18** **kN/m²** --> Sum = 4.75 **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