



Tel: 01636 832000

BEAM FLOORING TO EC2

Version 14.28

Job title : New House, Chadlington

By : PTC

Job ref : 68361

Calc ref : 3

Date: 26/04/18

Floor system : Beam & Block , Floor case : RDJ6

Beam ref : RD09. 215 mm wide (165 mm at top) x 150 mm deep. 9 no. wires. No. of beams = 1.

Block type : Aggregate infill block 440 mm wide. Density = 1500 kg/cu.m.

Floor case width = 388 mm. =l=

Exposure type XC1 for EC2 category : ' Inside enclosed buildings ' gives design class with permissible tension.

Type of floor loading = Domestic.

Effective span = 6.100 m. Clear span = 6.000 m.

Alternative point load checked : 2 kN at mid span

LOADING	kN/m ²		Width (m)	Service (kN/m)		Use maximum of EC1 equation 6.10(a) or (b)			
						Ultimate 6.10(a) (kN/m)		Ultimate 6.10(b) (kN/m)	
Self weight of beam, block and infill	2.47	x	0.39	=	0.96	x	1.35	1.29	x
Self weight of structural topping	0.00	x	0.39	=	0.00	x	1.35	0.00	x
Finishes other than structural topping	2.70	x	0.39	=	1.05	x	1.35	1.41	x
Partitions (allow)	0.00	x	0.39	=	0.00	x	1.35	0.00	x
Superimposed live	1.50	x	0.39	=	0.58	x	1.05	0.61	x
Total	6.67				2.59		3.32		3.38

RESULTS	M service (kNm)	M ultimate (kNm)	LHS shear (kN)	RHS shear (kN)	Max V_{Ed} / V_{Rd} (ratio)	Total Deflection (mm)	Movement (mm)
Actual	12.04	15.71	10.30	10.30	0.24	17.1	4.0
Limit	12.45	20.30	41.29	41.29	1	24.4*	17.4**

Flexurally cracked shear occurs at x = 1.708 and 4.392 m from LHS

*span/250

**span/350

** Finishes = Non-brittle finishes

Shear force

PASS

Alternative point load

PASS

Natural frequency = 4.2 (Hz) Minimum value = 4.0 (Hz)

PASS

Crack width = 0.005 (mm) Limiting value = 0.2 mm

PASS

Service moment

PASS

Ultimate moment

PASS

Deflection

PASS

Curltailment length

*** Design satisfactory *** (max. ratio actual / limit = 0.99)