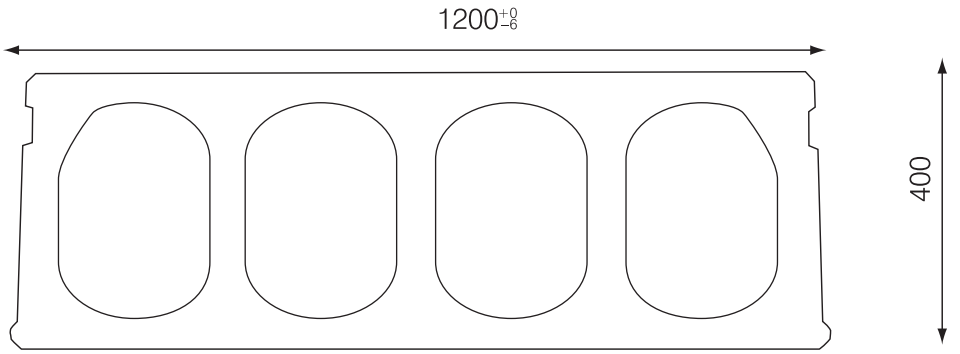
DP HOLLOW CORE SLAB — TYPE DP 4 - 400



Load Table DP 4 - 400

NO STRUCTURAL TOPPING

STRAND PATTERN	BEARING CAPACITY PER SLAB UNIT (1.20 M WIDTH)	SPAN (m)	8	10	12	14	15	16	17	18
7 no. 12.5 mm	M_{SLS} = 250 kNm/s.u.	q_{SLS} (kN/m^2)	19.7	10.9	6.1	3.3	2.3	1.4		
	M_{ULS} = 350 kNm/s.u.	q_{ULS} (kN/m^2)	30.0	16.9	9.7	5.4	3.9	2.6		
Mcrack = 298 kNm/s.u.	V_{UD} = 183 kN/s.u.	c (mm)	-11	-13	-12	-6	-3	+8		
9 no. 12.5 mm	M_{SLS} = 318 kNm/s.u.	q_{SLS} (kN/m^2)	21.7	13.9	9.1	5.5	4.1	3.1	2.2	
	M_{ULS} = 445 kNm/s.u.	q_{ULS} (kN/m^2)	33.1	23.2	14.1	8.7	6.7	5.1	3.8	
Mcrack = 355 kNm/s.u.	V_{UD} = 190 kN/s.u.	c (mm)	-15	-19	-21	-18	-14	-9	-4	
11 no. 12.5 mm	M_{SLS} = 384 kNm/s.u.	q_{SLS} (kN/m^2)		16.8	11.9	7.5	6.0	4.7	3.7	
	M_{ULS} = 538 kNm/s.u.	q_{ULS} (kN/m^2)		25.7	18.4	11.8	9.5	7.5	6.0	
Mcrack = 385 kNm/s.u.	V_{UD} = 193 kN/s.u.	c (mm)		-23	-24	-23	-21	-16	-10	-4
13 no. 12.5 mm	M_{SLS} = 410 kNm/s.u.	q_{SLS} (kN/m^2)		17.3	13.7	9.3	7.5	6.0	4.8	3.8
	M_{ULS} = 614 kNm/s.u.	q_{ULS} (kN/m^2)		26.5	21.0	14.4	11.7	9.5	7.7	6.2
Mcrack = 410 kNm/s.u.	V_{UD} = 198 kN/s.u.	c (mm)		-24	-28	-28	-27	-22	-16	-9
14 no. 12.5 mm	M_{SLS} = 426 kNm/s.u.	q_{SLS} (kN/m^2)		17.5	13.9	10.0	8.1	6.6	5.3	4.3
	M_{ULS} = 650 kNm/s.u.	q_{ULS} (kN/m^2)		26.8	21.3	15.6	12.8	10.5	8.5	6.9
Mcrack = 426 kNm/s.u.	V_{UD} = 200 kN/s.u.	c (mm)		-25	-31	-32	-31	-27	-22	-13

Slab Selfweight = 4.35kN/m^2
Joint Filling = 0.25kN/m^2
Total Selfweight = 4.60kN/m^2

M_{SLS} = Slab Moment Capacity (Service limit Stage)
M_{ULS} = Slab Moment Capacity (Ultimate limit Stage)
V_{UD} = Slab Shear Capacity (Ultimate limit Stage)

q_{SLS} = Maximum allowed imposed dead and live load, unfactored (excluding selfweight of slab)
q_{ULS} = Maximum allowed imposed dead and live load , factored (excluding selfweight of slab)
c = Theoretical camber at time of installation (+ indicate deflection)

Load Table DP 4 - 400 + 75

75mm STRUCTURAL TOPPING

STRAND PATTERN	BEARING CAPACITY PER SLAB UNIT (1.20 M WIDTH)	SPAN (m)	8	10	12	14	15	16	17	18
11 no. 12.5 mm	M_{SLS} = 450 kNm/s.u.	q_{SLS}		14.6	12.5	7.7	5.9	4.4	3.1	2.1
	M_{ULS} = 630 kNm/s.u.	q_{ULS}		25.2	19.5	12.3	9.6	7.3	5.4	3.9
Mcrack = 453 kNm/s.u.	V_{UD} = 206 kN/s.u.	c_t		-20	-21	-17	-12	-6	+7	+20
14 no. 12.5 mm	M_{SLS} = 490 kNm/s.u.	q_{SLS}		17.5	13.5	10.6	8.6	6.8	5.3	3.9
	M_{ULS} = 765 kNm/s.u.	q_{ULS}		26.9	20.9	16.6	13.6	10.9	8.6	6.6
Mcrack = 490 kNm/s.u.	V_{UD} = 216 kNs.u.	c_t		-24	-26	-26	-22	-16	-9	+6

Slab Selfweight = 4.35kN/m^2
Joint Filling = 0.25kN/m^2
75mm Topping = 1.87kN/m^2
Total Selfweight = 6.47kN/m^2

M_{SLS} = Slab Moment Capacity (Service limit Stage)
M_{ULS} = Slab Moment Capacity (Ultimate limit Stage)
V_{UD} = Slab Shear Capacity (Ultimate limit Stage)

q_{SLS} = Maximum allowed imposed dead and live load, unfactored (excluding selfweight of slab + topping)
q_{ULS} = Maximum allowed imposed dead and live load , factored (excluding selfweight of slab+ topping)
c_t = Theoretical camber just after casting the topping (+ indicate deflection)