HOLLOW-CORE

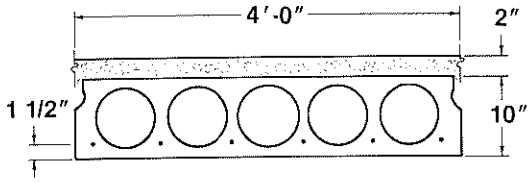
4′-0″ x 10″
Normal Weight Concrete

Strand Pattern Designation

76-S
- S = straight
- Diameter of strand in 16ths
- Number of strand (7)

Safe loads shown include dead load of 10 psf for untopped members and 15 psf for topped members. Remainder is live load. Long-time cambers include superimposed dead load but do not include live load.

Capacity of sections of other configurations are similar. For precise values, see local hollow-core manufacturer.



f'_c = 5000 psi
f'_{ci} = 3500 psi
Low-relaxation strand

Section Properties

		Untopped	Topped
A	=	259 in.²	—
I	=	3223 in.⁴	5328 in.⁴
Y_b	=	5.00 in.	6.34 in.
Y_t	=	5.00 in.	5.66 in.
Z_b	=	645 in.³	840 in.³
Z_t	=	645 in.³	941 in.³
b_w	=	10.50 in.	10.50 in.
wt	=	270 plf	370 plf
		68 psf	93 psf
V/S	=	2.23 in.	

Key
235 — Safe superimposed service load, psf
0.3 — Estimated camber at erection, in.
0.4 — Estimated long-time camber, in.

4HC10

Table of safe superimposed service load (psf) and cambers — No Topping

Strand Designation Code	Span, ft. 20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
48-S	235 0.3 0.4	208 0.3 0.4	185 0.3 0.4	165 0.3 0.4	147 0.3 0.4	131 0.3 0.4	117 0.3 0.3	105 0.3 0.3	94 0.3 0.2	84 0.2 0.2	75 0.2 0.1	67 0.2 0.0 – 0.1	59 0.1										
58-S	280 0.4 0.5	263 0.4 0.5	240 0.4 0.6	215 0.5 0.6	193 0.5 0.6	174 0.5 0.6	157 0.5 0.6	141 0.5 0.6	128 0.5 0.6	115 0.5 0.5	104 0.5 0.5	94 0.4 0.4	85 0.4 0.3	77 0.4 0.2	69 0.3 0.1	62 0.2 0.1 – 0.1	56 0.2						
68-S	289 0.5 0.7	272 0.5 0.7	255 0.6 0.8	242 0.6 0.8	231 0.6 0.8	215 0.7 0.8	195 0.7 0.9	176 0.7 0.9	160 0.7 0.9	146 0.7 0.9	133 0.7 0.8	121 0.7 0.8	110 0.7 0.7	100 0.7 0.7	91 0.6 0.6	83 0.6 0.5	76 0.5 0.4	69 0.5 0.2	62 0.4 0.1 – 0.1	51 0.3			
78-S	298 0.6 0.8	278 0.7 0.9	264 0.7 0.9	248 0.7 1.0	237 0.8 1.0	223 0.8 1.1	214 0.9 1.1	203 0.9 1.1	192 0.9 1.1	175 0.9 1.2	160 0.9 1.2	147 1.0 1.1	134 1.0 1.1	123 1.0 1.1	113 0.9 1.0	103 0.9 1.0	95 0.9 0.9	87 0.9 0.8	80 0.8 0.6	73 0.8 0.5	67 0.6 0.3	61 0.5 0.1 – 0.1	55 0.4
88-S		287 0.8 1.0	270 0.8 1.1	257 0.9 1.2	243 0.9 1.2	229 1.0 1.3	220 1.0 1.3	209 1.1 1.4	199 1.1 1.4	189 1.2 1.4	183 1.2 1.5	172 1.2 1.5	158 1.2 1.5	145 1.2 1.5	134 1.2 1.4	123 1.2 1.4	113 1.2 1.3	104 1.2 1.3	96 1.2 1.2	89 1.1 1.1	82 1.1 0.9	75 1.0 0.8	69 0.9 0.6

4HC10 + 2

Table of safe superimposed service load (psf) and cambers — 2″ Normal Weight Topping

Strand Designation Code	Span, ft. 20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
48-S	276 0.3 0.2	244 0.3 0.2	215 0.3 0.2	191 0.3 0.2	169 0.3 0.1	150 0.3 0.1	133 0.3 0.0	114 0.3 0.0 – 0.1	98 0.2 – 0.2	83 0.2 – 0.3	70 0.2 – 0.4	58 0.1 – 0.6	47 0.1								
58-S			280 0.4 0.4	250 0.4 0.4	223 0.5 0.4	200 0.5 0.3	179 0.5 0.3	161 0.5 0.3	145 0.5 0.2	130 0.5 0.1	116 0.4 0.0 – 0.1	102 0.4 – 0.2	88 0.4 – 0.3	76 0.3 – 0.5	64 0.3 – 0.6	54 0.2					
68-S				286 0.6 0.6	272 0.6 0.6	248 0.7 0.6	223 0.7 0.6	202 0.7 0.6	182 0.7 0.5	165 0.7 0.5	149 0.7 0.4	135 0.7 0.4	122 0.7 0.3	111 0.7 0.2	100 0.6 0.0 – 0.1	90 0.6 – 0.3	81 0.5 – 0.5	73 0.5			
78-S				295 0.7 0.8	278 0.8 0.8	265 0.8 0.8	250 0.9 0.8	239 0.9 0.8	218 0.9 0.8	199 0.9 0.8	181 0.9 0.7	165 1.0 0.7	150 1.0 0.6	137 1.0 0.5	125 0.9 0.4	113 0.9 0.3	103 0.9 0.2	94 0.8 0.0 – 0.2	85 0.8 – 0.4	77 0.7 – 0.6	67 0.6
88-S					287 0.9 1.0	271 1.0 1.0	259 1.0 1.0	245 1.1 1.0	232 1.1 1.0	224 1.2 1.0	211 1.2 1.0	193 1.2 1.0	176 1.2 0.9	161 1.2 0.9	148 1.2 0.8	135 1.2 0.7	124 1.2 0.6	113 1.2 0.5	104 1.2 0.3 + 0.1	95 1.1 – 0.1	86 1.1

Strength based on strain compatibility; bottom tension limited to $6\sqrt{f'_c}$; see pages 2-3–2-5 for explanation