HOLLOW-CORE

4′-0″ x 8″

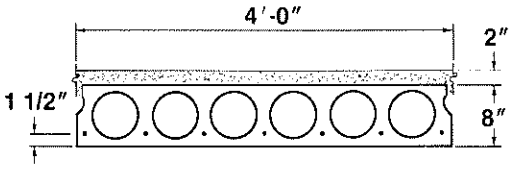
Lightweight Concrete

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	=	215 in.²	—
I	=	1666 in.⁴	3529 in.⁴
Y_b	=	4.00 in.	5.70 in.
Y_t	=	4.00 in.	4.30 in.
Z_b	=	416 in.³	619 in.³
Z_t	=	416 in.³	821 in.³
b_w	=	12.00 in.	12.00 in.
wt	=	172 plf	271 plf
		43 psf	68 psf
V/S	=	1.92 in.	

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

4LHC8

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

Strand Designation Code	Span, ft. 14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	35	36
66-S		280	252	220	193	169	150	133	118	105	94	84	75	67	60	54	48					
		0.3	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.3	0.3					
		0.4	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.4	0.3	0.2	0.0	0.1					
76-S			296	259	227	200	178	158	141	126	113	102	91	82	74	67	60	54	49			
			0.4	0.5	0.5	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.6	0.6	0.6	0.5	0.4			
			0.6	0.6	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.7	0.7	0.6	0.5	0.4	0.3	0.1	−0.1			
58-S					286	260	231	207	185	167	150	136	123	112	102	92	84	77	70	64	58	53
					0.7	0.8	0.8	0.9	0.9	1.0	1.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.0	1.0	0.9	0.8
					0.9	1.0	1.1	1.1	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.1	1.1	0.9	0.8	0.7	0.5	0.2
68-S					292	274	258	243	224	202	183	166	151	137	125	114	105	96	88	81	74	68
					0.9	1.0	1.1	1.1	1.2	1.3	1.3	1.4	1.5	1.5	1.5	1.6	1.6	1.6	1.6	1.6	1.5	1.5
					1.2	1.2	1.3	1.4	1.5	1.6	1.6	1.7	1.7	1.7	1.7	1.7	1.7	1.6	1.5	1.4	1.3	1.1
78-S						283	267	249	237	225	212	194	177	161	148	135	124	114	105	97	89	82
						1.2	1.3	1.4	1.5	1.6	1.7	1.7	1.8	1.9	2.0	2.0	2.1	2.1	2.1	2.2	2.2	2.1
						1.5	1.6	1.8	1.9	2.0	2.0	2.1	2.2	2.2	2.3	2.3	2.3	2.3	2.2	2.2	2.1	2.0

4LHC8 + 2

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

Strand Designation Code	Span, ft. 16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
66-S		272	237	207	182	160	141	125	110	95	80	67	55							
		0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.3							
		0.3	0.3	0.3	0.3	0.2	0.2	0.1	0.1	0.0	−0.2	−0.3	−0.5							
76-S			281	246	217	192	170	151	135	120	107	95	81	69	58					
			0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.7	0.6	0.6	0.6	0.6	0.5					
			0.4	0.5	0.4	0.4	0.4	0.4	0.3	0.2	0.1	0.0	−0.2	−0.3	−0.5					
58-S					284	253	225	202	181	163	146	132	119	107	97	87	79	71		
					0.8	0.9	0.9	1.0	1.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.0	1.0		
					0.8	0.8	0.8	0.8	0.8	0.7	0.7	0.6	0.5	0.4	0.2	0.1	−0.1	−0.4		
68-S							272	244	220	199	180	163	148	134	122	111	101	91	83	73
							1.2	1.3	1.3	1.4	1.5	1.5	1.5	1.6	1.6	1.6	1.6	1.6	1.5	1.5
							1.1	1.1	1.1	1.1	1.1	1.1	1.0	0.9	0.8	0.7	0.5	0.3	0.0	−0.2
78-S							297	279	256	232	210	191	174	159	145	132	121	110	101	91
							1.5	1.6	1.7	1.7	1.8	1.9	2.0	2.0	2.1	2.1	2.1	2.2	2.2	2.2
							1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.4	1.3	1.2	1.1	0.9	0.7	0.5

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