

CONTINUOUS SPIRALS

for Concrete Reinforcing

- **SAVE** material costs
- **SAVE** time and labor expenses
- **ASSURE** positive placement

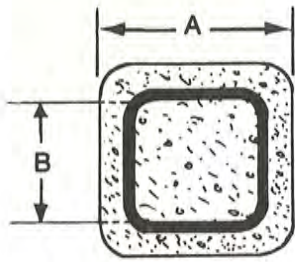


INSTEEL WIRE PRODUCTS®

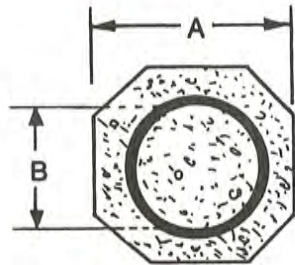
www.insteel.com
E-mail: pcstrand@insteel.com

1373 Boggs Drive
Mt. Airy, NC 27030
800-791-4108 • FAX 336-786-6682

STANDARD SPIRAL SIZE and WEIGHT



Square Spiral



Round Spiral

'A' Pile Size	10"	12"	14"	16"	18"	20"	22"	24"	30"
'B' Inside Dim.	5½	7½	9½	11½	13½	15½	17½	19½	25½
LB/100 turn 5 ga ASW	22	29	37	44	52	60	67	75	98
LB/100 turn 5 ga B'ham	25	33	42	50	59	67	76	85	110

'A' Pile Size	10"	12"	14"	16"	18"	20"	22"	24"	30"
'B' Inside Dim.	5½	7½	9½	11½	13½	15½	17½	19½	25½
LB/100 turn 5 ga ASW	17	23	29	35	41	47	53	59	77
LB/100 turn 5 ga B'ham	19	26	33	39	46	53	60	66	87

BASIC WIRE DIMENSIONS AND WEIGHTS

ASW Gage	Dia. inch mm	LB/FT	Birmingham Gage	Dia. inch mm	LB/FT
# 3	.2437 (6.17)	.1584	# 3	.2590 (6.58)	.1789
# 4	.2253 (5.72)	.1354	# 4	.2380 (6.05)	.1511
# 5	.2070 (5.26)	.1143	# 5	.2200 (5.59)	.1291
# 6	.1920 (4.88)	.0983	# 6	.2030 (5.16)	.1087
# 7	.1770 (4.50)	.0836	# 7	.1800 (4.57)	.0855
# 8	.1620 (4.11)	.0700	# 8	.1650 (4.19)	.0718
# 9	.1483 (3.76)	.0587	# 9	.1480 (3.76)	.0578
#10	.1350 (3.43)	.0486	#10	.1340 (3.40)	.0479
#11	.1205 (3.05)	.0387	#11	.1200 (3.05)	.0384
#12	.1055 (2.67)	.0297	#12	.1090 (2.77)	.0317

When wire for concrete reinforcement is ordered by size number, the following relation between size number and diameter shall apply:

Size Number	Nominal Diameter, in. (mm)	LB/FT	Size Number	Nominal Diameter, in. mm	LB/FT
W0.5	0.080 (2.03)	.0171	W10	0.357 (9.07)	.3407
W1.2	0.124 (3.15)	.0411	W12	0.391 (9.93)	.4086
W1.4	0.134 (3.40)	.0480	W14	0.422 (10.72)	.4760
W2	0.160 (4.06)	.0684	W16	0.451 (11.46)	.8091
W2.5	0.178 (4.52)	.08469	W18	0.479 (12.17)	.6133
W2.9	0.192 (4.88)	.09853	W20	0.505 (12.83)	.6816
W3.5	0.211 (5.36)	.1190	W22	0.529 (13.44)	.7480
W4	0.226 (5.74)	.1365	W24	0.553 (14.05)	.8174
W4.5	0.239 (6.07)	.1527	W26	0.575 (14.61)	.8837
W5	0.252 (6.40)	.1697	W28	0.597 (15.16)	.9526
W5.5	0.265 (6.73)	.1877	W30	0.618 (15.70)	1.021
W6	0.276 (7.01)	.2036	W31	0.628 (15.95)	1.054
W8	0.319 (8.10)	.2720			

NOTE: These sizes represent the most commonly used items in both welded wire fabric and wire usage. Other sizes can be used.

CAPABILITY

ADVANTAGES

1. One half the steel weight provides twice the yield strength of reinforcing steel stirrups.
2. Reinforcing spirals extend like an accordion and can be positively and quickly tied into place.
3. Spirals can be fabricated to meet exact shape and reinforcing specifications.

TYPICAL SPIRAL APPLICATION

Bridge piling, beams and caps.
 Building columns and joists.
 Highway sign footings.
 Railroad ties.
 Waterfront sheet piling.
 Keystone joists.
 Ornamental columns.
 Transmission and light poles,
 ... and other precast or prestressed concrete members.

CAPABILITY

SHAPES — Almost any convex shape is possible and many are carried in stock.

DIMENSIONS — Spirals can be furnished with inside dimensions from 3 inch through 30 inches. Standard length is 100 turns per bundle for any wire size. However, a greater number of turns can be furnished to special order.

WIRE SIZE — Spirals can be fabricated from bright, epoxy coated or galvanized steel wire W 0.5(.080) thru W 20(.505).

STRENGTHS

Standard grade of steel used complies with ASTM A-82 and has a minimum B/S of 80,000 PSI and a minimum yield strength of 65,000 PSI for bright wire. For galvanized wire the values are approximately 10% lower. Other grades of steel can be furnished with a yield strength exceeding 95,000 PSI, or almost twice that of grade 60 reinforcing steel.

ORDERING DATA

1. Sketch of shape giving strand or other reinforcing out-to-out dimensions.
 2. Spiral wire size and pitch desired.
 3. Required yield strength.
- For tapered sections, such as utility poles or transmission towers the exact taper of longitudinal reinforcing is necessary, in addition to above ordering data.

WEIGHT

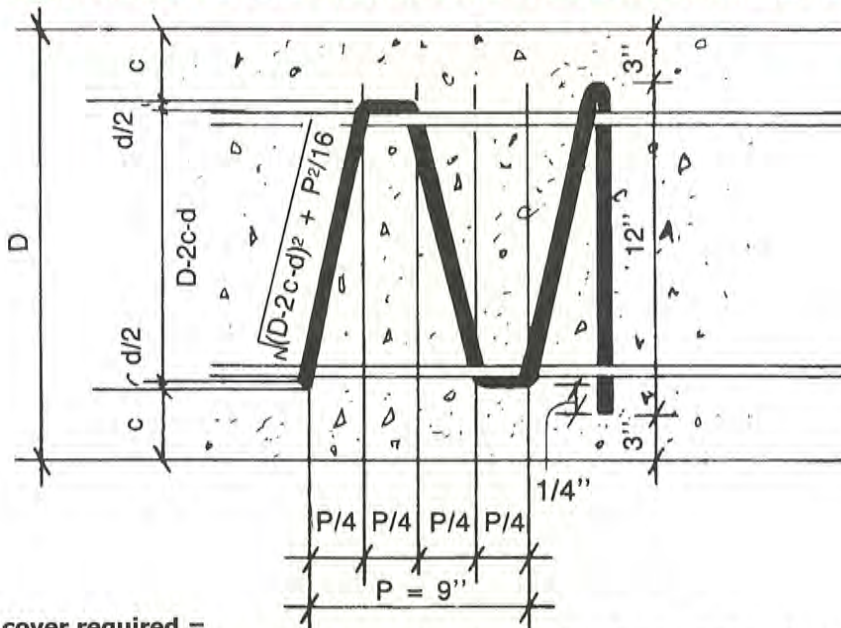
To determine the approximate weight of a multi-turn spiral proceed as follows:

Example for rectangular spiral, 100 turns, 5 ga. (.207") with inside dimension of 12" x 24".

1. Calculate the mean length of one complete turn in feet.
2. Multiply by the number of turns.
3. Multiply by the weight per foot from table below.

$$\frac{12.207 + 24.207 \times 2}{12} \times 100 \times .1143 = 69.5 \text{ lbs.}$$

DETAILING CONTINUOUS SPIRALS ADDITIONAL COVER AND FABRICATED DIMENSION



D = Sq. pile dimens.
 d = spiral wire dia.
 c = clear cover

Additional cover required =

$$\frac{1}{2} \times \text{O.D. reduction of spiral when stretched to pitch } p = \left[\sqrt{(D-d-2c)^2 + (p/4)^2} - (D-d-2c) \right] / 2$$

Example: 18" sq. pile, 5 ga spiral, 3" min. cover, 9" pitch (max)

$$\begin{aligned} \text{Additional cover} &= \left[\sqrt{(18-.207-6)^2 + (9/4)^2} - (18-.207-6) \right] \\ &= \left[\sqrt{11.788^2 + 2.25^2} - 11.788 \right] \\ &= .213' \end{aligned}$$

Use 3 1/4" cover and fabricate spirals to 12" O.D.

Note: The additional cover is required due to unstretched spirals in zone of nearly zero pitch.