

# ONE SIDED FORMING - OFF CONCRETE & ROCK

## C-19, C-20 AND C-21 FLARED COIL LOOPS

Williams C-19, C-20 and C-21 inserts have a flare that distributes the load over a greater area of concrete. Very useful for developing loads on low strength concrete. Larger bolt sizes do not increase the capacity of the insert.

### C-19

Size	SWL lbs./kN	Concrete PSI	Wire Diameter	A	B	C	E	F
3/4" x 6"	4,500/ 20	2000	.375	6"	1 3/4"	1 5/8"	3 1/2"	-
3/4" x 9"	4,500/ 20	2000	.375	9"	1 3/4"	1 5/8"	5 1/2"	-
3/4" x 12"	4,500/ 20	2000	.375	12"	1 3/4"	1 5/8"	5 1/2"	-
1" x 9"	4,500/ 20	2000	.375	9"	2 1/8"	2"	5 5/8"	-
1" x 9"	8,000/ 35.6	2000	.440	9"	2 1/4"	2"	5 3/4"	-
1" x 12"	4,500/ 20	2000	.375	12"	2 1/8"	2"	5 5/8"	-
1" x 12"	8,000/ 35.6	2000	.440	12"	2 1/4"	2"	5 3/4"	-
1 1/4" x 12"	4,500/ 20	2000	.375	12"	2 3/8"	2 1/8"	5 3/4"	-
1 1/4" x 12"	8,000/ 35.6	2000	.440	12"	2 1/2"	2 1/8"	5 3/4"	-
1 1/2" x 12"	8,000/ 35.6	2000	.440	12"	2 3/4"	2 3/8"	5 3/4"	-

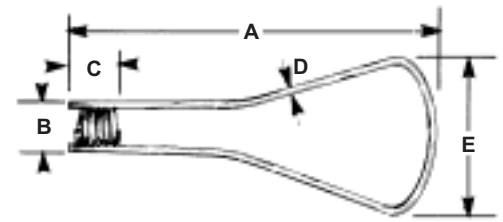
### C-20

1" x 12"	9,000/ 40	2000	.375	12"	2 1/8"	2"	5 1/2"	5 3/4"
1" x 12"	13,500/ 40	2000	.440	12"	2 1/4"	2"	5 1/2"	5 3/4"
1 1/4" x 12"	9,000/ 40	2000	.375	12"	2 3/8"	2 1/8"	5 1/2"	6"
1 1/4" x 12"	13,500/ 60	2000	.440	12"	2 1/2"	2 1/8"	5 3/4"	6"
1 1/2" x 12"	13,500/ 60	2000	.375	12"	2 5/8"	2 3/8"	5 3/4"	6 1/4"
1 1/2" x 12"	13,500/ 60	2000	.440	12"	2 3/4"	2 3/8"	5 3/4"	6 1/4"

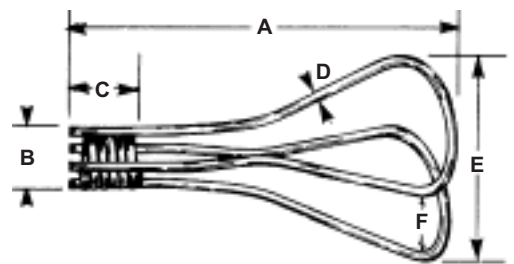
### C-21

1" x 12"	9,000/ 40	2000	.375	12 1/2"	2 1/8"	2"	5 1/2"	5 1/2"
1 1/4" x 12"	9,000/ 40	2000	.375	12 1/2"	2 3/8"	2 1/8"	5 1/2"	5 1/2"
1 1/2" x 12"	9,000/ 40	2000	.375	12 1/2"	2 5/8"	2 3/8"	5 1/2"	5 1/2"
1" x 12"	13,500/ 60	2000	.440	12 1/2"	2 1/4"	2"	5 3/4"	5 3/4"
1 1/4" x 12"	13,500/ 60	2000	.440	12 1/2"	2 1/2"	2 1/8"	5 3/4"	5 3/4"
1 1/2" x 12"	13,500/ 60	2000	.440	12 1/2"	2 3/4"	2 3/8"	5 3/4"	5 3/4"

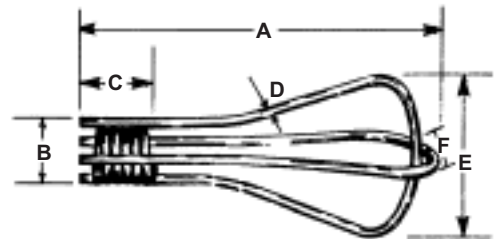
SAFETY FACTOR 4:1 safe load ratings are based on the approximate ultimate capacity of strut wires.



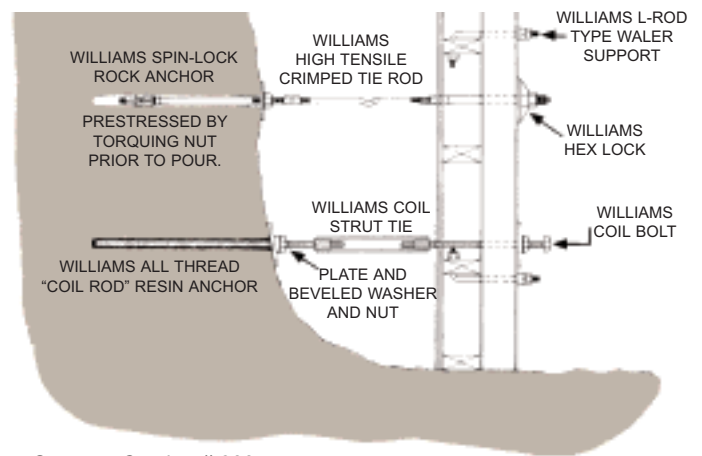
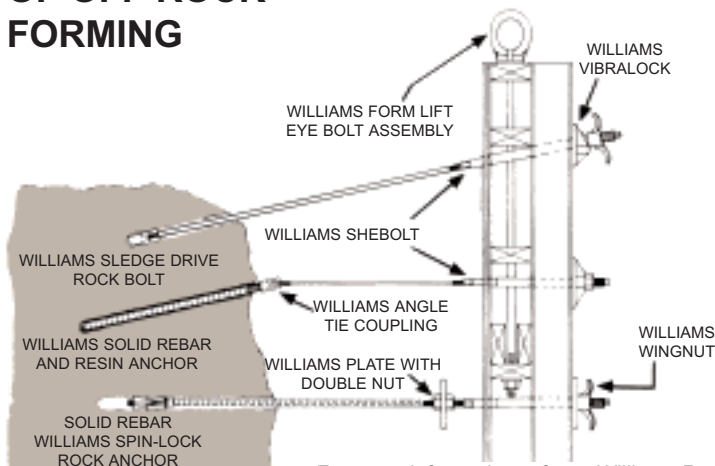
The C-20 double flared coil loop allows a greater capacity and margin of safety than single loops. The added loop doubles the sectional area of steel imbedded in concrete. The flared shape of the loops permit the insert to fit over the steel reinforcing and other obstructions. Parallel flared loops are available in a 2" F dimension if needed.



The C-21 criss-cross double flared loop insert has the same capacities as the C-20. Because this insert shape is more compact, its use is more versatile.



## VARIOUS METHODS OF OFF ROCK FORMING



For more information refer to Williams Rock Anchor Systems Catalog # 399