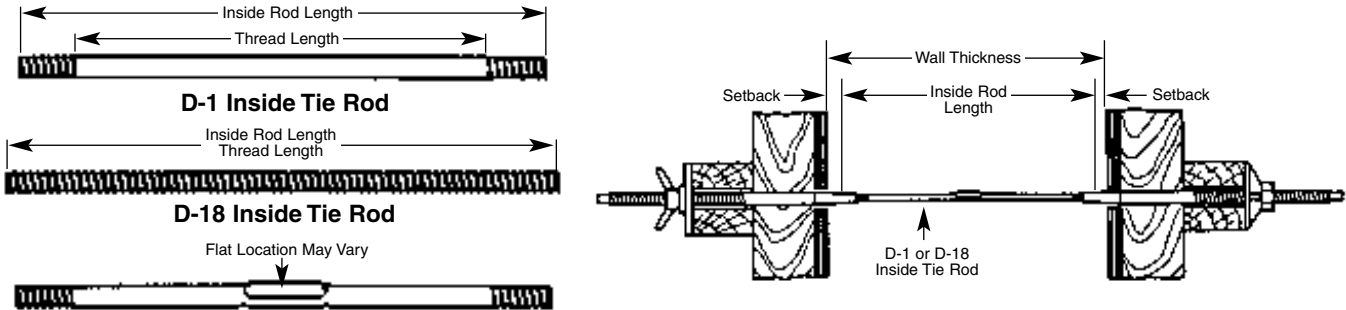


## D-1 and D-18 Inside Tie Rods

Inside tie rods are used with she-bolts to provide a highly adaptable forming system. The inside tie rods are made from high carbon steel with coil threads. National coarse threads can be provided on special order.

The correct inside tie rod length is determined by subtracting the total required setback (both sides) from the wall thickness. Flats are available to prevent turning of the inside tie rods in the concrete and are recommended for wall thickness of 24" or less.



D-1 and D-18 Inside Tie Rod Selection Chart

Type	Safe Working Load Tension (lbs.)	Inside Tie Rod			Dimensions	
		Thread Diameter	Thread Type	Thread Length	Minimum Length	Maximum Length
D-1	9,000	1/2"	N.C. or Coil	1-1/4"	5", 6" with flat	20'-0"
D-18	9,000	1/2"	Coil	Continuous	5"	20'-0"
D-1	12,000	5/8"	N.C. or Coil	1-3/4"	5", 6" with flat	12'-0"
D-18	12,000	5/8"	Coil	Continuous	5"	20'-0"
D-1	18,000	3/4"	N.C. or Coil	1-3/4"	5", 6" with flat	12'-0"
D-18	18,000	3/4"	Coil	Continuous	5"	20'-0"
D-1	38,000	1"	N.C. or Coil	2-1/4"	5", 6" with flat	12'-0"
D-18	38,000	1"	Coil	Continuous	5"	20'-0"

Approximate safety factor 2:1  
7/8", 1-1/8", 1-1/4" and 1-1/2" and D-18 Inside Rods are available on special order.

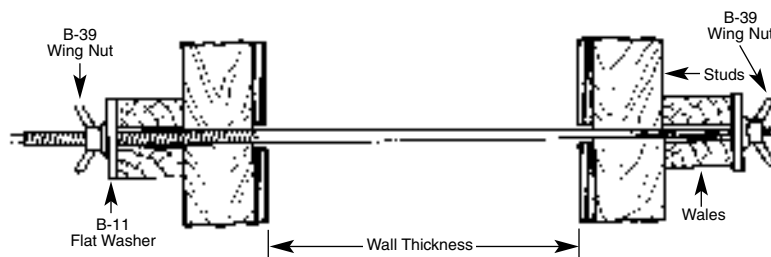
## D-9 Taper Ties

Dayton/Richmond D-9 Taper Ties are used where specifications require or permit complete removal of the form tie from the concrete. Standard taper ties are supplied with coil thread in the diameters and lengths shown in the chart. Other lengths are available on special order.

A complete taper tie assembly consists of one taper tie, two flat washers and two appropriate nut devices. Standard taper ties are manufactured with a taper up to 30° in length. Longer tapers are available on special order.

For wrench turning purposes, taper ties are manufactured with a square end. The opposite end (smaller end) is designed with a protruding nose to prevent thread damage during the removal operation. Coating the taper tie with waterproof grease will facilitate taper tie removal.

**Note:** Taper ties will wear and get damaged. They must be continually inspected and replaced if wear or damage is noted.



D-9 Taper Ties Selection Chart

Safe Working Load Tension (lbs.)	Large End of Tie		Small End of Tie		Standard Tie Lengths	Tapered Body Diameter
	Coil Thread Diameter	Length of Thread	Coil Thread Diameter	Length of Thread		
7,500	3/4"	10"	1/2"	2"	34" 43" 52"	.670" - .500"
18,000	1"	10"	3/4"	6"	30" 36" 42" 48" 54" 60" 72"	.884" - .750"
34,000	1-1/4"	10"	1"	6"		1.113" - 1.00"
50,000	1-1/2"	10"	1-1/4"	6"		1.5" - 1.25"
75,000 H.S.	1-3/4"	10"	1-1/2"	6"	36" 48" 60" 72"	1.75" - 1.5"

Approximate safety factor 2:1