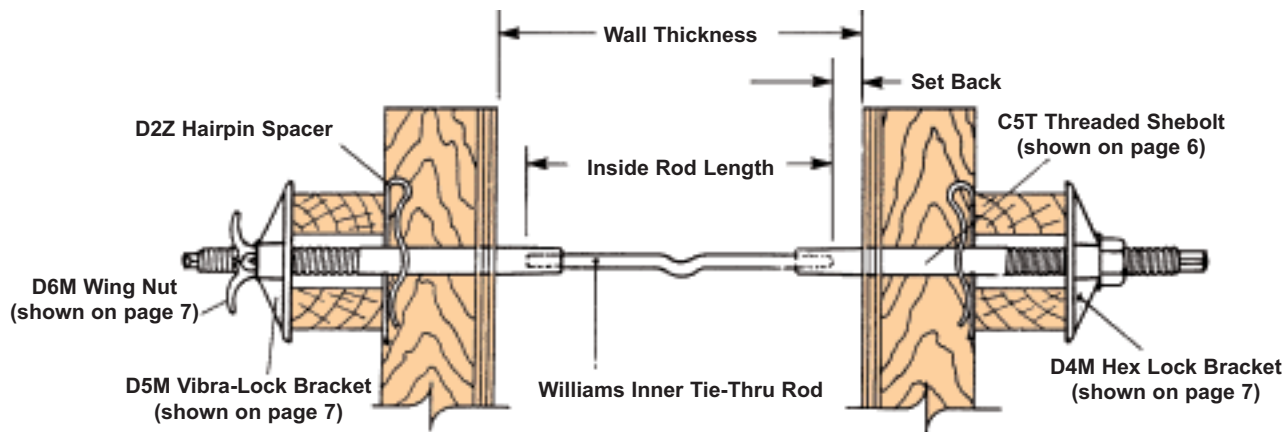


HEAVY TIE-THRU FORMING

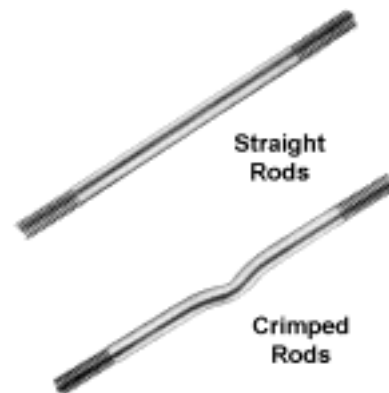
INNER TIE-THRU RODS



B1S TIE-RODS

Available with V-Thread in all diameters shown. Coil thread available up to 1-1/4" only. Lengths from 3" up. All WILLIAMS high tensile tie rods up to 2'0" are crimped to prevent rotation in the wall.

Ties threaded on each end allow easy spot checking of connections to insure proper engagement. See chart on next page for strengths.



B8S CONTINUOUS "V" THREAD ROD

Made from high tensile steel in all diameters shown. Standard lengths: 10'0" and 20'0". See chart on next page for strengths.



B7S CONTINUOUS HIGH TENSILE COIL ROD

WILLIAMS B7S coil rod is manufactured in high tensile steel. Available from 3/8" - 1-1/2" diameters. Standard lengths: 10'0" and 20'0". Stocked in 1/2", 3/4", 1", 1-1/4" and 1-1/2" diameters. See chart on next page for strengths.

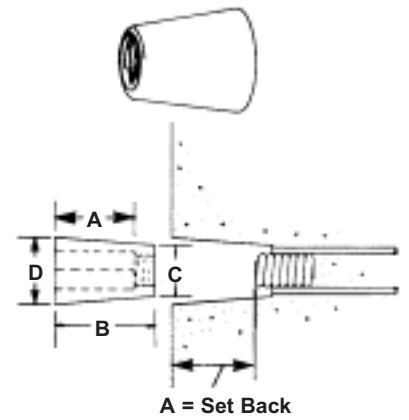


HEAVY TIE-THRU FORMING

B15 THREADED PLASTIC CONE

The threaded plastic cone is used as a form spacer or to create an architectural concrete effect. The small end of the cone has internal threads to be used with the extended coil of the ties. The Hex socket in the cone allows for easy removal.

Type	Bolt Dia.	1/2"	1/2"	1/2"	3/4"	3/4"	3/4"	1"	1-1/4"
A Set Back	1"	1-1/2"	2"	1"	2"	3"	2"	2"	2"
Cone	B	1-3/8"	1-7/8"	2-3/8"	1-1/2"	2-1/2"	3-1/2"	2-1/2"	2-1/2"
	C	1" to	1" to	1" to	1-7/16" to	1-7/16" to	1-7/16" to	1-13/16" to	2-1/8" to
	D	1-1/4"	1-1/4"	1-1/4"	1-5/8"	1-3/4"	1-7/8"	2-1/8"	2-3/8"



B16 PLASTIC CONE WRENCH

Tool used to remove threaded plastic cones. Tapered hexagon end was designed for easy insertion into plastic cones.

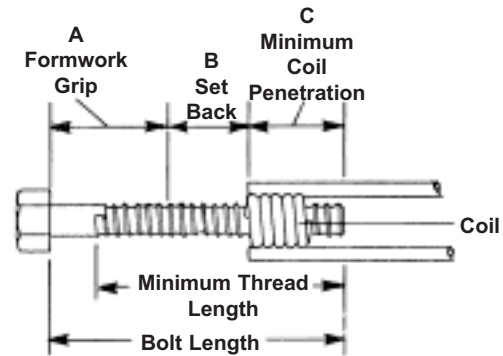


B10 COIL BOLT

A durable bolt manufactured with coil thread for ease of installation. Other lengths available on request.

Diameter	Threads Per Inch	*Thread Length	Min. Coil Penetration	Work Load Lbs./kN	Standard Lengths
1/2" (12mm)	6	2"	1-1/2"	6,750/ 30.0	2,4,6,8
5/8" (16mm)	4-1/2	6"	2"	8,000/ 35.5	2,4,6,8
3/4" (20mm)	4-1/2	6"	2"	9,000/ 40.0	3,4,6,8,10
7/8" (22mm)	4-1/2	4"	2-1/2"	11,000/ 49.0	4,6,8,10
1" (25mm)	3-1/2	5"	2-1/2"	18,000/ 90.1	6,8,10,12
1-1/4" (32mm)	3-1/2	5"	3"	27,000/ 120.1	10,12

*Maximum amount of possible thread.
Working load based on 2 to 1 Safety Factor

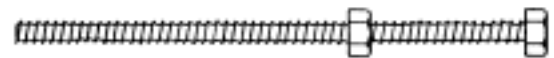


When determining minimum required length add A + B + C.

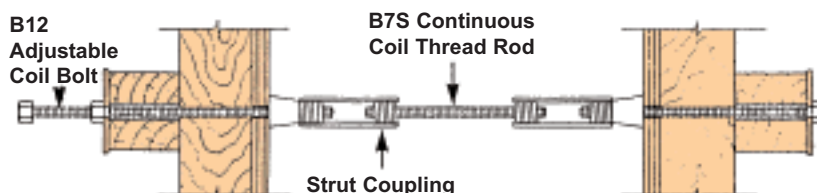
B12 ADJUSTABLE COIL BOLT

The adjustable coil bolt was designed for those situations where a specified bolt length is not desired. This bolt consists of a coil nut welded firmly to the end of a continuous threaded rod, and a free running nut.

Diameter	Lengths				
1/2" (12mm)	12" (305mm)	16" (406mm)	18" (441mm)	20" (508mm)	24" (610mm)
3/4" (20mm)	12" (305mm)	16" (406mm)	18" (441mm)	20" (508mm)	24" (610mm)



B7S CONTINUOUS COIL THREADED BOLT



See page 11 for strengths.

HEAVY TIE-THRU FORMING

INNER TIE-THRU

HIGH TENSILE STEEL WILLIAMS B1S High Tensile Tie Rods, B5S Pigtail Anchors, B7S and B8S Continuous Thread Rod

THREAD DIA.	THREAD PITCH		SAFE * WORKING LOAD	MAX. WORKING LOAD TO ELASTIC LIMIT	AVERAGE ULTIMATE STRENGTH
	COIL THD.	V THD.			
3/8" 10mm	8	16 NC	4,900 lbs. (21.8 kN)	7,500 lbs. (33.4 kN)	9,800 lbs. (43.6 kN)
1/2" 12mm	6	13 NC	9,000 lbs. (40.0 kN)	13,000 lbs. (57.8 kN)	18,000 lbs. (80.1 kN)
5/8" 16mm	4-1/2	11 NC	11,250 lbs. (50.0 kN)	18,000 lbs. (80.0 kN)	22,500 lbs. (100.0 kN)
3/4" 20mm	4-1/2	10 NC	19,000 lbs. (84.5 kN)	30,000 lbs. (133.5 kN)	38,000 lbs. (169.0 kN)
7/8" 22mm	4-1/2	9 NC	29,000 lbs. (129.0 kN)	46,000 lbs. (204.6 kN)	58,000 lbs. (258.0 kN)
1" 25mm	3-1/2	8 NC	37,500 lbs. (166.7 kN)	60,000 lbs. (266.8 kN)	75,000 lbs. (333.5 kN)
1-1/8" 30mm	3-1/2	-	42,500 lbs. (189.0 kN)	67,000 lbs. (298.0 kN)	85,000 lbs. (377.8 kN)
1-1/4" 32mm	3-1/2	7 NC	60,000 lbs. (266.8 kN)	90,000 lbs. (400.4 kN)	120,000 lbs. (533.7 kN)
1-1/2" 38mm	3-1/2	-	70,000 lbs. (311.4 kN)	112,000 lbs. (498.2 kN)	140,000 lbs. (622.8 kN)
2" 51mm	-	6 UN	155,000 lbs. (689.4 kN)	255,000 lbs. (1134.3 kN)	310,000 lbs. (1379.0 kN)

*Based on approximate 2 to 1 Safety Factor.



R61 GRADE 75 A-T ROD

High strength AT-Rod has a right hand continuous rebar thread deformation to the requirement of ASTM A 615. Available in lengths up to 50'-0".

NOMINAL BAR DIAMETER	NET AREA THRU THREADS IN ² /mm ²	SAFE WORKING LOAD AT 2:1 S.F. LBS./Kn	ULTIMATE STRENGTH LBS./Kn
#6 (20mm)	.44 / 284	22,000 / 98	44,000 / 196
#7 (22mm)	.60 / 387	38,000 / 169	76,000 / 338

H4R NEOPRENE WATER SEAL WASHER

Designed to prevent water leakage along the tie rod. Available in tie rod sizes 1/2" - 1-1/4". Special sizes available upon request.



Rod Diameter	Washer O.D.	Thickness Lbs./kN
1/2" (12mm)	1" (25mm)	1/8" (3.1mm)
5/8" (16mm)	1-1/4"	
3/4" (20mm)	1-1/4 (32mm)	
7/8" (22mm)	1-3/8"	
1" (25mm)	1-1/2"	3/16" (4.7mm)
1-1/8" (30mm)	1-5/8"	
1-1/4" (32mm)	1-7/8"	

B7G CONTINUOUS MILD STEEL COIL ROD

WILLIAMS B7G Coil Rod is manufactured in mild steel. It is available in 3/4", 1" and 1-1/4" diameters. Standard lengths: 10'0". Stocked in all diameters. See chart below for strengths.



B7G MILD STEEL CONTINUOUS COIL THREAD ROD		
DIAMETER - PITCH	SAFE WORKING LOAD LBS./Kn	ULTIMATE STRENGTH LBS./Kn
3/4" - 4-1/2	9,000/ 40.0	18,000/ 80.6
1" - 3-1/2	18,000/ 80.6	36,000/ 160.1
1-1/4" - 3-1/2	27,000/ 120.1	54,000/ 240.2

Based on 2 to 1 Safety Factor.
Mild steel 10' standard length.