PAB

Pre-Assembled Anchor Bolt

The PAB anchor bolt is a versatile cast-in-place anchor bolt ideal for high-tension-load applications, such as rod systems and shearwalls. It features a plate washer at the embedded end sandwiched between two fixed hex nuts and a head stamp for easy identification after the pour.

- Available in diameters from ½" to 1¼" in lengths from 12" to 36" (in 6" increments)
- Available in standard and high-strength steel
- Head stamp contains the No Equal sign, diameter designation and an "H" on high-strength rods

Material:
Standard Steel — ASTM F1554 Grade 36, A36 or A307; F_u = 58 ksi
High-Strength Steel (up to 1" dia.) — ASTM A449; F_u = 120 ksi
High-Strength Steel (1⅛" and 1¼" dia.) — ASTM A193 B7 or F1554 Grade 105; F_u = 125 ksi

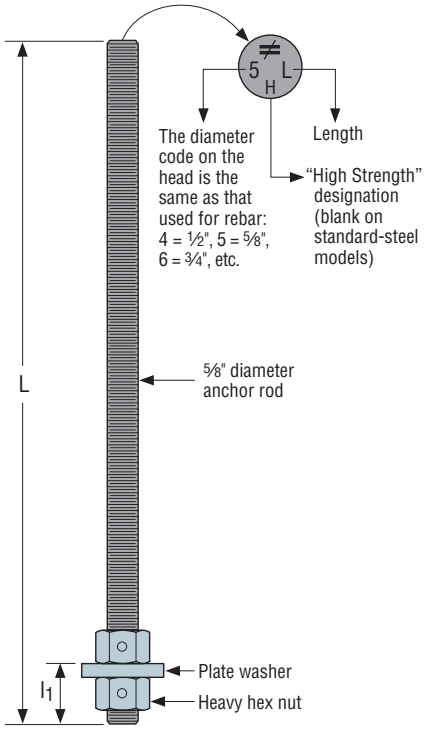
Finish: None. May be ordered in HDG; contact Simpson Strong-Tie.

Installation:

- On HDG PABs, chase the threads to use standard nuts or couplers or use overtapped products in accordance with ASTM A563; for example, Simpson Strong-Tie® NUT⅝-OST, NUT⅞-OST, CNW⅝-OST, CNW⅞-OST. Some OST couplers are typically oversized on one end of the coupler nut only and will be marked with an "O" on oversized side. Couplers may be oversized on both ends. Contact Simpson Strong-Tie.

Related Software

The Simpson Strong-Tie Anchor Designer™ Software analyzes and suggests anchor solutions using the ACI 318 strength-design methodology (or CAN/CSA A23.3 Annex D Limit States Design methodology). It provides cracked and uncracked-concrete anchorage solutions for numerous Simpson Strong-Tie mechanical and adhesive anchors as well as the PAB anchor bolt. With its easy-to-use graphical user interface, the software makes it easy for the Designer to identify anchorage solutions without having to perform time-consuming calculations by hand. See **strongtie.com/software**.



PAB

Naming Legend

PAB5H-12

- PAB Anchor Bolt
- Diameter* and Grade
- Length (12", 18", 24", 30" or 36")

*Units in ⅛" Increments (Ex: 9 = ⅝" or 1⅛")

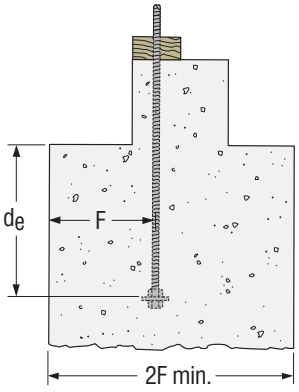
How to Specify and Order:

- When calling out PAB anchor bolts, substitute the desired length for the "XX" in the Root Model Number
- For a ⅝" x 18" anchor bolt, the model number would be PAB5-18 (or PAB5H-18 for high strength)

PAB Anchor Bolt

Diameter (in.)	Plate Washer Size (in.)	l_1 (in.)	Root Model No.		Lengths (in.)
			Standard Strength	High Strength	
½	⅜ x 1½ x 1½	1⅛	PAB4—XX	PAB4H—XX	12" to 36" (in 6" increments)
⅝	½ x 1¾ x 1¾	1⅜	PAB5—XX	PAB5H—XX	
¾	½ x 2¼ x 2¼	1½	PAB6—XX	PAB6H—XX	
⅞	½ x 2½ x 2½	1⅝	PAB7—XX	PAB7H—XX	
1	⅝ x 3 x 2¾	1⅞	PAB8—XX	PAB8H—XX	
1⅛	⅝ x 3½ x 3¼	2	PAB9—XX	PAB9H—XX	
1¼	¾ x 3½ x 3½	2¼	PAB10—XX	PAB10H—XX	

1. Lengths greater than 36" are available as a special order.
2. Plate washers are designed to develop the capacity of the bolt.



Design loads are calculated using a full shear cone. Coverage on each side of the bolt shall be a minimum of F or reductions must be taken.

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Pre-Assembled Anchor Bolt (cont.)

PAB Anchor Bolt – Anchorage Solutions

Design Criteria	Diameter (in.)	Anchor Bolt	2,500 psi Concrete				3,000 psi Concrete			
			Dimensions (in.)		Tension Load		Dimensions (in.)		Tension Load	
			d_e	F	ASD	LRFD	d_e	F	ASD	LRFD
Wind	½	PAB4	4½	7	4,270	6,405	4	6	4,270	6,405
	⅝	PAB5	4	6	4,030	6,720	4	6	4,415	7,360
			6	9	6,675	10,010	5½	8½	6,675	10,010
	¾	PAB6	5½	8½	6,500	10,835	5	7½	6,175	10,290
			7½	11½	9,610	14,415	7	10½	9,610	14,415
	⅞	PAB7	6	9	7,405	12,345	5½	8½	7,120	11,870
			9	13½	13,080	19,620	8½	13	13,080	19,620
		PAB7H	9	13½	13,610	22,680	8½	13	13,680	22,805
			14	21	27,060	40,590	13½	20½	27,060	40,590
	1	PAB8	8	12	11,405	19,005	7½	11½	11,340	18,900
			10½	16	17,080	25,565	10	15	17,080	25,560
		PAB8H	10½	16	17,150	28,580	10	15	17,460	29,100
			16½	25	35,345	53,015	15½	23½	35,345	53,015
	1⅛	PAB9	9	13½	13,610	22,680	8	12	12,495	20,820
			12½	19	21,620	32,430	12	18	21,620	32,430
	1¼	PAB10	14	21	26,690	40,035	13½	20½	26,690	40,035
Seismic	½	PAB4	5	7½	4,270	6,405	4½	7	4,270	6,405
	⅝	PAB5	6½	10	6,675	10,010	6	9	6,675	10,010
	¾	PAB6	7½	11½	9,060	12,940	7	10½	8,945	12,780
			8	12	9,610	14,415	7½	11½	9,610	14,415
	⅞	PAB7	9	13½	11,905	17,010	8½	13	11,970	17,100
			10	15	13,080	19,620	9½	14½	13,080	19,620
		PAB7H	14½	22	25,350	36,215	13½	20½	24,650	35,215
			15½	23½	27,060	40,590	14½	22	27,060	40,590
	1	PAB8	11	16½	15,996	22,850	10½	16	16,435	23,480
			11½	17½	17,080	25,625	11	16½	17,080	25,625
		PAB8H	17	25½	33,045	47,205	16	24	32,720	46,740
			18	27	35,345	53,015	17	25½	35,345	53,015
	1⅛	PAB9	12½	19	19,795	28,275	12	18	20,255	28,940
			13½	20½	21,620	32,430	12½	19	21,620	32,430
	1¼	PAB10	14½	22	25,350	36,215	14	21	26,190	37,415
			15	22½	26,690	40,035	14½	22	26,690	40,035

1. Anchorage designs conform to ACI 318-14 and assume cracked concrete with no supplementary reinforcement.
2. Seismic indicates Seismic Design Category C-F and designs comply with ACI 318-14, Section 17.2.3.4. Per Section 1613 of the IBC, detached one- and two-family dwellings in SDC C may use wind values.
3. Wind includes Seismic Design Category A and B.
4. Foundation dimensions are for anchorage only. Foundation design (size and reinforcement) by Designer. The registered design professional may specify alternative embedment, footing size, and anchor bolt.
5. Where tension loads are governed by anchor steel, the design provisions from AISC 360 are used to determine the tensile steel limit. LRFD values are calculated by multiplying the nominal AISC steel capacity by a 0.75 phi factor, and allowable values are calculated by dividing the AISC nominal capacity by a 2.0 omega factor.
6. Where tension loads are governed by ACI 318 concrete limit, the Allowable Stress Design (ASD) values are obtained by multiplying Load Resistance Factor Design (LRFD) capacities by 0.7 for Seismic and by 0.6 for Wind.

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