

Stud Anchor



SPECIFIED FOR ANCHORAGE INTO CONCRETE

Stud Anchors feature a bolt body and pre-assembled expander plug. Anchors should be installed with carbide tipped hammer drill bits made in accordance to ANSI B212.15-1994.

Anchors are tested to ASTM E488 criteria. Anchors are listed by the following agencies as required: UL and FM.

APPROVALS/LISTINGS

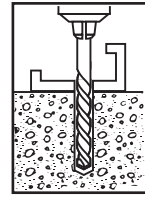
Meets or exceeds U.S. Government G.S.A. specification A-A-55614 Type 2 (Formerly GSA: FF-S-325 Group VIII, Type 2)

California State Fire Marshal

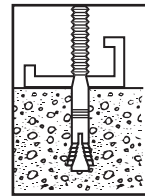
Factory Mutual

Underwriters Laboratories

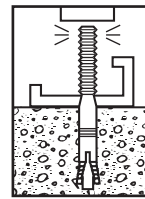
INSTALLATION STEPS



1. Drill hole same diameter as anchor to embedment specified in chart. Clean hole.



2. Drive anchor with expander plug in bottom, through material to be fastened.



3. Expand anchor by driving anchor over plug with hammer.

Note: Recommended thickness of concrete for bottom-bearing anchors = embedment depth + three times anchor diameter

Stud Anchors Ultimate Tension and Shear Values in Concrete (Lbs/kN)

ANCHOR DIA. In. (mm)	MINIMUM EMBEDMENT DEPTH In. (mm)	f'c = 2000 PSI (13.8 MPa)		f'c = 4000 PSI (27.6 MPa)	
		TENSION Lbs. (kN)	SHEAR Lbs. (kN)	TENSION Lbs. (kN)	SHEAR Lbs. (kN)
1/4 (6.4)	1-3/8 (34.9)	1,120 (5.0)	580 (2.6)	1,500 (6.7)	1,640 (7.3)
3/8 (9.5)	1-5/8 (41.3)	1,740 (7.7)	2,280 (10.1)	3,160 (14.1)	3,360 (14.9)
1/2 (12.7)	1-7/8 (47.6)	2,680 (11.9)	5,320 (23.7)	4,020 (17.9)	5,100 (22.7)
5/8 (15.9)	2-3/8 (60.3)	3,200 (14.2)	5,460 (24.3)	5,520 (24.6)	6,820 (30.3)
3/4 (19.1)	2-7/8 (73.0)	4,020 (17.9)	8,100 (36.0)	7,520 (33.5)	8,560 (38.1)

Allowable loads are based upon a 4 to 1 safety factor. Divide by 4 for allowable load values.

Stud Anchors Recommended Edge and Spacing Distance Requirements*

ANCHOR DIA. In. (mm)	MINIMUM EMBEDMENT DEPTH In. (mm)	EDGE DISTANCE REQUIRED TO OBTAIN MAX. WORKING LOAD In. (mm)	MIN. EDGE DISTANCE AT WHICH LOAD FACTOR APPLIED = .90 FOR TENSION = .65 FOR SHEAR In. (mm)	SPACING REQUIRED TO OBTAIN MAX. WORKING LOAD In. (mm)	MIN. ALLOWABLE SPACING BETWEEN ANCHORS LOAD FACTOR APPLIED = .90 FOR TENSION = .50 FOR SHEAR In. (mm)
1/4 (6.4)	1-3/8 (34.9)	2-7/16 (61.9)	1-1/4 (31.8)	4-13/16 (122.2)	2-7/16 (61.9)
3/8 (9.5)	1-5/8 (41.3)	2-7/8 (73.0)	1-7/16 (36.5)	5-11/16 (144.5)	2-7/8 (73.0)
1/2 (12.7)	1-7/8 (47.6)	3-5/16 (84.1)	1-11/16 (42.9)	6-9/16 (166.7)	3-5/16 (84.1)
5/8 (15.9)	2-3/8 (60.3)	4-3/16 (106.4)	2-1/8 (54.0)	8-5/16 (211.1)	4-3/16 (106.4)
3/4 (19.1)	2-7/8 (73.0)	5-1/16 (128.6)	2-9/16 (65.1)	10-1/16 (255.6)	5-1/16 (128.6)

* Linear interpolation may be used for intermediate spacing and edge distances.

Combined Tension and Shear Loading—for Stud Anchors

Allowable loads for anchors subjected to combined shear and tension forces are determined by the following equation: $(Ps/Pt)^{5/3} + (Vs/Vt)^{5/3} \leq 1$

Ps = Applied tension load Vs = Applied shear load Pt = Allowable tension load Vt = Allowable shear load