



Nylon Nailin®

PLASTIC DRIVE PIN TYPE ANCHOR

BASE MATERIAL

Concrete, Block, Brick,

SIZE RANGE

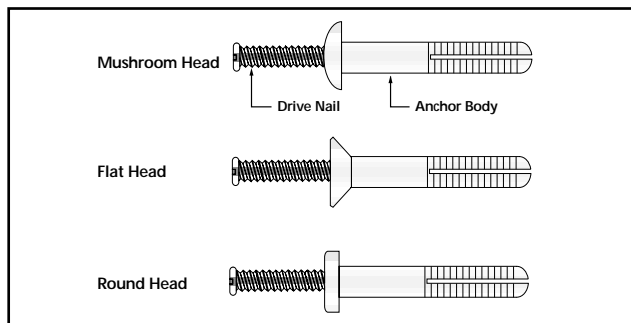
3/16" x 1" to 1/4" x 6"

ANCHOR MATERIAL

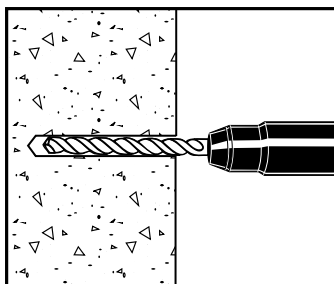
Engineered Nylon with Carbon or Stainless Steel Drive Pin

PRODUCT DESCRIPTION

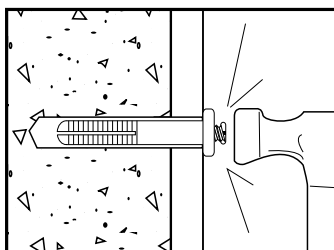
The Nylon Nailin is a pin drive anchor with a body formed from engineered plastic and nails available in carbon and stainless steel. The anchor can be used in concrete, block, brick, or stone. The anchor is pre-assembled with either a carbon steel or stainless steel nail. This anchor is not recommended for applications overhead. For applications overhead, please refer to Product Description for Zamac Hammer-Screw.



INSTALLATION PROCEDURES



Using the proper diameter bit, drill a hole into the base material to a depth of at least 1/4" deeper than the required embedment. The tolerances of the drill bit used should meet the requirements of ANSI Standard B212.15. Blow the hole clean of dust and other material.



Insert the anchor through the fixture. Drive the nail into the anchor body to expand it. Be sure the head is seated firmly against the fixture and that the anchor is at the proper embedment. This anchor is not recommended for use overhead.

ANCHOR SIZES AND STYLES

The round head and mushroom head versions are measured from below the head while the flat head version is measured end to end. To select the proper minimum anchor length, determine the embedment depth required to obtain the desired load capacity. Then add the thickness of the fixture, including any spacers or shims, to the embedment depth.

ROUND HEAD NYLON NAILIN - STEEL NAIL

CAT. NO.	SIZE	DRILL DIA.	STD. BOX	STD. CTN.	WT./100
2431	3/16" x 1"	3/16"	100	1000	1/2
2451	3/16" x 1-1/2"	3/16"	100	1000	3/4
2521	1/4" x 1"	1/4"	100	1000	3/4
2541	1/4" x 1-1/2"	1/4"	100	1000	1
2561	1/4" x 2"	1/4"	100	1000	1

FLAT HEAD NYLON NAILIN - STEEL NAIL

CAT. NO.	SIZE	DRILL DIA.	STD. BOX	STD. CTN.	WT./100
2432	3/16" x 1"	3/16"	100	1000	1/2
2452	3/16" x 1-1/2"	3/16"	100	1000	3/4
2522	1/4" x 1"	1/4"	100	1000	3/4
2542	1/4" x 1-1/2"	1/4"	100	1000	1
2562	1/4" x 2"	1/4"	100	1000	1

MUSHROOM HEAD NYLON NAILIN

CAT. NO.	STAINLESS NAIL	SIZE	DRILL DIAM.	STD. BOX	STD. CTN.	WT./100
2433	-	3/16" x 1"	3/16"	100	1000	1/2
2513	-	1/4" x 3/4"	1/4"	100	1000	1/2
2523	2528	1/4" x 1"	1/4"	100	1000	3/4
2543	2548	1/4" x 1-1/2"	1/4"	100	1000	1
2563	-	1/4" x 2"	1/4"	100	1000	1
2573	-	1/4" x 3"	1/4"	100	1000	2-1/4
2583	-	1/4" x 4"	1/4"	100	1000	2-3/4
2593	-	1/4" x 6"	1/4"	100	400	4

MUSHROOM HEAD BODIES ONLY

CAT. NO.	SIZE	DRILL DIA.	STD. BOX	STD. CTN.	WT./100
2574	1/4" x 3"	1/4"	2500	2500	1/2

INSTALLATION SPECIFICATIONS

ROUND HEAD NYLON NAILIN

ANCHOR SIZE	RH	3/16" FH	MH	RH	1/4" FH	MH
ANSI Drill Bit Size	3/16"	3/16"	3/16"	1/4"	1/4"	1/4"
Fixture Clearance Hole	1/4"	1/4"	1/4"	5/16"	5/16"	5/16"
Head Height	1/8"	1/8"	1/8"	1/8"	1/8"	1/8"
Head Width	3/8"	3/8"	9/16"	7/16"	7/16"	9/16"

MATERIAL SPECIFICATIONS

NYLON NAILIN

ANCHOR COMPONENT	ROUND HEAD	FLAT HEAD	MUSHROOM HEAD CS	MUSHROOM HEAD SS
Drive Nail	AISI 1018	AISI 1018	AISI 1018	Type 304 SS
Anchor Body	Nylon	Nylon	Nylon	Nylon
Nail Plating	ASTM B 633, SC1, Type III (Fe/Zn 5)			N/A

PERFORMANCE DATA

The following ultimate load capacities are based on testing conducted according to ASTM Standard E 488.

ANCHOR SIZE	EMBED. DEPTH	2,000 PSI CONCRETE		4,000 PSI CONCRETE		6,000 PSI CONCRETE	
		TENSION (LBS.)	SHEAR (LBS.)	TENSION (LBS.)	SHEAR (LBS.)	TENSION (LBS.)	SHEAR (LBS.)
3/16"	3/4"	180	280	195	320	200	320
3/16"	1"	200	280	220	320	230	320
1/4"	5/8"	120	320	140	500	180	500
1/4"	3/4"	220	320	240	500	245	500
1/4"	1"	230	320	250	500	260	500
1/4"	1-1/2"	240	320	270	500	280	500
1/4"	2"	255	320	285	500	300	500

NOTE: The values listed above are ultimate load capacities which should be reduced by a minimum safety factor of 4 or greater to determine the allowable working load. Refer to the section on Anchor Selection Guidelines for details.

ULTIMATE LOAD CAPACITIES IN C-90 BLOCK AND RED BRICK

ANCHOR SIZE	EMBED. DEPTH	C-90 HOLLOW BLOCK		SOLID RED BRICK	
		TENSION (LBS.)	SHEAR (LBS.)	TENSION (LBS.)	SHEAR (LBS.)
3/16"	3/4"	170	280	155	320
3/16"	1"	180	280	170	320
1/4"	5/8"	110	320	150	500
1/4"	3/4"	160	320	200	500
1/4"	1"	170	320	220	500
1/4"	1-1/4"	180	320	240	500
1/4"	1-1/2"	200	320	250	500

NOTE: Depending upon anchor application and governing building code, ultimate load capacities should be reduced by a minimum safety factor of 4 or greater to determine the allowable working load. The design professional familiar with the actual product installation should be consulted. Please refer to the general section entitled Evaluation of Test Data that appears earlier in this manual for current industry standards. The consistency of C-90 block and red brick varies greatly. The load capacities listed above should be used as guidelines only. Job site tests should be conducted to verify base material consistency and actual anchor performance.

DESIGN CRITERIA

BASE MATERIAL THICKNESS

The minimum recommended thickness of base material, BMT, when using the Nylon Nailin is 125% of the embedment to be used. For example, when installing an anchor to a depth of 1-1/2", the base material thickness should be 1-7/8". This does not apply to the face shell of a hollow block wall.

SPACING BETWEEN ANCHORS

To obtain the maximum load in tension or shear, a spacing, S, of 10 anchor diameters (10D) or greater should be used. The minimum recommended anchor spacing, S, is 5 anchor diameters (5D) at which point the load should be reduced by 50%. Anchor spacing closer or less than 5 diameters (5D) needs to be field tested. Actual base material conditions will determine any applicable reduction factor. The following table lists the load reduction factor, Rs, for each anchor diameter, D, based on the center to center anchor spacing.

ANCHOR SIZE D	ANCHOR SPACING, S (INCHES) TENSION AND SHEAR					
	10D	9D	8D	7D	6D	5D
3/16	1-7/8	1-3/4	1-1/2	1-3/8	1-1/8	1
1/4	2-1/2	2-1/4	2	1-3/4	1-1/2	1-1/4
Rs	1.00	0.90	0.80	0.70	0.60	0.50

EDGE DISTANCE - TENSION

For tension loads, an edge distance, E, of 12 diameters (12D) or greater should be used to obtain the maximum tension load. The minimum recommended edge distance, E, is 5 diameters (5D) at which point the tension load should be reduced by 20%. Edge distances closer or less than 5 diameters (5D) need to be field tested. Actual base material conditions will determine any applicable reduction factor. The following table lists the load reduction factor, Re, for each anchor diameter, D, based on the anchor center to edge distance.

ANCHOR SIZE D	EDGE DISTANCE, E (INCHES) TENSION ONLY							
	12D	11D	10D	9D	8D	7D	6D	5D
3/16	2-1/4	2-1/8	1-7/8	1-3/4	1-1/2	1-3/8	1-1/8	1
1/4	3	2-3/4	2-1/2	2-1/4	2	1-3/4	1-1/2	1-1/4
Re	1.00	0.97	0.94	0.91	0.89	0.86	0.83	0.80

EDGE DISTANCE - SHEAR

For shear loads, an edge distance, E, of 12 anchor diameters (12D) or greater should be used to obtain the maximum load. The minimum recommended edge distance, E, is 5 anchor diameters (5D) at which point the shear load should be reduced by 50%. Edge distances closer or less than 5 diameters (5D) need to be field tested. Actual base material conditions will determine any applicable reduction factor. The following table lists the load reduction factor, Re, for each anchor diameter, D, based on the anchor center to edge distance.

ANCHOR SIZE D	EDGE DISTANCE, E (INCHES) SHEAR ONLY							
	12D	11D	10D	9D	8D	7D	6D	5D
3/16	2-1/4	2-1/8	1-7/8	1-3/4	1-1/2	1-3/8	1-1/8	1
1/4	3	2-3/4	2-1/2	2-1/4	2	1-3/4	1-1/2	1-1/4
Re	1.00	0.93	0.86	0.79	0.71	0.64	0.57	0.50

APPROVALS AND LISTINGS

The following approvals and listings are for reference purposes. They should be reviewed by the design professional responsible for the product installation to verify approved base materials, sizes, and compliance with local codes.

Federal Specification

Meets the descriptive requirements of FF-S-325C, Group V, Type 2, Class 4 (superseded) and CID A-A-1925A Type 3 (mushroom head), Type 4 (flat head) and Type 5 (round head).

SUGGESTED SPECIFICATIONS

NYLON NAILIN WITH CARBON STEEL NAIL

Expansion anchors shall be a pre-assembled nail drive anchor with a _____ style head and a body formed from nylon. The carbon steel nail shall be plated according to ASTM Specification B633, SC1, Type III (Fe/Zn 5). Nylon Nailin anchors shall be as dimensioned and supplied by Powers Fasteners Inc.

NYLON NAILIN WITH STAINLESS STEEL NAIL

Expansion anchors shall be a pre-assembled nail drive anchor with a _____ style head and a body formed from nylon. The nail shall be manufactured from Type 304 stainless steel. Nylon Nailin anchors shall be as dimensioned and supplied by Powers Fasteners Inc.