

Roofing Spike® Anchor

PRODUCT DESCRIPTION

For roofing applications, the Spike is a one-piece, vibration resistant anchor available for use in fastening insulation, single-ply membrane, wood, and metal to structural concrete roof decks. This version of the Spike has a Perma-Seal™ coating, and is designed for use in conjunction with Powers insulation or membrane plates.

GENERAL APPLICATIONS AND USES

- Fastening insulation, single-ply membrane, wood and metal to structural concrete decks.

APPROVALS AND LISTINGS

Factory Mutual Research Corporation – Now known as FM Global (FM Approvals)
Structural Concrete Deck – J.I. 1K6A7.AM, J.I. 0N9A2.AM, J.I. 1M4A5.AM
Fully Adhered Single-Ply and Modified Bitumen Coverings (All Decks) – J.I. 1T9A4.AM

MATERIAL SPECIFICATIONS

Anchor Component	Component Material
Anchor Body	Grade 8.2 Carbon Steel
Coating	Perma-Seal Fluoropolymer

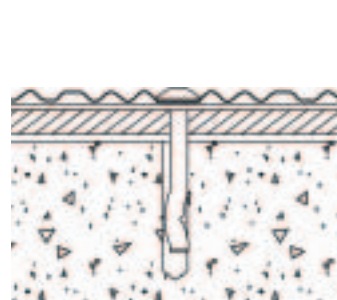
INSTALLATION SPECIFICATIONS

Diameter	Component Material
	1/4"
ANSI Drill Bit Size, d_{bit} (in.)	1/4
Fixture Clearance Hole (in.)	5/16
Head Size, O.D. (in.)	1/2
Head Height (in.)	7/64

Installation Guidelines



Drill a hole into the base material to the depth of at least 1/2" deeper than the embedment required. 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.



Drive the anchor through the plate into the anchor hole until the head is firmly seated. Be sure the anchor is driven to the required embedment depth.

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Roofing Spike

ANCHOR MATERIALS

Perma-Seal Coated Carbon Steel

ANCHOR SIZE RANGE (TYP.)

1/4" x 1" to 1/4" x 14"

SUITABLE BASE MATERIALS

Normal-Weight Concrete
Concrete Masonry

PERFORMANCE DATA

Ultimate Load Capacities for Roofing Spike in Normal-Weight Concrete^{1,2}

Anchor Diameter d in. (mm)	Minimum Embedment Depth h_e in. (mm)	Minimum Concrete Compressive Strength (f'_c)					
		3,000 psi (20.7 MPa)		4,000 psi (27.6 MPa)		5,000 psi (34.5 MPa)	
		Tension lbs. (kN)	Shear lbs. (kN)	Tension lbs. (kN)	Shear lbs. (kN)	Tension lbs. (kN)	Shear lbs. (kN)
1/4 (6.4)	1 1/4 (31.8)	1,100 (5.0)	2,500 (11.3)	1,550 (7.0)	2,750 (12.4)	1,700 (7.7)	2,100 (9.5)

1. The values listed above are ultimate load capacities which should be reduced by a minimum safety factor of 4.0 or greater to determine the allowable working load.
2. Linear interpolation may be used to determine ultimate loads for intermediate compressive strengths.

PERFORMANCE DATA

Allowable Load Capacities for Roofing Spike in Normal-Weight Concrete^{1,2}

Anchor Diameter <i>d</i> in. (mm)	Minimum Embedment Depth <i>h_v</i> in. (mm)	Minimum Concrete Compressive Strength (<i>f'_c</i>)					
		3,000 psi (20.7 MPa)		4,000 psi (27.6 MPa)		5,000 psi (34.5 MPa)	
		Tension lbs. (kN)	Shear lbs. (kN)	Tension lbs. (kN)	Shear lbs. (kN)	Tension lbs. (kN)	Shear lbs. (kN)
1/4 (6.4)	1 1/4 (31.8)	275 (1.2)	625 (2.8)	390 (1.8)	690 (3.1)	425 (1.9)	525 (2.4)

1. Allowable load capacities listed are calculated using an applied safety factor of 4.0.

2. Linear interpolation may be used to determine allowable loads for intermediate compressive strengths.

Ultimate and Allowable Load Capacities for Roofing Spike in Hollow Concrete Masonry^{1,2}

Anchor Diameter <i>d</i> in. (mm)	Minimum Embedment Depth <i>h_v</i> in. (mm)	<i>f_m</i> ≥ 3,000 psi (20.7 MPa)			
		Ultimate Load		Allowable Load	
		Tension lbs. (kN)	Shear lbs. (kN)	Tension lbs. (kN)	Shear lbs. (kN)
1/4 (6.4)	1 1/4 (31.8)	800 (3.6)	2,100 (9.5)	160 (0.7)	420 (1.9)

1. Tabulated load values are for anchors installed in minimum 6-inch wide, Grade N, Type II, medium and normal-weight concrete masonry units. Mortar must be minimum Type N. Masonry prism compressive strength must be 1,500 psi minimum at the time of installation.

2. Allowable loads are based on average ultimate values using a safety factor of 5.0.

ORDERING INFORMATION

Roofing Spike

Cat. No.	Anchor Size	Drill Diameter	Min. Embedment	Std. Box	Std. Carton	Wt./100
3811	1/4" x 1 1/4"	1/4"	7/8"	500	500	2 1/2
3723	1/4" x 1 1/2"	1/4"	1 1/4"	500	500	2 1/2
3725	1/4" x 2"	1/4"	1 1/4"	500	500	3
3727	1/4" x 2 1/2"	1/4"	1 1/4"	500	500	4
3729	1/4" x 3"	1/4"	1 1/4"	500	500	4 1/2
3731	1/4" x 3 1/2"	1/4"	1 1/4"	500	500	5
3733	1/4" x 4"	1/4"	1 1/4"	500	500	6
3735	1/4" x 4 1/2"	1/4"	1 1/4"	500	500	6 1/2
3737	1/4" x 5"	1/4"	1 1/4"	500	500	7
3739	1/4" x 5 1/2"	1/4"	1 1/4"	500	500	7 1/2
3741	1/4" x 6"	1/4"	1 1/4"	250	250	8
3743	1/4" x 6 1/2"	1/4"	1 1/4"	250	250	8 1/2
3745	1/4" x 7"	1/4"	1 1/4"	250	250	9 1/2
3747	1/4" x 7 1/2"	1/4"	1 1/4"	250	250	10 1/2
3749	1/4" x 8"	1/4"	1 1/4"	250	250	11
3753	1/4" x 9"	1/4"	1 1/4"	250	250	12
3757	1/4" x 10"	1/4"	1 1/4"	250	250	13
3765	1/4" x 11"	1/4"	1 1/4"	100	100	14
3769	1/4" x 12"	1/4"	1 1/4"	100	100	15
3773	1/4" x 13"	1/4"	1 1/4"	100	100	16
3777	1/4" x 14"	1/4"	1 1/4"	100	100	17



Roofing Spike Installation Tools

Cat. No.	Description	Guide I.D.	Std. Box	Wt./Each
3790	Spike Driver 1000	1/2"	1	1/4
3791	Spike Driver 2000	1/2"	1	1/4

