GENERAL INFORMATION

ROOFING SPIKE®

Anchor

PRODUCT DESCRIPTION

For roofing applications, the Spike is a one-piece, vibration resistant anchor available for use to fasten 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 stress plates for insulation and membrane attachments.

GENERAL APPLICATION AND USES

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

APPROVALS AND LISTINGS

- FM Global (FM Approvals) - see listings
  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
Fastener Body	Grade 8.2 Carbon Steel
Coating	Perma-Seal

INSTALLATION SPECIFICATIONS

Dimension	Mushroom Head Roofing Spike
ANSI Drill Bit Size (in.)	1/4
Fixture Clearance Hole (in.)	5/16
Head Size, O.D. (in.)	1/2
Head Height (in.)	7/64

SECTION CONTENTS

ROOFING SPIKE

ANCHOR MATERIALS

- Perma-Seal Coated Carbon Steel

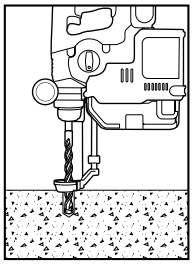
ANCHOR SIZE RANGE (TYP.)

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

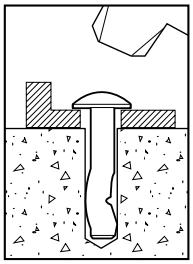
SUITABLE BASE MATERIALS

- Normal-Weight Concrete
- Grouted Concrete Masonry (CMU)

INSTALLATION GUIDELINE



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. Remove the dust and debris from the hole during drilling (e.g. dust extractor, hollow bit) or following drilling (e.g. suction, forced air) to extract loose particles created by drilling.



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.

PERFORMANCE DATA

Ultimate Load Capacities for Roofing Spike in Normal-Weight Concrete[1]

Anchor Diameter in. (mm)	Minimum Embedment Depth 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)	1,500 (7.0)	2,750 (12.4)	1,700 (7.7)	2,750 (12.4)

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.

Allowable Load Capacities for Roofing Spike in Normal-Weight Concrete[1,2]

Anchor Diameter in. (mm)	Minimum Embedment Depth 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)	275 (1.2)	625 (2.8)	390 (1.8)	690 (3.1)	425 (1.9)	690 (3.1)

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 Grouted Concrete Masonry[1,2]

Anchor Diameter in. (mm)	Minimum Embedment Depth in. (mm)	f'm ≥ 2,000 psi (13.7 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. Grout must be coarse grout complying with ASTM C476. Masonry prism compressive strength must be 2,000 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. Embed.	Box Qty.	Carton Qty.
3811	1/4" x 1-1/4"	1/4"	7/8"	500	500
3723	1/4" x 1-1/2"	1/4"	1-1/4"	500	500
3725	1/4" x 2"	1/4"	1-1/4"	500	500
3727	1/4" x 2-1/2"	1/4"	1-1/4"	500	500
3729	1/4" x 3"	1/4"	1-1/4"	500	500
3731	1/4" x 3-1/2"	1/4"	1-1/4"	500	500
3733	1/4" x 4"	1/4"	1-1/4"	500	500
3735	1/4" x 4-1/2"	1/4"	1-1/4"	500	500
3737	1/4" x 5"	1/4"	1-1/4"	500	500
3739	1/4" x 5-1/2"	1/4"	1-1/4"	500	500
3741	1/4" x 6"	1/4"	1-1/4"	250	250
3743	1/4" x 6-1/2"	1/4"	1-1/4"	250	250
3745	1/4" x 7"	1/4"	1-1/4"	250	250
3747	1/4" x 7-1/2"	1/4"	1-1/4"	250	250
3749	1/4" x 8"	1/4"	1-1/4"	250	250
3753	1/4" x 9"	1/4"	1-1/4"	250	250
3757	1/4" x 10"	1/4"	1-1/4"	250	250
3765	1/4" x 11"	1/4"	1-1/4"	100	100
3769	1/4" x 12"	1/4"	1-1/4"	100	100
3773	1/4" x 13"	1/4"	1-1/4"	100	100
3777	1/4" x 14"	1/4"	1-1/4"	100	100

Roofing Spike Installation Tool

Cat. No.	Description	Guide I.D.	Std. Box
3790	Spike Driver 1000	1/2"	1