

PERFORMANCE DATA

Ultimate and Allowable Load Capacities for Zamac Nailin in Hollow Concrete Masonry^{1,2,3}

Anchor Diameter <i>d</i> in. (mm)	Minimum Embedment Depth <i>h_v</i> in. (mm)	<i>f'_m</i> ≥ 1,500 psi (10.4 MPa)			
		Ultimate Load		Allowable Load	
		Tension lbs. (kN)	Shear lbs. (kN)	Tension lbs. (kN)	Shear lbs. (kN)
3/16 (4.8)	3/4 (19.1)	270 (1.2)	560 (2.5)	55 (0.2)	110 (0.5)
1/4 (6.4)	5/8 (15.9)	360 (1.6)	655 (2.9)	70 (0.3)	130 (0.6)
	3/4 (19.1)	735 (3.3)	850 (3.8)	145 (0.7)	170 (0.8)
	1 (25.4)	835 (3.8)	890 (4.0)	165 (0.7)	180 (0.8)
	1 1/4 (31.7)	990 (4.4)	970 (4.3)	200 (0.9)	195 (0.9)

1. Tabulated load values are for anchors installed in minimum 6-inch wide, minimum Grade N, Type II, lightweight, medium-weight or normal-weight concrete masonry units conforming to ASTM C 90. Mortar must be minimum Type N. Masonry compressive strength must be at the specified minimum at the time of installation (*f'_m* ≥ 1,500 psi).
2. Allowable load capacities listed are calculated using and applied safety factor of 5.0. Anchors are not recommended for use overhead or for life safety. Consideration of safety factors of 20 or higher may be necessary depending upon the application such as in sustained tensile loading applications.
3. Anchors installed flush with face shell surface.

Ultimate and Allowable Load Capacities for Zamac Nailin in Solid or Hollow Clay Brick Masonry^{1,2}

Anchor Diameter <i>d</i> in. (mm)	Minimum Embedment Depth <i>h_v</i> in. (mm)	<i>f'_m</i> ≥ 1,500 psi (10.4 MPa)			
		Ultimate Load		Allowable Load	
		Tension lbs. (kN)	Shear lbs. (kN)	Tension lbs. (kN)	Shear lbs. (kN)
3/16 (4.8)	3/4 (19.1)	460 (2.1)	920 (4.1)	90 (0.4)	185 (0.8)
1/4 (6.4)	5/8 (15.9)	570 (2.6)	1,250 (5.6)	115 (0.5)	250 (1.1)
	3/4 (19.1)	790 (3.6)	1,400 (6.3)	160 (0.7)	280 (1.3)
	1 (25.4)	820 (3.7)	1,400 (6.3)	165 (0.7)	280 (1.3)
	1 1/4 (31.7)	865 (3.9)	1,400 (6.3)	175 (0.8)	280 (1.3)

1. Tabulated load values are for anchors installed in multiple wythe, minimum Grade SW, solid clay brick masonry walls conforming to ASTM C 62. Mortar must be minimum Type N. Masonry compressive strength must be at the specified minimum at the time of installation (*f'_m* ≥ 1,500 psi).
2. Allowable load capacities listed are calculated using and applied safety factor of 5.0. Anchors are not recommended for use overhead or for life safety. Consideration of safety factors of 20 or higher may be necessary depending upon the application such as in sustained tensile loading applications.

DESIGN CRITERIA

Combined Loading For anchors loaded in both shear and tension, the combination of loads should be proportioned as follows:

$$\left(\frac{N_u}{N_n}\right) + \left(\frac{V_u}{V_n}\right) \leq 1$$

Where: *N_u* = Applied Service Tension Load
N_n = Allowable Tension Load
V_u = Applied Service Shear Load
V_n = Allowable Shear Load

Load Adjustment Factors for Spacing and Edge Distances¹

Anchor Installed in Normal-Weight Concrete					
Anchor Dimension	Load Type	Critical Distance (Full Anchor Capacity)	Critical Load Factor	Minimum Distance (Reduced Capacity)	Minimum Load Factor
Spacing (<i>s</i>)	Tension and Shear	<i>s_{cr}</i> = 10 <i>d</i>	<i>F_{Ns}</i> = <i>F_{Vs}</i> = 1.0	<i>s_{min}</i> = 5 <i>d</i>	<i>F_{Ns}</i> = <i>F_{Vs}</i> = 0.50
Edge Distance (<i>c</i>)	Tension	<i>c_{cr}</i> = 12 <i>d</i>	<i>F_{Nc}</i> = 1.0	<i>c_{min}</i> = 5 <i>d</i>	<i>F_{Nc}</i> = 0.80
	Shear	<i>c_{cr}</i> = 12 <i>d</i>	<i>F_{Vc}</i> = 1.0	<i>c_{min}</i> = 5 <i>d</i>	<i>F_{Vc}</i> = 0.50

1. Allowable load values found in the performance data tables are multiplied by reduction factors when anchor spacing or edge distances are less than critical distances. Linear interpolation is allowed for intermediate anchor spacing and edge distances between critical and minimum distances. When an anchor is affected by both reduced spacing and edge distance, the spacing and edge reduction factors must be combined (multiplied). Multiple reduction factors for anchor spacing and edge distance may be required depending on the anchor group configuration.