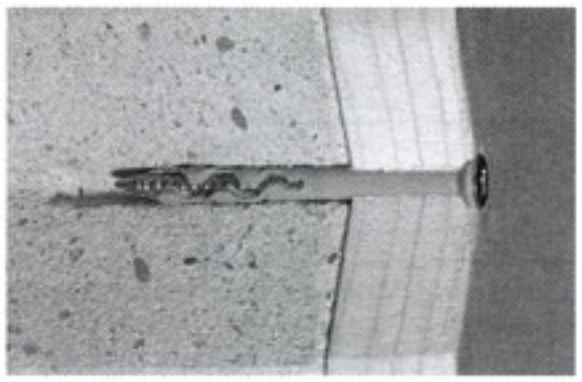
Tenn™ FASTENING SYSTEMS

TENN CXE & MXE Alligator Plugs

Hammer-In Plugs



Cut-away view of Tenn Alligator Plug Fastening

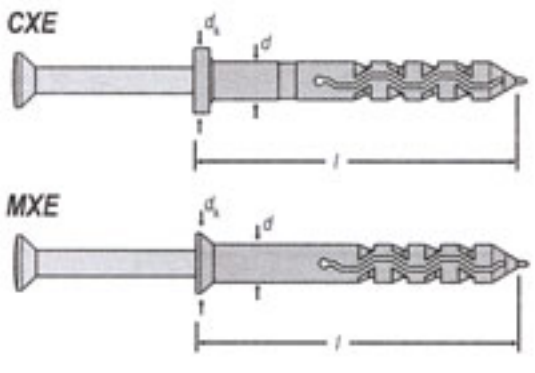
The Tenn Alligator Hammer-in Plug combines a screw-nail of the correct diameter and a thick-walled sleeve made of Polyamide 6-6 to provide a hammer-in plug with dramatically increased holding power compared to other hammer plugs.

Owing to sleeve's circular cross-section, the forces exerted by the screw are fully transmitted around the plug to the wall of the drill-hole. Most other hammer plugs transmit compressive pressure to the wall of the drill-hole only along the thickest portion of the plug but with Tenn Alligator Plugs, expansion and compressive power are generated along the total embedment.

The expander screw compresses the plastic into the screw threads thereby forcing outward pressure along the embedment. The external blocks are pressed onto the surface of the hole and locks up with any undercuts in the hole.

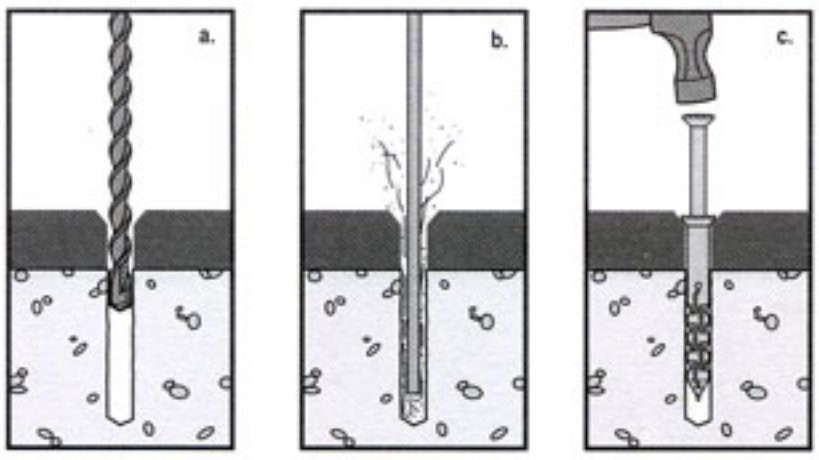
Tenn Alligator Plug are available in two headstyles - CXE and MXE.

TENN CXE & MXE ALLIGATOR RANGE AND INSTALLATION DATA



Type	Anchor Dimensions d x l, mm	Maximum Attachment Thickness t_{fix}, mm	Head Diameter d_k, mm	Drill-Hole Diameter d_o, mm	Minimum Hole Depth h_o, mm	Clearance Hole Diameter D2, mm
CXE.12561	6 x 40	8	10	6	35	6.5
CXE.12562	6 x 60	28	10	6	35	6.5
CXE.12563	6 x 80	48	10	6	35	6.5
MXE.12261	6 x 40	8	10	6	35	6.5
MXE.12262	6 x 60	28	10	6	35	6.5
MXE.12263	6 x 80	48	10	6	35	6.5
MXE.12281	8 x 60	13	13	8	55	9
MXE.12282	8 x 80	33	13	8	55	9
MXE.12283	8 x 100	53	13	8	55	9
MXE.12284	8 x 120	73	13	8	55	9
MXE.12285	8 x 140	93	13	8	55	9

INSTALLATION PROCEDURE



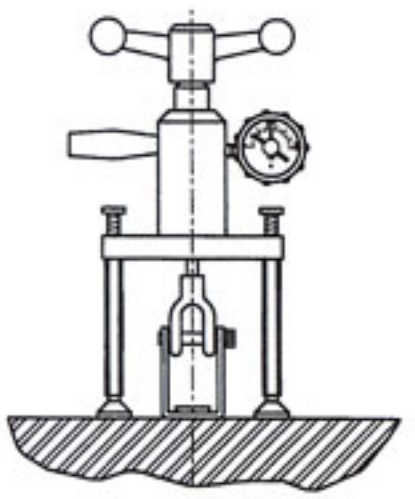
a. Drill hole to correct diameter and depth through the clearance hole in attachment.

b. Vacuum or blow drill dust out of hole.

c. Insert and expand plug by hammering.

ULTIMATE AND SAFE WORKING LOADS

Tension Test Setup



All tests were conducted in accordance with ASTM E-488-96 "Standard Test Methods for Strength of Anchors in Concrete and Masonry Elements" in 25 N/mm^2 unreinforced concrete.

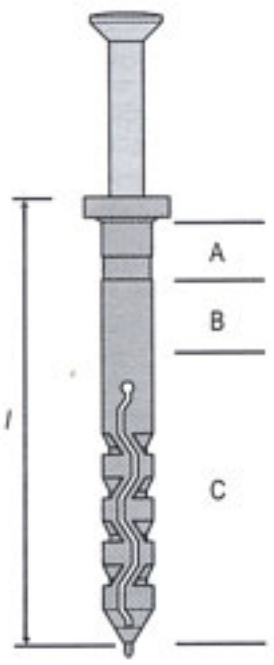
CXE/MXE Size d, mm	Drill-Hole Diameter d_o, mm	Average Ultimate Pull-out Loads, N_u (kN) Embedment Depth, h_{ef} 25 mm	30 mm	35 mm	40 mm	50 mm	60 mm
6	6	0.81	1.19	1.38	1.52	-	-
8	8	-	1.38	1.65	1.88	2.25	2.51

CXE/MXE Size d, mm	Drill-Hole Diameter d_o, mm	Average Ultimate Shear Loads, V_u (kN) Embedment Depth, h_{ef} 25 mm	30 mm	35 mm	40 mm	50 mm	60 mm
6	6	-	-	-	2.85	-	-
8	8	-	-	-	-	4.65	-

SAFE WORKING LOADS

Base Material	CXE/MXE Size d, mm	Drill-Hole Diameter d_o, mm	Embedment Depth h_{ef}, mm	Critical Spacing s_{cr}, mm	Critical Edge Distance c_{cr}, mm	Safe Working Loads Tension kN	Shear kN
Concrete C20/25	6	6	30	30	30	0.23	0.60
	6	6	40	40	40	0.30	0.60
	8	8	40	40	40	0.36	0.90
	8	8	50	50	50	0.46	0.90
Brick MZ 20	6	6	30	30	30	0.13	0.45
	6	6	40	40	40	0.17	0.45
	8	8	30	30	30	0.22	0.70
	8	8	50	50	50	0.30	0.70

How to select the correct length Tenn Alligator Plug



Select a Tenn Alligator Plug with sufficient length *l* to accommodate A + B + = C (mm)

A = Fixture thickness

B = Any air space or non-structural rendering

C = Anchorage depth (minimum 5d)

RANGE

CXE

Product ID	Size d x l, mm	Price Each (RM)
125.CXE12561	6 x 40	0.40
125.CXE12562	6 x 60	0.50
125.CXE12563	6 x 80	0.60

MXE

Product ID	Size d x l, mm	Price Each (RM)
125.MXE12261	6 x 40	0.40
125.MXE12262	6 x 60	0.50
125.MXE12263	6 x 80	0.60
125.MXE12281	8 x 60	0.55
125.MXE12282	8 x 80	0.65
125.MXE12283	8 x 100	0.85
125.MXE12284	8 x 120	1.20
125.MXE12285	8 x 140	1.50