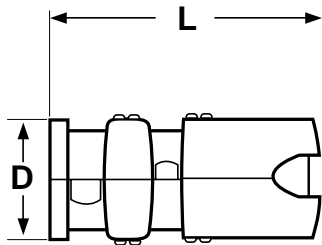
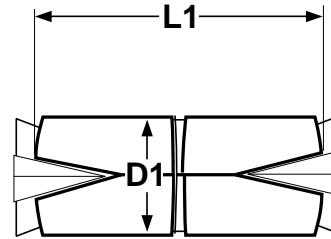


# Single & Double Expansion

# Anchors



**SINGLE EXPANSION**



**DOUBLE EXPANSION**

SINGLE AND DOUBLE EXPANSION ANCHORS								FF-S-325, Group II Type 2, Class 2
Bolt Diameter	Recommended Hole Diameter	Single Expansion Anchors				Double Expansion Anchors		
		D	L		Proof Test Load (Ultimate Tensile Strength) In 3000 psi. strength concrete	D1	L1	Proof Test Load (Ultimate Tensile Strength) In 3000 psi. strength concrete
			Minimum Length of Shield Body					
			Minimum Diameter of Shield Body	Short				
1/4	1/2	7/16	1 1/4	1 1/2	800	1/2	1 1/4	1100
5/16	5/8	1/2	1 3/8	1 5/8	1100	9/16	1 5/8	1450
3/8	3/4	11/16	1 1/2	2	1450	11/16	2	1750
1/2	7/8	7/8	2	2 1/2	1850	7/8	2 1/4	2200
5/8	1	1	2 1/2	2 3/4	2400	1	2 3/4	3250
3/4	1 1/4	1 1/8	2 3/4	3 1/4	3000	1 1/8	3 1/4	4600
7/8	1 5/8	1 1/2	-	4 1/2	3700	1 1/2	4	5850
1	1 3/4	1 5/8	-	5	4400	1 5/8	4 1/4	6700

Style	Single Expansion	Double Expansion
Description	This anchor consists of three parts-- (A) a two-piece expansion shield held together by a steel band or wire, or interlocked by ears and lugs; and (B) an expander nut. The outer surface of the shield is designed with ribs or corrugations to resist turning. The nut is either conical or elliptical in shape so as to fit within the shield body.	This anchor consists of four parts-- a two-piece tubular shield, a hollow, wedge-shaped cone and a wedge-shaped nut-- brought together into a single anchor unit. The shields are connected by a pair of spring bands. At one end is the nut and at the other the cone, each designed so as to not turn during expansion.
Applications/ Advantages	Used in soft masonry with machine screws or machine bolts which are exposed to vibration or side pressure. The expander nut climbs the anchor bolt as it is tightened, expanding the shield body. The bolt can be removed and replaced without affecting the holding power of the anchor system. Can also be used in harder materials, including stone, brick or concrete.	Used in soft masonry with machine screws or machine bolts which are exposed to vibration or side pressure. As the anchor sets, the opposite ends pull towards each other causing the elongation of the anchor body. It doesn't fracture and allows for a fastening of any length. Can also be used in harder materials, including stone, brick, concrete or block.
Material	Expansion shield and nut may be made of alloy zinc, brass, malleable iron or steel.	
Anchor Spacing	Anchors should be installed a minimum of ten anchor diameters between each other and a minimum of five anchor diameters from the edge.	
Depth of Hole	Should be equal to or slightly longer than the length of the anchor.	
Tensile Strength	Expansion anchors shall not be removable or show evidence of failure when subjected to axially applied proof test loads as specified in the above table when set in concrete of 3000 psi. compressive strength. The suggested safe working load is one-fourth the average proof test loads shown in the above table.	