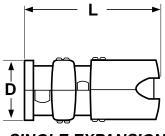
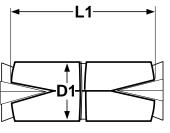
## Single & Double Expansion

## Anchors



SINGLE EXPANSION



## DOUBLE EXPANSION

| SINGLE AND DOUBLE EXPANSION ANCHORS FF-S-325, Group II<br>Type 2, Class 2 |                              |                                       |                                  |         |   |                            |                          |                                   |
|---|------------------------------|---------------------------------------|----------------------------------|---------|---|----------------------------|--------------------------|-----------------------------------|
| Bolt<br>Diameter  | Recommended<br>Hole Diameter | Single Expansion Anchors              |                                  |         |   | Double Expansion Anchors   |                          |                                   |
|   |                              | D                                     | L                                |         | Proof Test<br>Load<br>(Ultimate<br>Tensile<br>Strength) | D1                         | L1                       | Proof Test Load                   |
|   |                              | Minimum<br>Diameter of<br>Shield Body | Minimum Length of<br>Shield Body |         |   | Minimum                    | Minimum                  | (Ultimate Tensile<br>Strength)    |
|   |                              |                                       | Short                            | Regular | In 3000 psi.<br>strength<br>concrete                    | Diameter of<br>Shield Body | Length of<br>Shield Body | In 3000 psi.<br>strength concrete |
| 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<br>shield held together by a steel band or wire, or interlocked by ears<br>and lugs; and (B) an expander nut. The outer surface of the shield is<br>designed with ribs or corrugations to resist turning. The nut is either<br>conical or eliptical in shape so as to fit within the shield body.                           | This anchor consists of four parts a two-piece tubular shield, a<br>hollow, wedge-shaped cone and a wedge-shaped nut brought<br>together into a single anchor unit. The shields are connected by<br>a pair of spring bands. At one end is the nut and at the other the<br>cone, each designed so as to not turn during expansion.   |  |  |  |
| Applications/<br>Advantages | Used in soft masonry with machine screws or machine bolts which<br>are exposed to vibration or side pressure. The expander nut climbs<br>the anchor bolt as it is tightened, expanding the shield body. The<br>bolt can be removed and replaced without affecting the holding<br>power of the anchor system. Can also be used in harder materials,<br>including stone, brick or concrete. | Used in soft masonry with machine screws or machine bolts<br>which are exposed to vibration or side pressure. As the anchor<br>sets, the opposite ends pull towards each other causing the<br>elongation of the anchor body. It doesn't fracture and allows for<br>a fastening of any length. Can also be used in harder materials,<br>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 t 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 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.   |   |  |  |  |

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