

# Boa Coil Expansion Anchor - Technical Data

## PERFORMANCE TABLES

### **Boa Coil Anchors** *Ultimate concrete/steel capacity in concrete<sup>1</sup>*

| ANCHOR<br>DIAMETER<br>In. (mm) | HOLE DIA.<br>In. (mm) | EFFECTIVE<br>EMBEDMENT<br>DEPTH<br>In. (mm) | FIXTURE<br>HOLE DIA.<br>In. (mm) | TURNS<br>TO SET<br>ANCHOR | ULTIMATE CONCRETE CAPACITY (2) (3) |                    |                          |                    |                          |                    | ULTIMATE STEEL STRENGTH (4) |                    |
|--------------------------------|-----------------------|---------------------------------------------|----------------------------------|---------------------------|------------------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|-----------------------------|--------------------|
|                                |                       |                                             |                                  |                           | 2,000 PSI (13.8 MPa)               |                    | 4,000 PSI (27.6 MPa)     |                    | 6,000 PSI (41.4 MPa)     |                    | LBS. (kN)                   |                    |
|                                |                       |                                             |                                  |                           | TENSION (5)<br>Lbs. (kN)           | SHEAR<br>Lbs. (kN) | TENSION (5)<br>Lbs. (kN) | SHEAR<br>Lbs. (kN) | TENSION (5)<br>Lbs. (kN) | SHEAR<br>Lbs. (kN) | TENSION<br>Lbs. (kN)        | SHEAR<br>Lbs. (kN) |
| 1/2 (12.7)                     | 1/2 (12.7)            | 2 (50.8)                                    | 9/16 (14.3)                      | 3-4                       | 4,039 (17.9)                       | 6,070 (27.0)       | 5,715 (25.4)             | 8,590 (38.2)       | 6,994 (31.1)             | 10,516 (46.8)      | 19,384 (86.2)               | 14,456 (64.3)      |
|                                |                       | 3 (76.2)                                    | 9/16 (14.3)                      | 3-4                       | 7,403 (32.9)                       | 12,082 (53.7)      | 10,471 (46.6)            | 17,089 (76.0)      | 12,822 (57.0)            | 20,937 (93.1)      |                             |                    |
| 5/8 (15.9)                     | 5/8 (15.9)            | 2-3/8 (60.3)                                | 11/16 (17.5)                     | 4-5                       | 5,291 (23.5)                       | 8,800 (39.1)       | 7,483 (33.3)             | 12,445 (55.4)      | 9,162 (40.8)             | 15,242 (67.8)      | 30,152 (134.1)              | 21,937 (97.6)      |
|                                |                       | 3-7/8 (98.4)                                | 11/16 (17.5)                     | 4-5                       | 10,855 (48.3)                      | 19,999 (89.0)      | 15,355 (68.3)            | 28,285 (125.8)     | 18,802 (83.6)            | 34,636 (154.0)     |                             |                    |
| 3/4 (19.1)                     | 3/4 (19.1)            | 3-1/4 (82.6)                                | 13/16 (20.6)                     | 4-5                       | 8,479 (37.7)                       | 16,567 (73.7)      | 11,991 (53.3)            | 23,427 (104.2)     | 14,682 (65.3)            | 28,690 (127.6)     | 43,360 (192.9)              | 32,031 (142.5)     |
|                                |                       | 4-1/2 (114.3)                               | 13/16 (20.6)                     | 4-5                       | 13,555 (60.3)                      | 27,239 (121.2)     | 19,171 (85.3)            | 38,518 (171.3)     | 23,478 (104.4)           | 47,173 (209.8)     |                             |                    |

(1) Use lower value of either concrete or steel (2) Concrete capacity based on Concrete Capacity Design method and verified by test data (3) Influence factors must be applied to concrete strength values

(4) Steel strength based on .57 Fu Ag for shear and 0.75 Fu Ag for tension (5) Test results when reused four times; maximum 20% reduction in tensile capacity; no reduction in shear

### **Boa Coil Anchors** *Allowable concrete/steel capacity in concrete<sup>1</sup>*

| ANCHOR<br>DIAMETER<br>In. (mm) | HOLE DIA.<br>In. (mm) | EFFECTIVE<br>EMBEDMENT<br>DEPTH<br>In. (mm) | FIXTURE<br>HOLE DIA.<br>In. (mm) | TURNS<br>TO SET<br>ANCHOR | RECOMMENDED WORKING LOADS IN CONCRETE (2) (3) |                    |                          |                    |                          |                    | ALLOWABLE STEEL STRENGTH (4) |                    |
|--------------------------------|-----------------------|---------------------------------------------|----------------------------------|---------------------------|-----------------------------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|------------------------------|--------------------|
|                                |                       |                                             |                                  |                           | 2,000 PSI (13.8 MPa)                          |                    | 4,000 PSI (27.6 MPa)     |                    | 6,000 PSI (41.4 MPa)     |                    | LBS. (kN)                    |                    |
|                                |                       |                                             |                                  |                           | TENSION (5)<br>Lbs. (kN)                      | SHEAR<br>Lbs. (kN) | TENSION (5)<br>Lbs. (kN) | SHEAR<br>Lbs. (kN) | TENSION (5)<br>Lbs. (kN) | SHEAR<br>Lbs. (kN) | TENSION<br>Lbs. (kN)         | SHEAR<br>Lbs. (kN) |
| 1/2 (12.7)                     | 1/2 (12.7)            | 2 (50.8)                                    | 9/16 (14.3)                      | 3-4                       | 1,011 (4.5)                                   | 1,517 (6.7)        | 1,430 (6.4)              | 2,147 (9.5)        | 1,751 (7.8)              | 2,629 (11.7)       | 8,529 (37.9)                 | 5,579 (24.8)       |
|                                |                       | 3 (76.2)                                    | 9/16 (14.3)                      | 3-4                       | 1,852 (8.2)                                   | 3,020 (13.4)       | 2,619 (11.6)             | 4,272 (19.0)       | 3,208 (14.3)             | 5,234 (23.3)       |                              |                    |
| 5/8 (15.9)                     | 5/8 (15.9)            | 2-3/8 (60.3)                                | 11/16 (17.5)                     | 4-5                       | 1,324 (5.9)                                   | 2,200 (9.8)        | 1,872 (8.3)              | 3,111 (13.8)       | 2,293 (10.2)             | 3,810 (16.9)       | 13,266 (59.0)                | 8,466 (37.7)       |
|                                |                       | 3-7/8 (98.4)                                | 11/16 (17.5)                     | 4-5                       | 2,715 (12.1)                                  | 5,000 (22.2)       | 3,840 (17.1)             | 7,071 (31.5)       | 4,703 (20.9)             | 8,660 (38.5)       |                              |                    |
| 3/4 (19.1)                     | 3/4 (19.1)            | 3-1/4 (82.6)                                | 13/16 (20.6)                     | 4-5                       | 2,121 (9.4)                                   | 4,141 (18.4)       | 2,999 (13.3)             | 5,556 (24.7)       | 3,673 (16.3)             | 7,172 (31.9)       | 19,078 (84.9)                | 12,362 (55.0)      |
|                                |                       | 4-1/2 (114.3)                               | 13/16 (20.6)                     | 4-5                       | 3,390 (15.1)                                  | 6,810 (30.3)       | 4,794 (21.3)             | 9,630 (42.8)       | 5,872 (26.2)             | 11,793 (52.4)      |                              |                    |

(1) Use lower value of either concrete or steel (2) Safety factor 4 (3) Influence factors must be applied to concrete strength values (4) Steel strength based on .22 Fu Ag for shear and 0.33 Fu Ag for tension

(5) Test results when reused four times; maximum 20% reduction in tensile capacity; no reduction in shear