

Tapcon Screw Anchor - Technical Data

PERFORMANCE TABLE

| ANCHOR DIA. In. (mm) | | MIN. DEPTH OF EMBEDMENT In. (mm) | f'c = 2000 PSI (13.8 MPa) | | f'c = 3000 PSI (20.7 MPa) | | f'c = 4000 PSI (27.6 MPa) | | f'c = 5000 PSI (34.5 MPa) | |
|-------------------------|--------------|-------------------------------------|---------------------------|--------------------|---------------------------|--------------------|---------------------------|--------------------|---------------------------|--------------------|
| | | | TENSION Lbs. (kN) | SHEAR Lbs. (kN) | TENSION Lbs. (kN) | SHEAR Lbs. (kN) | TENSION Lbs. (kN) | SHEAR Lbs. (kN) | TENSION Lbs. (kN) | SHEAR Lbs. (kN) |
| 3/16 (4.8) | 1 (25.4) | 600 (2.7) | 720 (3.2) | 625 (2.8) | 720 (3.2) | 650 (2.9) | 720 (3.2) | 800 (3.6) | 860 (3.8) | |
| | 1-1/4 (31.8) | 845 (3.7) | 720 (3.2) | 858 (3.8) | 720 (3.2) | 870 (3.9) | 720 (3.2) | 1,010 (4.5) | 860 (3.8) | |
| | 1-1/2 (38.1) | 1,090 (4.8) | 860 (3.8) | 1,090 (4.8) | 860 (3.8) | 1,090 (4.8) | 860 (3.8) | 1,220 (5.4) | 860 (3.8) | |
| | 1-3/4 (44.5) | 1,450 (6.5) | 870 (3.9) | 1,455 (6.5) | 870 (3.9) | 1,460 (6.5) | 990 (4.4) | 1,730 (7.7) | 990 (4.4) | |
| 1/4 (6.4) | 1 (25.4) | 750 (3.3) | 900 (4.0) | 775 (3.4) | 900 (4.0) | 800 (3.6) | 1,360 (6.1) | 950 (4.2) | 1,440 (6.4) | |
| | 1-1/4 (31.8) | 1,050 (4.7) | 900 (4.0) | 1,160 (5.2) | 900 (4.0) | 1,270 (5.6) | 1,360 (6.1) | 1,515 (6.7) | 1,440 (6.4) | |
| | 1-1/2 (38.1) | 1,380 (6.1) | 1,200 (5.3) | 1,600 (7.2) | 1,200 (5.3) | 1,820 (8.1) | 1,380 (6.1) | 2,170 (9.7) | 1,670 (7.4) | |
| | 1-3/4 (44.5) | 2,020 (9.0) | 1,670 (7.4) | 2,200 (9.8) | 1,670 (7.4) | 2,380 (10.6) | 1,670 (7.4) | 2,770 (12.3) | 1,670 (7.4) | |

Safe working loads for single installation under static loading should not exceed 25% of the ultimate load capacity.

PERFORMANCE TABLES

| ANCHOR DIA. In. (mm) | | ANCHOR EMBEDMENT In. (mm) | LIGHTWEIGHT BLOCK | | MEDIUM WEIGHT BLOCK | |
|-------------------------|----------|------------------------------|----------------------|--------------------|----------------------|--------------------|
| | | | TENSION Lbs. (kN) | SHEAR Lbs. (kN) | TENSION Lbs. (kN) | SHEAR Lbs. (kN) |
| 3/16 (4.8) | 1 (25.4) | 220 (1.0) | 400 (1.8) | 340 (1.5) | 730 (3.2) | |
| 1/4 (6.4) | 1 (25.4) | 250 (1.1) | 620 (2.8) | 500 (2.2) | 1,000 (4.4) | |

Safe working loads for single installation under static loading should not exceed 25% of the ultimate load capacity.

NOTE: 3/16" Tapcon requires 5/32" bit, 1/4" Tapcon requires 3/16" bit.

Tapcon® Anchors Allowable Edge and Spacing Distances

| PARAMETER | ANCHOR DIA. In. (mm) | NORMAL WEIGHT CONCRETE | | | CONCRETE MASONRY UNITS (CMU) | | |
|--------------------------------------|-------------------------|--|--|--------------------------|--|--|--------------------------|
| | | FULL CAPACITY (Critical Distance Inches) | REDUCED CAPACITY (Minimal Distance Inches) | LOAD REDUCTION FACTOR | FULL CAPACITY (Critical Distance Inches) | REDUCED CAPACITY (Minimal Distance Inches) | LOAD REDUCTION FACTOR |
| Spacing Between Anchors - Tension | 3/16 | 3 | 1-1/2 | 0.73 | 3 | 1-1/2 | 1.00 |
| | 1/4 | 4 | 2 | 0.66 | 4 | 2 | 0.84 |
| Spacing Between Anchors - Shear | 3/16 | 3 | 1-1/2 | 0.83 | 3 | 1-1/2 | 1.00 |
| | 1/4 | 4 | 2 | 0.82 | 4 | 2 | 0.81 |
| Edge Distance - Tension | 3/16 | 1-7/8 | 1 | 0.83 | 4 | 2 | 0.91 |
| | 1/4 | 2-1/2 | 1-1/4 | 0.82 | 4 | 2 | 0.88 |
| Edge Distance -Shear | 3/16 | 2-1/4 | 1-1/8 | 0.70 | 4 | 2 | 0.93 |
| | 1/4 | 3 | 1-1/2 | 0.59 | 4 | 2 | 0.80 |

For SI: 1 inch = 25.4 mm

Tapcon Maxi-Set Anchor - Technical Data

PERFORMANCE TABLES

Tapcon®

Maxi-Set Anchors

Ultimate Tension and Shear Values (Lbs/kN) in Concrete

| ANCHOR DIA. In. (mm) | MIN. DEPTH OF EMBEDMENT In. (mm) | f _c = 2000 PSI (13.8 MPa) | | f _c = 3000 PSI (20.7 MPa) | | f _c = 4000 PSI (27.6 MPa) | | f _c = 5000 PSI (34.5 MPa) | |
|-------------------------|-------------------------------------|--------------------------------------|--------------------|--------------------------------------|--------------------|--------------------------------------|--------------------|--------------------------------------|--------------------|
| | | TENSION Lbs. (kN) | SHEAR Lbs. (kN) | TENSION Lbs. (kN) | SHEAR Lbs. (kN) | TENSION Lbs. (kN) | SHEAR Lbs. (kN) | TENSION Lbs. (kN) | SHEAR Lbs. (kN) |
| 1/4 (6.4) | 1 (25.4) | 750 (3.3) | 900 (4.0) | 775 (3.4) | 900 (4.0) | 800 (3.6) | 1,360 (6.1) | 950 (4.2) | 1,440 (6.4) |
| | 1-1/4 (31.8) | 1,050 (4.7) | 900 (4.0) | 1,160 (5.2) | 900 (4.0) | 1,270 (5.6) | 1,360 (6.1) | 1,515 (6.7) | 1,440 (6.4) |
| | 1-1/2 (38.1) | 1,380 (6.1) | 1,200 (5.3) | 1,600 (7.2) | 1,200 (5.3) | 1,820 (8.1) | 1,380 (6.1) | 2,170 (9.7) | 1,670 (7.4) |
| | 1-3/4 (44.5) | 2,020 (9.0) | 1,670 (7.4) | 2,200 (9.8) | 1,670 (7.4) | 2,380 (10.6) | 1,670 (7.4) | 2,770 (12.3) | 1,670 (7.4) |

Safe working loads for single installation under static loading should not exceed 25% of the ultimate load capacity. Divide by 4

Tapcon® Maxi-Set Anchors

Ultimate Tension and Shear Values (Lbs/kN) in Hollow Block

| ANCHOR DIA. In. (mm) | ANCHOR EMBEDMENT In. (mm) | LIGHTWEIGHT BLOCK | | MEDIUM WEIGHT BLOCK | |
|-------------------------|------------------------------|----------------------|--------------------|----------------------|--------------------|
| | | TENSION Lbs. (kN) | SHEAR Lbs. (kN) | TENSION Lbs. (kN) | SHEAR Lbs. (kN) |
| 1/4 (6.4) | 1 (25.4) | 250 (1.1) | 620 (2.8) | 500 (2.2) | 1,000 (4.4) |

Safe working loads for single installation under static loading should not exceed 25% of the ultimate load capacity. Divide by 4.

NOTE: 3/16" Tapcon requires 5/32" bit, 1/4" Tapcon requires 3/16" bit.

Tapcon® Maxi-Set Anchors

Allowable Edge and Spacing Distances

| PARAMETER | ANCHOR DIA. In. (mm) | NORMAL WEIGHT CONCRETE | | | CONCRETE MASONRY UNITS (CMU) | | |
|-----------------------------------|-------------------------|--|--|--------------------------|--|--|--------------------------|
| | | FULL CAPACITY (Critical Distance Inches) | REDUCED CAPACITY (Minimal Distance Inches) | LOAD REDUCTION FACTOR | FULL CAPACITY (Critical Distance Inches) | REDUCED CAPACITY (Minimal Distance Inches) | LOAD REDUCTION FACTOR |
| Spacing Between Anchors - Tension | 1/4 | 4 | 2 | 0.66 | 4 | 2 | 0.84 |
| Spacing Between Anchors - Shear | 1/4 | 4 | 2 | 0.82 | 4 | 2 | 0.81 |
| Edge Distance - Tension | 1/4 | 2-1/2 | 1-1/4 | 0.82 | 4 | 2 | 0.88 |
| Edge Distance - Shear | 1/4 | 3 | 1-1/2 | 0.59 | 4 | 2 | 0.80 |

For SI: 1 inch = 25.4 mm

Tapcon SCOTS Screw Anchor - Technical Data

PERFORMANCE TABLES

Tapcon® scots Anchors

Ultimate Tension and Shear Values (Lbs/kN) in Concrete

| ANCHOR DIA. In. (mm) | MIN. DEPTH OF EMBEDMENT In. (mm) | f'c = 2000 PSI (13.8 MPa) | | f'c = 3000 PSI (20.7 MPa) | | f'c = 4000 PSI (27.6 MPa) | | f'c = 5000 PSI (34.5 MPa) | |
|-------------------------|-------------------------------------|---------------------------|--------------------|---------------------------|--------------------|---------------------------|--------------------|---------------------------|--------------------|
| | | TENSION Lbs. (kN) | SHEAR Lbs. (kN) | TENSION Lbs. (kN) | SHEAR Lbs. (kN) | TENSION Lbs. (kN) | SHEAR Lbs. (kN) | TENSION Lbs. (kN) | SHEAR Lbs. (kN) |
| 1/4 (6.4) | 1 (25.4) | 750 (3.3) | 900 (4.0) | 775 (3.4) | 900 (4.0) | 800 (3.6) | 1,360 (6.1) | 950 (4.2) | 1,440 (6.4) |
| | 1-1/4 (31.8) | 1,050 (4.7) | 900 (4.0) | 1,160 (5.2) | 900 (4.0) | 1,270 (5.6) | 1,360 (6.1) | 1,515 (6.7) | 1,440 (6.4) |
| | 1-1/2 (38.1) | 1,380 (6.1) | 1,200 (5.3) | 1,600 (7.2) | 1,200 (5.3) | 1,820 (8.1) | 1,380 (6.1) | 2,170 (9.7) | 1,670 (7.4) |
| | 1-3/4 (44.5) | 2,020 (9.0) | 1,670 (7.4) | 2,200 (9.8) | 1,670 (7.4) | 2,380 (10.6) | 1,670 (7.4) | 2,770 (12.3) | 1,670 (7.4) |

Safe working loads for single installation under static loading should not exceed 25% of the ultimate load capacity.

Tapcon® scots Anchors

Ultimate Tension and Shear Values (Lbs/kN) in Hollow Concrete Masonry Units

| ANCHOR DIA. In. (mm) | ANCHOR EMBEDMENT In. (mm) | LIGHTWEIGHT BLOCK | | MEDIUM WEIGHT BLOCK | |
|-------------------------|------------------------------|----------------------|--------------------|----------------------|--------------------|
| | | TENSION Lbs. (kN) | SHEAR Lbs. (kN) | TENSION Lbs. (kN) | SHEAR Lbs. (kN) |
| 1/4 (6.4) | 1 (25.4) | 250 (1.1) | 620 (2.8) | 500 (2.2) | 1,000 (4.4) |

Safe working loads for single installation under static loading should not exceed 25% of the ultimate load capacity.

NOTE: 3/16" Tapcon requires 5/32" bit, 1/4" Tapcon requires 3/16" bit.

Tapcon® scots Anchors

Allowable Edge and Spacing Distances

| PARAMETER | ANCHOR DIA. In. (mm) | NORMAL WEIGHT CONCRETE | | | CONCRETE MASONRY UNITS (CMU) | | |
|-----------------------------------|-------------------------|--|--|--------------------------|--|--|--------------------------|
| | | FULL CAPACITY (Critical Distance Inches) | REDUCED CAPACITY (Minimal Distance Inches) | LOAD REDUCTION FACTOR | FULL CAPACITY (Critical Distance Inches) | REDUCED CAPACITY (Minimal Distance Inches) | LOAD REDUCTION FACTOR |
| Spacing Between Anchors - Tension | 1/4 | 4 | 2 | 0.66 | 4 | 2 | 0.84 |
| Spacing Between Anchors - Shear | 1/4 | 4 | 2 | 0.82 | 4 | 2 | 0.81 |
| Edge Distance - Tension | 1/4 | 2-1/2 | 1-1/4 | 0.82 | 4 | 2 | 0.88 |
| Edge Distance - Shear | 1/4 | 3 | 1-1/2 | 0.59 | 4 | 2 | 0.80 |

For SI: 1 inch = 25.4 mm

Tapcon XL Screw Anchor - Technical Data

PERFORMANCE TABLES

Tapcon[®] XL Anchors

Ultimate Tension and Shear Values (Lbs/kN) in Concrete

| ANCHOR DIA. In. (mm) | MIN. DEPTH OF EMBEDMENT In. (mm) | EDGE DISTANCE | f _c = 3000 PSI (20.7 MPa) | |
|-------------------------|-------------------------------------|---------------|--------------------------------------|--------------------|
| | | | TENSION Lbs. (kN) | SHEAR Lbs. (kN) |
| 5/16 (7.9) | 1-1/4 (31.8) | 1-9/16 (39.7) | 1,050 (4.7) | 1,330 (5.9) |
| | | 2-3/16 (55.6) | 1,205 (5.4) | 1,725 (7.7) |
| | 1-3/4 (44.5) | 1-9/16 (39.7) | 2,020 (9.0) | 1,530 (6.8) |
| | | 2-3/16 (55.6) | 2,250 (10.0) | 2,505 (11.1) |
| | 2-1/4 (57.2) | 1-9/16 (39.7) | 2,850 (12.7) | 1,955 (8.9) |
| | | 2-3/16 (55.6) | 3,120 (13.9) | 3,250 (14.4) |

Safe working loads for single installation under static loading should not exceed 25% of the ultimate load capacity. Divide by 4.

1. Pilot hole diameter shall be 0.263" and drilled 1/4" longer than the necessary embedment.
2. Allowable loads are based ultimate test load divide by 4.
3. Recommended center to center distance of 3-3/4" is required for 100% efficiency and 1-7/8" for 50% efficiency.
4. Embedment is through 1-1/4" face shell of hollow block.

Tapcon[®] XL Anchors

Ultimate Tension & Shear Values in Concrete Masonry Units

| ANCHOR DIA. In. (mm) | MINIMUM DEPTH OF EMBEDMENT In. (mm) | EDGE DISTANCE (Inches) | HOLLOW CORE ¹ | | GROUT-FILLED ² | |
|-------------------------|--|---------------------------|--------------------------|--------------------|---------------------------|--------------------|
| | | | TENSION Lbs. (kN) | SHEAR Lbs. (kN) | TENSION Lbs. (kN) | SHEAR Lbs. (kN) |
| 5/16 (7.9) | 1-1/4 (31.8) | 4 | 1,045 (4.6) | 2,280 (10.1) | 1,045 (4.6) | 2,280 (10.1) |
| | 1-3/4 (44.5) | 4 | NOT RECOMMENDED | NOT RECOMMENDED | 1,950 (8.7) | 2,825 (12.6) |
| | 2-1/4 (57.2) | 4 | NOT RECOMMENDED | NOT RECOMMENDED | 3,770 (16.8) | 3,140 (14.0) |

Safe working loads for single installation under static loading should not exceed 25% of the ultimate load capacity.

1 CMU = 1,600 PSI minimum compressive strength.

2 CMU = 1,600 PSI minimum compressive strength with 2,000 PSI grout.

Tapcon Storm Guard Screw Anchor - Technical Data

PERFORMANCE TABLES

Tapcon[®] Storm Guard Anchors *Ultimate Tension and Shear Values (Lbs/kN) in Concrete*

| ANCHOR DIA. In. (mm) | MIN. DEPTH OF EMBEDMENT In. (mm) | EDGE DISTANCE | f _c = 3000 PSI (20.7 MPa) | |
|-------------------------|-------------------------------------|---------------|--------------------------------------|--------------------|
| | | | TENSION Lbs. (kN) | SHEAR Lbs. (kN) |
| 1/4 (6.4) | 1 (25.4) | 1-1/4 (31.8) | 1,230 (5.5) | 1,339 (6.0) |
| | 1 (25.4) | 2-1/2 (63.5) | 1,701 (7.6) | 2,333 (10.4) |
| | 1-3/4 (44.5) | 1-1/4 (31.8) | 2,704 (12.0) | 1,375 (6.1) |
| | 1-3/4 (44.5) | 2-1/2 (63.5) | 2,844 (12.6) | 2,618 (11.6) |

Safe working loads for single installation under static loading should not exceed 25% of the ultimate load capacity. Divide by 4.

Tapcon[®] Storm Guard Anchors *Ultimate Tension and Shear Values (Lbs/kN) in Hollow Concrete Masonry Units*

| ANCHOR DIA. In. (mm) | MIN. DEPTH OF EMBEDMENT In. (mm) | EDGE DISTANCE | f _c = 1500 PSI (10.4 MPa) | |
|-------------------------|-------------------------------------|---------------|--------------------------------------|--------------------|
| | | | TENSION Lbs. (kN) | SHEAR Lbs. (kN) |
| 1/4 (6.4) | 1-1/4 (31.8) | 1-1/4 (31.8) | 1,955 (8.7) | 536 (2.4) |
| | 1-1/4 (31.8) | 2-1/2 (63.5) | 1,940 (8.6) | 1,088 (4.8) |

Tapcon[®] Storm Guard Anchors *Ultimate Tension and Shear Values (Lbs/kN) in Grout-Filled (CMU)*

| ANCHOR DIA. In. (mm) | MIN. DEPTH OF EMBEDMENT In. (mm) | EDGE DISTANCE | GROUT-FILLED (CMU) f _c = 2000 PSI (13.8 MPa) | |
|-------------------------|-------------------------------------|---------------|--|--------------------|
| | | | TENSION Lbs. (kN) | SHEAR Lbs. (kN) |
| 1/4 (6.4) | 1-3/4 (44.5) | 1-1/4 (31.8) | 3,335 (14.8) | 1,207 (5.4) |
| | 1-3/4 (44.5) | 2-1/2 (63.5) | 3,779 (16.8) | 2,061 (9.2) |