Concrete Anchor Quick Reference

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Substrate Compatibility

Match the anchor type to your substrate before buying. Using the wrong anchor for the material is the #1 cause of anchor failure.

Product	Solid Concrete	Brick	Solid Block (CMU)	Hollow Block
Tapcon Screw	Yes	Yes	Yes	Face shell only
Wedge Anchor (TruBolt)	Yes	No	No	No
Titen HD Screw	Yes	Yes	Yes	No
Sleeve Anchor (Hillman)	Yes	Yes	Yes	No

Hollow block face shells only accept screws, not expansion anchors. For true hollow-wall applications, use toggle bolts or specialty hollow-wall anchors instead.

Drill Bit Sizing

Anchor	Size	Drill Bit
Tapcon	3/16"	5/32" carbide
Tapcon	1/4"	3/16" carbide
Wedge / Sleeve anchors	Any	Bit diameter = anchor diameter (exact match)

Never use a larger bit than specified. An oversized hole prevents the anchor from expanding or threading properly and will pull out under load.

Typical Load Capacity (Tension)

Anchor	Approx. Capacity
3/16" Tapcon screw (3,000 psi concrete)	100-300 lbs
1/2" Wedge anchor (3,000 psi concrete)	3,000-5,000 lbs
5/8" Wedge anchor (3,000 psi concrete)	5,000-9,000 lbs

Values depend on concrete strength, embedment depth, and edge distance. For a project-specific number, use the free Anchor Specification Engine at buildtoolhq.com/tools/anchor-spec.

Installation Checklist

1. Drill the pilot hole to the anchor's specified diameter and depth — never oversize.

2. Clear the hole completely. Dust left behind can cut holding capacity by 30-50%.

3. Insert the anchor through the fixture first (wedge/sleeve), or hand-start screws before driving.

4. Torque or drive to the manufacturer's specification. Don't over- or under-tighten.

5. For structural or load-bearing work, verify against a licensed engineer before finalizing.