



Optimizing the Installation of Composite Decking Material When Using Composite Screws



SplitStop™ screws are designed for, and deliver, maximum performance. Their performance can be optimized, however, by observing the following simple installation procedures.

Relevant to all Titan Composite Screw Products

Screw Size/Board Thickness:

- 2" Length Screws - *3/4" (or less) Solid Deck Boards (*Not recommended for fascia, see below)
- 2 1/2" Length Screws - 7/8" to 1 1/8" Solid Deck Boards
- 3" Length Screws - 1 1/4" to 1 1/2" Solid Deck Boards

Coverage: Titan calculates composite screw needs at 3.5 screws per square foot when used on decks constructed with standard, 16" on center joist spacing and using two screws per joist. (Example: A 10' x 10' deck surface requires 350 screws.)

Expansion/Contraction/Shrinkage: Composite decking and fascia materials expand at higher ambient temperatures. These same temperatures will dry and shrink most treated wood joist materials significantly. It is possible, under certain conditions, for this opposing movement to exceed the 1,100 lb shear-strength capabilities of our #8 screw. If you are in a climate that experiences extremes of temperature and/or moisture throughout the day, if your deck is constructed low to the ground with little ventilation, if you use a dark color decking or if your deck exceeds 12' in width, the following installation suggestions will limit your exposure to this potential issue.

- 1) Check the composite decking manufacturer's literature for specifics regarding expansion, contraction and proper board spacing.
- 2) Allow your treated framing material to thoroughly dry prior to construction or use materials kiln-dried after treatment.
- 3) Install your decking with two screws per board, per joist. Staggered, single-screw per board, per joist, installations are not recommended by Titan.
- 4) Ensure ventilation under your deck.
- 5) Pre-drill two holes at the board ends, forming an elongated slot in the direction of the board's length, into which the screws should be driven.
- 6) Darker colored deck boards absorb heat faster and would benefit from a reduction in board length and/or the use of three screws at each board end.
- 7) Check the decking manufacturer's specific installation instructions for fascia materials. Some manufacturer's recommend the use of softer, more pliable, stainless steel nails rather than screws. If installing with screws, install three rows of #8 screws in the board's width. The screws in each row should be 12" on center. The middle row of screws should be staggered 3" from the top row and the bottom row of screws should be staggered 3" from the middle row, forming a diagonal line of screws.

Preventing Bit Slippage: All SplitStop™ composite screws are designed with a combination of star drive recess and SplitStop thread technology, which allow SplitStop screws to avoid slippage by cutting through hard dense composite materials with less torque. To prevent the insert drive bit from slipping out of the screw's drive recess, be sure that straight-line, vertical engagement is maintained between the composite screw and the screw gun. The use of a bit extension will improve your ability to monitor this in-line state. Use a high quality, insert drive bit with a high hardness rating. (Titan III™ composite screws are packaged with one such bit in every box. Additional bits are available from your SplitStop retailer or on our website.) Screws are best driven on the high speed setting using an 18 to 24 volt cordless screw gun rather than a corded drill or impact driver.

Minimizing Splitting: The incidence of splitting in composite type materials is typically higher than that experienced in natural wood products. The SplitStop™ composite screw design greatly reduces, but does not eliminate, board-end splitting. The incidence of splitting varies depending on the type of composite used, variations within the composite mix, and the outside temperature during installation. Even though you may be able to drive our screw into the board-end without pre-drilling, Titan recommends that you pre-drill the board-end surface using a 1/8" drill bit as show in Fig.1, to avoid splitting after expansion/contraction cycles.

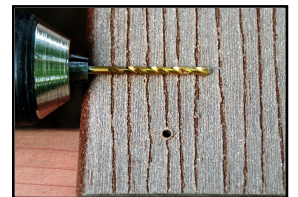


Fig. 1

Secondary Mushrooming: Use a screw gun with a depth gauge. In harder, denser, composite deck boards, the setting of screw heads below the surface may push up a secondary mushroom or lump around the screw head. To avoid secondary mushrooming, drive the composite screws into the composite material perpendicular to the decking surface and set the composite screw flush with the top of the deck board.

Additionally Relevant to Titan's Original Round Shaft Version Composite Screws

Preventing Secondary Mushrooming: The SplitStop™ "Original Round Shaft" version composite screw, eliminates or greatly minimizes secondary mushrooming. The incidence of this type of mushrooming, however, varies depending on the type of composite used, variations within the composite mix and the outside temperature during installation. Titan recommends testing the material before installation. If secondary mushrooming is experienced, before or during installation, dimple the surface as show in Fig. 2-A. A dimple can be most effectively created by using a 1/4" butterfly-type drill bit, fitted with a depth stop, which allows only the tip of the drill to penetrate the surface. Titan also offers a special "Dimpler" bit, as show in Fig. 2-B, which can be placed in a standard drive extension.

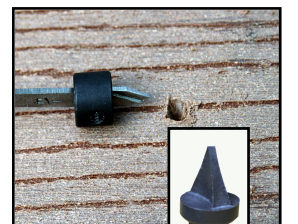


Fig. 2-A



Fig. 2-B

Minimizing Spinout: The SplitStop™ "Original Round Shaft" version composite screw, incorporates a thread design that enhances pull power and restricts pullout. However, in a situation where the density and compression rate of the composite material exceeds that of the substrate material, spinout may occur. (This is also a common result of driving screws into the end-grain of the joist, as in stair-stringer construction.) This type of spinout may be minimized by using treated southern yellow pine as the substrate material. If using treated southern yellow pine is not an option, dimpling the surface as shown in Fig. 2-A will decrease the amount of pressure required to set the screw head and eliminate spinout.