Thru-Plate Installations

Application Note **AN48** May 16, 2019

1. Background

The BoltHold asphalt anchors are designed to be installed flush with the asphalt surface. After installing the anchors, the equipment is attached to the anchors using bolts, very much like a molly is used in walls. The bolt attachment is done through a flat plate that is part of the equipment.

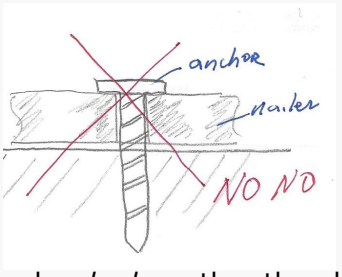
Our customers have encountered numerous applications where it was not practical to install the anchors and place the plate over the anchors afterwards. This application note addresses such applications where the installation is done through the plate.

2. Nailer Sill Plate

A sill plate, also known as Nailer, is used to anchor a shed or other structures to concrete or asphalt surfaces. The picture shows a nailer attached using bolts embedded in concrete.

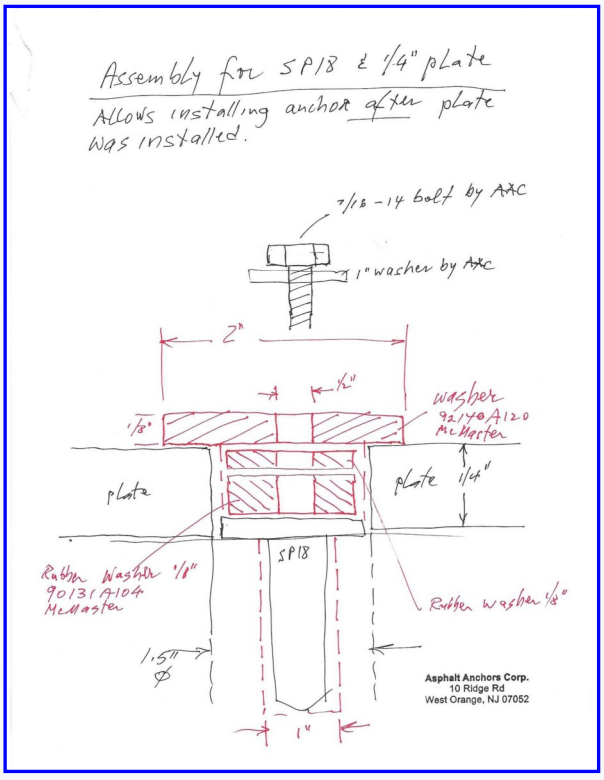
When it comes to securing a sill nailer to asphalt, the challenge is if you need to do that to an *existing* structure. Installing the asphalt anchors requires that the head of the anchor is flush with the asphalt surface, but that means that the anchor is placed *under* the sill plate. That would require moving the structure and placing it back over the anchor after the anchor's installation — not practical in many cases.

The 'simple' solution seems to be to drill a hole large enough to accommodate the body of our anchors (about 1") in the sill plate, and install the anchor from the top, as shown below on the left sketch. However, that method will not use the bolt to capture the sill, as the head of the anchor is *above* the plate. It also will prevent the removal the of the sill plate and the plate will be permanently captured by the anchor *body*, rather than by the *bolt* that attaches the sill to the anchor.



The sketch on the right shows the recommended method of attaching an *existing* sill plate to asphalt. Drill 1" a hole through the plate and into the asphalt, to the specified depth for the anchor (6" or 12"). Use a wood drill bit for the wood, then change to a masonry bit for the asphalt.

Next use a 1.5" hole saw to enlarge the hole



in the sill so that it accommodates the head of the anchor (1.4”). Pull the wooden plug out of the hole saw cup carefully, as you will need to use it as a spacer later. Note that if you prefer, you can use metal washers to fill the gap instead of the wooden plug.

Now proceed with filling the hole in the asphalt with the EPX2 grout, and push the anchor in until it is flush with the asphalt, as usual. Wait for the grout to cure (15 minutes).

The last step is to remove the bolt and washer that are pre-installed in the anchors. Place the wood spacer in the hole in the sell, and use a longer bolt, so that you have about 1” of thread inside the anchor. You will also need to replace the washer with a 2” diameter (or more) washer.

The sketch on the previous page shows specific dimensions for installing our SP18 anchor using metal and/or rubber washers to fill the space. Installing the SP10 or SP12 is essentially the same.

3. Open Tube Installation

Some bike racks used a U shaped metal profile as the base. The design calls for bolting these tubes directly to the asphalt.

The problem is that as you tighten the bolt that attaches the tube to the anchor, there will be no direct contact between the tube and the head of the anchor. As a result, the bolt will work to pull the anchor out of the asphalt as you tighten it, due to the great mechanical advantage of the thread.

The solution is to add a spacer to bridge the gap between the head of the anchor and the bottom of the U bracket. The spaced can be a tube cut to length, a set of washers or even a piece of wood that fits inside the U and is of the right height.