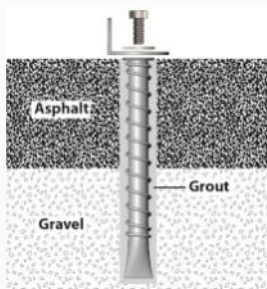


**BoltHold** is a family of anchors specifically designed for anchoring to asphalt surfaces. The anchors are suitable for attaching barriers, signs, bicycle stands and similar structures to asphalt. Additional and continuously updated information on anchor installation can be found on our web site [asphaltanchors.com](http://asphaltanchors.com)



## **Static vs. Dynamic Stress**

Asphalt "flows" if under continuous excessive stress, especially in warmer weather. It is therefore recommended to mount the structure in a way that will not apply a significant, continuous, static stress to the asphalt. For this reason we discourage the use of the anchors to hold up structures that will not stand on their own. Continuous forces in the range of 25% of rating are not considered a problem. Please refer to Table 1 for specific data on the anchor model you are interested in.

**Ratings are based on a minimum distance of 12" between anchors.** If the distance is less than 12", de-rate the pull force by 6% for every inch less than 12.

## **Bolt Length**

The thread inside the anchors is 2.25" deep. The length of the bolt that is used to attach the equipment should be computed so that the part of the bolt inside the anchor does not exceed 2".

## **Grout Selection**

The anchors are designed to be used with grout. The term "grout" is used here in a broad meaning; the actual material can be expanding concrete or epoxy.

The grout **must** be self-leveling (meaning that it flows easily, to fill in all the crevices and voids). It must cure to a hard material. The cured grout must be immune to extended exposure to water. UV exposure is not an issue. **DO NOT USE ROCKITE OR KWIXSET** as they are water soluble.

	SP10	SP12	SP18
<b>Drill Depth</b>	6"	12"	12"
<b>Drill diameter</b>	7/8"	7/8"	1"
<b>Drill Part Number</b>	83-1002	83-1002	83-1003
<b>Anchors per EPX2</b>	2	1	1
<b>Grout weight, oz</b>	7	13	14
<b>Grout Volume, cc</b>	105	195	210
<b>Rated Pull, lb.</b>	1,500	2,000	2,500
<b>Bolt Torque lb-in</b>	200	200	280

Table 1

The most cost effective anchoring results are achieved using an expanding concrete mix such as Quikrete Anchor Cement or our EPX2. The EPX2 is packaged in bags of 14oz grout (P/N 82-5002.K for a six-pack). The re-sealable bags allow adding water, kneading the mixture, then pouring it. The EPX2 is also available in 10 and in 20 lb pails at a significantly lower cost.



**See our online FAQ for installing the grout when temperatures are below 40°F.**

The amount of grout required depends on the model of the anchor you selected. See Table 1 for a guide on the quantity of grout required.

Epoxy cartridges for use as grout are commonly available from other parties, at a higher cost.

## **Required Supplies**

Before starting the installation, make sure that you have the following items:

1. EPX2 grout in quantity per table 1
2. Water
3. If the item you are attaching is thicker than 3/8", procure the required bolts.



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Otherwise, the bolts provided with the anchors will do.

4. If your own bolts, you need Permatex anti-seize paste to facilitate removal of the bolts in the future.
5. Masonry drill bit per Table 1
6. Tools — hammer-drill, hammer, wrench for bolts, vacuum cleaner or blower.



#### **Drill Hole**

1. Use a masonry drill bit per table 1. It is Ok to use a 1" drill for the smaller hole.
2. Clean the hole and the immediate area around it with compressed air or a blower.

#### **EPX2 Use Directions**

1. Prior to the activation of the grout, make sure that you have the anchors on hand. Do not separate the bolts from the anchors.
2. Note that the EPX2 is fast curing; you have less than 10 minutes handling time.
3. With the zipper on top, carefully open the bag in the middle of the zipper. Do not press on the bag as it will send a cloud of dust which should be avoided.
4. Add 3 oz. to 5 oz. of water. The amount of water is critical. There is great variability in the required amount, depending on the water content of the grout as provided in the bag. The end consistency of the mixture should be syrup-like.
5. If too much water is added, the consistency will be too liquid and the grout will require much longer to cure and may not reach full strength. If an inadequate amount is applied, there will be lumps in the mixture and it will clog the top of the hole in the ground and the grout will not flow to the full length of the hole. The pull resistance will be severely reduced.
6. Roll the top section of the bag that has no mixture to remove trapped air from the bag, then carefully zip the bag closed.
7. Knead the mixture for 2 minutes until all the powder was dissolved and no lumps are pre-

sent. As you knead, rotate the bag 90 degrees at a time, knead and rotate again.

8. If more water is required, add one tablespoon at a time.
9. If there was too much water in the mix, add grout from another bag.
10. Slowly pour the mixture into the hole from a corner of the bag.
11. **Make sure that the grout reaches the very top of the hole, even a little above it.** Failure to fill to the top will greatly weaken the bond between the anchor and the asphalt.

#### **Insert Anchor**

1. Push the anchor all way into the hole and do not stop until its head is flush with the asphalt surface.
2. Immediately wash the area around the anchor to remove unsightly grout before it cures.
3. The time for full cure of the installation varies with the mixture, temperature and humidity. Allow 1-2 hours before placing a pull serious load (500 lbs or more) on the anchors.

#### **Attach Structure**

1. Remove the bolt and washer from the anchor.
2. If you need to use your own bolt, apply a small amount of the Permatex paste along its thread (one side is enough).
3. Place the plate to attach making sure that **it is flat and in contact with the head** of the anchor.
4. Insert the washer and the bolts, and tighten. **DO NOT EXCEED** the torque allowed in Table 1. **DO NOT USE** an impact wrench.

#### **Warnings:**

- Once mixed with water, the grout is caustic and can cause burns to eyes and skin.
- Prevent aluminum from coming in contact for a lengthy period with the installed grout.



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