

## Anchor Installation Guide V5.7

**Asphalt Anchors** are 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. To be used in asphalt 10cm or thicker.

### 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 30cm between anchors.** If the distance is less than 250mm, de-rate the pull force by 6% for every 25mm less than 30cm.

### Bolt Length

The effective minimum required thread within the anchor is 5 turns of the bolt and the maximum length of bolt is the total length of the anchor less 5cm. There is no strength gain in having more than 2.5cm of thread within the anchor.

### 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-levelling (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 or any other water-soluble grout.** The most cost effective anchoring results are achieved using an expanding concrete mix such as Quikrete Anchor Cement or our AGE2. The AGE2 can be packaged in bags of 400g or is available in 5kg buckets for convenience and economy.



**Contact us for installing the grout when temperatures are below 5 degrees Celsius.**

The amount of grout required depends on the model of the anchor you selected. See Table 1 below 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.

| Hole                  | AASP10 | AASP12 | AASP18  | AASP58  |
|-----------------------|--------|--------|---------|---------|
| Depth                 | 150mm  | 300mm  | 300mm   | 250mm   |
| Diameter              | 22mm   | 22mm   | 25mm    | 38mm    |
| Grout mixture volume* | 60ml   | 120ml  | 160ml   | 285ml   |
| Rated pull            | 680kg  | 900kg  | 1,135kg | 2,270kg |
| Max torque            | 23Nm   | 23Nm   | 32Nm    | 81Nm    |

Estimated anchors per 5kg grout bucket

|    |    |    |   |
|----|----|----|---|
| 30 | 18 | 15 | 9 |
|----|----|----|---|

**Table 1**

\*Approximately, be sure to fill the hole completely and ensure grout is of a heavy syrup consistency.

### Required Supplies

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

1. AGE2 grout in quantity per **Table 1**.
2. Water and mixing container.
3. If the item you are attaching is thicker than 9.5mm procure the required bolts. Otherwise, the bolts provided with the anchors will do.
4. If your own bolts, you need 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 25mm or 1” drill for the smaller holes.
2. Clean the hole and the immediate area around it with compressed air or a blower.

## Grout 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 AGE2 is fast curing; you have on average 20 minutes handling time.
3. Note the weight and volume of grout required on **Table 1**.
4. Use a mixing container if required and fill it 20% with water.
5. Add grout, roughly 3 times the volume of the water, mix thoroughly.
6. Add water as required to achieve a **thick syrup consistency**.
7. 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.
8. Slowly pour the mixture into the hole.
9. **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

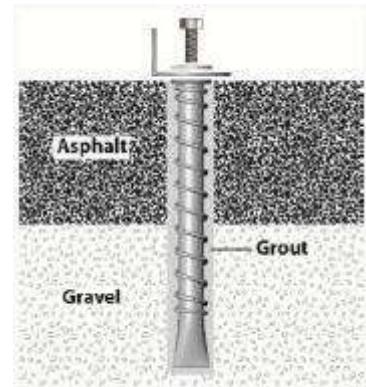
1. Push the anchor all way into the hole checking the grout level once the anchor is 5cm from completely installed. If the grout is below the surface, top up the grout without removing the anchor.
2. Push the anchor the remainder of the way into the hole, using a hammer if required.
3. Immediately wash the area around the anchor to remove unsightly grout before it cures.
4. The time for full cure of the installation varies with the mixture, temperature and humidity. Allow 1-2 hours before opening the bolts as the torque can damage the uncured grout. Refer to grout for full set time.
5. You can install the structure after an hour in ambient temperature of 20°C and above, unless grout seems to be soft.
6. Working strength is achieved in 2.5hrs, full strength in 1-2 days.

## 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 anti-seize 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:

1. Once mixed with water, the grout is caustic and can cause burns to eyes and skin.
2. Prevent aluminium from coming in contact for a lengthy period with the installed grout.
3. Do not use with coatings other than zinc. Epoxy should be used if these coatings are required.



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