

This application note relates to the installation and use of the BoltHold™ asphalt anchors manufactured by AAC. In particular, this AN concentrates on issues related to installation in rain and in cold weather. Using our EPX2 grout.

There are no issues with the *use* of the anchors in such conditions once the installation has been successfully completed.

### Low Temperature

Anchoring during cold winter months requires special measures, not unlike working with concrete under similar conditions.

The key concern is applying the grout -- whether it is cement or epoxy. In both cases the hardening of the grout requires a controlled ambient temperature. For water-based cement such as our EPX2 or AGe2, once the ambient temperature drops below 50°F, special steps need to be taken.

- The EPX2 grout reacts with the water to start the curing process. If the water is too cold, the process will not start, or it will be very slow.
- Once the process starts, it generates its own heat at which point curing will proceed on its own.
- At low ambient temperatures (below 40°F), use warm water to mix with the EPX2 powder.
- At temperatures close to freezing or below it, use special epoxies instead (such as HIT-ICE by Hilti) or follow the suggestions in the next column:

1. Do not apply grout of any type to frozen *ground*, as the ice may prevent the grout from flowing into the asphalt crevices and bonding with the asphalt.
2. Preheat the grout and the water to 70F or higher.
3. Use a small tent with heat lamps.
4. Use a forced air heat gun to warm the hole and its immediate surrounding area.

Bear in mind that the alternative to using asphalt anchors is to cut out a large patch of asphalt and pour concrete. That too is not a viable option in freezing temperatures.

### RAIN

While the grout is water-proof once it hardens, rain can dilute the grout mixture when poured into the hole. This can be caused by standing water in the hole, or by water seeping into the hole from the rain or from a high water-table in the area.

#### Solutions:

1. If it is raining, either wait it out or cover the area above the hole with a tent. Then...
2. Push the water out of the hole using the drill bit or the anchor, and blow out the rest of the water with compressed air.
3. If the water table is high and the water keeps rising in the hole, try to push in small gravel aggregate to the bottom of the hole (below the end of the anchor). That may slow the rise of the water enough to allow the grout to be poured and cure.