Headstone Resetting Guidelines

Who Should Reset: Resetting headstones should be left to professionals. There are just too many possible scenarios for which to train volunteers. Cleaning and leveling can be assigned to trained volunteers, but save resetting and repair for professionals. When hiring resetting work for a cemetery, be sure you hire qualified professionals. If they do not have a tripod that can handle 1000 pounds, they probably should not be hired. The Oregon Commission on Historic Cemeteries has a good bulletin on what to consider when hiring a contractor. For a current list of contractors doing cemetery work, contact the Oregon Commission on Historic Cemeteries. When calculating an estimated cost for resetting, figure about 1-1/2 person-hours per marker. Some will go quicker, others will take longer, particularly if the base also needs to be leveled.

Care in Resetting: Take care when resetting monuments so no further damage occurs to the grave marker. Even if markers do not appear fragile on the exterior, internal fractures may result in breakage or damage. Consider every marker a fragile object. The unanticipated weight of a marker being handled can also result in breakage.

Mortar: Reset stones using lime mortar where there was lime mortar originally – it is as simple as that. If it is a break in a stone, then turn to epoxy, but when resetting a stone where there was originally mortar, it is best to repeat the setting with mortar. However, if it is obvious the original mortar failed because the stone surfaces were too smooth, such as on granite, or the existing mortar is still well attached to the bottom of the stone and dry fits well, then epoxy might be the best choice. This is why a professional should do the resetting: each stone is decided on a case-by-case basis.

Do not use concrete, do not use any off-the-shelf mortars, all are too hard. You need the softness of lime mortar to prevent damage to the stone. The mortar joint has to be the weak link on a monument so that if the headstone does get pushed over in the future, the mortar joint will be the first to fail.

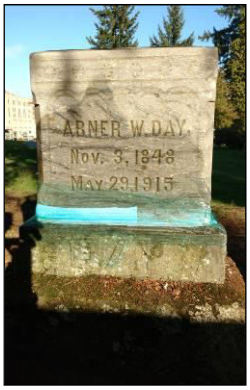
For resetting a stone on a base or plinth, the rule is to use 1 part natural hydraulic lime (NHL 3.5) to 2 parts clean fine sand. For resetting a stone in a base slot, the rule is to use 1 part natural hydraulic lime (NHL 3.5) to 3 parts clean fine sand. Stir the dry ingredients, adding small amounts of water until damp. Stir for about 8 minutes, and the lime mortar will become slaked and be the consistency of peanut butter. The mortar should remain workable for about 30 minutes.

Wet the stone surfaces thoroughly before applying the mortar and sponge off any excess water. You want the stone to be moist so that it does not suck the water out of the mortar. Apply the mortar in a thin, even layer covering the entire contact surface on the lower stone. Tape can be used to prevent excess mortar from getting on to unwanted areas (just be sure to apply the tape before you wet the stone surfaces). Cut lines in the mortar to allow moisture to escape when the headstone is lowered.

Once the stone has been lowered, finish the joint with a tuck pointer. Let the mortar cure for about an hour and then brush off any excess with a chip brush. The joint will have to stay damp for about three days. You can wrap the joint in a wet cloth covered in plastic wrap to maintain moisture.

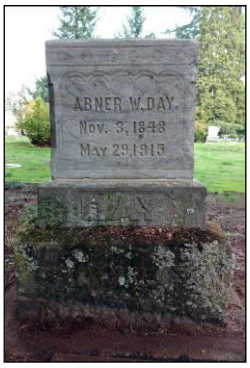
Epoxy: Use epoxy as a last resort since it is a permanent alteration to the stone. Use it sparingly and very carefully. Use epoxy on tablet breaks where there is not enough surface area and thickness for mortar to make a long-lasting, sturdy bond. Use epoxy on obelisk bases where there is a small contact surface when compared to overall mass. The stone epoxies have now evolved to a point where they are effective and versatile.

Akepox 2010 by AKEMI is the preferred epoxy for cemetery stone work and the current standard for repairing a break in a stone. It is a two-part epoxy mixed at a 2:1 ratio. The epoxy comes in a pair of tubes which is ideal when making repairs in the field.



It is best to make repairs in position so that the stone does not have to be moved after the repair. Curing vertically will make for a stronger joint, too. First, make sure the pieces are clean and dry. Use a very soft wire brush on the faces of the joint that will not be visible to really clean the surface to be epoxied and to slightly abrade it. This is the only time you will use a wire brush in a cemetery.

Second, dry fit the two pieces of stone to be epoxied. Mark with a pencil where the two pieces do not touch. Third, lift off the stone and apply the epoxy, thinly and sparingly to the areas on the lower stone where the two stones will touch. Do not spread epoxy to every place the stones touch, as you want to leave plenty of escape routes for future moisture in the stone, and you definitely do not want epoxy squeezing out from the joint when weight is applied. Any epoxy that does squeeze out of the joint, immediately and carefully scrape off and do not smear it on the stone. Epoxy is a one shot deal and is best left to the experienced professionals. Immediately brace the stone and leave it undisturbed. Epoxy will set quickly so that the stone repair can be touched within 30 minutes; however, leave your bracing on the stone and remove the braces after seven days of full cure.



Epoxy and Mortar: We have been using epoxy and mortar to reset obelisks. We put epoxy "dabs" at the center and toward the four corners of the plinth and then set the obelisk down for a seven-day cure. We then come back and point the joint with mortar. This combination gives us the strength of epoxy to resist tipping with the mortar keeping moisture out of the joint.

Resources: We are currently using a premix of fine sand and lime mortar from LimeWorks (https://limeworks.us/products/lime-mortar/) called Ecologic Mortar. A premix is nice in that is mixes up very easily (only five minutes) and does not require measuring. A bag is relatively inexpensive but unfortunately there are no dealers on the West Coast so shipping is expensive for any NHL mortar. We have also used US Heritage Group (https://usheritage.com/repointing-mortars/) as a source for NHL mortar that worked very well.

For Akepox 2010, we buy from Atlas Preservation (https://atlaspreservation.com/products/akemi-akepox-2010-450-gram-tubes) but there are many vendors on the internet for under $30 for a two-tube set.