

## Standard Operating Procedure 540 Concrete Sampling

### *Purpose*

To obtain a representative sample of a masonry or concrete surface that can be used for laboratory analysis.

### *Safety Equipment*

- Wear nitrile gloves to reduce the incidence of skin contact with potentially contaminated concrete and to reduce the risk of potential cross contamination.
- Wear goggles or a face shield to protect your eyes from air borne debris.
- The coring machine is a powerful tool that produces high torque, operators should be experienced in concrete coring.

### *Required Equipment*

- Coring machine with stand and 1” coring bit (or other bit, as appropriate)
- Extension cord
- Electric drill with masonry bit, anchor bolts, wrench to tighten bolts, and 4 ½ inch angle grinder with cutting wheel
- Water tank filled with water (and a water container filled with tap water, if there is not a nearby water tap)
- Hammer, screw driver, wire and other tools which can be used to retrieve the core sample from the core hole and/or coring bit
- 2000 watt generator, if there is no on-site power source
- Paper towels
- Tape measure

- Laboratory-supplied sample containers or plastic bags and a clean cooler with ice or frozen ice packs

### *Procedure*

1. Ensure that the coring bit is clean before starting.
2. Determine the appropriate location and identification prior to sampling. Use a tape measure to determine the distance (within 0.1 foot) between the sample location and site landmarks. Record the sample identifier and location in the field notes.
3. If the coring bit is greater than 1 inch in diameter or the target coring depth is greater than 6 inches, install an anchor bolt about 6 inches from the sample location. Use the anchor bolt and nut to secure the coring machine stand.
4. Attach the coring machine to the stand and connect the water tank.
5. Start a slow flow of water through the coring machine prior to starting the machine, failure to do so will cause a release of airborne particles and hinder sample retrieval. Maintain a flow of water throughout the coring process.
6. Using the coring machine, core the concrete in the appropriate location. To get a representative sample the entire cross-section of the concrete should be cored, unless otherwise stated in the site specific work plan.
7. Dry the cores with a clean paper towel. Use a gloved hand to transfer the concrete cores into appropriately labeled laboratory bags. If necessary use a clean screwdriver and wire piece to remove the concrete from the core hole. If the core sample is lodged in the coring bit, tap the side of the bit gently with a hammer.
8. Be sure to remove all of the core from the coring bit between samples to avoid cross-contamination.
9. If an anchor bolt was used, cut off the bolt flush with the concrete surface with the angle grinder.
10. Discard gloves and use new gloves for the next sample location.