

1. Overview.

The Concrete Imaging Policy guides site personnel conducting any type of concrete imaging to prevent any potential injury from cutting, coring, or drilling. McKinstry believes the safety of employees is paramount, and no one should be exposed to hazardous environments without the completion of thorough planning and risk mitigation activities. This policy intends to prevent injury to workers and avoid property damage to building structure and to prevent exposure to any other potentially buried hazards. Imaging is required before any cutting, coring, or drilling is conducted as specified in this policy.

2. Purpose.

The purpose of the Concrete Imaging Policy is to provide direction for a consistent and standard practice for imaging of concrete surfaces prior to any cutting, drilling, coring, or demo activities. Our goal is to prevent injury to personnel or buildings caused by hitting electrical conduit, post-tension cables, rebar, and other utilities hidden inside the concrete.

3. Scope.

The scope of the Concrete Imaging Policy applies to all personnel subject to the McKinstry site-specific safety plan. Imaging is required if drilling, coring, cutting is greater than one-inch depth.

4. References.

- 4.1 Concrete Imaging Assessment Form, February, 2020

5. Definitions.

- 5.1 **Coring** is any round penetration that completely removes material from a wall or deck to facilitate the passage of MEP infrastructure from one space to the next.
- 5.2 **Drilling** is the use of battery-operated or electric drills or roto hammers to provide voids for mechanical or chemically fastened anchors.
- 5.3 **Ground Penetrating Radar (GPR)** scanning is a non-destructive method to view subsurface conditions. A geophysical method that uses radar pulses to image the subsurface.
- 5.4 **Imaging** is the process of producing an image using either a GPR or X-Ray.
- 5.5 **Saw Cutting** is the removal of material from a wall or deck using a walk-behind saw, handheld saw, a chainsaw with a specialized chain or circular saw with a specialized blade.
- 5.6 **X-Ray** is a non-destructive method of imaging with the main differences from GPR is the need for access to both sides of the surface and the requirement to have the area cleared of all site personnel.

6. Responsibilities.

- 6.1 **Field Leadership** is responsible for the implementation of this process. Delegation of assigned tasks to other employees on-site is not prohibited. However, the completion of the Concrete Imaging Assessment form and informing the GC/Owner of the schedule for concrete imaging is the ultimate responsibility of field leadership. Field Leadership is responsible for notifying the subcontractor of the location for the GPR scan or X-Ray using the Concrete Imaging Assessment form. Field Leadership will use the form to coordinate all pre and post imaging tasks.
- 6.2 **Project Manager, Construction Manager, or Project Team** are responsible for reviewing the completed Concrete Imaging Assessment form. They are responsible for approving any work outside the guaranteed area given by the subcontractor.

7. Concrete Imaging Policy

- 7.1 An image is not required if drilling depth is one inch or less. A shoulder bit or a depth stop is required to stop any user from drilling further than one inch. This applies to drilling either from the top or bottom of a surface.
- 7.2 Concrete imaging is conducted prior to concrete cutting, coring, or drilling activities to prevent injury to workers and avoid accidental damage to the building structure.
- 7.3 Scanning activities should be planned well in advance of on-site work, to allow for any adjustment to schedule and communication of the findings of the imaging.
- 7.4 All relevant sections of the Concrete Imaging Assessment form should be completed prior to the activity of any imaging and will provide direction on how to prepare and arrange for imaging on your project.
- 7.5 Any owner, customer, or contract imaging requirements should be clarified and agreed upon before any imaging activity.
- 7.6 Before the task of x-ray, notification should go out to all site personnel to ensure safety. Do not assume all site personnel is aware of radiation concerns. Any necessary signage will be posted as appropriate for potential hazards.
- 7.7 McKinstry recommends the use of a company that assumes liability for their work. The Concrete Imaging Assessment form includes preferred contractors at the bottom of the document. The decision of the subcontractor used should be made through coordination between field leadership and the project team.
- 7.8 Concrete imaging must locate electrical conduit, post-tension cables, piping, rebar, and other utilities that could be buried inside the concrete. Once imaging is complete, locations of utilities are marked on the concrete and a clear area will be marked where it is safe to proceed.
 - 7.8.1 If a guaranteed area is not marked out, the field leadership or their delegate will obtain approval to proceed from the Project Manager.
 - 7.8.2 When scanning is not sufficient, and it is still unclear what is in the concrete, an X-ray will be scheduled.
- 7.9 Once scanning or x-ray activities are completed, the trade crews can drill, core, or cut three inches away from post-tension cables, two inches away from conduits, and one inch from rebar.
- 7.10 Any concrete drilling, cutting, demo activities not in compliance with this policy will be corrected immediately, to include a hazardous observation reported via the McKinstry hotline, (866) 772-3108.

8. Revision History.

The Concrete Imaging Policy is a controlled document and will be updated in the future. Table 1 contains the list of changes for this document and the current revision.

Table 1. Revision History for this document

Number	Date	Incorporated Changes	Point of Contact
1.0	February 2020	Initial Release	Michael Cleek

