

# Seattle Permits

— part of a multi-departmental City of Seattle series on getting a permit

## Concrete Encased Grounding Electrode

Updated October 19, 2020

This Tip is intended to provide an overview of the code requirements for concrete encased grounding electrodes. Topics covered include requirements for bonding, licensed contractors, and ground ring electrodes.

### 2005 Edition of the NEC

The 2005 National Electrical Code (NEC) outlined new rules for mixing concrete and electricity.

You must install a 20-foot section of rebar in the lower section of concrete foundations before you pour any additional concrete. This section of rebar must be bonded to the reinforcing bars installed in the foundation (ufer ground) and stubbed out of the foundation at an accessible location for future use with the structure's electrical service. If you are building an addition with at least 20 lineal feet of new footing and a new electrical service permit, you will be required to install a concrete encased grounding electrode.

### Bonding

You may accomplish the required bonding by using the industry standard procedure of tying rebar together with steel tie wires. You must identify the rebar extending out of the concrete in a manner that indicates that it is intended to be used as the grounding electrode for the service providing power to the structure.

### Licensed Electrical Contractor

Because grounding is so important to the safety of an electrical installation, a licensed electrical contractor must obtain a permit and arrange for an inspection for the ufer ground before you place the concrete. You can request the inspection on the permit for the tempo-

rary service, if ready at the same time, service/feeder, conduit-only placement, or a get-started permit when plans are required.

### Ufer Only Permit

If you are not able to purchase electrical permits for the building when the foundations are being constructed, your electrical or general contractor may obtain a "ufer only permit" for the installation of the ufer ground only. That permit will only cover the inspection of the installation of the ufer ground.

### Ground Ring Electrode Option

If you do not comply with the permit and inspection requirements, you may be required to install a ground ring electrode encircling the building (NEC Article 250.52(A)(4)) before the service can be energized.

If you have any questions or concerns regarding the installation of ufer grounds, please contact SDCI's Electrical Technical Backup at (206) 684-5383, Monday-Friday, 7:00 a.m. - 4:30 p.m.

## Access to Information

Links to electronic versions of SDCI **Tips**, **Director's Rules**, and **Forms** are available on the "Tools & resources" page of our website at [www.seattle.gov/sdci](http://www.seattle.gov/sdci). Paper copies of these documents are available from our Public Resource Center, located on the 20th floor of Seattle Municipal Tower at 700 Fifth Ave. in downtown Seattle, (206) 684-8467.

