

FOUNDATION REUSE AFTER A WILDFIRE

The standard procedure for removal of debris at a property with a severely damaged or destroyed structure is to completely remove and dispose of the foundation. Existing footings, slabs, and foundation systems in fire-destroyed buildings are typically compromised and are not permitted to be re-used.

Intense heat and fire can render a foundation unusable, or impractical for re-use for the following reasons:

1. A fire can generate enough heat to damage and weaken the concrete and steel reinforcement bars in footings, slabs, and footing stem walls. Even though concrete is non-flammable and offers fire protective qualities for preventing the spread of fire, it loses most, if not all of its structural strength characteristics when exposed to extreme heat. Performing compressive tests to confirm that the concrete has retained sufficient strength for reusing can be destructive and is not cost effective.
2. Foundation anchorage hardware (steel bolts and holdown anchors) is compromised during a fire and cannot be replaced or repaired without expense. Installing replacement anchors in an existing footing is labor intensive and requires special inspections during installation, which can add significant cost. Replacement anchors for holdown hardware must be re-engineered and are difficult and expensive to install in existing concrete footings. It requires special hardware and installation techniques involving high-strength epoxies, careful drilling, and continuous special inspection for new anchor placement.
3. Plumbing pipes and electrical conduit embedded in the concrete is usually destroyed or heavily damaged during a fire. Repairs and replacement of pipes and conduits in existing foundations involves the removal and replacement of portions of the concrete that encapsulates them, which further compromises the concrete. This process usually involves saw cutting and jackhammering out those portions of concrete containing pipes and conduits, removing and replacing the damaged pipes and conduit, and pouring the replacement concrete.



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