



POLICIES, PROCEDURES, AND GUIDELINES

Subject

**Concrete Slabs & Foundations
Damaged by the Fires**

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Policy

Existing footings and slabs in fire-damaged buildings and structures are not typically permitted to be reused due to the impacts of intense heat and fire to the foundation.

Guidelines

If a homeowner or contractor proposes to reuse the existing foundation, besides submitting a debris removal workplan, an engineering report/plan prepared by a licensed civil engineer, structural engineer, or architect must be submitted to Public Works for review and approval certifying the reuse of the existing foundations system.

The engineering report shall provide the testing protocol for the existing foundation to determine if it is suitable for reuse. The foundation system may include footings, piers, grade beams, retaining walls, or any other concrete elements that support the structure. In addition, if necessary, a building plan should include structural repairs and details as recommended in the report. Implementation of an approved workplan and testing protocol will not guarantee that the existing foundation can be reused. The burden falls on the design professional to prove through testing that the slab and foundation are structurally adequate for reuse.

The foundation investigation protocol may include a combination or all of the following depending on the extent of the damage:

Visual Assessment

- Includes the review of patterns such as scorch marks, discoloration, cracks, spalling of slabs. Assessment also applies to leaning and tilting of walls that may be evidence of heat damage.

Non-Destructive Testing

- The hammer sounding, impact echo, and rebound hammer [commonly known as the Schmidt hammer] tests to determine the surface hardness of the concrete.
- Ultrasound pulse velocity (UPV) testing to measure the depth of the fire-damaged concrete layer.

Destructive Testing

- The two destructive tests used for concrete are the compressive strength test and petrography test. It should be noted that fire has been known to remove moisture from concrete, resulting in an increased breaking strength. Therefore, these two test results should be correlated to eliminate these error results.

The report/workplan shall include the evaluation investigation methods for both the materials and structural elements, analysis, and repair details if needed. Public Works will review the design professional's report/workplan, conduct a site visit, and may require additional investigation tests and analysis if necessary.