

Clemson University Facilities: Fire Suppression Systems Installation and Alterations

Permitting and Submittals

Renovation Permits are required for any new installation of fire suppression systems and all alterations to existing systems. Plans for fire alarm, fire sprinkler, and alternative automatic fire extinguishing systems shall be submitted with the permit and will be reviewed for compliance with all standards and documents listed in this document. Submittals for review shall include [Fire Sprinkler System Specification Sheets \(FSSSS\)](#), [Certificate of Compliance](#), and all calculations and cut sheets to show compliance with the [Office of the State Engineer \(OSE\)](#), [Office of the State Fire Marshal \(OSFM\)](#), and Clemson's [Guidelines for Commissioned Architects and Engineers](#).

Shop drawings shall be prepared, submitted and approved prior to the start of installation. Drawings shall contain all information as required by [applicable laws](#), [OSFM](#) regulations, adopted codes, and installation standards referenced therein. New installations and alterations adding more than ten sprinkler heads to an existing system or other circumstance deemed necessary by the Fire Code Official shall require submission to [OSFM](#) for review.

The Fire Protection Engineer of Record (EOR) shall submit OSFM Form: [Request for Fire Sprinkler Shop Drawings for State Construction Projects](#) to the Fire Code Official, Project Manager and OSE (if required). Any change to the EOR or sprinkler contractor after submittals require notification via [LLR Notification Form](#) to the Fire Code Official and Project Manager.

Exterior Installations

Fire Department Connection Installation (FDC): FDC's shall be located within 100 feet of a fire hydrant, be free standing, and be separated from the building by a distance greater than the wall facing the FDC. A single point of connection shall be provided for buildings with multiple risers and shall include, at a minimum, two 2.5 inch (Siamese) connections.

Valve Installation: A double check valve is required at the riser. Post indicator valves (PIVs) are not required on Clemson University projects. Special permission is required for the use of PIV's and underground vaults.

Dry Systems: Shall be filled with nitrogen.

Inspection and Acceptance

Underground Inspection: Inspections of underground piping shall be conducted by the Clemson University Utilities and witnessed by the Code Official. Connections to the building shall not be made until a witnessed flush of the system is completed. Information required for state submittal can be found at [Underground Piping Plan Submittal List](#).

Hydrostatic Testing: A two-hour hydrostatic pressure test at 200 PSI is required for new systems or alterations involving new mains or new branch lines or when repairs or alterations affect 20 or more sprinkler heads. Alterations and repairs shall be tested while completely isolated from the remainder of the existing system.

Above Ceiling Inspection: The Code Official will issue a release to cover when all above ceiling inspections are complete.

Final Inspection: Final inspection shall include verification of sprinkler heads and testing of the fire alarm system and fire flow bell. As-built drawings are to be approved prior to final inspection. The *Contractors Material and Test Certificate for Above and Underground Piping* as listed in the latest edition of NFPA 13 shall be provided within 13 days following the final inspection.