City of Austin Fire Department *Fire Marshal's Office*

Guidelines, protocols, and expectations for construction – new or remodel – in AFD's jurisdiction

AFD Inspection Scheduling: call the scheduling office at 512-974-0153x3 during our scheduling hours between 8 AM and 1 PM, Mon-Fri. Please note that calls are returned in order, so leave a voicemail and leave a contact number and permit number. Calls are returned same-day.

Construction Site Considerations per adopted IFC and NFPA

A. Address Numbers

1. Correct address numbers for the site should be posted in conspicuous location. This should assist any emergency vehicles as well as delivery trucks etc.

B. Access- Buildings

1. Access shall be required for life-saving and fire-fighting operations.
2. KEY BOXES (Building Access)
   a) *Where required; Where access to or within a structure or an area is restricted because of secured openings or where immediate access is necessary for life-saving or fire-fighting purposes, the fire code official is authorized to require a key box to be installed in an approved location. The key box shall be of an approved type listed in accordance with UL 1037, and shall contain keys to gain necessary access as required by the fire code official.*
3. <u>Additional information</u>

C. Access – Roadways (Fire Apparatus and Emergency Vehicles)

1. Access shall be provided by either temporary or permanent roads, capable of supporting vehicle loading under all weather conditions. Minimum width 20feet, extended to 150' of all portions (1st floor) of any building, within 100' of FDC, and kept clear of obstructions.
2. IFC SECTION 503.1 ACCESS FOR FIRE FIGHTING
   a) *503.1.1 Buildings and facilities.*
      (1) Approved fire apparatus access roads shall be provided for every facility, building or portion of a building hereafter constructed or moved into or within the jurisdiction. The fire apparatus access road shall comply with the requirements of this section and shall extend to within <u>150 feet of all portions of the facility and all portions of the exterior walls of the first story</u> of the building as measured by an approved route around the exterior of the building or facility.
      (2) Exception: The fire code official is authorized to increase the dimension of 150 feet where:
         (a) The building is equipped throughout with an approved automatic sprinkler system installed in accordance with Section 903.3.1.1, 903.3.1.2 or 903.3.1.3.
         (b) Fire apparatus access roads cannot be installed because of location on property, topography, waterways, nonnegotiable grades or other similar conditions, and an approved alternative means of fire protection is provided.
         (c) There are not more than two Group R-3 or Group U occupancies.
   b) *503.1.2 Additional access.*
      (1) The fire code official is authorized to require more than one fire apparatus access road based on the potential for impairment of a single road by vehicle congestion, condition of terrain, climatic conditions or other factors that could limit access.
3. IFC SECTION **3311** ACCESS FOR FIRE FIGHTING
   a) ***3311.1** Required access.*
      (1) Approved vehicle access for firefighting shall be provided to all construction or demolition sites. Vehicle access shall be provided to within <u>100 feet of temporary or permanent fire department connections.</u> Vehicle access shall be provided by either temporary or permanent roads, capable of supporting vehicle loading under all weather conditions. Vehicle access shall be maintained until permanent fire apparatus access roads are available.

4. CITY OF AUSTIN FIRE PROTECTION RULE per COA Fire Protection Criteria Manual

a) *IFC (LDC Chapter 25-12, Article 7), Reference Sections 501.3, 503, and 507*

(1) Construction documents related to site plan and building permit approvals shall address general emergency access provisions and construction sequencing that affects fire or life safety. One aspect of meeting this requirement is to include in the site plan submittal general construction notes which should include, but need not be limited to the following:

(a) *<u>The Austin Fire Department requires final asphalt or concrete pavement on required access roads prior to the start of combustible construction</u>. Any other method of providing "<u>all-weather driving capabilities</u>" shall be required to be documented and approved as an alternate method of construction in accordance with the applicable rules for temporary roads outlined in the City of Austin Fire Protection Criteria Manual.*

(b) *Fire hydrants shall be installed with the center of the four (4) inch opening (steamer) located at least 18 inches above finished grade. The steamer opening of fire hydrants shall face the approved fire access driveway or public street and set back from the curb line(s) an approved distance, typically three (3) to six (6) feet. The area within three (3) feet in all directions from any fire hydrant shall be free of obstructions, and the area between the steamer opening and the street or driveway giving emergency vehicle access shall be free of obstructions.*

(c) *Timing of installations: When fire protection facilities are installed by the contractor, such facilities shall include surface access roads. Emergency access roads or drives shall be installed and made serviceable prior to and during the time of construction. When the Fire Department approves an alternate method of protection, this requirement may be modified as documented in the approval of the alternate method.*

(d) *All emergency access roadways and fire lanes, including pervious/decorative paving, shall be engineered and installed as required to support the axle loads of emergency vehicles. <u>A load capacity sufficient to meet the requirements for HS-20 loading (16 kips/wheel) and a total vehicle live load of 80,000 pounds is considered compliant with this requirement.</u>*

(e) *Fire lanes designated on site plans shall be registered with the City of Austin Fire Department and inspected for final approval.*

(f) *The minimum vertical clearance required for emergency vehicle access roads or drives is 14 feet for the full width of the roadway or driveway.*

b) *IFC (LDC Chapter 25-12, Article 7), Reference Section 503.1.1*

(1) The 150-foot measurement from a fire department access road to a building shall be measured around the building perimeter from the nearest access road to the most distant point of an exterior wall of the first story. (See 901S-1 in City of Austin Standards Manual)

c) *IFC (LDC Chapter 25-12, Article 7), Reference Section 503.2.3*

(1) The Austin Fire Department requires an all-weather driving surface on fire apparatus access roads prior to construction. However, the acceptance of alternative road methods shall be allowed during construction with the approval of the Fire Chief in accordance with Section 104.8, 104.9 and **104.10** of Fire Code (LDC Chapter 25-12, Article 7). Any alternative roadway acceptance shall be predicated upon the following:

(a) Placement of all underground utilities and/or any other underground installations requiring ditching prior to placement of the roadway itself.

(b) Application of the road system in accordance with methods and specifications approved by the Fire Chief.

(c) Submittal of a letter by a registered professional engineer which states that the road application is in accordance with the aforementioned methods and specifications and shall include all necessary compaction test reports as required by the Fire Chief (generally 95% proctor or better). Such reports and tests shall be submitted to the Fire Marshal's office prior to building construction.

(d) Maintenance of such a road throughout the construction phase of the project to permit required access.

(e) A person desiring to construct such a road for building permit purposes shall state in writing the reasons for the necessity of an alternative system. Causes or reasons for requesting such an alternative shall be limited to the following, unless specifically included by the Fire Chief in writing:

(i) Construction practices which would, of necessity, constantly damage or destroy an asphalt or concrete application thereby causing unnecessary economic harm to the builder. Such conditions shall include reasonable expectation that the City of Austin may damage the roadway surface through ditching or other methods but specifically exclude any possible damage by concrete trucks, forklifts or similar equipment.

(ii) Inability to receive over a continuous period [more than three (3) weeks] either cement or asphalt paving material in order to provide the necessary surfacing.

(iii) Use of a paving material such as grasscrete or interlocking pavers which would of consequence be damaged by heavy trucks and construction activity.

(iv) It shall be the responsibility of the applicant to document and cite any of the aforementioned causes or reasons when requesting an alternative roadway approval by the Fire Department.

(f) Maintenance:

(i) Should a person receiving approval for an alternative roadway method fail to provide necessary engineering reports showing compaction tests and completion, or fail to maintain in an adequate condition such alternative roads, then the Fire Department may take official action in accordance with Sections 109, 110, and/or 111 of the Fire Code (LDC Chapter 25-12, Article 7).

d) IFC (LDC Chapter 25-12, Article 7), Reference Section 503.2.3

(1) The Austin Fire Department requires that all weather pavement be of either concrete or asphalt construction.

(2) Access roadways shall be finished by application of an all-weather driving surface of hot mix asphaltic concrete or concrete pavement over a flexible base Engineered to provide a load bearing capacity in conformance with City of Austin Standard Specifications for city streets. Any pervious /decorative paving within 100 feet of any building must meet the same vehicle loading requirements. The pervious/decorative paving installation must be

designed and sealed by a Professional Engineer, and approved by the Fire Department.

e) *IFC (LDC Chapter 25-12, Article 7), Reference Section 503.2.4*

(1) Access roadways shall be designed with an appropriate 25-foot inside turning radius and a 50 foot outside turning radius at turns to accommodate any operational Fire Department apparatus. Turning radii for entrance and exit access roadways must also conform to current City of Austin driveway requirements; therefore, entrances and exits may have to be widened to satisfy both requirements.

(2) *Access roadway requirements refer to access roads on private property subject to use by the Fire Department (business drives, apartment drives, etc.). For public street design refer to the City of Austin Standard Specifications and City of Austin Standards Manuals.

f) *IFC (LDC Chapter 25-12, Article 7), Reference Section 503.2.5*

(1) Where Fire Department access roadways are longer than 150 feet and terminate at a dead end, approved provisions for turning around Fire Department apparatus shall be provided. The Austin Fire Department will approve a cul-de-sac with a minimum 50 feet unobstructed radius. A 25' x 80' "T" section or "Hammerhead" turn-around is also acceptable, provided that an additional ten (10) feet of right of way around the 25' x 80' dimension can be provided with no obstruction over one (1) foot high. (See 901S-2 in the City of Austin Standards Manual)

D. Standpipe and FDC

1. Standpipes shall be installed when construction progress is not more than 40 feet. Standpipes shall be extended as construction progresses to within ONE floor of the highest point having flooring. FDC connections should have locking caps installed to prevent damage.

2. IFC SECTION **3314** STANDPIPES

a) ***3314.1*** *Where required.*

(1) In buildings required to have standpipes by Section 905.3.1, not less than one standpipe shall be provided for use during construction. Such standpipes shall be installed when the progress of construction is not more than 40 feet in height above the lowest level of fire department vehicle access. Such standpipe shall be provided with fire department hose connections at accessible locations adjacent to usable stairs. Such standpipes shall be extended as construction progresses to within one floor of the highest point of construction having secured decking or flooring.

(2) If you have a stairwell that calls for a standpipe, that stairwell and standpipe shall be installed when you reach 40 feet in height. This applies for every stairwell with a standpipe. If you are found in violation a citation will be issued and a stop-work order given until compliance is obtained.

b) ***3314.2*** *Buildings being demolished.*

(1) Where a building is being demolished and a standpipe is existing within such a building, such standpipe shall be maintained in an operable condition so as to be available for use by the fire department. Such standpipe shall be demolished with the building but shall not be demolished more than one floor below the floor being demolished.

c) ***3314.3*** *Detailed requirements.*

(1) Standpipes shall be installed in accordance with the provisions of Section 905.

(2) Exception: Standpipes shall be either temporary or permanent in nature,

and with or without a water supply, provided that such standpipes comply with the requirements of Section 905 as to capacity, outlets and materials.

E. Water Supply

1. An approved water supply shall be available as soon as combustibles are on site. Check approved plans for requirements (fire flow and hydrants). See Plan Review Engineer
2. IFC SECTION **3313** WATER SUPPLY FOR FIRE PROTECTION
   a) *3312.1 When required.*
      (1) An approved water supply for fire protection, either temporary or permanent, shall be made available as soon as combustible material arrives on the site. A temporary water supply shall be approved prior to combustibles arriving on site by the fire code official.
3. IFC City of Austin Local Amendments
   a) *507.3 Fire flow. Fire flow requirements for buildings or portions of buildings and facilities shall be determine in accordance with IFC Appendix B as amended.*
   b) *507.4 Water supply test. The fire department, emergency prevention division shall be notified prior to the water supply test. Water supply tests shall be witnessed by the fire department emergency prevention division.*
   c) *507.5.1 Where required. Where a portion of the facility or building hereafter constructed or moved into or within the jurisdiction is more than 400 feet (122 m) from the nearest hydrant on a fire apparatus access road or more than 500 feet (152 m) from secondary hydrants needed to supply the minimum fire flow, as measured by an approved route around the exterior of the facility or building, on-site fire hydrants and mains shall be provided where required by the fire code official.*
      (1) Exceptions:
         (a) For Group R-3 and Group U occupancies, the distance requirement shall be 600 feet (183 m).
         (b) For buildings equipped throughout with an approved automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2, the distance requirement for all required fire hydrants shall be 500 feet (152 m).
4. CITY OF AUSTIN FIRE PROTECTION RULE per COA Fire Protection Criteria Manual
   a) *IFC (LDC Chapter 25-12, Article 7), Reference Section 507*
      (1) When actual fire flow for a project is undetermined (e.g., when buildings are not yet defined), the fire flow shall not be less than the flow outlined in the table below:
   b) *TABLE 507-1 WATER SUPPLY DETERMINATION*

Occupancy/Use	Minimum Water Supply (gpm)
Residential, Single-Family, <3,600 sq ft	1,000
Residential, Single-Family, >=3,600 sq ft	2,500
Residential, Multifamily	3,500
Retail	3,500
Storage	3,500
Industrial	3,500

F. Extinguishers

1. IFC SECTION **3316** PORTABLE FIRE EXTINGUISHERS
   a) ***3316.1*** *Where required.*
      (1) Structures under construction, alteration or demolition shall be provided with not less than one approved portable fire extinguisher in accordance with Section 906 and size for not less than ordinary hazard as follows:
         (a) At each stairway on all floor levels where combustible materials have accumulated.
         (b) In every storage and construction shed.
         (c) Additional portable fire extinguishers shall be provided where special hazards exist including, but not limited to, the storage and use of flammable and combustible liquids.
   b) *TABLE 906.3(1) FIRE EXTINGUISHERS FOR CLASS A FIRE HAZARDS*

	LIGHT (Low) HAZARD OCCUPANCY	**ORDINARY (Moderate) HAZARD OCCUPANCY**	**EXTRA (High) HAZARD OCCUPANCY**
Minimum rated single extinguisher	2-A[c]	2-A	4-A[a]
Maximum floor area per unit of A	3,000 square feet	1,500 square feet	1,000 square feet
Maximum floor area for extinguisher [b]	11,250 square feet	11,250 square feet	11,250 square feet
Maximum travel distance to extinguisher	75 feet	75 feet	75 feet

G. Stairwells

1. Buildings exceeding 50 feet in height or four stories are required to provide at least one lighted stairway (temporary or permanent).
2. IFC SECTION **3312** MEANS OF EGRESS
   a) *[B]* ***3312.1*** *Stairways required.*
      (1) Where a building has been constructed to a building height of 50 feet or four stories, or where an existing building exceeding 50 feet in building height is altered, at least one temporary lighted stairway shall be provided unless one or more of the permanent stairways are erected as the construction progresses.
   b) ***3312.2*** *Maintenance.*
      (1) Required means of egress shall be maintained during construction and demolition, remodeling or alterations and additions to any building.

H. Waste Materials

1. Accumulations of combustible waste material shall be removed from the structure at the end of each work shift or more frequently if needed. Trash chutes require a safety plan.

I. Temporary Enclosures

1. Flame resistant tarpaulins or certified only. Shall be fastened securely so as not to be blown against heaters or other sources of ignition.

J. Heating Equipment

1. Check for proper ventilation and clearance

K. Hot Work and Welding

1. See NFPA 51B

L. Flammable Liquid Storage

1. See NFPA 30, NFPA 704

M. Fire Prevention Superintendent

1. See IFC Section 1408 Owner's responsibility for Fire protection

N. Sprinkler Systems

1. IFC SECTION **3315** AUTOMATIC SPRINKLER SYSTEM

   a) ***3315.1*** *Completion before occupancy.*

      (1) In buildings where an automatic sprinkler system is required by this code or the International Building Code, it shall be unlawful to occupy any portion of a building or structure until the automatic sprinkler system installation has been tested and approved, except as provided in Section 105.3.4.

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II. TCO Stocking, TCO Occupancy, and Fire Final

A. Conditional permits.

1. Where permits are required and upon the request of a permit applicant, the fire code official is authorized to issue a conditional permit to occupy the premises or portion thereof before the entire work or operations on the premises is completed, provided that such portion or portions will be occupied safely prior to full completion or installation of equipment and operations without endangering life or public welfare. The fire code official shall notify the permit applicant in writing of any limitations or restrictions necessary to keep the permit area safe. The holder of a conditional permit shall proceed only to the point for which approval has been given, at the permit holder's own risk and without assurance that approval for the occupancy or the utilization of the entire premises, equipment or operations will be granted.
2. TCO inspections are considered Fire Final inspections and any subsequent Fire Final inspections will incur a re-inspection fee based on current fee schedule.
3. The current codes adopted by AFD are listed on our website.

B. Temp to Stock (607, DSD system inspection item)

1. The building is not to be occupied for staff training, this is still considered a construction zone.
2. Approval allows for temporary stocking of furnishings and goods within a tenant finish out/ tenant improvement. NOT FOR OCCUPANCY
    - a) *Permanent power must be in place*
    - b) *Rated fire walls installed and approved*
    - c) *Sprinkler system hydro and visual inspections completed and approved*
        - (1) System must be complete and tied into city water
        - (2) An approved underground hydro for the fire line is required for all new work and must be approved through a Fire Line work type plumbing permit
    - d) *Drop ceiling or cloud ceiling installed and intact*
    - e) *As appropriate based on project, sprinkler system monitoring, water flow alarm, water flow bell installed, tested and approved*
    - f) *Fire Extinguishers installed (ABC, Dry Chem, and/or K Class as appropriate)*
    - g) *Building Address and/or Suite installed as required*
    - h) *If type 1 hood installed, suppression system must be inspected and approved with Class K extinguisher installed and report uploaded to TCE (see item n below)*
    - i) *Standpipe Recon completed and Flow Test completed approved (as applicable)*
        - (1) A minimum of 2 weeks lead time is required to obtain the resources necessary for completion of a Flow Test
    - j) *All potential obstructions to adequate building access are resolved (i.e. parking lots and driveways completed, etc.)*
    - k) *Private hydrants are functional*
    - l) *All MEP's have received Temp to Stock approval (minimum)*
        - (1) These approvals must be obtained prior to scheduling of Temp to Stock Inspection from Fire
    - m) *Carbon Dioxide Detection system tested and approved (as applicable)*
        - (1) For Systems >100 lbs, plans review and approval by AFD Hazmat Engineer is required prior to testing
        - (2) Systems >100 lbs require a hazmat permit, the application and fee must be processed prior to scheduling
    - n) *The Compliance Engine (TCE) uploads must be current*

(1) For properties in COA Full Purpose Jurisdiction: New fixed fire protection systems must have acceptance testing reports uploaded and accepted by AFD prior to TCO or Fire final inspections.

(a) *Sprinkler and standpipe systems must be in TCE prior to TCO Stocking*

(b) *Phasing and other case-specific conditions will be taken into consideration for TCO scheduling*

(2) Existing buildings must have no systems beyond 30 days overdue or deficient. Any systems overdue or deficient will be required to be repaired and have corrections and/or compliant reports uploaded prior to scheduling any TCO or Fire final inspection.

(3) See Section III for more on TCE

o) *Tenant improvements in Shell buildings- The shell building must have fire final approval before obtaining TCO for tenant improvement.*

3. What can be moved in prior to Temp to Stock being issued by the Building Dept.?

a) *Enclosed phone booths*

(1) These are NOT considered a furniture item and require both sprinkler and alarm coverage as applicable to the site.

(2) If they are not shown on the approved building permit set, they require a separate plan review for permit or a revision to be accounted for in the scope of work.

b) *Items shown on red-stamped approved building plans in hardline are allowed to be installed prior to TCO Stocking. HOWEVER:*

(1) Grey-lined items may NOT be moved in or installed

(a) *Furniture plans not considered during our inspections*

(b) *Exception: Enclosed phone booths need to be installed so that all appropriate fire protection systems can be installed and tested*

(2) All sprinkler work must be completed, inspected, and approved with active monitoring

(a) *Minimum of alarm testing for monitoring must be approved*

(b) *Modern building design allows for a particular fuel load based on the installation and proper operation of life safety systems such as automatic sprinkler and fire alarm systems. For the protection of responding emergency personnel, we cannot allow additional fuel load (i.e. furniture) to be added to the base structure without the required automatic sprinkler protection being placed into service.*

(3) Building inspector must approve the installation

c) *Common items allowed:*

(1) Cubicles as needed for EP

(a) *NO computers, furniture, desks, printers, etc. until Building Inspector passes and approves TCO Stocking*

(2) Gym equipment (metal, floor-bolted)

C. Temp to Occupy (608, DSD system inspection item)

1. Allows for either full use or a portion (known as a phased TCO) of a building to be occupied by the general public. Note: A phased TCO is used when occupancy is requested in a portion of several separate areas under construction (ex. High rise building, large apartment complex).

2. All Temp to Stock Items, plus:

a) *Emergency Lighting installed and approved*

b) *Exit signage installed and approved*

c) *Emergency phones installed and approved (as applicable)*

d) *Generator tested and approved (as applicable)*

(1) Generator is NOT to be fueled until Fuel Tank Inspection has been completed and approved

e) *Egress pathways unobstructed*

f) *Panic hardware installed (as applicable)*

g) *Sprinkler System completed, inspected, approved, and current in TCE (System is tagged and in service)*

h) *Alarm System fully installed, tested, approved, and current in TCE (System is tagged and in service)*

i) *Access control/delayed egress system plans approved, installed, and tested*

j) *Duct smoke detectors (when not tied into an alarm) are ready to be tested with canned smoke; please ensure HVAC assistance knows they will not be allowed to use magnets.*

k) *Elevators tested and approved (as applicable)*

(1) Elevator inspections to be scheduled after TDLR certificate is approved

l) *All MEP's have received Temp to Occupy approval (minimum)*

(1) These approvals must be obtained prior to scheduling of Temp to Occupy Inspection from Fire

m) *Construction near completion (only minor trim work remaining)*

n) *Hi Rise Buildings-*

(1) Stairwell Pressurization tested and approved

(2) Sequence Testing inspected and approved

o) *Tenant improvements in Shell buildings- The shell building must have fire final approval before obtaining TCO for tenant improvement.*

p) *The Compliance Engine (TCE) uploads must be current*

(1) For properties in COA Full Purpose Jurisdiction: New fixed fire protection systems must have acceptance testing reports uploaded and accepted by AFD prior to TCO or Fire final inspections.

(a) *Phasing and other case-specific conditions will be taken into consideration for TCO scheduling*

(2) Existing buildings must have no systems beyond 30 days overdue or deficient. Any systems overdue or deficient will be required to be repaired and have corrections and/or compliant reports uploaded prior to scheduling any TCO or Fire final inspection.

(3) See Section III for more on TCE

D. Fire Final (609, DSD system inspection item)

1. Prior to the approval of fire final, a property that has been identified as having to supply an Emergency Responder Radio Communication System (ERRCS/DAS) must have an approved system installed and tested by the Austin Wireless Division and the Austin Fire Department.

a) *Buildings **with** wired firefighter communication phones will be allowed to obtain a temporary occupancy (TCO-Occupancy) but will not receive approval for full fire final until the ERRCS/DAS has been installed and approved.*

b) *Buildings **without** wired firefighter communication phones will not be allowed to obtain any level of occupancy prior to the installation and approval of the ERRCS/DAS.*

2. The last Fire inspection required to satisfy the building permit requirement for life safety inspection. Approval of this Inspection allows for a contractor to schedule a Building Department Final Inspection to close a permit

3. All items listed under Temp to Stock and Temp to Occupy plus:

a) *Construction complete (space is cleaned and "tenant ready")*

b) *All MEP's are closed*

c) *Knox Box installed and/or other building access features tested and approved (as required)*

d) *The Compliance Engine (TCE) uploads must be current*

(1) New fixed fire protection systems must have acceptance testing reports uploaded and accepted by AFD prior to Fire final inspections.

(2) Existing buildings must have no systems beyond 30 days overdue or deficient. Any systems overdue or deficient will be required to be repaired and have corrections and/or compliant reports uploaded prior to scheduling any TCO or Fire final inspection.

(3) See Section III for more on TCE

e) *Fire Lane markings installed and approved*

f) *Private hydrants certified and appropriate documentation provided*

g) *FDC locking caps installed if applicable*

h) *Signs and Labeling - All of the following must be labeled for Fire Final Approval if applicable*

(1) FDC

(a) *The placard text shall be white reflective letters, 1.5" minimum height, (AFD has been asking 2"), on red background. The Placard shall contain the following information.*

(i) *Required pressure*

(ii) *Area supplied by the FDC*

(iii) *Location of any PRVs*

(b) *The template is as follows:*

(i) *PUMP XXX PSI XXX is the churn pressure*

(a) You get this information when you run the pump.

(ii) *FDC SERVES ALL STANDPIPES / SPRINKLERS*

(a) Please have your Sprinkler Company map out what each FDC serves

(iii) *PRVS ON FLOORS X-XX*

(a) Please find out what floors have PRV'S.

(b) These are the Pressure reducing valves in the stairwells that we will connect our fire hose to during a fire.

(c) *Some signs may be larger depending on the information required to describe what the FDC serves. Description can be detailed:*
FDC SERVES EAST STANDPIPE, LOW RISE PART OF OFFICE AND PARKING GARAGE

(d) *Also indicate which floors have Pressure Reducing Valves on the Fire Department Hose Connection in the stairwells.*

(e) *Sign should look like this: Demo Only*
PUMP 225 PSI
FDC SERVES ALL STANDPIPES / SPRINKLERS
PRVS FLOORS P2-8

(2) FACP
(3) Elevator Control Rooms
(4) Gas Meters
(5) Electrical Shutoffs
(6) Address/Suite #’s
(7) Sprinkler Riser Room
(8) Boiler Room
(9) Stairwell (Roof/No Roof Access)
(10) Wayfinding Signs (map of complex with above items listed marked on map)

E. Knox Products / Knox Boxes

1. Ordering instructions (PDF link)
   a) *Step 1:*
      (1) Knox boxes: knoxbox.com/ausitnfire-boxes
      (2) FDC locks, Gate & Key switches, Padlocks: knoxbox.com/austinfire
   b) *Step 2:*
      (1) Choose product and add to cart or configure. Or, to enter a specific model number, use the search by product model search box. Enter installation address and proceed with checkout.
   c) *Step 3:*
      (1) Once order has been reviewed, an email with a secure cart link will be sent to complete the purchase.
2. When the boxes mounted and keys are ready to be locked inside, please email to schedule an appointment: AFDKnox@austintexas.gov
3. It is the responsibility of Property Mgt. to keep the building keys up-to-date for AFD access. Please contact AFDknox@austintexas.gov when updates are needed.
4. All structures or properties in which access is made difficult due to physical barriers (i.e. gates, fences, bollards, etc.) or where required by Fire Code in commercial structures in which (monitored) fire protection systems are installed shall provide a COA approved key box or key switch, as applicable, with proper keys to gain access to the structure or property. If there are restrictions on vehicle egress from sites, these requirements shall apply to all such egress gates as well.
5. MOUNTING INSTRUCTIONS:
   a) *Location of the key box shall be at or near the primary Fire Dept. access (ADDRESS SIDE) into the building/project. This should be in a visible location to the responding AFD units and provide the closest access to the FACP (Fire Alarm Control Panel).*
   b) *Mounted no higher than 4-6 feet from ground level (AFD should not have to use a ladder to reach the box).*
   c) *An exception to this preferred placement would be to mount the box next to the Riser Room door, if the FACP is located in it or a second box is required due to the size of the building.*
6. ADDITIONAL INFO:
   a) *Confirm that all the keys being placed in the box have been tested and work!*
   b) *Make sure the Knox box is mounted correctly by maintenance personnel. The drain hole on the box should face the ground, do not mount the box upside down or on its side to fit it on columns or posts.*

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III. The Compliance Engine (TCE) – current FPS Permit system program

A. For properties in COA Full Purpose Jurisdiction only.

1. Properties in Limited Purpose Jurisdiction (LTD) will send their reports to the local AHJ / ESD for the area (many also use TCE). Systems in this jurisdiction type will not upload to AFD's TCE as they do for Full Purpose sites.
2. Use the Property Profile map to determine the site's status: https://www.austintexas.gov/GIS/PropertyProfile/
    a) *The Address Search will produce a list of items for the address entered, the "Annexation History" section will show the property's designation (Full/LTD/ETJ)*

B. Acceptance Testing

1. All installations of:
    a) *Automatic Closing Fire Assemblies*
    b) *Fire Pump*
    c) *Fire Alarm*
    d) *Sprinkler (annual and 5 year inspection)*
        (1) The first upload will be done twice to account for each type separately
    e) *Standpipe (annual and 5 year flow test)*
        (1) The first upload will be done twice to account for each type separately
    f) *Kitchen Hood Suppression*
    g) *Clean Agent*
    h) *Foam System*
    i) *Paint/Spray Booth Suppression*
    j) *Smoke Control*
2. Following the completion and approval of the System Acceptance Test with AFD, the installing contractor is required to upload the test results to The Compliance Engine (TCE) website.
    a) *Acceptable documentation includes:*
        (1) AFD inspection report
        (2) Typed inspection report from your company
        (3) Form that is also submitted to State of Texas for new installs
    b) *NOT accepted: Handwritten reports and pictures of inspection tags*
3. To upload the report:
    a) *Log in to the TCE website: www.thecomplianceengine.com*
    b) *Select 'Enter Report'*
    c) *Search for the address. If the address does not exist, select 'Create a new premise'*
    d) *For 'Inspection Report Template' select: A – Acceptance Testing Documentation – System Type*
    e) *'Inspection Date' is the date of acceptance test, not the date the report is entered*
4. If reports have not been uploaded, reviewed and approved, into the system, then TCO and Fire Final inspections will be held until TCE is compliant.

C. Annual reports and deficiencies

1. All of the systems listed above are required to be reported through TCE for all deficiencies, repairs, and annual inspections (with hoods occurring every six months).
2. It is the expectation of AFD that all fire protection system contractors be responsible for their reporting through the use of TCE.

3. If reports have not been uploaded, reviewed and approved, or corrections entered into the system, then TCO and Fire Final inspections will be held until TCE is compliant.

D. For questions regarding The Compliance Engine (TCE)

1. AFD Procedures and/or requirements:
    a) *512-974-0160 x 4*
    b) *AFDcompliance@austintexas.gov*
2. For technical support with the TCE website:
    a) *630-413-9511*
    b) *support@mybrycer.com*

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IV. Phasing Plan Guidelines

A. Prior to requesting occupancy within the phase:

1. Vertical and horizontal fire separations between the occupied phase and other phases shall be approved, completed, and accepted.
2. Any required standpipe system in the occupied or adjacent unoccupied phases shall be approved, tested, and accepted.
3. The required automatic sprinkler system throughout the occupied phase and adjacent unoccupied phases shall be approved, tested, and accepted; electronically supervised, and monitored. Sprinkler piping supplying the occupied phase shall not be located in an incomplete phase. Sprinklers in the adjacent unoccupied phase must be capped during work that would damage the sprinklers (such as sanding and painting), and the caps must be removed immediately after the work is done in that area and caps must be removed overnight.
4. Required fire alarm system throughout the occupied phase shall be approved, tested, and accepted; the fire alarm panel, and unprotected wiring serving an occupied phase shall not be located in an incomplete phase. For each new phase, 10% of the previous phase must be re-tested and any failure in the previous phase shall cause a 100% re-test of previous phases.
5. Any required elevator shall be approved, tested, and accepted, including phase I and II emergency service, by Texas Department of Licensing and Registration (TDLR) and the City of Austin.
6. Required exiting (minimum, 2) shall be approved and accepted, from any part of the occupied phase to the public way without entering an incomplete phase, or unfinished area of the site. Barriers erected at the boundary of the phase shall not create a dead-end corridor greater than 20’ except 50’ shall be allowed in B, E, F, I-1, M, R-1, R-2, S and U occupancies sprinklered per NFPA (not 13R), per amended IBC 1018.4.
7. The accessible means of egress shall be approved and accepted to the public way. If required for accessible means of egress, the elevator serving the phase shall be approved by TDLR and the City of Austin.
8. Signage shall be provided at any door from occupied phase to incomplete phase indicating “Danger, construction area, authorized personnel only.”
9. The exterior building envelope for all phases shall be an approved water-resistive barrier, and there shall be no overhead hazards in the occupied phase.
10. Fire department access roads and private fire hydrants shall be completed and accepted.
11. Fire department connections serving the phase shall be maintained visible and accessible.
12. There shall be no exposed framing in the occupied phase or adjacent phases.
13. Fire department building access opening serving the phase shall be accessible and approved, including key boxes with keys for: main doors, mechanical rooms/closets, fire control rooms or fire panel location, elevators, and any other areas that may require after hours emergency entry.
14. The accessible public entrance for the phase shall be approved.
15. The phasing plan be submitted with the fire sprinkler and fire alarm shop drawing.

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V. High-Rise Order of Inspections

A. Required Inspections for Shell Certificate of Occupancy

1. The third party Special Inspection Agency Report (SIA-R) to be approved by AFD prior to shell building approval.
    a) *The SIA-R must be submitted for review to AFD once it has been approved by the engineer of record.*
    b) *The time period for AFD review of the SIA-R is twenty-one days. This additional time requirement should be scheduled into the construction calendar.*
    c) *No stocking of TI spaces will be allowed prior to approval of the SIA-R and a complete fire emergency systems inspection by an AFD inspector on both facility and emergency power.*
2. Sprinkler visual and hydrostatic testing on all shell building piping to include standpipe and horizontal piping from the FDC's.
3. Approved Hazardous Materials Inspection by an AFD Hazmat engineer.
    a) *A Hazmat Permit is required prior to allowing diesel to be added to the generator tank. In addition to an approved Hazmat Permit, the floor the generator is located on must be covered by sprinkler protection and the water flow must be monitored. Pressure for the sprinkler system should be adequate with City water supply. Monitoring must be third-party and monitored off-site. This can be done by temporary means until the full alarm system has been installed.*
4. Generator Load Bank Test (This is done by a third-party and not witnessed by AFD)
5. The Standpipe Reconnaissance Inspection should be done prior to scheduling the Fire Pump Acceptance Test if the contractor intends to schedule the Pump Test and the Standpipe Flow Test on the same day.
    a) *The Standpipe Recon will gather all the needed information to perform the Standpipe Flow Test as well as ensuring that the site is adequately prepared to accommodate AFD apparatus and firefighters. At a minimum, all site work in the vicinity of the FDC's should be complete and clear of obstructions including overhead scaffolding.*
6. The Pump Acceptance Test will not be scheduled until the generator load bank test has been reviewed by an AFD engineer
7. The Standpipe Flow Test may be scheduled on the same day as the pump acceptance test.
    a) *Scheduling for the Standpipe Flow Test is always at least two weeks out to accommodate the logistical issues involved with getting one (or two) fire engine companies to assist.*
8. PRV Testing shall be completed after the Standpipe Flow Test.
9. Stairwell Pressurization Testing (This is done by an AFD approved third-party vendor and may be attended by the AFD inspector).
    a) *Stairwell Pressurization results and the Special Inspection Report shall be approved by the engineer of record and then passed on the AFD Engineering for review. The review process may take as long as three weeks once the report has been uploaded and accepted into The Compliance Engine.*
10. Alarm Testing may begin once the area being tested is "dust free" in accordance with NFPA 72 Chapter 17.7.1.11.3. All general alarms and supervisory alarms are to be tested on facility power to include the following systems:
    a) *Sprinkler Related Alarms – Tampers and Flows, Dry System Flows, Hi/Low Alarms and Trip Tests, Pre-Action Systems and Pollution Control Systems.*
    b) *Mechanical Related Alarms – All devices related to the activation of the stairwell pressurization system, and all duct detectors and associated fire smoke dampers.*
    c) *Fire Alarm System – All initiating devices and associated notification devices. Magnetic door holders must also be inspected at this time if they haven't been already.*

If any kitchen hoods are on the building shell alarm plans, they must be tested as well.

d) *Elevator Recall – Once the TDLR State Elevator Inspector has approved all elevators in a shaft, elevator recall inspections can be scheduled. All elevators in the shaft must be operational and available at the time of inspection and an elevator technician must be available for assistance.*

e) *Fire Phones – All fire phones are required to be installed and tested.*

f) *Area of Refuge Phones – Area of Refuge phones must be tested for connectivity to the Fire Control Room as well as third-party monitoring.*

11. Generator Transfer Test – This can be done on the same day as the AFD Sequence Test. A generator technician must be on site and available for this test.

12. AFD Sequence Test

    a) *A more detailed operating procedure may be requested.*

    b) *All power will be dropped at the switch-gear and all emergency systems will be tested on generator power. The following technicians will be required to be available during this test:*

        (1) Sprinkler Technician – This person will need to be available for pump issues.

        (2) Alarm Technician – At least two alarm technicians should be available.

        (3) Generator Technician – This should be an actual generator technician from the generator vendor.

        (4) Elevator Technician – Someone who know how the elevators are supposed to run on generator power.

        (5) Electrician – Normally one electrician that can answer system questions and one that can make repairs on the spot.

        (6) Mechanical Representative & Technician – Normally one that can answer specific questions related to the building being tested and one that can make repairs on the spot.

        (7) General Contractor – At least three representatives from the General Contractor with radios for communication.

    c) *Test processes and expectations:*

        (1) Locate ATSs and main disconnects. ATSs should be labeled for what devices they control, if not in a common location there should be a map in the FCR with their locations and what they control. If multiple generators same rules.

        (2) Send all elevator cabs away from lobby, kill power to the building:

            (a) HR should pick up power within 10 seconds

            (b) Make sure elevators drop to lobby on power loss

        (3) Restore power, generator will have cool down setting, norm is 15 minutes.

        (4) Simulate sprinkler head going off on random floor:

            (a) Ensure WF hits panel

            (b) Floor above, floor below, floor of alarm activation

            (c) Stair press fan activation

            (d) Any associated mechanical fire barriers activate (Won doors, fire shutters, FSDs, smoke shutter, elevator shaft fans)

            (e) Elevator recall

        (5) Activate general alarms on other floors.

            (a) At some point during this process check the VFD for stair press fans for baseline

            (b) Open stair well doors to ensure fan ramps up and down as you make changes, this can be verified by checking the VFD if needed

(6) At some point before all floors have been activated, kill power to the building using main disconnect:

(a) This is best done by working top to bottom

(b) Verify alarm devices, and emergency lights on floors are working on generator power.

(c) Continue alarm activations and verifying EM coverage until whole building is in alarm

(d) Check fire phones, AOR boxes

(7) With entire building in alarm test elevators on emergency power

(a) Use selector in FRC to prove emergency power to each elevator cab as designed

(8) Kill ATS to Fire pump and flow water

(a) Use ATS on Fire Pump Controller to run pump on generator power

(b) Flow water to make pump work harder (250-1000 gpm)

B. Miscellaneous Items for Stocking

1. In addition to all of the shell building fire emergency system testing, the following details will have to be addressed to ensure firefighter access and indication of critical areas:

a) Sprinkler system control valves must all be opened.

b) Fire Alarm system must be monitored off-site – A point of contact for the General Contractor must be provided to the monitoring company.

c) Knox Box – A Knox Box with keys to access the building, pump room, Fire Control Room and elevator penthouse.

d) Signs for Critical Areas – These signs can be temporary or permanent:

(1) Fire Command Center

(2) Fire Pump Room – Include directional signs if access is not directly located at the right of way.

(3) Fire Riser Room – Signs provided for all rooms that contain a dry system valve and a description for what the valve supplies.

(4) Generator Room – Must display the appropriate 704 diamond outside of the room.

(5) Main Electrical Service Disconnect

(6) Elevator Machine Room

(7) Chemical Storage Areas – Including the chemical name and associated 704 diamond.

e) All extinguishers must be installed and tagged current.

f) Stocking related trash must be removed on a daily basis.

C. Additional requirements for approval of Temporary Certificate of Occupancy and Fire Final

1. Once the SIA-R has been approved and complete testing of the fire emergency systems has been completed on both facility and emergency power, a temporary certificate of occupancy for stocking can be approved for TI spaces that have been completed. However, no level of occupancy (temporary or final) will be approved until the following requirements for base building have been completed:

a) Egress – Prior to receiving occupancy, clear egress from building must be provided. This includes but is not limited to construction fencing and traffic control devices.

b) Permanent building key cores must be installed prior to fire final.

c) Access Control - If access control will be installed by the owner, temporary occupancy can be approved but final inspection will not be approved until the system has been *approved and door releases on both general alarm and button on the alarm panel have been confirmed.*

d) *Knox Gate Switch – If gates are to be installed that would prevent ingress or egress, a Knox Gate Switch will need to be supplied. Operation of the gate switch will need to be tested on both facility and emergency power.*

e) *Fire Command Center – The area designated as the Fire Command Center must be complete and supplied in accordance with the 2015 International Fire Code section 508 including but not limited to the following items:*

(1) Box including 6 fire phones (unless Emergency Responder Radio Coverage is provided in accordance with 2015 IFC section 510 at the time of commissioning)

(2) Secure box with 10 sets of building keys including a master hard key, master key card and FEOK1 fire recall key for elevators.

(3) Document box including all building fire alarm plans with appropriate detail to show the location of the pump room, remote dry system valves, electrical rooms and mechanical rooms.

(4) A work table with two chairs

(5) Building information card that includes the following information, but is not limited to:

(a) General building information including building name, address, number of floors above and below grade and estimated building population at both day and night.

(b) Building emergency contact information including the building manager and building engineers phone number and email address.

(c) Location of all exit access stairways

(d) Location and quantities of all site hazardous materials.

(e) Additional requirements are detailed in NFPA 72.

D. Office Tenant Finish Note

1. When can construction on tenant improvements (TI) begin? This is most often the first question asked when building a high-rise B occupancy shell. TI finish outs can begin once building plans have been approved and permits have been issued for the work areas being request with the following criteria:

a) *Sprinkler and Alarm Contractors must be the same as the base building.*

b) *TI contractors agrees not to demo any shell building fire safety components (initiation, notification, and smoke control) prior to testing.*

c) *In the event that shell components are demoed prior to testing, the shell will not be approved until the components are replaced.*

d) *No TI spaces will be issued any level of TCO (including stocking) prior to the completion of the shell building.*

E. Residential Phasing Note

1. Because of the fast paced nature of construction in Austin, it’s very common for residential (R-1 & R-2) occupancies to be “phased” while still under construction. This is an accepted practice, however, no floors will be allowed occupancy until the completion and acceptance of the building shell. This means that the building must be topped out and the exterior envelop must be fully enclosed. In addition, the core and corridors from bottom to top must be complete. This is required for stairwell pressurization testing. All initiating and notification devices on all floors must be installed and tested. This is important to note because these areas need to be at a level of completion to comply with NFPA 72 Section 17.7.1.11.3 which states that all other construction trades must be off the floor and completed clean-up prior to installation. If this provision cannot be met, an agreement

between the general contractor and the alarm contractor that will address the level of degradation that will require replacement prior to acceptance. (This is commonly 80%) A sensitivity report will be required for this reason upon building completion.

2. Required Inspections in Preferred Order for Temporary Certificate of Occupancy to Stock (TCO-Stocking) – If the project is mixed use (Both R-1 & R2) there are some additional considerations that must be addressed prior to stocking. Hotels require significant time to stock prior to initially opening for business. For this reason, General Contractors should allow adequate time for testing prior to receiving approval for a TCO-S. Stocking items that require inspection from other trade inspectors such as hard wired, limited combustible furniture is acceptable with prior approval from the AFD Fire Chief. No stocking of unapproved items will be approved in any part of the building until the shell building has been 100% tested and approved for all emergency systems on both facility and emergency power.

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