# Utah State
# Fire Marshal's Office

## Sprinkler
## Technician III

## (Foam-Water Sprinkler Systems
## Foam-Water Spray Systems &
## Water Spray Fixed Systems)

## Certification Program

| Task Book Assigned to: |
| --- |
| Individual's Name, Company Name |
| Date Issued by State Fire Marshal's Office |

***The material contained in this book accurately defines the performance expected of the position for which it was developed. This task book is approved for use as a position qualification document in accordance with the instructions contained herein.***

# EVALUATOR

DO NOT COMPLETE THIS UNLESS YOU ARE RECOMMENDING THE APPLICANT FOR CERTIFICATION

VERIFICATION OF COMPLETED TASK BOOK FOR THE POSITION OF

***Sprinkler Technician Level III***

FINAL EVALUATOR'S VERIFICATION
I verify that all tasks have been performed and are documented with appropriate initials.

_____

FINAL EVALUATOR'S SIGNATURE AND DATE

_____

EVALUATOR'S PRINTED NAME, TITLE, BUSINESS NAME, AND PHONE NUMBER

_____

FINAL EVALUATOR'S SIGNATURE AND DATE

_____

EVALUATOR'S PRINTED NAME, TITLE, BUSINESS NAME, AND PHONE NUMBER

_____

FINAL EVALUATOR'S SIGNATURE AND DATE

_____

EVALUATOR'S PRINTED NAME, TITLE, BUSINESS NAME, AND PHONE NUMBER

# UTAH STATE FIRE MARSHAL
# TASK BOOK for

# SPRINKLER TECHNICIAN III

Task Books (TB) have been developed for this position to meet the requirements as established in Utah Code R710-5 as administered by the Utah State Fire Marshal's office. Each Task Book lists the performance requirements (tasks) for the specific position in a format that allows an applicant to be evaluated against written guidelines. Successful performance of all tasks, as observed and recorded by an evaluator, will result in a recommendation to the State Fire Marshal's Office that the applicant is eligible to be certified as a Technician III.

Evaluation and confirmation of the applicants performance of all the tasks may involve more than one evaluator. All bullet statements within a task which require an action (contain an action verb) must be demonstrated before that task can be signed off. A more detailed description of this process, definitions of terms, and responsibilities are included in NFPA 25.

The Company is responsible for:

- Selecting technician candidate that meet its needs and meet employment requirements.
- Ensuring that the technician candidate meets the training and experience requirements included in the prerequisites for this certification.
- Initiating Task Books to document task performance.
- Explaining to the technician candidate the purpose and processes of the Task Book as well as the applicants responsibilities.
- Providing opportunities for evaluation and/or making the technician candidate available for evaluation.
- Providing an evaluator for assignments.
- Tracking progress of the technician candidate.
- Confirming Task Book completion.
- Determining eligibility and recommendation for examination.

The Technician Candidate is responsible for:

- Reviewing and understanding instructions in the Task Book.
- Identifying desired objectives/goals.
- Providing background information to an evaluator.
- Satisfactorily demonstrating completion of all tasks for an assigned position.
-
- Assuring the Evaluation Record is complete.

- Notifying company personnel when the Task Book is completed and providing a copy.

- Keeping the original Task Book in personal records.

The Evaluator is responsible for:

1- Understanding the Sprinkler Technician task book, examination and certification program.

2- Being qualified and proficient in the systems being evaluated.

3- Meeting with the technician candidate and determining past experience, current qualifications, and desired objectives/goals.

4- Reviewing tasks with the technician candidate.

5- Explaining to the technician candidate the evaluation procedures that will be utilized and which objectives may be attained.

6- Identifying tasks to be performed during the evaluation period.

7- Accurately evaluating and recording demonstrated performance of tasks. Satisfactory performance shall be documented by dating and initialing completion of the task.

The Final Evaluator is responsible for:

1- Signing the verification statement inside the front cover of the Task Book when all tasks have been initialed and if the technician candidate is recommended for examination.

**Technician Level III Tasks**
**Water Spray Fixed Systems, Foam Water Sprinkler Systems & Foam Water Fixed Systems**

| Tasks | Explain in detail how task was performed and why. | Business Address where task was completed | Evaluator Initial, Certification #, and date upon completion of task |
|---|---|---|---|
| **Water Spray Fixed Systems.** | | | |
| Determine location of system riser or control valve and if it meets standards. | | | |
| Determine if system or hazard has been modified or changed since last inspection. | | | |
| Determine what hazard is being protected. | | | |
| Determine if valves are properly supervised. | | | |
| Determine if water supply is adequate for system. | | | |
| Determine if fire pumps support system. If so, has pump been inspected and tested. | | | |
| Determine if fire department connection supplies system. If so, does FDC meet inspection requirements? | | | |
| Determine if mainline strainers have been flushed. | | | |
| Determine if nozzle strainers have been removed, cleaned and inspected. | | | |
| Determine what precautions are needed before discharge testing. | | | |
| Determine type of detection system and testing requirements of | | | |

| **Tasks** | **Explain in detail how task was performed and why.** | **Business Address where task was completed** | **Evaluator Initial, Certification #, and date upon completion of task** |
|---|---|---|---|
| each. | | | |
| Verify detection system is adequately installed and functional. | | | |
| Determine spray nozzle condition. | | | |
| Determine piping condition. | | | |
| Determine pipe hangers' condition and location. | | | |
| Determine if rubber gasketed fittings are adequately protected. | | | |
| Determine condition of water gauges. | | | |
| Determine if riser location is subject to freezing conditions. If so, what precautions have been taken to maintain riser from freezing. | | | |
| Conduct full flow operational test per automatic detection system. | | | |
| Conduct full flow operational test per manual discharge. | | | |
| Determine response time of detection system and verify that it is within acceptable limits. | | | |
| Determine time lapse between detection system operation and water delivery at the nozzles. | | | |
| Verify pressure at hydraulically remote nozzle. | | | |
| Verify residual pressure at deluge valve with system flowing. | | | |

| **Tasks** | **Explain in detail how task was performed and why.** | **Business Address where task was completed** | **Evaluator Initial, Certification #, and date upon completion of task** |
|---|---|---|---|
| Determine discharge pattern of nozzles. Are they providing adequate coverage? | | | |
| Verify nozzle caps or plugs are in place and free to operate. | | | |
| Verify low point drains have been opened and drained. | | | |
| Verify weep holes are open and free of obstructions. | | | |
| Perform internal inspection on deluge valve. | | | |
| Operation of control valves from full open to full closed. How many turns did it take? | | | |
| Perform proper main drain test and record results. | | | |
| Compare main drain test results with prior years and determine if water supply is deteriorating. | | | |
| Verify mainline strainer has been removed and internally inspected every 5 years. | | | |
| On ultra-high speed systems verify all detectors are cleaned and in full operation. | | | |
| On ultra-high speed systems verify response time with system requirements. Never greater than 100 milliseconds. | | | |
| Verify the ability to trip | | | |

| Tasks | Explain in detail how task was performed and why. | Business Address where task was completed | Evaluator Initial, Certification #, and date upon completion of task |
|---|---|---|---|
| and reset a deluge riser with pneumatic detection. | | | |
| Verify the ability to trip and reset a deluge riser with hydraulic detection. | | | |
| Verify the ability to trip and reset a deluge riser with electric fixed temperature detectors. | | | |
| Verify the ability to trip and reset a deluge riser with electric rate of rise detectors. | | | |
| Verify the ability to trip and reset a deluge riser with electric linear detection. | | | |
| Verify the ability to trip and reset a deluge riser with electric UV/IR detection. | | | |

| Tasks | Explain in detail how task was performed and why. | Business Address where task was completed | Evaluator Initial, Certification #, and date upon completion of task |
|---|---|---|---|
| **Foam Water Sprinkler Systems** | | | |
| Determine if original installation drawings and calculations are on the premises as required by standards. | | | |
| Determine if previous year's inspection and testing records are on site as required by standards. | | | |
| Determine if occupancy has changed since the last inspection. | | | |
| Determine if the use or process of building has changed since the last inspection. | | | |
| Determine if storage configuration has changed since the last inspection. | | | |
| Determine if the building has been remodeled or changed since the last inspection. | | | |
| Determine if the system has been in continuous service since the last inspection | | | |
| Determine if proper notification has been given to AHJ, alarm company etc. before testing. | | | |
| Determine location of system riser or control valve and if it meets standards. | | | |
| Determine if all identification signs are in place and legible. | | | |

| Tasks | Explain in detail how task was performed and why. | Business Address where task was completed | Evaluator Initial, Certification #, and date upon completion of task |
|---|---|---|---|
| Determine what hazard is being protected. | | | |
| Determine if valves are properly supervised. | | | |
| Determine if water supply is adequate for system. | | | |
| Is a hydraulic nameplate on the riser? Is it legible? | | | |
| Complete a visual inspection of the sprinklers from floor level. | | | |
| Verify sprinklers do not show signs of leakage. | | | |
| Verify sprinklers are free of corrosion. | | | |
| Verify sprinklers are free of foreign materials. | | | |
| Verify sprinklers are free of paint. | | | |
| Verify sprinklers are free of physical damage. | | | |
| Verify sprinklers are in the proper orientation. | | | |
| Verify sprinklers are free from unacceptable obstructions to spray patterns. | | | |
| Verify the proper number of sprinklers and type in the head box. | | | |
| Verify a sprinkler wrench is available for each type of sprinkler. | | | |
| Complete a visual inspection of the pipe and fittings from floor level. | | | |
| Verify pipe and fittings are free of mechanical damage. | | | |

| **Tasks** | **Explain in detail how task was performed and why.** | **Business Address where task was completed** | **Evaluator Initial, Certification #, and date upon completion of task** |
|---|---|---|---|
| Verify pipe and fittings are free from leakage. | | | |
| Verify pipe and fittings are free from corrosion. | | | |
| Verify pipe and fittings are free from misalignment. | | | |
| Verify pipe and fittings are free from external loads by materials resetting on or hanging from the piping. | | | |
| Complete a visual inspection on the hangers and seismic bracing from floor level. | | | |
| Verify that hangers or seismic bracing is not loose or damaged. If so, replace or reattach. | | | |
| Verify gauges are in good condition. | | | |
| Verify gauges on gridded systems are provided with a relief valve. | | | |
| Verify alarm devices are free of physical damage. | | | |
| Verify sprinklers installed before 1920 are replaced. | | | |
| Verify when sprinklers have been in service for 50 years they have been tested or replaced. Test procedures shall be repeated at 10 year intervals. | | | |
| Verify when fast response sprinklers have been in service for 20 years they have been tested or replaced. Test procedures | | | |

| Tasks | Explain in detail how task was performed and why. | Business Address where task was completed | Evaluator Initial, Certification #, and date upon completion of task |
|---|---|---|---|
| shall be repeated at 10 year intervals. | | | |
| Verify solder-type sprinklers with temperature of 325°F have been tested at 5 year intervals. | | | |
| Verify when sprinklers have been in service for 75 years they have been tested or replaced. Test procedures shall be repeated at 5 year intervals. | | | |
| Verify that dry sprinklers that have been in service for 10 years have been tested or replaced. If maintained they shall be retested at 10 year intervals. | | | |
| Verify sprinklers in harsh environments, corrosive atmospheres or corrosive water supplies have been tested or replaced on a 5 year basis. | | | |
| Verify gauges have been replaced or calibrated within the last 5 years. Calibration accurately within 3% of full scale. | | | |
| Verify before opening any test or drain valves there is adequate provisions for drainage. | | | |
| Operation of control valves from full open to full closed. How many turns did it take? | | | |
| If a Post Indicator Valve (PIV) is installed verify | | | |

| Tasks | Explain in detail how task was performed and why. | Business Address where task was completed | Evaluator Initial, Certification #, and date upon completion of task |
|---|---|---|---|
| the rod has not become detached from the valve. | | | |
| Verify alarm device activation by opening and flowing inspectors test. | | | |
| Verify water motor alarm is operating properly and free of any debris. | | | |
| Perform a proper main drain test and record the results. | | | |
| Verify the main drain test complies within accepted variances from previous tests and original commissioning test. | | | |
| Verify internal inspection on alarm valves have been completed every 5 years unless tests indicate a greater frequency is necessary. | | | |
| Verify internal inspection on deluge valves have been completed annually unless tests indicate a greater frequency is necessary. | | | |
| Verify strainers, filters and restricted orifices are inspected internally every 5 years. | | | |
| Verify internal inspection on check valves have been completed every 5 years to verify all components operate correctly, move freely, and are in good condition. | | | |
| Determine foam type and concentrate percentage. | | | |

| **Tasks** | **Explain in detail how task was performed and why.** | **Business Address where task was completed** | **Evaluator Initial, Certification #, and date upon completion of task** |
|---|---|---|---|
| Verify type of foam proportioning system, i.e. balanced pressure pump proportioning, bladder tank, In-line balanced pressure proportioning, line proportioning and around the pump proportioning systems. | | | |
| Perform detection activation test on foam system with no flow. | | | |
| Perform visual inspection on exterior of foam tanks for corrosion. | | | |
| Verify water control valves on foam tank are in the correct position. | | | |
| Verify the pressure vacuum vent is operating freely. | | | |
| Verify if foam is in the water surrounding the bladder in tank. | | | |
| Verify the amount of foam concentrate in the tank. | | | |
| Collect and set up sample foam mixtures for baseline comparison. | | | |
| Perform a foam discharge test and obtain solution samples. | | | |
| Determine residual pressure at remote line. | | | |
| Verify alarms and auxiliary equipment shutdowns. | | | |
| Determine foam concentration levels from samples taken during test. | | | |

| **Tasks** | **Explain in detail how task was performed and why.** | **Business Address where task was completed** | **Evaluator Initial, Certification #, and date upon completion of task** |
|---|---|---|---|
| Compare concentration sample results with baseline and verify they are within accepted limits. | | | |
| Refill foam tank to proper levels and place in operation. | | | |

| Tasks | Explain in detail how task was performed and why. | Business Address where task was completed | Evaluator Initial, Certification #, and date upon completion of task |
|---|---|---|---|
| **Foam Water Fixed Systems.** | | | |
| Determine location of system riser or control valve and if it meets standards. | | | |
| Determine if system or hazard has been modified or changed since last inspection. | | | |
| Determine what hazard is being protected. | | | |
| Determine if valves are properly supervised. | | | |
| Determine if water supply is adequate for system. | | | |
| Determine if fire pumps support system. If so, has pump been inspected and tested. | | | |
| Determine if fire department connection supplies system. If so, does FDC meet inspection requirements? | | | |
| Determine if mainline strainers have been flushed. | | | |
| Determine if nozzle strainers have been removed, cleaned and inspected. | | | |
| Determine what precautions are needed before discharge testing. | | | |
| Determine type of | | | |

| Tasks | Explain in detail how task was performed and why. | Business Address where task was completed | Evaluator Initial, Certification #, and date upon completion of task |
|---|---|---|---|
| detection system and testing requirements of each. | | | |
| Verify detection system is adequately installed and functional. | | | |
| Determine spray nozzle condition. | | | |
| Determine piping condition. | | | |
| Determine pipe hangers' condition and location. | | | |
| Determine if rubber gasketed fittings are adequately protected. | | | |
| Determine condition of water gauges. | | | |
| Determine if riser location is subject to freezing conditions. If so, what precautions have been taken to maintain riser from freezing. | | | |
| Conduct full flow operational test per automatic detection system. | | | |
| Conduct full flow operational test per manual discharge. | | | |
| Determine response time of detection system and verify that it is within acceptable limits. | | | |
| Determine time lapse between detection system operation and water delivery at the nozzles. | | | |
| Verify pressure at hydraulically remote nozzle. | | | |
| Verify residual pressure | | | |

| Tasks | Explain in detail how task was performed and why. | Business Address where task was completed | Evaluator Initial, Certification #, and date upon completion of task |
|---|---|---|---|
| at deluge valve with system flowing. | | | |
| Determine discharge pattern of nozzles. Are they providing adequate coverage? | | | |
| Verify nozzle caps or plugs are in place and free to operate. | | | |
| Verify low point drains have been opened and drained. | | | |
| Verify weep holes are open and free of obstructions. | | | |
| Perform internal inspection on deluge valve. | | | |
| Operation of control valves from full open to full closed. How many turns did it take? | | | |
| Perform proper main drain test and record results. | | | |
| Compare main drain test results with prior years and determine if water supply is deteriorating. | | | |
| Verify mainline strainer has been removed and internally inspected every 5 years. | | | |
| Determine foam type and concentrate percentage. | | | |
| Verify type of foam proportioning system, i.e. balanced pressure pump proportioning, bladder tank, In-line balanced pressure proportioning, line proportioning and | | | |

| Tasks | Explain in detail how task was performed and why. | Business Address where task was completed | Evaluator Initial, Certification #, and date upon completion of task |
|---|---|---|---|
| around the pump proportioning systems. | | | |
| Perform detection activation test on foam system with no flow. | | | |
| Perform a water only discharge test to verify discharge patterns and pressures. | | | |
| Perform visual inspection on exterior of foam tanks for corrosion. | | | |
| Verify water control valves on foam tank are in the correct position. | | | |
| Verify the pressure vacuum vent is operating freely. | | | |
| Verify if foam is in the water surrounding the bladder in tank. | | | |
| Verify the amount of foam concentrate in the tank. | | | |
| Collect and set up sample foam mixtures for baseline comparison. | | | |
| Perform a foam discharge test and obtain solution samples. | | | |
| Determine residual pressure at remote line. | | | |
| Verify alarms and auxiliary equipment shutdowns. | | | |
| Determine foam concentration levels from samples taken during test. | | | |
| Compare concentration sample results with baseline and verify they are within accepted limits. | | | |

| **Tasks** | **Explain in detail how task was performed and why.** | **Business Address where task was completed** | **Evaluator Initial, Certification #, and date upon completion of task** |
|---|---|---|---|
| Refill foam tank to proper levels and place in operation. | | | |
| Verify the ability to trip and reset a deluge riser with pneumatic detection. | | | |
| Verify the ability to trip and reset a deluge riser with hydraulic detection. | | | |
| Verify the ability to trip and reset a deluge riser with electric fixed temperature detectors. | | | |
| Verify the ability to trip and reset a deluge riser with electric rate of rise detectors. | | | |
| Verify the ability to trip and reset a deluge riser with electric linear detection. | | | |
| Verify the ability to trip and reset a deluge riser with electric UV/IR detection. | | | |