



pennsylvania

DEPARTMENT OF ENVIRONMENTAL PROTECTION

Aboveground Storage Tank Inspections

**Title 25 Pennsylvania Code
Chapter 245**

Aboveground Storage Tank Inspectors

The background image shows an industrial site with several large, white, cylindrical aboveground storage tanks. A worker in a white hard hat and a blue and white striped shirt is in the foreground, looking towards the tanks. Another worker in a striped shirt is visible in the middle ground. The scene is outdoors with a clear sky.

- 3rd Party DEP-certified
- Two certification categories:
 - **IAM** – Manufactured Aboveground Storage Tank (AST) systems (STI or API 653 cert.)
 - **IAF** – Field constructed AND Manufactured AST systems (API 653 cert.)

AST Inspectors

- Experience and Education Pre-requisite
- For both IAM and IAF certification:
 - 4 years of experience, or college degree and 2 years of experience.

AST Inspectors

- IAM – Inspection of manufactured ASTs systems
 - API 653 or STI Inspector certification – needs to be maintained
 - Pass DEP administered examination
 - Attend DEP provided inspector training every renewal cycle (3 years)

AST Inspectors

- IAF – Field Constructed AST systems
 - Documented work under other DEP and/or API inspectors within 3 years of application.
 - API 653 certification – needs to be maintained
 - Pass DEP administered examination
 - Attend DEP provided inspector training every renewal cycle (3 years)

AST Inspectors

- Conflict of interest (§ 245.106)...A certified inspector may not be:
 - An employee of the tank owner
 - A certified installer on the same tank handling activity that they are the inspector
 - An employee of the company performing the certified tank handling activity they are inspecting on a field constructed tank.

AST Inspection Types

- Installation Inspections
- In-service Integrity Inspections
- Out-of-service Integrity Inspections
- Modification Inspections
- Tank Interior Lining Inspections

Installation Inspections

- New installation of ASTs > 21,000-gallons
- Relocation at same facility
- Reconstruction at different facility
- Small ($\leq 21,000$ -gallons) field constructed ASTs
- AST inspectors must be involved prior to the initiation of a project and present at critical times.

Installation Inspections

- AST systems shall be inspected by a DEP-certified inspector at the time of installation in accordance with § 245.522 (relating to new AST installations and reconstructions)...
- The inspection report shall be kept for the operational life of the tank.

Installation Inspections

- Comprehensive evaluation of tank system
- Field constructed ASTs are hydrostatically tested.
- Alternative test for tightness
- Non-destructive testing
- Certified Inspectors report their findings to DEP on Aboveground Tank Installation Inspection Summary Form

In-service Inspections

- External inspection that evaluates: containment areas, foundation, shell, roof, appurtenances, ancillary equipment including piping, leak detection method, cathodic protection system (if installed), tank system integrity and suitability for service



In-service Inspections

- Initial in-service inspections shall be conducted by DEP-certified inspector within 5 years of installation for ASTs > 21,000-gallons.
 - Subsequent in-service inspections shall be based on the API 653 calculated service life method or $\frac{1}{4}$ of the corrosion rate life with a maximum of 5 years between inspections.

In-service Inspections

- Small ASTs with capacities $>5,000$ -gallons, and $\leq 21,000$ -gallons, and $>1,100$ -gallon storing highly hazardous substances shall have in-service inspections conducted every 10 years or more often when corrosion, deterioration or other specific conditions necessitate.

In-service Inspections

- DEP-certified inspectors report their in-service inspection findings to the Department within 60 days of the inspection on the AST Integrity Inspection Summary Form.

Out-of-service Inspections

- Large ASTs (>21,000-gallons capacity)
- In-service inspection + evaluation of tank bottom (internal inspection), as well as internal lining and coatings, if installed
- ASTs that can be completely examined from the exterior are exempt from out-of-service inspections except for tanks that are internally lined.

Out-of-service Inspections



Out-of-service inspections

- Tank bottom evaluation must be based on UT and visual examination and include at least one other method of non-destructive examination such as magnetic flux tests or vacuum test of bottom lap welds.

Out-of-service Inspections Frequencies

- Initial out-of-service inspections shall occur by 10 years from the date of installation to determine the corrosion rate.
- If the corrosion rates are known, subsequent out-of-service inspections at their API 653 service life method or $\frac{1}{2}$ the corrosion rate life, with a maximum of 20 years from the last out-of-service inspection.

Out-of-service Inspections

- DEP-certified inspectors report their out-of-service inspection findings to the Department within 60 days on the AST Integrity Inspection Summary Form.
- All deficiencies shall be remedied before the tank is returned to service.
- Certain tank handling activities (modifications) are reported to the DEP by a certified tank handler.

Modification Inspections

- Tank handling activities involving field constructed and ASTs >21,000-gallons that are major modifications shall be inspected by a certified AST inspector (IAF/IAM) and reported to the Department.
- Inspector must be involved prior to the initiation of the project and present at critical times.

Modification Inspections

Major modification – An activity to upgrade, repair, refurbish or restore all or any part of an existing storage tank system or storage tank facility, which alters the design of and/or may affect the integrity of that storage tank system or storage tank facility. The term includes an activity directly affecting the tank portion of the storage tank system or an activity directly affecting an underground component of the storage tank system.

*****All major modifications on field constructed and large ASTs (>21,000-gallons) require an inspection*****

Modification Inspections

- Guidance Document
 - Storage Tank Modification and Maintenance Issues (October 1, 2005)
 - Document ID: 257-0900-011

Modification Inspections

- When substantial modifications are made to the tank floor, the next inspection (in-service and out-of-service integrity inspection) dates shall be determined based on the condition of the tank subsequent to those modifications.
 - i.e., installed new tank bottom in existing AST, and the corrosion rate is unknown for the new tank bottom, therefore next out-of-service inspection is due within 10 years

Interior Lining Inspections

- Interior lining or coatings shall be inspected by a DEP-certified AST inspector at installation, when undergoing a major modification, and at least every 10 years or as warranted or recommended by the manufacturer or design engineer.
 - Applies to all regulated ASTs (> 250-gallons in capacity). Refer to § 245.534 and § 245.612 (h)

AST Inspections Summary*

Capacity (gallons)	Installation Inspection	In-service Inspection	Out-of-service Inspection	Modification Inspection	Internal Liner Insp.
251 – 1,100	Field Constructed	Never	Never	Field Constructed	10 years
1,101 – 5,000	Field Constructed	Never	Never	Field Constructed	10 years
1,101 – 5K (high. haz.)	Field Constructed	10 years from install	Never	Field Constructed	10 years
5,000 – 21,000	Field constructed	10 years from install	Never	Field Constructed	10 years
>21,000 (elevated)	All	5 years from install	Never	All	10 years
>21,000 (vertical)	All	5 years from install	10 years from install	All	10 years

* Subsequent inspection schedules are based on the condition of the tank at the time of the inspection, and have maximum intervals as discussed in the previous slides of this presentation.

Contact Information



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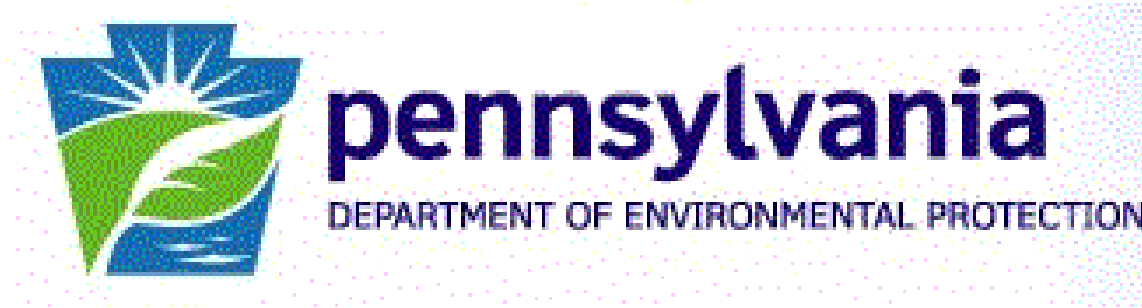
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More Information



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DEP Programs A – Z  Storage Tanks