

**Air Compressor Storage Tanks****SPP# 1910.169****Quick Reference**

1.0 Purpose .....	1
2.0 Scope and Applicability.....	1
3.0 <u>Reference</u> .....	2
4.0 <u>Policy</u> .....	2
5.0 <u>General Responsibilities</u> .....	2
6.0 <u>General Requirements</u> .....	2
6.1 <u>Definitions</u> .....	2
6.2 <u>General Provisions</u> .....	3
6.2.1 <u>Training</u> .....	3
6.2.2 <u>Applications</u> .....	3
6.2.3 <u>Drains and Traps</u> .....	3
6.2.4 <u>Gauges and Valves</u> .....	3
6.2.5 <u>Installation Requirements</u> .....	4
6.3 <u>Specific Responsibilities</u> .....	4
6.3.1 <u>Managers/Unit Heads</u> .....	4
6.3.2 <u>Supervisors</u> .....	4
6.3.3 <u>Employees</u> .....	4
6.3.4 <u>Safety and Loss Control</u> .....	5
APPENDIX A: <u>Air Compressor Storage Tank Checklist</u> .....	6

**1.0 Purpose**

The purpose of this safety policy and procedure is to establish guidelines for the protection of North Carolina Department of Transportation (NCDOT) employees working with or on compressed air equipment.

**2.0 Scope and Applicability**

Air compressors are used for a variety of applications in NCDOT. Air compressor storage tanks store excess air that is generated from the compressor. Thus, air compressor storage tanks provide a convenient and readily accessible air source. However, because of the air pressure within these storage tanks, potential dangers can develop if certain practices and precautions are not followed.

This safety policy and procedure provides guidelines for the safe use of air compressor storage tanks. It includes provisions for training, discussion on where these air compressor storage tanks are used, and guidelines for locating drains and traps on air compressor storage tanks. Additionally, it presents requirements for gauges and valves and installation of gauges, valves, drains and traps.

This document also details the areas of responsibility for managers/unit heads, supervisors, employees, and Safety and Loss Control within NCDOT.

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## SAFETY POLICY & PROCEDURE

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This safety policy and procedure applies to NCDOT employees who, as a result of their job duties, are exposed to or use Air Compressor Storage Tanks.

### 3.0 Reference

This safety policy and procedure is established in accordance with Occupational Safety and Health Standards for General Industry (29 CFR 1910.169) and Occupational Safety and Health Standards for Construction Industry (29 CFR 1926.306).

### 4.0 Policy

It is the policy of NCDOT to provide a place of employment that is free from recognized hazards that cause or are likely to cause death or serious physical harm to employees or the public. Therefore, NCDOT will not tolerate malfunctioning air compressor storage tanks that are a threat to employee safety. When these hazards exist that cannot be eliminated, then engineering practices, administrative practices, safe work practices, Personal Protective Equipment (PPE), and proper training regarding Air Compressor Storage Tanks will be implemented. These measures will be implemented to minimize those hazards to ensure the safety of employees and the public.

### 5.0 General Responsibilities

It is the responsibility of each manager/unit head, supervisor, and employee to ensure implementation of NCDOT's safety policy and procedure on Air Compressor Storage Tanks. It is also the responsibility of each NCDOT employee to report immediately any unsafe act or condition to his or her supervisor. Specific responsibilities are found in Section 6.3.

### 6.0 Procedure

This section provides applicable definitions, establishes general provisions, and identifies specific responsibilities required by NCDOT's safety policy and procedure on Air Compressor Storage Tanks.

#### 6.1 Definitions

##### **Air Compressor Storage Tank**

Pressurized vessel that stores air generated from an air compressor.

##### **Drain Valve**

A valve that is installed at the lowest point of an air compressor storage tank to provide for the removal of accumulated oil and water.

##### **Trap**

A device which uses venting head pressure to purge the tank from condensed water.

### 6.2 General Provisions

This section details the provisions of this safety policy and procedure with each provision discussed in a separate subsection. These provisions are:

- Training
- Applications
- Drains and Traps
- Gauges and Valves
- Installation Requirements

#### 6.2.1 Training

Affected employees will be trained in:

- The purpose of air compressor storage tanks
- The basic operation of air compressor storage tanks
- Maintenance requirements of drains and traps
- Reading gauges and operating valves
- Identifying damage and defects in the storage tanks

This training shall be performed upon initial employment and/or job reassignment. Periodic refresher training shall also be conducted at the discretion of the supervisor.

#### 6.2.2 Applications

Air compressor storage tanks are typically used for tire inflation, pneumatic tool use, hoisting, and chipping. All air compressor storage tanks shall be operated and maintained in accordance with industry standards.

#### 6.2.3 Drains and Traps

Drain valves must be located beneath a tank at the lowest point on all new equipment. Drain valves must be opened once a week to purge water build-up unless they are automatically operated traps.

#### 6.2.4 Gauges and Valves

All air compressor storage tanks shall be equipped with a least one safety valve and pressure gauge. Gauges and safety valves will be tested at least every six months to ensure proper operation.

No valve of any type shall be placed between the air receiver and its safety valve.

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## SAFETY POLICY & PROCEDURE

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### 6.2.5 Installation Requirements

Air compressor storage tanks shall be installed such that all drains, handholes, and manholes are easily accessible. Air compressor storage tanks shall never be buried underground or located in an inaccessible place.

## 6.3 Specific Responsibilities

### 6.3.1 Managers/Unit Heads

Managers/Unit Heads are responsible for ensuring that adequate funds are available for the purchase and repair of air compressor storage tanks in their areas. Additionally, they will be responsible for identifying the employees affected by this safety policy and procedure.

Managers/Unit Heads will obtain and coordinate the required training for affected employees. Managers/Unit Heads will also ensure proper use and maintenance through regular standard audits of air compressor storage tanks.

### 6.3.2 Supervisors

Supervisors will ensure that only those employees who have been trained to work with air compressor storage tanks will be allowed to operate such equipment.

Supervisors will ensure that equipment as needed is available and is in good working condition. If the equipment is not in good working condition, they will ensure that such equipment is repaired.

Supervisors will ensure that air compressor storage tanks are inspected every six months and that employees are provided with Personal Protective Equipment (PPE) as necessary for their job. Appendix A provides a generic checklist for use by supervisors.

### 6.3.3 Employees

Employees will inspect air compressor storage tanks prior to use and note any damage or defects. Employees shall immediately report any damages or defects to their supervisors. Employees will empty manual drains and taps on a regularly scheduled basis.

### 6.3.4 Safety and Loss Control

Safety and Loss Control will provide prompt assistance to managers/unit heads, supervisors, or others as applicable as necessary on any matter concerning this safety policy and procedure. Additionally, Safety and Loss Control will assist in developing or securing required training.

Safety and Loss Control will also work with Purchasing and Central Equipment Unit to ensure that all newly purchased air compressor storage tanks comply with current safety regulations.

Safety Engineers will provide consultative service and audit assistance to ensure effective implementation of this safety policy and procedure.

**APPENDIX A: Air Compressor Storage Tank Checklist**

Air Compressor Storage Tank Location \_\_\_\_\_

Air Compressor Storage Tank ID# \_\_\_\_\_

Air Compressor Storage Tank Manufacturer ID# \_\_\_\_\_

Maximum allowable working pressure of the air compressor storage tank (PSI) \_\_\_\_\_

**Yes    No**

- |                       |                       |   |
|-----------------------|-----------------------|---|
| <input type="radio"/> | <input type="radio"/> | Are all drains, handles, and manholes easily accessible?  |
| <input type="radio"/> | <input type="radio"/> | Is a drain pipe and valve installed on the lowest point of the air compressor storage tank?   |
| <input type="radio"/> | <input type="radio"/> | Is the drain valve opened and frequently drained to prevent the accumulation of excessive amounts of liquids?   |
| <input type="radio"/> | <input type="radio"/> | Does the air compressor storage tank have a pressure gauge?   |
| <input type="radio"/> | <input type="radio"/> | Do the safety valves operate to prevent the internal tank pressure from exceeding 10% beyond the maximum allowable working pressure of the air compressor tank? |