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# **TESTING UNLIMITED CORPORATION**

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## **FAQ's about fire department aerial device inspections**

### **Which NFPA specification applies?**

National Fire Protection Association (NFPA) Standard 1911, - Standard for Inspection, Maintenance, Testing and Retirement of In-Service Emergency Vehicles, Chapter 22 - 2017 edition.

### **Why do aerial devices need to be tested?**

Fire department aerial devices are subject to fatigue and dynamic loads which can exceed the manufacturer's original design limitations. The National Fire Protection Association provides a recommended specification for the testing of fire department aerial devices to provide reasonable safety for fire fighters and victims who depend on the performance of the aerial device without failure.

### **What types of aerial devices are covered by NFPA 1911?**

All fire apparatus equipped with an aerial ladder, an elevating platform or water tower, regardless of year of manufacture, "*Shall be Examined and Tested*" to determine if the device meets the standard for continued serviceability.

### **What certification and qualification requirements for third party testing companies?**

The inspections and tests outlined in this standard shall be performed by qualified persons, a third-party testing company or the manufacturer, determined acceptable to the authority having jurisdiction. If a third-party testing company is employed to do NDT that company shall comply with ISO/IEC 17020 *General criteria for the operation of various types of bodies performing inspection*.

(NFPA1911, section 22.3)

### **Who can perform the nondestructive testing?**

The person actually performing the NDT shall be certified to at least a Level II technician in the test method used, as specified in the ASNT CP-189, *Standard Qualification and Certification of Nondestructive personnel*.

(NFPA 1911, section 19.2.2)

### **How often do aerial devices need to be tested?**

All inspections and tests specified in this standard except those specifically designated as nondestructive testing (NDT) shall be conducted at the following times:

1. At least annually.
2. After major repairs or overhaul.
3. Following the use of an aerial device that could have been subjected to unusual operating conditions of stress or load.
4. When there is reason to believe that usage has exceeded manufacturer's recommended aerial device procedures.

### **How often is the nondestructive testing (NDT) due?**

1. At least every 5 years.
2. Whenever visual inspection or load testing indicates a potential problem.
3. When there is a desire to further confirm continued operational safety.

### **What does an inspection and test consist of?**

1. Review Service Records and Previous Inspections.
2. Review Manufacturers Specifications and Performance Requirements.
3. Visual Inspection. (All Structural Weldments, Bolts, Rivets and other Mechanical Fasteners).
4. Visual Inspection. (Chassis, Stabilizers, Turntable, Torque Box, Aerial Ladder, Platform, Water Way).
5. Operating Test. (Elevation, Extension and Rotation Time Requirements, Operation Controls and overrides).
6. Manufacturer's Mechanical Tolerances. (Bearing Clearance & Backlash, Cylinder Drift, Vertical twist).
7. Safety Devices. (Warning Lights and Horns, Interlocks, Overrides, Relief Valves, etc...).
8. Load Test.
9. Water System Test. (If Applicable).
10. Non-Destructive Testing. (Mounting Hardware and Structural Weldments).
11. Warning Signs and Operational Limitation Placards.
12. Hydraulic Spectral Oil Analysis.