




ARLINGTON COUNTY, VIRGINIA
INSPECTION SERVICES DIVISION
 2100 Clarendon Boulevard, Suite 1000, Arlington, VA 22201

CODE INTERPRETATION/POLICY

| Code/Year | Section of Code | Title of Code Section/Subsection/Policy |
|---|-------------------------------------|---|
| 2015 | N/A | In-Building First Responder Communication System |
| <p>Statement/Background of Issue</p> <p>In 2014 Arlington County adopted a policy to encourage developers of new commercial construction to install a wireless first responder network to enhance the communication of police, fire and other emergency responders within the built environment. This policy was to become part of the site plan conditions with each development projects.</p> | | |
| <p>Responsibilities</p> <p>Registered Design Professional is to include, as part of the electrical construction document, the proposed in-building communication system including all the riser diagrams, floor plans, conduit type (i.e. coax vs. fiber), location of any donor antenna and head-end unit, floor transmitters and repeaters and wiring diagram.</p> <p>ISD Electrical Plans Examiners will review the construction drawings to insure compliance with the site plan condition prior to approval of the building permit.</p> <p>ISD Electrical Inspectors will ensure that the construction of the In-building communication system complies with the approved construction documents.</p> <p>System Testing will be conducted by qualified testers in accordance with the testing protocol prior to issuance of an occupancy permit.</p> <p>Registered Design Professional in responsible charge shall certify to the Building official that the system functions as prescribed in the site plan condition and the test protocol prior to issuance of a certificate of occupancy.</p> <p>Building Official will inform the Zoning Administrator of the approval or disapproval of the system</p> <p>Zoning Administrator has the ultimate responsibility to ensure that the site plan condition is met and shall take appropriate actions for non-compliance in accordance with the County and State laws and ordinances</p> | | |
| <p>Interpretation/Policy No.</p> <p>2015-1</p> | <p>Date</p> <p>5/29/2015</p> | <p>Chief Building Official</p> <p>Shahriar Amiri </p> |

Test Protocol (Policy # 2015-1)

The developer agrees to install and maintain in operable condition, in a manner acceptable to the County Manager, an internal antenna/amplifier system that permits public safety radio communications to transmit in the 806-825 MHz frequency and to receive in the 851-870 MHz frequency from all areas within the building.

When an emergency responder radio coverage system is required, and upon completion of installation, the building owner shall have the radio system tested to ensure that two-way coverage on each floor of the building is a minimum of 95 percent. The test procedure shall be conducted as follows:

1. Each floor of the building shall be divided into a grid of 20 approximately equal areas.
2. The test shall be conducted using a calibrated portable radio of the latest brand and model used by the public agency talking through the agency's radio communications system.
3. A maximum of two nonadjacent areas shall be allowed to fail the test.
4. In the event that three of the areas fail the test, in order to be more statistically accurate, the floor may be divided into 40 equal areas. A maximum of four nonadjacent areas shall be allowed to fail the test. If the system fails the 40-area test, the system shall be altered to meet the 95percent coverage requirement.
5. A test location approximately in the center of each grid area shall be selected for the test, then the radio shall be enabled to verify two-way communications to and from the outside of the building through the public agency's radio communications system. Once the test location has been selected, that location shall represent the entire area. If the test fails in the selected test location, that grid area shall fail, and prospecting for a better spot within the grid area shall not be allowed.
6. The gain values of all amplifiers shall be measured and the test measurement results shall be kept on file with the building owner so that the measurements can be verified during annual tests. In the event that the measurement results become lost, the building owner shall be required to rerun the acceptance test to reestablish the gain values.
7. As part of the installation a spectrum analyzer or other suitable test equipment shall be utilized to insure spurious oscillations are not being generated by the subject signal booster. This test shall be conducted at time of first certificate of occupancy for each building and tenants thereof and subsequent annual inspections.
8. The antennas, cable, and other passive components of the system shall be rated to operate at least between 400MHz and 5.0 GHz.

Minimum qualifications of personnel: The minimum qualifications of the system designer, tester and lead installation personnel shall include:

1. A valid FCC-issued General Radio Operators License, and
2. Certification of in-building system training issued by a nationally recognized organization or school or a certificate issued by the manufacturer of the equipment being installed.

Personnel may be exempt from these requirements upon successful demonstration of adequate skills and experience satisfactory to the County Manager or designee.