



**DATE: November 7, 2022**

**TO: All Development Services Personnel and Contractors.**

**FROM: Building Official, Ashley Kessler  
Fire Chief, Clint Hodges**

**SUBJECT: 2018 International Fire Code (IFC) Section 510 Requirements for New Construction**

The Development Services Office will no longer issue Effingham County temporary or permanent approvals of occupancy for any building permitted after January 1<sup>st</sup>, 2023, due to the requirements of IFC 510, Emergency Responder Radio Coverage (ERRC), not being met. Any emergency responder radio coverage required by IFC 510 must be installed, tested and operational prior to the issuance of a Fire Safety Codes release or Certificate of Occupancy. Building owners and designers must take the necessary steps for the testing, design and installation of any required emergency responder radio system prior to the issuance of a temporary or permanent certificate of occupancy.

**Application:** All new (proposed) construction and any substantial renovation(s) to existing buildings as defined in OCGA 25-2-14 (O) (d) approved after January 30, 2014. Wired systems as identified in IFC 510.1 exception 1 will not be accepted in lieu of an ERRC.

Exceptions: (As permitted by IFC 510.1 (2))

The following structures are not required to comply with the requirements of IFC Section 510.

1. Buildings with no more than 12,000 total square feet, and no floors below grade.
2. Temporary buildings including tents when permitted by the Building Official. For additions to buildings, unless the exceptions above are met for the area of the addition, the entire building being expanded must meet IFC 510 requirements.

#### **Testing-Needs Assessment**

1. Effective January 1<sup>st</sup>, 2023, initial signal strength testing must be completed prior to the approval of site plans for new buildings and building additions.
2. Field testing for signal strength certification will not be conducted prior to the building envelope being complete and all doors, windows and exterior openings closed. In buildings with significant internal signal impairments like rack storage or other metal parts, interior room enclosures that contain wire mesh security screens, or other interior or exterior features, etc.; all internal construction must be complete prior to final testing for signal strength.
3. Testing will be performed in accordance with IFC 510 using the 20 test cell (per floor) criteria for initial testing. For floors 32,000 sq ft or more, each floor of the building shall be divided into grids of approximately 40 ft by 40 ft.
4. All critical areas as defined in NFPA 72 chapter 24.5.2.2.1 shall be tested individually and shall not be counted towards the 20 test cell count.

5. Testing results will be certified by the testing contractor and forwarded to the Building Official. A copy shall be left on site with the approved plans.
6. Authorization to operate on frequencies licensed to Effingham County must be obtained from the Radio System Manager. Send request for frequency access to [BDA-Request@EffinghamCounty.org](mailto:BDA-Request@EffinghamCounty.org) or [BDARquest@EffinghamCounty.org](mailto:BDARquest@EffinghamCounty.org). The consent must be maintained in a recordable format that can be presented to an FCC representative or other relevant licensee investigating interference. Consent may be withdrawn by Effingham County for any reason with notice to the property owner.

**Design Considerations:** All proposed ERRC system shall be designed in accordance with IFC section 510, good engineering practices and applicable regulations of the Federal Communications Commission. Installations shall be performed by the FCC certified technician and all components are FCC Certified. Method of transmission throughout building (“leaking coax” or fiber optics). Penetrations through rated walls will need to be sealed.

Plans must be verified and approved by the Building Official prior to the installation or modification of an ERRC system. Please send plans in pdf form stamped by qualified design professional to [Buildinginspections@effinghamcounty.org](mailto:Buildinginspections@effinghamcounty.org). Designer shall state that plans being presented indicate required coverage in compliance with IFC section 510. **However, the installer carries the full responsibility to assure the installation meets all the applicable National Standards, State and Local codes.** Plans shall be submitted through local county building department so that appropriate permits must be obtained through the applicable building department. The plans will be routed to the Building Official through this process the same fire alarm projects are routed to Building Official. If building has a required fire alarm system the fire radio system shall be connected to the fire alarm system according to NFPA 72, IFC and other applicable codes.

Permits will be issued based on a verification of engineering plans. A design professional stamp to take ownership is required.

1. Site map showing location of target building and closest donor site antenna.
2. Statement of work and scope of work describing the system design.
3. Location(s) of all head end equipment and radio transmitters (BDA’s).
4. Locations of all “critical areas” as defined in NFPA 72, 24.5.2.2.1 with anticipated signal levels (-95dBm required).
5. Signal line schematic drawing of antenna lines and data lines.
6. Type and location of NEMA 4 enclosures.
7. Battery calculations to show 24 hours capacity at 100% transmit duty cycle.
8. Floor plans showing distributed antenna system (DAS) antennas and the anticipated signal level in each test grid square, see number 4 above also.
9. System component specification documents including coax cables(s) and data or fiber optic components, all transmitters shall be FCC type accepted, provide documentation.
10. System monitoring shall include:
  - a. Monitoring equipment and identification of monitoring station.
  - b. Malfunction of BDA loss of primary power or related electronic system.
  - c. Antennas and passive filters are exempt from monitoring.
  - d. Fire alarm installing contractor if system is to be monitored by FACP.
11. Detailed acceptance procedures including all provisions of IFC 510.5.3.-Talk in and talk out signal levels must be included for each zone and critical area.
12. Location of document box – shall be co-located with head and equipment.