



OREGON FIRE CODE

Joint Policy Bulletin

A collaborative service to provide consistent and concise application of Oregon's fire prevention and life safety regulations.

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Subject: Emergency Responder Radio Coverage (ERRC)

Code References: 2014 Oregon Fire Code (OFC) Section 510, 1103.2

Background: The ERRC provisions require that certain buildings have approved radio signal coverage for emergency responders. Approved radio signal coverage provides public safety agencies the ability to transmit a signal inside and outside of buildings. In some cases, the radio signal strength provided through public emergency communication infrastructure is adequate and no additional requirements would be necessary.

Building construction features and materials can have a negative impact on emergency personnel communications by blocking critical radio signals. If testing determines a lack of radio signal strength in the building, then steps must be taken per OFC Sections 510 or 1103.2 to address radio signal coverage deficiencies. In the event signal strength is inadequate, designers can give consideration to a number of remedies. One remedy is to change exterior construction materials to allow for better penetration of radio signals. Another remedy is to install a Bi-Directional Amplification (BDA), Distributed Antenna Systems (DAS), or other approved equipment and technology. Additionally, designers may work with the local fire code official to approve alternate equipment and methods for compliance.

Advice: The OFC provisions regarding ERRC address the reliability of radio signals used by emergency responders. In new and existing buildings, compliance with ERRC coverage requirements as described in OFC Sections 510 and 1103.2 will continue to be prescribed and enforced by the local fire code official.

Both the Office of State Fire Marshal (OSFM) and Department of Consumer and Business Services, Building Code Division (BCD) have authority over certain, distinct aspects of ERRC that, when put together, make for a complete regulatory scheme. Specifically, OSFM is authorized to adopt rules related to fire prevention standards for equipment used for fire protection as prescribed in ORS 476.030(1). These rules include equipment used for emergency radio communications by a fire service unit as well as the adequacy of coverage provided by that equipment. In concert with OSFM's authority to require such coverage, BCD is authorized to establish the associated construction requirements for buildings required to install ERRC equipment as prescribed in ORS 455.010 and 455.020.

Any waiver for, or alternate to these coverage requirements is at the discretion of the fire code official. There are additional temporary rule *construction* requirements that may be applicable under the Oregon Structural Specialty Code (OSSC) which should be coordinated with and approved by the local building official.

The ERRC provisions in the 2014 OFC remain unchanged. Approved emergency responder radio coverage must be provided as outlined in Section 510.1.1 OFC for emergency responders within a building. ERRC is intended to permit firefighters and other emergency responders to communicate with each other when entering a building. The OFC addresses such matters as types of buildings required to have radio coverage, radio signal strength, amplification systems permitted, signal boosters, and other requirements addressing coverage of communications. These provisions continue to be enforceable by the fire code official. At the discretion of the building official, the issuance of a permit or certificate of occupancy *may* be delayed, in accordance with ORS 455.485 and OSSC 105.4 and 111, until the fire code official's advice is obtained. We strongly encourage local fire code officials to coordinate closely with their local building officials to understand any plan review, permits, or inspections the building official may require when ERRC signal boosting equipment is necessary.

Buildings subject to the ERRC requirement are subject to the construction component requirements described in the OSSC. Construction requirements include such specifications as protected cabinets for equipment and shaft enclosures.

Additionally, signal boosting equipment must be approved by the Federal Communications Commission (FCC) license holder for the frequencies being boosted. The FCC license holder may require specific equipment, agreements, testing, or other criteria as conditions for their approval.

Authority: The ERRC requirements in the 2014 OFC Sections 510 and 1103.2 are regulated and enforced under the authority of the fire code official. Whether radio coverage exists in a particular region, what frequencies can be accessed or must be used, or for what purposes those frequencies are to be used, are all under the authority of the fire code official. Therefore, rules related to the requirement of buildings to have adequate ERRC in buildings is determined by the fire code official. This authority is in accordance with Oregon Revised Statutes 476.030(1) (a)-(c), 476.035, 476.120 and 478.910, and Oregon Administrative Rule Section 837-039-0015. Once the fire code official determines that ERRC is required in a particular building, the OSSC sets forth requirements for construction related to installation of equipment and other structural components of the building. Consequently, both the fire code official and building official have authority over certain portions of ERRC – the fire code official sets standards for the necessity for radio communication coverage and how that coverage is to be provided; the building official sets standards for construction and associated structural components for installation of the ERRC system. Local fire jurisdictions should continue evaluating new and existing structures for adequacy of emergency responder radio coverage and require remedies as appropriate. For newly proposed buildings, it is important that local fire code officials identify and communicate ERRC requirements early in the project design phase. Fire code officials should utilize their involvement in land use cases and building permit reviews to communicate requirements to the applicant at the earliest possible opportunity.

Temporary Rule: Under the May 2, 2017 [temporary rule](#) and incorporated OSSC code provisions, the 2014 OSSC contains temporary requirements related to *construction features* where ERRC equipment will be installed. Specifically, OSSC requirements are limited to pathway survivability (where applicable) and National Electrical Manufacturers Association (NEMA) enclosures for equipment. Most equipment already comes in NEMA enclosures. Pathway survivability is typically accomplished by a fire-rated shaft provided in the building. The building official is responsible for enforcing these OSSC regulations, which will typically be in the form of fire-rated shafts and through-penetration protections where cables penetrate required rated assemblies. Additionally, there are other general speciality code requirements that may be applicable, such as electric code provisions for powering the equipment.

The temporary rule also requires that an OSSC Form 915 be submitted to the building official for buildings meeting certain criteria. Local fire code officials are requested to review the form, provide information, and sign applicable sections. In Part III of the form you may indicate your district has an alternative ERRC program (if appropriate), that a wired communication system is recommended, or an alternative system would be considered but is subject to approval by the local fire code official. It is important to keep in mind that the OSSC regulates *construction* features (OSSC 915.3), and not the entire communication system nor the ERRC system requirements in the OFC. Only the fire code official may approve, waive, or modify any of the OFC Sections 510 or 1103.2 communication requirements.

Conclusion: The OFC and OSSC work in concert to establish the regulatory scheme for adequate communication coverage. The fire code officials determine if coverage is necessary and adequate – or not; and building officials determine if corresponding construction provisions are necessary for equipment installation. Only the fire code official may waive ERRC coverage requirements, as such an exception to the requirements is for the fire code official to approve because it specifically addresses the adequacy of coverage. The OSSC provisions address solely construction requirements (pathway survivability), rather than adequacy or exceptions to coverage.

Contacts: If you have questions or are in need of further information, contact David Mills at 503-934-8204, osfm.flss@state.or.us or John Patterson at 541-826-7100, johnp@jcf3.com.

References:

2014 OFC Sections: 101.2; 101.3; 102.1; 102.2; 102.4; 102.7, 102.7.1, 102.7.2; 104.1; 104.2; 104.6.4; 104.8; 104.9.2; 105.4; 510.1 – 510.6.3; 1103.2

Oregon Revised Statute: 476.030; 476.035; 476.060; 476.120; 478.910

Oregon Administrative Rule: 837-039-0015(2)(b);
2014 Oregon Structural Specialty Code:
Oregon Attorney General Opinion: OP-5874 (1985); 7082 (1974)

Imbedded links:

<https://www.oregon.gov/bcd/laws-rules/Documents/rules/20170503-errc-tr.pdf>