



Code Amendment Proposal Application

Department of Consumer & Business Services

Building Codes Division

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Read the entire code amendment proposal application before completing this form. Please complete all parts before submitting your proposal and refer to the provided checklist.

APPLICANT INFORMATION

Name: Eric Sherman	Date: September 25, 2022	
Representing (if applicable): N/A	Work phone: 541-270-8761	
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PROPOSAL INFORMATION

Specialty code: Oregon Electrical Specialty Code
Code section(s): 314.27(C)
Briefly explain the subject of your proposal: Adopt model 2023 NEC article 314.27(C), eliminating existing OESC amendments, to require fan-rated boxes to be installed in new construction where fan installation is feasible

INSTRUCTIONS AND CHECKLIST


Fill in all the information above and submit this page, signed and dated, with the required supplementary information for Parts I, II, III, and IV described on page 2 of this application. This application may be submitted by mail to the mailing address above, or by email to BCD.PTSPtech@oregon.gov.

Summary checklist for the applicant:

- Part I** Code amendment language is attached in the proper format.
- Part II** Amendment proposal requirements for amending the code have been reviewed.
- Part III** Amendment proposal criteria questions have been answered and are attached.
- Part IV** If applicable, additional ORSC energy efficiency amendment proposal information is attached.

Note: One application is required for each code section you are proposing to amend. If this proposal requires changes in other sections of the code for alignment, include those changes as part of this application.

APPLICANT SIGNATURE

Signature: 	Date: Sep. 25, 2022
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Part I – Code Amendment Language Proposal

Delete existing OESC 314.27(C) and replace with 2023 NFPA 70 - National Electrical Code article 314.27(C) as indicated:

314.27(C) Boxes at Ceiling-Suspended (Paddle) Fan Outlets.

Outlet boxes or outlet box systems used as the sole support of a ceiling-suspended (paddle) fan shall be listed, shall be marked by their manufacturer on the interior of the box as suitable for this purpose, and shall not support ceiling-suspended (paddle) fans that weigh more than 32 kg (70 lb). For outlet boxes or outlet box systems designed to support ceiling-suspended (paddle) fans that weigh more than 16 kg (35 lb), the required marking shall include the maximum weight to be supported.

Outlet boxes mounted in the ceilings of habitable rooms of dwelling occupancies in a location acceptable for the installation of a ceiling-suspended (paddle) fan shall comply with one of the following:

- (1) Listed for the sole support of ceiling-suspended (paddle) fans
- (2) Installed so as to allow direct access through the box to structural framing capable of supporting a ceiling-suspended (paddle) fan without removing the box

Part II – Code Amendment Proposal Requirements

Code proposal depicted above in Part I satisfies proposal requirements. Intent is for addition/modification of technical aspects of Oregon Electrical Specialty Code and contains no proposals for Administrative aspects of Electrical Code Program

Part III – Code Amendment Proposal Criteria

1) Describe the concept and purpose of this proposal.

This proposal is intended to adopt the language of model 2023 NEC article 314.27(C) to require fan-rated ceiling outlet boxes in habitable rooms of new construction and renovations in dwellings. This language, adopted from the model code verbatim, would update the obsolete practice currently depicted in OESC 314.27(C) and provide for safe support of ceiling-suspended paddle fans.

2) What problem in the existing Oregon code or national model code is this proposal solving? How does this amendment address the issue? If you have evidence demonstrating the problem, submit that information.

The current OESC 314.27(C) amendment language reads as follows:

314.27 (C) Boxes at Ceiling-Suspended (Paddle) Fan Outlets. ...

~~Outlet boxes mounted in the ceilings of habitable rooms of dwelling occupancies~~ Where spare, separately switched, ungrounded conductors are provided to a ceiling-mounted outlet box, in a location acceptable for the installation of a ceiling-suspended (paddle) fan in one-family, two-family, or multifamily dwellings, the outlet box or outlet box system shall be complied with one of the following: (1) listed for the sole support of ceiling-suspended (paddle) fans. ~~(2) An outlet box complying with the applicable requirements of 314.27 and providing access to structural framing capable of supporting of a ceiling-suspended (paddle) fan bracket or equivalent~~

This OESC language has been in place for many code cycles and no longer reflects installation practices standard for modern ceiling-suspended paddle fans. Modern ceiling fans typically include a wireless remote control device that handles fan speed, fan direction, and lighting control (if applicable). This negates the need for the spare, separately switched, ungrounded conductors that would have been utilized for separate operation of the fan motor and fan light assembly, if installed.

Installation of a modern ceiling fan can now be done with a single ungrounded conductor, switched or unswitched, relying on the remote control for device operation and functionality. This opens up the ability for a ceiling fan to be installed at nearly any suitable existing luminaire location, and necessitates the installation of a junction box capable of, and rated for, supporting a ceiling-suspended paddle fan. My proposal would result in minimal increased construction costs, substantial cost savings in the event of a future ceiling fan installation, and significant consumer safety.

I can imagine two main arguments against this proposal:

First is the scope of the Code depicted in 90.1(B): “This *Code* contains provisions that are considered necessary for safety. Compliance therewith and proper maintenance result in an installation that is essentially free from hazard but *not necessarily efficient, convenient, or adequate for good service or future expansion of electrical use.*” Observing this, it is clear that it is outside the scope and purpose of the NEC to mandate installation requirements for future potential use. I would argue that the NEC has long abandoned this principle, especially in light of Oregon-adopted code articles such as 404.2(C) – requiring grounded circuit conductors be present at light switch locations for future installation of electronic lighting control devices, Table 310.15(C)(1) – requiring that spare conductors installed in raceways be included for conductor ampacity derating purposes, and some new 2023 NEC language in Article 220 that would incorporate structures and areas not adaptable for future use into electrical load calculations (anything is adaptable for future use if you try hard enough).

Second is the added expense of installing outlet boxes rated for support of ceiling-suspended paddle fans in lieu of standard ceiling outlet boxes. Current OESC and NEC language both require that ceiling outlet boxes designed for the attachment/support of a luminaire are capable of supporting 50 pounds. Boxes installed for ceiling fans shall not support ceiling fans over 70 pounds, and boxes capable of supporting ceiling fans greater than 35 pounds shall be marked accordingly. A standard round nonmetallic 3/0 new construction box, rated for luminaire support up to 50 pounds, costs anywhere from \$1-\$5. A similar new construction junction box from the same manufacturer, rated for fan support up to 70 pounds, costs between \$5 and \$10. In a new construction or renovation project on a dwelling, the total increased cost of using fan-rated boxes is directly proportional to the number of such outlet boxes installed, but would be a negligible burden when compared to the overall project costs. Future savings would be significant in the event of ceiling fan installation, due to no additional labor required to remove the existing junction box and replace with a retrofit fan-rated box. **Many electrical contractors already make a standard practice of installing fan-rated boxes in new construction.**

Substantiation:

If you've ever had to install one of these things then there is nothing else to substantiate and this proposal should fly through with the support of every service electrician in Oregon:



- 3) **Has this been proposed at the national model code level? If so, explain when it was proposed, what happened, and why it was not adopted.**

This language has been proposed, adopted, and expanded in the 2020 and 2023 model National Electrical Codes.

Implementation and Fiscal Impact

- 1) **Explain how the proposed provisions would be enforced. Are additional inspections or permits required? Describe any necessary equipment, training, tests, or special certifications.**

Enforcement of a newly revised 314.27(C) would be included with a typical rough electrical inspection, prior to wall & ceiling covering, already mandatory for new construction and remodels on dwellings. No additional inspections or permits would be required for enforcement purposes.

No special equipment beyond hand and power tools typical for the electrical trade is required for the installation of fan-rated junction boxes. No additional training or certifications would be necessary for licensed Oregon electrical contractors and electricians.

- 2) **What is the fiscal impact of this proposal? Provide a cost benefit analysis and include the resources or methods used to determine the fiscal impact.**

Cost of materials for a 1,200 ft² house on a 6,000 ft² parcel, including three bedrooms, two bathrooms, typical habitable room layout necessitating a minimum of (12) ceiling lighting outlet locations: \$12-\$60

Cost of materials for the same house, using fan-rated junction boxes in lieu of standard luminaire boxes: \$60-\$120. Additional savings possible by excluding installation of spare conductors.

Impacted stakeholders and other specialty codes

- 1) It is important that proposals be shared with stakeholders that will be impacted by them. Was this proposal developed with people or organizations likely to be affected by it? Has it been reviewed or shared with people or organizations likely to be affected by it? If so, who, and if not, why not?**

No. I have not reached out to stakeholder organizations or individuals, other than acquaintances in the electrical trade.

- 2) Does this proposal impact other specialty codes or statewide programs?**

No.

Part IV – ORSC Energy Efficiency Additional Code Amendment Proposal Criteria

Not applicable.