



SUBJECT

OSHPD Preapproval of Manufacturer’s Certification (OPM)

PIN: 62

Effective: 6/2/2016



PURPOSE

The 2016 California Building Code (CBC) Section 1705A.13.2 and ASCE/SEI 7-10 (ASCE 7) Section 13.2.1 Item # 2 permit seismic design requirements for architectural, mechanical and electrical components’ (here after referred to as nonstructural components) supports and attachments to be satisfied by “Manufacturer’s Certification.”

OSHPD Preapproval of Manufacturer’s Certification (OPM) is a voluntary program, established to streamline and simplify hospital construction for facility owners, consultants, contractors, and manufacturers of nonstructural components’ supports and attachments by providing a program for review and preapproval of Manufacturer’s Certifications.

This Policy Intent Notice (PIN) provides a summary of the processes and procedures for the OPM program and generic issues related to Manufacturer’s Certification.

BACKGROUND

Health & Safety Code §129895 states, in part:

“The office shall adopt by regulations seismic safety standards for hospital equipment anchorages, as defined by the office, to include, but not be limited to, architectural, mechanical, and electrical components, supports, and attachments.

*...
 Manufacturers, designers, or suppliers of equipment anchorages may submit data sufficient for the office to evaluate equipment anchorages’ seismic safety prior to the selection of equipment anchorages for any specific hospital building.”*

This statutory language provides the authority for the OPM program.

The OPM program has reduced the time required for project specific nonstructural components’ supports and attachments reviews and the number of deferred approvals significantly.

Over time, the OPM program has grown to encompass a large number and variety of nonstructural components’ supports and attachments.

To address questions about the OPM program from the diverse group of users who participate in the process, this PIN has compiled the various requirements of the OPM program and associated generic requirements into a single resource document.

POLICY

Scope

1. The OPM is a voluntary program for nonstructural component manufacturers, designers or suppliers.
2. The OPM program is limited to:
 - a. Seismic design of supports and attachments for nonstructural components;
 - b. Seismic bracing of distribution systems (HVAC ducts, pipes and electrical raceways); and
 - c. Interior partition walls and suspended ceilings seismic bracing equivalent to those approved through OSHPD Preapproved Details(OPDs).
3. The OPM is **not** a product/components approval program.
4. The OPM **does not** verify the adequacy of the supporting structure.

Certification Basis

5. An OPM is issued on the basis of analysis or tests in accordance with the CBC or its reference standards or approved equivalent.
6. An OPM shall include entire (continuous) load path or paths with adequate strength and stiffness to transfer all the forces from nonstructural components to primary structural framing (final point of resistance).
7. All tests shall be performed by an independent approved laboratory/testing agency having accreditation to the ISO accreditation standard 17025 or shall be under the responsible charge of an independent California licensed engineer in accordance with CBC Section 1703.4 or 1703A.4. Test reports shall be reviewed and accepted by an independent California licensed structural engineer.
8. All analysis shall be performed by a Registered Design Professional in accordance with the 2016 California Administrative Code (CAC) Section 7-115.

Implementation for OSHPD Projects

9. The Registered Design Professional for the project shall specify on the construction documents, submitted to OSHPD for approval, the requirements for OPM by reference (including specific details in the OPM, as applicable) in accordance with CBC Section 1705.13.2 or 1705A.13.2.

10. Certificates of compliance for the manufacturer's certification shall be submitted to the building official as specified in CBC Section 1704.5 or 1704A.5.

Exceptions: An OPM not using **approved fabricator** provisions (in accordance with CBC Section 1703.6 or 1703A.6 or exception to Section 1704.2.5 or 1704A.2.5) need not provide certificate of compliance.

All project specific special inspection and testing requirements in CBC Chapter 17 or 17A and limited construction documents review required by the OPMs for code compliance shall be applicable. A Registered Design Professional has designed the OPM and OSHPD has reviewed the supporting documents for code compliance. Therefore, the OPM and supporting documents will not be re-reviewed by OSHPD regional staff. However, applicability of OPMs to the site conditions shall be reviewed by the OSHPD regional staff.

11. Distribution system (HVAC ducts, pipes and electrical raceways) seismic supports and attachments OPMs:

A. Layout drawings of the supports, attachments, and bracing systems in accordance with the preapproval shall be submitted to the Structural Engineer of Record/Registered Design Professional in responsible charge of the project for review to verify that the details are in conformance with the code requirements. The layout drawings shall as a minimum satisfy the requirements of ASCE 7 Section 13.6 as modified by the 2016 CBC Section 1616A.

- a. The Structural Engineer of Record shall verify that the supporting structure is adequate for the forces imposed on it by the supports, attachments, and braces installed in accordance with the preapproval in addition to all other loads.
- b. The Structural Engineer of Record shall forward the supports, attachments, and bracing drawings (including construction documents for supplementary framing where required) to the Registered Design Professional in responsible charge with a notation indicating that the drawings have been reviewed and are in general conformance with the preapproval and the design of the project.
- c. A review stamp shall be permitted to be used, by the Structural Engineer of Record, to indicate compliance with this requirement.
- d. The Registered Design Professional other than Structural Engineer of Record, may provide the review stamp for small projects at the discretion of the OSHPD.

B. The layout drawings, with the review stamp, shall be submitted to OSHPD, as part of original CDs or as Deferred Submittal Items in accordance with 2016 CAC Section 7-126 and 2016 CBC Section 107.3.4.1 for verification that:

- a. Structure supporting the distribution system has adequate capacity;
- b. Seismic design forces (F_p) are in accordance with the 2016 CBC; and

- c. Submittal is within the scope of the OPM:
 - i. Size of distribution system components,
 - ii. Spacing of bracing and flexible joints, and
 - iii. Substrate for attachments.

C. The layout drawings, with the review stamp, shall be kept on the jobsite to be used for installation of the support and bracing.

- The approved agency/inspector of record shall provide inspection in accordance with CBC Sections 1704 or 1704A/CAC Section 7-145.
- OSHPD field staff will review/inspect the installation in accordance with CAC Section 7-147.

D. The Structural Engineer of Record shall design any supplementary framing that is needed to resist the loads, maintain stability and/or is required for installation of preapproved system.

- The supplementary framing shall be submitted to OSHPD as part of original Construction Documents or as a Deferred Submittal Item; Deferred Submittal Items shall be listed on the cover page of the original Construction Documents.

E. A copy of the chosen bracing system(s) installation guide/OPM manual shall be on the jobsite prior to starting the installation of hangers and/or braces.

- The approved agency/inspector shall maintain an approved copy of the OPM (obtained from OSHPD website) in accordance with CAC Section 7-145 Item # 4.

F. Components of two or more preapproved bracing systems shall not be mixed.

- Only one preapproved bracing system may be used for a run of pipe, duct or raceway.
- Any substitution of component of an OPM system shall require OSHPD review and approval.

12. Overstrength factor (Ω_0) for OPMs shall be in accordance with ASCE 7, as amended in CBC Section 1616A.1.23.

13. The Registered Design Professional shall submit verified compliance reports in accordance with CAC Section 7-151, that satisfy the requirements of the approved Testing, Inspection and Observation program in accordance with CAC Section 7-141.

Validity

14. OPMs have no expiration date, they are valid indefinitely for the code cycle under which they are approved.

Exception: OPMs approved under the 2013 CBC or 2016 CBC can be used for projects submitted under any code cycle, subject to limitations in the OPM.

15. OPM will be nullified when:

- a. Design, construction, or quality control/quality assurance methods are materially altered as defined in the CAC Section 7-111; or
- b. Strength, stiffness, size, weight, materials, support, orientation, or manufacturer are changed/altered so that they are no longer equivalent to what was approved in the OPM.

16. Approved OPMs will be posted on the OSHPD website.

OPM Application Submittal Requirements

17. For an OPM application to be considered complete, all of the following documents shall be submitted electronically (by e-mail or equivalent) to OPM@OSHPD.CA.GOV:

- a. Completed application in word format with signature attached (electronic signature embedded).
- b. Application filing fee of \$250.00 payable to "OSHPD". Review fee will be charged to the applicant for actual cost at prevailing rates **in addition to the filing fee** in accordance with the CAC Section 7-133(m).
- c. For equipment supports and attachments OPM, Manufacturer's Certified Outline Drawings showing sizes, weights, locations of center of gravity, and attachment requirements.
- d. Supporting documents, test reports, drawings, product catalog, and calculations for review, and OPM to be approved.

Original signed	6/2/16
Paul Coleman	Date

APPENDIX A

2016 CALIFORNIA BUILDING CODE

1705A.13.2 Nonstructural Components. For structures assigned to *Seismic Design Category D, E or F*, where requirements of Section 13.2.1 of ASCE 7 for non-structural components, supports, or attachments are met by *manufacturer's certification* as specified in Item 2 therein, the *registered design professional* shall specify on the *approved construction documents* the requirements for seismic certification by analysis or testing. *Certificates of compliance* for the *manufacturer's certification* shall be submitted to the *building official* as specified in Section 1704A.5.

Seismic sway braces satisfying requirements of FM 1950 shall be deemed to satisfy the requirements of this Section. Component tests shall be supplemented by assembly tests, when required by the building official.

ASCE STANDARD ASCE/SEI 7-10

American Society of Civil Engineers
Minimum Design Loads for Buildings and Other Structures

11.2 DEFINITIONS

ATTACHMENTS: Means by which nonstructural components or supports of nonstructural components are secured or connected to the seismic force-resisting system of the structure. Such attachments include anchor bolts, welded connections, and mechanical fasteners.

COMPONENT: A part of an architectural, electrical, or mechanical system.

COMPONENT, NONSTRUCTURAL: A part of an architectural, mechanical, or electrical system within or without a building or nonbuilding structure.

SUPPORTS: Those members, assemblies of members, or manufactured elements, including braces, frames, legs, lugs, snubbers, hangers, saddles, or struts, and associated fasteners that transmit loads between nonstructural components and their attachments to the structure.

13.2 GENERAL DESIGN REQUIREMENTS

13.2.1 Applicable Requirements for Architectural, Mechanical, and Electrical Components, Supports, and Attachments

Architectural, mechanical, and electrical components, supports, and attachments shall

comply with the sections referenced in Table 13.2-1. These requirements shall be satisfied by one of the following methods:

1. Project-specific design and documentation submitted for approval to the authority having jurisdiction after review and acceptance by a registered design professional.
2. Submittal of the manufacturer's certification that the component is seismically qualified by at least one of the following:
 - a. Analysis, or
 - b. Testing in accordance with the alternative set forth in Section 13.2.5, or
 - c. Experience data in accordance with the alternative set forth in Section 13.2.6.

APPENDIX B

FREQUENTLY ASKED QUESTIONS

1. How can we submit layout drawings, as required by the distribution system OPMs?

Layout drawings required by distribution system OPMs can be submitted as follows:

- a. Part of the original Construction Documents (CDs) submittal for plan review; or
- b. As Deferred Submittals Items (DSIs) in accordance with 2016 CAC Section 7-126 and 2016 CBC Section 107.3.4.1, which are required to be listed on the CDs; or
- c. As Amended Construction Documents (ACDs) in accordance with 2016 CAC Section 7-153 and 2016 CBC Section 107.4, where equipment, supports and attachments are changed or added after CD approval.

Both DSIs and ACDs are Post-Approval Documents and use Form OSH-FD-125.

2. Can we submit distribution system layout drawings to OSHPD field staff?

Yes. However, depending on the scope of review and staff availability submittal may be sent to the OSHPD regional plan review units for review.

3. Do we need to insert approved OPMs into construction documents?

No. OPMs can be used by reference in construction documents. Reference to the OPM shall identify specific details in the OPM being used for the project. Submittal of layout drawings, as specified in the OPMs, shall be required for distribution system OPMs.

All approved OPMs are posted on the OSHPD website:

<http://www.oshpd.ca.gov/FDD/Pre-Approval/preapprovalMfgCert-dtaTable.html>

4. Can an OPM, based on the 2013 CBC, be used on projects governed by the 2016 CBC?

Yes. Demand shall be based on either the 2013 CBC or 2016 CBC. Capacities shall be as provided in the OPMs.

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6. Do distribution system seismic supports and attachments require a deferred submittal or will these submittals be triaged and field approved by the Office?

An item is never required to be submitted as a deferred submittal. However, for systems that are often designed by the vendors or specialty contractors, such as distribution system supports and attachments, deferred submittals are common. OPM may be used for the supports and attachments of pipes, electrical raceways and HVAC ducts. A Registered Design Professional has designed the OPM and OSHPD has reviewed the supporting documents for code compliance. Therefore, the OPM and supporting documents will not be re-reviewed by OSHPD regional staff. However, each distribution system OPM requires submittal of layout drawings that will be reviewed and approved by OSHPD on a project specific basis to ensure that:

- a. Structure supporting the distribution system has adequate capacity;
- b. Seismic design forces (F_p) are in accordance with the CBC; and
- c. Submittal is within the scope of OPM for:
 - i. Size of distribution system components;
 - ii. Spacing of bracing and flexible joints; and
 - iii. Substrate for attachments.

As with all OPMs, construction documents shall show how and where the OPM will be applied to each applicable system on a project specific basis.

The distribution system OPM typically relies on a prescriptive approach. The OPM's have tables and charts associated with them that are to be used to select the appropriate detail for each location that a support/attachment is to be installed. The application of these criteria should never become the responsibility of the Inspector of Record, whose responsibility is to inspect only, not design.

In accordance with 2016 CAC Section 7-126 and 2016 CBC Section 107.3.4.1, the structural engineer of record is required to review and forward the supports and attachments construction documents for OSHPD review with a notation indicating that the construction documents have been reviewed and they have been found to be in general conformance with the project requirements. A review stamp by the Structural Engineer of Record, or Registered Design Professional when project does not have a Structural Engineer of Record, is usually acceptable for compliance with this requirement.

The OSHPD regional staff, on a project specific basis, will review layout drawings and supports/attachments details and supporting documents that are not part of an OPM. Review of supports and attachments of this nature does not constitute a preapproval that may be used on other projects without the benefit of OSHPD construction documents review.

7. Can I get an OPM for outdoor equipment, where design is governed by wind or snow loads?

No. OPM is for indoor components only, where design is controlled by seismic forces. Components that are subject to significant non-seismic forces such as gravity (where seismic force is primarily vertical seismic force produced by self-weight of the components supported), wind, flood, snow, soil or water pressure, thermal loads, etc. are outside the scope of the OPM program.

8. Can I get an OPM for distribution system gravity only supports and attachments?

No. OPM program is limited to seismic design of supports and attachments only.

9. Is the “certificate of compliance” in accordance with the 2016 CBC Section 1704.5 or 1704A.5 Item # 2 required for pure gravity supports and attachments?

No. The “certificate of compliance” requirement in the 2016 CBC Sections 1704.5 and 1704A.5 Item # 2 is limited to seismic design only.

10. Can existing post-installed expansion and undercut anchors remain in use for the 2016 CBC based projects?

Materials already in use in a building in compliance with requirements or approvals in effect at the time of their erection or installation shall, in general, be permitted to remain in use in accordance with the 2016 CBC Section 3401A.4.1.

How, if there are no design drawings to show details of existing post-installed anchors?

If there are no design drawings that show diameter and embedment length or where capacities can't be established on the basis of identification mark on the anchors, then testing in accordance with the 2016 CAC, Chapter 6, Section 11.3, using three times calculated allowable stress level demand including overstrength factor based on the 2016 CBC, will be acceptable.