

**Advisory
Guide
Series**

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**Prefabrication Advisory
Guide for Preapproved
Fabricated Components
and Systems (PCS)**

**FOR
[ALL BUILDINGS UNDER
OSHDP JURISDICTION]**

Office of Statewide Hospital Planning and Development

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INTRODUCTION

This guide provides a structured approach for design professionals, manufacturers, inspectors, and healthcare project stakeholders to understand and apply prefabrication strategies within California healthcare construction under HCAI oversight. It explains pathways including Preapproved Prefabricated Components and Systems (PCS), project-specific prefabrication, and related programs.

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Department of Health Care Access and Information (HCAI)
Office of Statewide Hospital Planning and Development (OSHDP)
has drafted this Advisory Guide in consultation with the
Hospital Building Safety Board (HBSB)

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TABLE OF CONTENTS

INTRODUCTION..... i

TABLE OF CONTENTS..... iii

SECTION 1 Key Definitions..... 1

SECTION 2 PCS Review and Approval Process 3

SECTION 3 Distinction Between PCS and OPM..... 5

SECTION 4 Use of PCS in Construction Documents..... 7

SECTION 5 Project-Specific Prefabrication Details 9

SECTION 6 PCS Renewal Considerations 11

SECTION 7 Inspection Process and TIO Development 13

SECTION 8 Fire and Life Safety Design Considerations..... 16

APPENDIX A – Vendor Feedback from March 19, 2026 HCAI HBSB Meeting A-1

APPENDIX B – Q&A from June 25, 2024 Prefabrication Webinar B-1

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SECTION 1

Key Definitions

Preapproved Prefabricated Components and Systems (PCS) is a voluntary HCAI program providing multidisciplinary preapproval of prefabricated systems. Prefabrication refers to producing assemblies of components prior to installation. Off-site fabrication occurs away from the final installation location, while on-site fabrication occurs at the project site.

Term	Definition
Components	A constituent part, element, or part of a system including architectural, mechanical, or electrical.
Manufacture	The making of goods or components by manual labor or machinery.
Manufactured Components	Factory-built catalog items with defined capacity or seismic certification.
Off-Site Fabrication	Assembly off-site with intent to transport and install later.
Off-Site Prefabrication	Assembly performed off-site for components normally assembled on-site and can be approved within projects.
On-Site Fabrication	Assembly of components on-site for immediate installation.
OPAA	Preapproved agency program for inspections and testing.
OPD	Preapproved standard design details.
OPM	Preapproval of seismic supports and attachments for nonstructural components.
OSP	Preapproval of special seismic certification for equipment.
PCS	Preapproved Prefabricated Components and Systems program providing multidisciplinary approval.
Pre-Assemble	Manufacture sections of a building in a factory for transport and assembly.
Pre-Fabricate	Produce a product of multiple components prior to installation.

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SECTION 2

PCS Review and Approval Process

The HCAI Preapproved Prefabricated Components and Systems (PCS) program is designed to streamline healthcare construction by providing multi-disciplinary preapproval for prefabricated elements. This initiative eliminates the need for manufacturers to seek approval on a per-project basis, significantly reducing the uncertainty and repetitive nature of plan reviews. To begin the process, applicants must submit a complete PDF application to HCAI via email (see instructions below). This submittal must include an initial application filing fee of \$250.00 and the project is ultimately billed hourly based on time spent. A Rough Order of Magnitude (ROM) for total costs can be provided once the complexity of the system and specific review requirements are established.

A successful application requires comprehensive supporting documentation, including test reports (where applicable), drawings, product catalogs, and detailed calculations for review. Because the PCS program is a multi-discipline endeavor, these documents must address various criteria, potentially involving structural, architectural, mechanical, electrical, plumbing, and fire life safety disciplines. To facilitate a smooth review, documents must be easy to follow, use common sizes/cases rather than overly broad data, and strictly adhere to applicable California Building Code (CBC) standards. The approval process typically involves an initial multi-discipline review by HCAI, followed by potential coordination meetings between design professionals and manufacturers to address comments. Once all responses to comments are reviewed and verified, HCAI issues the final approval, allowing the component or system to be utilized in California healthcare facility construction.

For further information go to <https://hcai.ca.gov/constructionfinance/preapproval-programs/>. Download the Application for Preapproved Prefabricated Components and Systems (HCAI-FD-110). Email your completed application and supporting documents to PPCS@hcai.ca.gov.

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SECTION 3

Distinction Between PCS and OPM

OPM and PCS are voluntary preapproval programs that support California healthcare construction and focus on different scopes. OPM is a program limited to the seismic design of supports and attachments for nonstructural components, such as anchoring equipment, bracing for ducts, pipes, electrical raceways, interior partitions, and suspended ceilings. It does not approve the equipment or component itself or evaluate the supporting structure. PCS, on the other hand, is for full prefabricated components and systems. It provides a multidisciplinary preapproval that streamlines project review and allows manufacturers to have their prefabricated systems approved independently of a specific construction project. In short, OPM focuses on seismic support and attachment details for nonstructural components, while PCS provides broader preapproval of complete prefabricated components and systems.

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SECTION 4

Use of PCS in Construction Documents

Once PCS preapproval is granted, it serves as a standardized "building block" for healthcare construction projects across California. Preapproval is not permitting approval; rather, it is a time-saving document for HCAI and the design professionals during project specific reviews. To use a preapproved component in a specific project, the Design Professional of Record (DPOR) must incorporate the PCS details directly into the project's construction documents. It is a requirement that the drawings and calculations submitted to HCAI for the specific construction project provide a clear and direct reference to the unique PCS number assigned during the preapproval process. Furthermore, it is required to copy the relevant portions of the preapproved structural drawings and details into the project-specific construction document set. This ensures that field inspectors and contractors have immediate access to the approved design criteria without needing to cross-reference external manuals during construction.

While the PCS program provides a rigid framework for consistency, there may be instances where minor adjustments are necessary to fit the unique constraints of a specific site. If there are minor deviations compared to the approved PCS, the design professional should justify these minor deviations with the plan review submission. If the deviations are significant, then PCS is not appropriate to use. If these significant deviations are very common, it is advised that the PCS should be revised to reflect the common cases.

PCS Approval Workflow

Submit → HCAI Multi-Discipline Review → Comment Resolution → Approval → Use in Construction Documents

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SECTION 5

Project-Specific Prefabrication Details

In addition to the general PCS preapproval, which allows a manufacturer to use their system across all six HCAI regions in California, the program also facilitates Project-Specific Prefabrication. While standard PCS preapproval is intended to streamline multiple projects by creating a universal "building block," a project-specific path is often chosen to allow variability or to satisfy the requirements of a specific hospital. This approach allows design and fabrication to be tailored strictly to the unique constraints and specialized needs of a single facility. Under this model, the review and approval are tied directly to the project's specific HCAI region project number, ensuring that the prefabricated components meet the architectural, mechanical, electrical, plumbing, structural and life safety standards required for that specific site.

Even with project-specific prefabrication, the integration process follows the same documentation requirements as a general PCS. The calculations and design drawings must cover all conditions where the prefabricated element is used and follow the applicable codes and standards. The design drawings and the specifications must be compartmentalized (unique sheet numbers or detail numbers, and by separate incremental packages if appropriate) so that they can be easily referenced. The TIO must indicate when and where the inspections, tests and observation steps are to be implemented for these prefabricated components. An important consideration is to indicate where the prefabrication assembly is performed (on-site or off-site), to coordinate inspections and observations for the DPOR, IOR and HCAI field staff.

Furthermore, because the approval is project-bound, any modifications to the prefabricated system must be approved by HCAI via an Amended Construction Document (ACD) submittal for material changes or a Non-Material Alteration (NMA) for revisions that meet NMA requirements. Obtaining explicit approval for these modifications ensures that the integrity of the project-specific prefabrication is maintained throughout the construction phase.

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SECTION 6

PCS Renewal Considerations

New or Revised Product (Version Control)

When a preapproved component or system is modified, updated, or expanded beyond the originally approved configuration, a revised PCS submittal shall be prepared. The Engineer of Record (EOR) shall perform the necessary calculations and prepare updated drawings and supporting documentation reflecting the revised product. The submittal shall clearly identify all changes from the previously approved version, including revision clouds or a summary of changes. The complete package shall be submitted to HCAI for review. Upon approval, a new version of the PCS shall be issued with an updated version number, superseding or supplementing the prior approval as determined by HCAI.

Changes in Applicable Codes and Standards

When new editions of the California Building Code (CBC) or other applicable standards are adopted, the Engineer of Record (EOR) shall evaluate the impact of such changes on the previously approved PCS. This evaluation shall determine whether the existing design remains compliant or identify any limitations or conditions under which the PCS can continue to be used. Where full compliance with the new code is not inherent, the EOR shall provide clear guidance, calculations, and/or design criteria describing how the previously approved PCS may be used in a manner that satisfies the intent of the updated code. This guidance shall be documented and submitted to HCAI for review and acceptance.

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SECTION 7

Inspection Process and TIO Development

Prefabrication Assembly Inspections

Prefabrication changes the location and sequence of construction, but does not eliminate applicable testing, inspection, or observation requirements. Required inspections should occur at the stage of fabrication or installation when the work is accessible and can be adequately evaluated.

The DPOR, contractor, IOR, approved agencies, special inspectors, manufacturers, and HCAI field staff, as applicable, shall coordinate the inspection approach before fabrication begins. The approved Testing, Inspection and Observation (TIO) program shall identify the required inspections, tests and observations, the responsible parties, and the stages of fabrication or installation at which they will occur.

Where work will become concealed during prefabrication, required inspections must be completed before concealment. The use of prefabrication should not result in work becoming inaccessible before required inspection or testing has occurred.

A. On-site Fabrication

Where components are fabricated or preassembled at the project site, required inspections, tests, and observations shall be performed in accordance with the approved construction documents and TIO program in substantially the same manner as conventional field construction.

The project team shall coordinate the sequence of fabrication so that required inspections can be performed before work becomes concealed or inaccessible. Where multiple trades are incorporated into a prefabricated assembly, the IOR and applicable special inspectors shall be provided access to inspect the work at the appropriate stages of assembly.

Materials incorporated into on-site prefabricated assemblies shall be identified and verified in accordance with applicable code requirements, approved construction documents, specifications, and the TIO.

Each prefabricated assembly shall be identified at a level appropriate to the project and coordinated with the approved construction documents and TIO so that required inspections and tests can be associated with the applicable assembly. Once the prefabricated assembly has been placed in its final location, remaining connections,

anchorage, interfaces, and other project-specific work shall be completed and inspected in accordance with the approved construction documents and TIO.

B. Off-Site Fabrication and Prefabrication

Off-site fabrication may occur adjacent to the project site, elsewhere within California, in another state, or outside the United States. Applicable testing, inspection and observation requirements continue to apply regardless of the location of fabrication.

For structural fabrication, CBC Section 1704A.2.5 requires special inspection of structural, load-bearing, and lateral-force-resisting members and assemblies during fabrication when fabrication occurs at a fabricator's shop.

a. Inspection Planning

Prior to commencement of off-site fabrication, the DPOR shall coordinate with the contractor, IOR, manufacturer or fabricator, approved agencies, special inspectors, and other responsible parties to identify the testing, inspection, and observation activities that must occur at the fabrication facility.

The approved TIO should identify, as applicable:

- i. inspections and tests required during fabrication;
- ii. responsible inspectors, approved agencies, and other participants;
- iii. required continuous or periodic special inspections;
- iv. work requiring inspection before concealment;
- v. material identification requirements;
- vi. prototype or first-article inspections where applicable;
- vii. production unit inspection requirements;
- viii. required hold points;
- ix. HCAI field observation milestones;
- x. documentation and reporting requirements; and
- xi. final inspection or acceptance required before shipment.

The objective is to provide the required level of inspection at the location where the work can be effectively evaluated.

b. Level of Inspection

Prefabricated work shall receive the same applicable level of inspection and quality assurance that would be required if the work were constructed at the project site.

This does not necessarily mean that every activity performed at a fabrication facility requires inspection. The TIO shall, distinguish between fabrication or assembly that requires inspection and preparatory manufacturing activities that can be verified later.

For example, individual components that are cut, prepared, or bundled for later assembly at the project site may be inspected as part of the subsequent on-site work where permitted. Conversely, work that will become concealed or inaccessible during off-site assembly should receive all required inspections before concealment.

c. Identification and Tracking

A reliable identification and tracking system shall be established for prefabricated components and assemblies. Each unit or assembly shall be identified at a level appropriate to the project and coordinated with the approved construction documents and TIO. Where appropriate, the identification system may include unique unit numbers, serial numbers, barcodes, QR codes, or electronic tracking.

The tracking system shall allow the project team to correlate the prefabricated component with its:

- i. project and increment;
- ii. approved construction documents;
- iii. material identification records;
- iv. applicable inspections and tests;
- v. inspection status;
- vi. nonconformance or corrective-action records, if any;
- vii. shipping documentation; and
- viii. final installation location.

d. Material Identification

Materials incorporated into prefabricated assemblies shall be identified and verified in accordance with applicable code requirements, approved construction documents, specifications, and the TIO.

The contractor, manufacturer or fabricator shall coordinate material identification with the IOR and applicable special inspectors before

materials become incorporated into work that will subsequently be concealed.

Material certifications, listings, labels, mill certificates, welding materials, and other documentation shall remain traceable to the applicable component or assembly where required.

e. Inspection During Fabrication

The IOR, approved agencies, special inspectors, and other responsible parties shall perform the inspections, tests, and observations identified in the approved TIO at the appropriate stages of fabrication.

Inspection activities may include architectural, structural, mechanical, electrical, plumbing, medical gas, fire protection, and other applicable work that can be inspected independently before connection to project-site systems.

Where repetitive units are being fabricated, the TIO may establish prototype or first-article inspections and appropriate inspection frequencies for subsequent production units, subject to applicable code requirements.

Required continuous special inspection remains continuous where mandated by code or the approved TIO.

f. Protection for Transportation

Components and systems requiring temporary protection for transportation shall be appropriately secured, capped, sealed, or otherwise protected before shipment.

Examples may include piping systems, medical gas piping, electrical components, ductwork, fire protection piping, and other systems susceptible to contamination, damage, moisture intrusion, or displacement during transportation.

Any testing or certification that could be affected by transportation shall be identified so that appropriate verification can occur following delivery.

g. HCAI Field Observation

The IOR and DPOR should coordinate with HCAI field staff regarding appropriate observation of off-site fabrication and applicable TIO milestones.

HCAI field staff may visit an off-site fabrication facility as appropriate. However, required inspections and tests should not be dependent upon HCAI staff being continuously present at the fabrication facility unless specifically required.

The approved TIO shall establish the inspection and documentation process necessary to demonstrate compliance throughout fabrication.

h. Completion Prior to Shipment

Prior to release of a prefabricated component or assembly for shipment to the project site, required fabrication inspections and tests shall be completed and documented.

The IOR and other responsible parties, as applicable, shall verify that:

- i. required inspections and tests have been completed;
- ii. identified deficiencies or nonconforming conditions have been resolved;
- iii. work that will become inaccessible has been inspected;
- iv. required documentation is complete;
- v. component identification and tracking information are current; and
- vi. the component is appropriately protected for transportation.

The final fabrication inspection shall be documented in accordance with the approved TIO and project inspection procedures.

i. Fabrication Outside the United States

Prefabricated components and systems may be manufactured or assembled outside the United States. The location of fabrication does not reduce or eliminate applicable testing, inspection, observation, documentation, or quality assurance requirements.

The requirements of Section 8(b) for off-site fabrication apply equally to international fabrication. In addition, international fabrication may require additional planning to address the qualification of inspection agencies and personnel, access to the fabrication facility, communication, documentation, travel, and transportation.

Because access to an international fabrication facility may be more difficult to coordinate, the DPOR, contractor, manufacturer, IOR, approved agencies, special inspectors, and HCAI shall identify the proposed fabrication and inspection approach before fabrication begins. The TIO shall clearly identify the tests, inspections and observations that will occur at the foreign fabrication facility and the individuals or agencies responsible for performing them.

j. Approved Agencies and Qualified Inspectors

Required structural tests and special inspections must be performed by agencies and individuals acceptable to the DPOR and HCAI, and qualified for the specific work being performed.

A foreign testing or inspection agency is not necessarily unacceptable solely because it is located outside the United States. HCAI's OPAA program recognizes agencies based upon qualifying accreditation or acceptance, and PIN 58 recognizes accreditation bodies that are signatories to the International Laboratory Accreditation Cooperation (ILAC) Multilateral Recognition Arrangement.

The project team shall verify the qualifications, certifications, accreditation, experience, and scope of services of proposed foreign agencies or inspectors sufficiently in advance of fabrication to allow review and acceptance by HCAI where required.

Where qualified U.S.-based approved agencies or inspectors will travel to the foreign fabrication facility, those individuals shall likewise be identified in the TIO and coordinated in advance.

The manufacturer's own QA/QC program shall not be considered a substitute for independent testing or special inspection where independent testing or inspection is required by code or the approved TIO.

k. Inspection Frequency and Hold Points

The TIO shall identify whether each required inspection is continuous, periodic, or performed at specified milestones.

For repetitive manufacturing or production, the approved inspection program may establish appropriate inspection frequencies and defined hold points based upon the applicable code requirements, approved construction documents, PCS requirements, and nature of the fabrication.

Where work will become concealed during fabrication, the required inspection must occur before concealment. Fabrication shall not proceed beyond an established inspection or hold point until the required inspection, test, or observation has been completed and documented. This principle is particularly important for international fabrication because reopening completed assemblies after shipment may be impractical and may defeat many of the benefits of prefabrication.

l. Manufacturer Quality Control and Independent Quality Assurance

The manufacturer's quality control program and the project's independent quality assurance and inspection program shall be clearly distinguished.

Manufacturer quality control may include material certifications, fabrication procedures, internal inspections, dimensional checks, equipment calibration, production testing, and documentation.

Independent quality assurance may include review or observation of manufacturing processes, verification of material identification, witnessing required testing, special inspection, review of test results, and verification that fabrication conforms to the approved construction documents and applicable acceptance criteria.

m. Documentation and Reporting

Inspection and testing performed outside the United States shall be documented to the same level required for comparable work performed domestically.

Reports shall clearly identify the component or assembly inspected, date and location of inspection, applicable approved construction documents or procedures, work observed, tests performed, results, inspector or agency performing the work, and any nonconforming conditions.

Records shall be transmitted to the appropriate project participants in accordance with the approved TIO and maintained as part of the project inspection documentation.

Where testing is performed, test equipment calibration and applicable testing standards shall be established in advance.

n. Nonconforming Work

The inspection and QA/QC program shall establish a procedure for identifying, documenting, evaluating, and resolving nonconforming work before the affected component is shipped or incorporated into the project.

Nonconforming work shall be clearly identified and segregated or otherwise controlled to prevent inadvertent shipment or installation. Required repair, rework, replacement, additional testing, or other corrective action shall be reviewed and approved by the appropriate design professional and HCAI when required.

Corrective actions and subsequent inspections or testing shall remain traceable to the affected component.

o. International Fabrication Planning Considerations

International fabrication shall be identified as early as practical. Qualification of inspection agencies and personnel, travel and access requirements, time-zone differences, language and documentation issues, inspection hold points, and transportation time can significantly affect the inspection plan and project schedule if not addressed before fabrication begins.

p. Receipt and Installation at the Project Site

Upon delivery of prefabricated components or assemblies to the project site or an intermediate storage location, the IOR shall verify with the

contractor that the delivered components correspond with the identification and tracking documentation established during fabrication.

As applicable, verification shall include:

- i. component or assembly identification;
- ii. unit, serial, barcode, QR code, or other tracking information;
- iii. applicable project and increment;
- iv. conformance with shipping records;
- v. required fabrication inspection and testing documentation; and
- vi. condition of the component following transportation.

q. Transportation and Handling Damage

The IOR shall evaluate delivered components for evidence of damage, deterioration, displacement, contamination, unauthorized modification, or other conditions resulting from transportation, storage, or handling.

Components exhibiting conditions that could affect compliance or performance shall be evaluated by the appropriate design professional before installation.

Previously inspected concealed work generally need not be reopened solely because the component has been transported from the fabrication facility to the project site. However, evidence of damage, alteration, nonconformance, or incomplete documentation may require additional inspection or evaluation.

r. Installation and Connection

Once the prefabricated component or assembly has been placed in its final location, remaining project-specific work shall be completed and inspected in accordance with the approved construction documents and TIO.

This may include, as applicable:

- i. anchorage and structural connections;
- ii. connections to mechanical, electrical, plumbing, medical gas, fire protection, and other building systems;
- iii. field-installed penetrations and firestopping;
- iv. joints and interfaces with adjacent construction;

- v. fire and smoke dampers;
- vi. fire alarm and detection system connections;
- vii. weatherproofing or environmental protection;
- viii. accessibility and required clearances; and
- ix. other work completed after delivery or placement.

s. Field Modifications

Any field modification to a previously inspected prefabricated component or assembly shall be evaluated to determine whether the modification remains consistent with the approved construction documents and PCS, where applicable.

Modifications affecting previously inspected work may require additional inspection, testing, design professional review, documentation, or HCAI approval before the affected work is concealed or the component is placed into service.

t. Final Verification

The IOR and applicable special inspectors shall verify completion of required installation inspections and tests in accordance with the approved TIO.

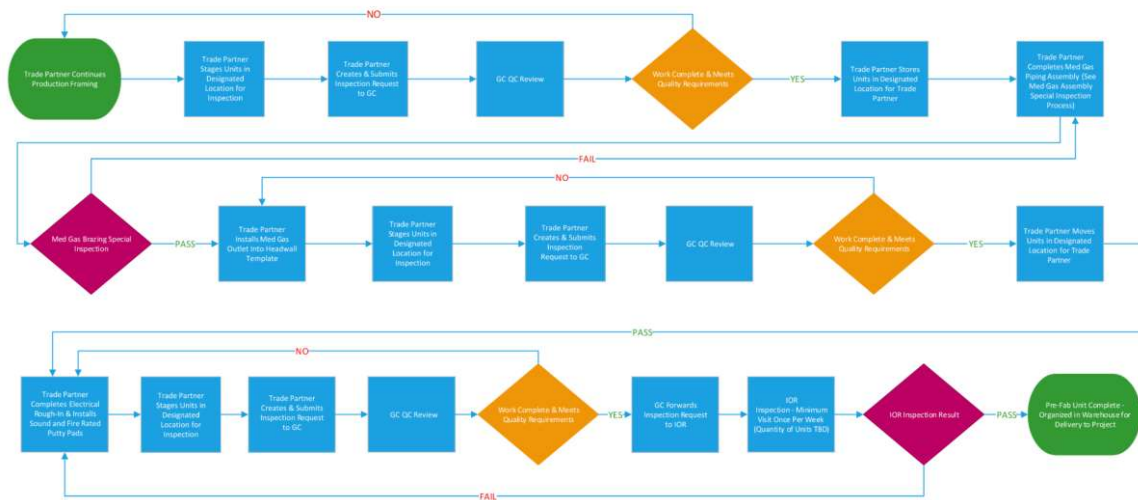
Final documentation shall maintain continuity between the identification and inspection records established during fabrication and the component's final installed location within the project.

Reference PIN 58 for further clarification on inspection requirements.

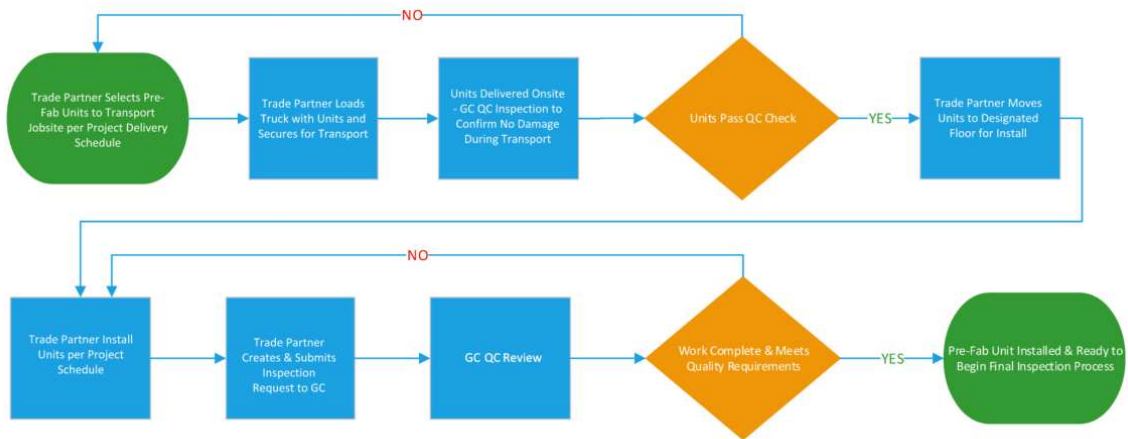
OFFSITE PRE-FABRICATION INSPECTION PROCESS: MATERIAL ID



OFFSITE PRE-FABRICATION INSPECTION PROCESS: PRODUCTION UNITS



**OFFSITE PRE-FABRICATION INSPECTION PROCESS:
TRANSPORT TO INSTALL**



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SECTION 8

Fire and Life Safety Design Considerations

Preapproved fabricated components and systems integrated within buildings must be designed and installed in a manner that maintains compliance with applicable fire and life safety requirements. While these systems are constructed off-site, their installation introduces unique coordination challenges that must be addressed early in the design process.

Design teams shall evaluate project-specific variables including, but not limited to, construction type, occupancy classification, and the location of the system within the building. These factors directly influence allowable materials, fire-resistance requirements, and the design of fire protection systems. Compliance with the California Building Code (CBC), California Fire Code (CFC), and applicable standards such as NFPA 13 is required.

Material selection must align with the building's construction type and applicable code provisions. Interior finishes must meet flame spread and smoke development requirements, and any plastics or combustible materials must be evaluated in accordance with applicable code sections. Mechanical, electrical, and plumbing components must also comply with applicable code requirements.

Fire-resistance-rated construction must remain continuous and uncompromised. When preapproved fabricated components and systems are not intended to serve as part of required fire-resistance-rated assemblies, the adjacent fire-resistance rated assemblies must be constructed and maintained independently to meet required ratings. The system will be reviewed for compliance with furred out requirements of CBC Chapter 8 and concealed space requirements. When preapproved fabricated components and systems are intended to serve as part of the fire resistance rated assembly, tested, listed, approved assemblies are to be used with details provided, and all applicable code requirements met.

All penetrations and openings through rated assemblies must be properly protected using listed, tested and approved firestopping systems. Additionally, any structural modifications such as floor depressions must be coordinated to ensure compliance with tested horizontal assembly requirements.

Concealed spaces created between preapproved fabricated components and systems and adjacent construction must be carefully evaluated. Sprinkler protection within concealed spaces may be required. Concealed spaces will require evaluation for sprinkler protection, insulation, or other methods in accordance with NFPA 13. Coordination with the sprinkler designer and architect of record is essential.

The placement of preapproved fabricated components and systems must not adversely impact the means of egress system. Compliance with CBC Chapters 4, 7 & 10 must be maintained, including, but not limited to, travel distance limitations, corridor configurations, suite configurations, and door operation requirements. Doors serving the systems must meet CBC 716 requirements, including compliance with hardware and operational requirements, be free egress or meet code requirements for controlled egress where controlled egress devices are permitted by code.

Fire alarm and sprinkler systems must be fully coordinated with the preapproved fabricated components and systems design. Detection and notification coverage must be provided as required for the intended use. Sprinkler systems must account for system size, configuration, concealed spaces, and all other applicable code and referenced standards requirements. Designers must provide sufficient detail, including dimensions of concealed areas, to support proper system design.

Successful implementation of preapproved fabricated components and systems requires strong coordination across all disciplines. Structural, architectural, and fire protection elements must be aligned to ensure compliance without compromising constructability. For questions or project-specific conditions, coordination with the appropriate fire and life safety staff is recommended. Early engagement with the design team and HCAI is also recommended to address project-specific conditions and avoid delays.

This guide is not exhaustive; project-specific conditions may require additional analysis. **HCAI approval of a preapproved fabricated components and systems is not equivalent to material or equipment approval and listing by the State Fire Marshal per Title 19, Division 1, Chapter 1.5. Please do not label or identify the preapproved fabricated components and systems as approved and listed by the California State Fire Marshal.**

1. Purpose and Applicability
 - a. Provide fire and life safety design considerations for preapproved fabricated components and systems installed within buildings.
 - b. Applicable to all project types where preapproved fabricated components and systems are integrated into a structure.
2. General Considerations
 - a. Evaluate project-specific variables, including:
 - b. Construction type
 - c. Use
 - d. System location within the building

- e. Fire-resistance requirements
 - f. Fire alarm and sprinkler systems
 - i. Coordinate early with design team to address integration with building systems.
 - ii. Confirm compliance with applicable parts of California Code of Regulations (CCR) Title 24, applicable chapters and sections of California Building Code, California Fire Code, and referenced standards such as NFPA 13, NFPA 72.
3. Materials and Construction
- a. Materials must comply with allowable construction type and fire resistance rated assembly requirements (CBC Chapter 6 & 7).
 - b. Interior wall and ceiling finishes must meet CBC Chapter 8 requirements.
 - c. Plastics, if allowed in the system, must comply with CBC Chapter 26, all other applicable code sections and referenced standards.
 - d. Mechanical, electrical, and plumbing materials must comply with applicable CBC, CMC, and CPC provisions, and referenced standards.
 - e. Use noncombustible materials where required by construction type.
4. Fire-Resistance-Rated Construction
- a. Maintain continuity of fire-resistance-rated assemblies (CBC Chapter 7).
 - b. When preapproved fabricated components and systems are not intended to serve as part of required fire-resistance-rated assemblies, the adjacent fire-resistance rated assemblies must be constructed and maintained independently to meet required ratings. The system will be reviewed for compliance with furred out requirements of CBC 8 and concealed space requirements.
 - c. When preapproved fabricated components and systems are intended to serve as part of the fire resistance rated assembly, tested, listed, approved assemblies are to be used with details provided, and all applicable code requirements met.
 - d. Coordinate installation sequence:
 - i. Determine whether systems are installed before or after fire resistance rated construction.
 - ii. Ensure constructability (e.g., system access into completed spaces).
 - e. Provide details for:
 - i. Fire resistance rated assemblies (walls and floor/ceiling, roof/ceiling) and listed approved assemblies and numbers

- ii. Penetrations through rated assemblies
 - iii. Fire smoke damper locations
 - iv. Floor/ceiling assembly continuity (CBC 711)
 - v. Depressions or structural modifications affecting rated assemblies
 - vi. Furred/Set-Out construction requirements between system and fire resistance rated assemblies (CBC 803.15)
 - vii. All other applicable details
- 5. Concealed Spaces
 - a. Evaluate concealed spaces between the system and adjacent construction
 - b. Concealed space protection above system and between horizontal floor/ceiling, roof/ceiling assembly may be required per NFPA 13.
 - i. Evaluate need for:
 - 1. Sprinkler protection
 - 2. Insulation/concealed space fill
 - 3. Other compliant methods per NFPA 13
 - 4. Coordinate with sprinkler designer and architect of record.
- 6. Means of Egress (CBC Chapters 4, 7 & 10)
 - a. Ensure system placement does not compromise egress requirements, including:
 - i. Travel distance
 - ii. Access through intervening rooms
 - iii. Corridor, suite and smoke compartment relationships
 - b. Door requirements
 - i. Free egress
 - ii. Appropriate hardware and applicable code requirements (e.g., delayed egress, controlled egress, anti-ligature as applicable)
 - iii. Maintain required widths, clearances, and accessibility.
- 7. Fire Alarm Systems
 - a. Provide fire alarm, notification devices, initiation devices, coverage in accordance with applicable codes.
 - b. Coordinate detection within and around preapproved fabricated components and systems.
 - c. Identify perforation location for devices.
 - d. Ensure system integration with the building fire alarm system.
 - e. Fire smoke damper location
- 8. Automatic Sprinkler Systems

- a. Provide sprinkler protection in accordance with CBC/CFC Section 903 and NFPA 13.
 - b. Evaluate:
 - i. Coverage within the system
 - ii. Concealed spaces above ceilings and below raised floors
 - c. Provide dimensions of concealed spaces to support sprinkler design and applicable code/referenced standards requirements.
 - d. Coordinate sprinkler layout with system size and configuration, and installation sequence.
9. Coordination Consideration
- a. Structural openings (e.g., floor depressions, penetrations)
 - b. Drain locations and alignment
 - c. Timing of core drilling and installation
 - d. Ventilation openings
 - e. Ensure modifications do not compromise fire-resistance-rated assemblies.
 - f. Provide clear identification for critical systems (e.g., electrical circuits where required).
10. Documentation Requirements
- a. Provide plans and details demonstrating:
 - i. Code-compliant material selection
 - ii. Fire-resistance-rated assembly continuity
 - iii. Penetration protection
 - iv. Fire alarm and sprinkler coverage
 - v. Egress compliance
 - vi. Opening protection (e.g. dampers, glazing, doors)
 - vii. Include coordination details between disciplines
 - b. Provide notes when items will be provided separate from preapproved fabricated components and systems
11. Support and Coordination
- a. Early coordination with HCAI OSHPD is recommended
 - b. For project-specific questions, consult the design team and applicable HCAI/OSHPD staff

Common Pitfalls and Coordination Challenges

The following items represent common issues observed in the design and installation of preapproved fabricated components and systems. Addressing these early in the design process can help avoid delays, redesign, and compliance concerns.

- a. Fire-Resistance-Rated Construction

- i. Preapproved fabricated components and systems relation to required fire-resistance-rated assemblies
 - ii. Discontinuities in rated walls, floors, or ceilings at system interfaces
 - iii. Incomplete or missing firestopping at penetrations through rated assemblies
 - iv. Failure to account for structural modifications (e.g., floor depressions) in tested fire-resistance designs
- b. Installation Sequencing and Constructability
 - i. Designing system placement without considering installation sequence
 - ii. Systems not fitting through openings after rated assemblies are constructed
 - iii. Lack of coordination between preapproved fabricated components and systems delivery and building construction timeline
- c. Concealed Spaces
 - i. Overlooking concealed spaces created between the system and adjacent construction
 - ii. Not evaluating combustible vs. noncombustible conditions
 - iii. Missing or unclear sprinkler protection requirements for concealed spaces
 - iv. Lack of coordination with the sprinkler designer and architect of record
- d. Means of Egress
 - i. System placement reducing required egress width or travel distance compliance
 - ii. Doors not meeting required egress operation (e.g., hardware, power operation, delayed egress conditions)
 - iii. Improper placement relative to corridors, suites, or required exit components
- e. Fire Alarm Systems
 - i. Gaps in detection coverage within or around preapproved fabricated components and systems
 - ii. Failure to account for perforations or openings affecting detection coverage
 - iii. Lack of integration with the building fire alarm system
- f. Automatic Sprinkler Systems
 - i. Omission of sprinkler protection in concealed or obstructed spaces

- ii. Inadequate coordination of sprinkler head locations with system configuration
 - iii. Missing or incomplete dimensions for concealed spaces impacting system design
- g. Materials and Code Compliance
 - i. Use of materials not permitted for the building's construction type
 - ii. Noncompliant interior finishes
 - iii. Improper use of plastics or combustible materials without proper evaluation
- h. Coordination Across Disciplines
 - i. Limited coordination between architectural, structural, MEP, and fire protection teams
 - ii. Late identification of conflicts affecting fire and life safety systems
 - iii. Incomplete documentation demonstrating compliance with applicable codes
- i. Documentation
 - i. Missing details for penetrations, rated assembly continuity, or system integration
 - ii. Inconsistent or unclear code references
 - iii. Lack of clarity on responsibilities between design team members
- j. Addressing these considerations early in the design process supports efficient project delivery and helps ensure compliance with applicable fire and life safety requirements.

AMC Alternate Means of Compliance (AMC)

An Alternate Means of Compliance (AMC) provides a process for proposing materials, systems, or designs that are not explicitly prescribed by code, but can be demonstrated to meet the intent of the code and provide an equivalent level of safety and performance. This process can be particularly useful in preapproved fabricated components and systems design, where preapproved configurations may require modification based on project-specific conditions.

The AMC process can be an effective tool when addressing fire and life safety considerations for preapproved fabricated components and systems, particularly when:

- a. Preapproved designs require modification due to site conditions
- b. Integration with building systems creates unique constraints
- c. Standard prescriptive solutions are not feasible

- d. In these cases, the AMC provides a structured and acceptable path to demonstrate that the proposed solution maintains the required level of fire and life safety.

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APPENDIX A Vendor Feedback

Reference Meeting Minutes from Hospital Building Safety Board, Ad Hoc How-To-Guide Development for Preapproved Fabricated Components and Systems Subcommittee March 19, 2026 for vendor feedback on the process they went through and the benefits they have experienced since getting the preapproval.

1. Vendor Presentation: DuraFuse Frames PCS-0004
2. Vendor Presentation: SurePods PCS-0003
3. Vendor Presentation: STARC Systems OPM-0642
4. Link to Meeting Minutes [Public Meetings – HCAI](#)
5. **HCAI Confirm acceptable to reference specific vendors in Advisory Guide**

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APPENDIX B
Q&A from June 25, 2024 Prefabrication Webinar

#	Question Asked	Answer
1	We have had problems with out of state / out of country fabricated items having a difficult time meeting Lab Standards used in California. Is there a path to equivalent accepting other Lab Standards equivalent to those in CA?	HCAI accepts many accredited lab/agency as indicated in PIN 58 section 3,4 and 5. The websites in item 8 list many approved out-of-state and out-of-country labs.
2	In order to fully realize the advantages of off-site fabrication then we will need a larger cohort of IOR's so that then can handle this strategy.	PCS does not require continuous inspection, the demand on IOR/inspectors is not going to significantly affect the total workload, however HCAI continuously promote inspector through various programs.
3	Is there a path forward where something like a bathroom, or a patient care room can become more like what we do now for Air Handlers. They become pre-approved items and the manufacturers have to get them certified and approved and then when they are used on a project that are treated like black boxes and no IOR inspection is required? I think that's what we're looking for. I.e. this is not for custom pre-fab solutions that are project specific, but if a vendor out there has a standard bathroom - that bathroom can be certified and purchased and no inspection at the manufacturers site is required ?	Yes, HCAI's PCS program allows manufacturers to develop standardized prefabricated systems that can be used on multiple projects. However, PCS approval does not eliminate inspection requirements. In accordance with the approved TIO program, the first article/prototype unit must receive a full off-site inspection with the participation of the IOR, DPOR/EORs, and other required parties prior to production. After the prototype is accepted, production units may proceed under periodic off-site inspections as defined in the approved TIO. Components that are concealed off-site must be inspected prior to concealment. On-site activities are generally limited to verification of shipping condition, final anchorage, connections, and other field-installed work.
4	If a manufacturer goes through the PCS process does that item need to be inspected by the IOR as it is built for a project?	Yes, prefabricated products still need to conform to code requirements for inspection to provide quality assurance/control at the same level that would be inspected for field installed components. The

		requirements for inspection and a TIO developed for PCS approved products ensure alignment of expectations and prevents items from being concealed before they have been properly inspected.
5	Should we say that a workload/approach should also be provided to HCAI to understand the prefabrication approach? Do details provide clarification on what is prefabricated?	DPOR and IORs should be involved in any prefabrication approach discussion as team members to help provide guidance and align on an inspection approach to the proposed prefabrication. Details are needed for prefabrication at the same level of field installed components. HCAI PCS review and approval should provide the details needed for compliant fabrication and referenced in drawing sets
6	Curious if the process involves a typical shop drawing review between the DPOR and the off site constructor.	DPORs should review all shop drawings typically. Regarding prefabrication, for best results, the DPOR should meet with any off-site constructors of prefabricated components to understand the product and the details required for a complete install, not just the components that the off-site constructor will be responsible for.
7	Please detail now the IOR can comply with requirement of "continuous inspection of work" when prefab work is done off site.	Continuous/periodic inspection requirements can be satisfied through an approved off-site TIO program. The initial prototype/first article unit is fully inspected off-site with participation of the IOR, DPOR/EORs, contractor, and manufacturer. After the prototype is approved, periodic in-plant inspections may be performed during production as defined in the approved TIO program. Work that will be concealed must be inspected prior to concealment at the fabrication facility. Upon arrival on-site, the IOR verifies shipping condition, installation, anchorage, and final connections rather than re-inspecting previously approved concealed work.

8	Can a prefab or modular product go through a project specific design approval without the pre-approval (PCS)?	Yes, prefabrication can be project specific and detailed for a specific drawing set but will be subject to the normal review process. Utilization of a PCS means that the product and applicable details have already been developed, reviewed and approved without the risk of additional review at a project specific level.
9	If a modular component is HCD certified (factory-built housing and building components), does it need to also go through HCAI?	Yes. HCD certification does not replace HCAI requirements for hospital projects. Any prefabricated or modular component used in HCAI-regulated facilities must comply with applicable HCAI requirements, including approved construction documents, TIO requirements, inspections, and special inspections.
10	Do HCAI field need to visit the plant during fabrication?	HCAI field staff may visit fabrication facilities as needed. However, the approved TIO program primarily relies on DPOR/EOR. With the DPOR direction, the IOR, approved agencies, special inspectors will perform the required off-site inspections and observations. The first prototype/first article inspection is intended to establish compliance before production begins.
11	If something is inspected in an off-site factory, is there any need to reinspect in the field. Thinking about systems within walls that are covered with gyp board in the factory.	Generally, no. Elements that were properly inspected and approved off-site prior to concealment do not require reinspection in the field. On-site inspections are focused on verifying shipping condition, damage, anchorage, final connections, and any work performed in the field.
12	Will OSHPD field staff travel to out of state factory or rely solely on IOR for inspections out of state/country.	HCAI field staff may visit out-of-state or international fabrication facilities as needed. However, compliance with the approved TIO program is primarily achieved through the IOR, approved agencies, special inspectors, and the DPOR/EOR team performing the required off-site inspections and reporting.

13	To achieve maximum benefit of prefab fully volumetric, some things like walls may be closed in. If everything is inspected in factory and covered up, unless there is apparent damage, no need to reinspect. Correct?	Correct. If work was properly inspected off-site in accordance with the approved TIO program prior to concealment, it generally does not need to be reopened or reinspected in the field unless there is evidence of damage, modification, or noncompliance. Field inspections are focused on shipping condition, installation, anchorage, and final connections.
14	What is the estimated timeframe to receive a preapproval, and how will HCAI monitor the fabrication process in the shops? Can you clarify is a PCS is specific to a project only?	A PCS is specific to a product not a project. Once a product has PCS approval, the details and requirements for the system can be copied in project specific construction documents but do not require further review or risk of approval. Details do not require to be re-reviewed. The timeframe for review depends on the complexity of the system being reviewed. HCAI staff will review the submission and commit to a timeline once they have a chance to review the product.
15	Are there a sufficient inspectors available to keep projects on schedule with this process as it ramps up?	HCAI recognizes that expanded use of prefabrication may increase demand for qualified inspectors and approved agencies. The approved TIO approach is intended to balance quality assurance with efficiency by using a fully inspected prototype/first article process followed by periodic inspections during production.
16	Is HCAI/OSHPD developing a preapproval program that will allow proprietary prefab information/details/engineering to be confidential? Currently all of this information is public for all to see.	As a public funded agency the work of the agency is made public per "public records acts".
17	For walls, how much of a product needs to be accepted? Can it vary on thickness and sizes and still be under the same "product"?	Preapprovals will show acceptable thickness and sizes. If a product varies from the preapproval then it is not viewed as the same product.

18	Except for required continuous inspections or material ID's, if you aren't allowing us to cover items up offsite, what purpose does the offsite inspection serve? Couldn't it all be inspected onsite then.	The purpose of off-site inspection is to inspect and verify work before it becomes concealed and inaccessible. Under an approved TIO program, the first prototype/first article unit receives a full inspection off-site, after which production units may proceed under periodic inspections (some items require continuous inspection by code). Once inspected and approved off-site, concealed components generally do not require reopening for field inspection. On-site inspections are focused on verifying shipping condition, damage, anchorage, final connections, and any work performed in the field.
19	Can the inspectors be from same company that built it or different?	To avoid conflicts of interest, inspections are required to be done by an independent party. The requirement for inspectors are defined in Chapter 7 of the California Administrative Code.
20	Who inspects the pre-fab product when it arrives onsite?	The EOR establishes the inspection program for both on-site and off-site. The IOR is responsible for verifying the condition of the prefabricated product upon arrival on-site, including observing for shipping damage and verifying installation, anchorage, and final connections in accordance with the approved construction documents and TIO program.
21	Can the pre-fab work be considered work in progress, since it gets fully inspected in the final installation	In some cases, prefabricated work may be treated as work in progress; however, any components that will become concealed must be inspected off-site prior to concealment in accordance with the approved TIO program. Final on-site inspections are generally limited to installation, anchorage, connections, and verification of shipping condition.
22	I'm sold on pre-fab. My interest is what is OSHPD/HCAI doing to make it more possible on acute care	HCAI will publish further guides and example in the future.

	projects. Will you be covering this?	
23	So if each room needs to be fully inspected if it were built onsite, you're saying it will still need to be inspected at the same level of detail at the offsite fabrication location ?	Yes, the same level of inspections need to be provided as if you were building on-site. This includes the Design Professional of Record (DPOR) administration of the project inspections, testing, special inspections for items prior to covering etc.
24	Can the manufacturing plant be located internationally?	Construction for pre-fabricated items may be internationally provided as long as all of the same requirements for construction, i.e. IORs, inspections, special inspections, TIO etc. are met.

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