

TESTING AND INSPECTION OF REMOTELY FABRICATED STRUCTURAL ELEMENTS

Disciplines:	Structural	History:	Revised in its entirety 01-14-15 Revised 01-12-11	Revised 12-17-09 Revised 10-15-07 Issued 08-13-03 as CR A-1
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PURPOSE: In general, all aspects of the construction shown on the Division of the State Architect (DSA) approved documents are subject to the California Building Code requirements for material testing and inspection, regardless of the location where the construction takes place. The purpose of this Interpretation of Regulations (IR) is to clarify the requirements for testing materials and inspection of the construction that takes place off-site.

This IR is pertinent to project inspectors, testing laboratories, laboratory technicians, and special inspectors working on projects under DSA jurisdiction.

1. DEFINITIONS:

Assistant Inspector – An individual approved by DSA to assist the project inspector on the project site. See [IR A-8](#) and [IR A-12](#) for further information.

Factory-Built Building – A building constructed in a plant at a location remote from the project site. Factory-built buildings include but are not limited to: relocatable buildings, modular buildings (not relocatable), modular elevator towers and modular shade structures.

Laboratory of Record (LOR) – The DSA accepted laboratory selected and retained by the school board to provide the required tests and special inspections for a specific project.

Owner – For the purpose of this IR, owner shall be the State of California for state-owned or state-leased Essential Services Buildings.

Project Inspector – An individual approved by DSA to inspect all aspects of construction for a project. The project inspector may utilize assistant or special inspectors for some aspects of the construction.

Proprietary Structural Element – A structural element made or sold by a company or person that has the exclusive legal right to do so. Examples include, but are not limited to: moment connections qualified under AISC 358 and Buckling Restrained Braces.

Relocatable Building In-Plant (RBIP) Inspector – An individual approved by the DSA to perform in-plant inspection of factory-built relocatable buildings. See [IR A-7](#) for further information.

Special Inspector – A qualified and appropriately certified individual acceptable to DSA to provide inspection of a specific aspect of construction such as structural welding, masonry, precast concrete etc. either on or off the project site. Special Inspectors shall be employed by the Laboratory of Record or contract individually and directly with the school Board.

See [IR 17-6](#) for further information on special inspection.

See [IR 17-4](#) for further information on the basics of testing and special inspection as well as a clarification of specific procedures considered to be “tests” vs. “special inspections.”

2. SCOPE:

This IR is applicable to off-site construction including, but not limited to: factory-built buildings, proprietary structural elements, poles for lights, platforms for HVAC units, prefabricated ramps, elevator guide rails, wood and/or steel open-web joists, wood trusses, etc.

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Exceptions: The following are outside the scope of this interpretation:

- The fabrication of bleachers (grandstands) is addressed in DSA's Interpretations of Regulations; see [IR 16-5.01](#) and [IR 16-5.07](#). All DSA Interpretation of Regulations may be viewed at: <http://www.dgs.ca.gov/dsa/Resources/IRManual.aspx>
- Packaged equipment such as HVAC units, motors, transformers, etc.
- Equipment that has received seismic certification pre-approval from the Office of Statewide Health Planning and Development (OSHPD).

3. TESTING AND SPECIAL INSPECTION:

3.1 Material test and special inspection requirements are listed on the Structural Test and Inspection List (form [DSA 103](#)) and in the plans and/or specifications for each project.

The School Board/Owner—with the advice of the responsible architect or engineer—shall select the laboratory of record to conduct all required tests for the project, and special inspections which are contracted to the laboratory. All required structural tests and special inspection services shall be performed by qualified representatives of the LOR, and under the direct supervision of the LOR's DSA approved engineering manager.

The School Board/Owner may contract individually and directly with a special inspector, provided the following requirements are fulfilled:

- The School Board/Owner and design professional in responsible charge secure DSA approval of the special inspector prior to commencement of work requiring special inspection. Application for such approval shall be made on completed forms prescribed by DSA.
- The design professional in responsible charge of the project shall verify the qualifications and/or certifications of the special inspector and provide direct supervision of his/her inspection work as required by the 2013 California Code of Regulations Title 24, Part 1 Sections 4-335 (f) 1. B.

Exception: The LOR may subcontract structural tests and/or special inspections to a laboratory facility that is not DSA-accepted when all of the conditions of Section 3.1.1 through 3.1.4 are met.

- 3.1.1** A facility accepted by DSA's Laboratory Evaluation and Acceptance program (LEA) does not exist within 300 miles of either the material supplier and/or the material fabrication location.
- 3.1.2** The required material test and/or special inspections are routine and the materials to be tested are used in an ordinary manner. Unusual materials and/or applications may require testing by an LEA-accepted facility at the discretion of the DSA field engineer for the project.
- 3.1.3** The facility to which services are subcontracted operates under the supervision of and reports directly to the LOR's approved engineering manager. The LOR's engineering manager shall verify the subcontract facility's quality system management, personnel, equipment, and operations meet the requirements of 2013 California Code of Regulations Title 24, Part 1 Sections 4-335, 4-335.1.
- 3.1.4** The LOR's engineering manager shall verify that all subcontracted tests and inspections are performed in accordance with the DSA-approved documents and that reports of such tests and inspections are submitted as required by Code. Such supervision and control shall be evidenced by the engineering manager's signature and seal on the verified reports required by code.

TESTING AND INSPECTION OF REMOTELY FABRICATED STRUCTURAL ELEMENTS**4. GENERAL INSPECTION:**

Certain aspects of construction require inspection by an inspector approved by DSA, regardless of whether the construction occurs at an off-site facility or at the project site. In general, only Special Inspectors, Class 1 inspectors (or equivalent for Essential Services Buildings), and Relocatable Building In-Plant inspectors are approved by DSA to inspect construction that occurs off-site.

Exceptions:

- With prior DSA approval, Class 2 and 3 inspectors may perform off-site construction inspection on projects within the inspector's classification. See IR A-7 for definition of project classification.
- With prior DSA approval, off-site inspection is not required if the nature of the construction allows the shop-fabricated assembly (excluding proprietary structural elements) to be fully inspected at the project site.

4.1 Factory-Built Building In-Plant Inspection: Inspectors performing factory-built building "in-plant" inspection are responsible for all aspects of the inspection of construction and for monitoring all work of the testing laboratories and special inspection that occurs in the fabrication plant. Such aspects of construction include but are not limited to plywood shear wall nailing, gypsum wall board installation, roofing, electrical or mechanical work, etc., and may include welding inspection provided the inspector is appropriately certified. Inspection, reporting, employment, and all other aspects of inspection are identical to those defined for project inspectors except that the scope of work for which the "in-plant" inspector is responsible will not be the entire scope of the project. The portions of the construction that will occur in the fabrication plant and the portions that will occur at the project site must be clearly defined as part of the DSA approved documents.

Exception: For factory-built building stockpile projects, the construction done in the fabrication plant is the entire scope of the project.

REFERENCES:

California Code of Regulations (CCR) Title 24
Part 1, California Building Standards Administrative Code, Sections 4-330 through 4-339
Part 2, California Building Code

This Interpretation of Regulations (IR) is intended for use by the Division of the State Architect (DSA) staff, and as a resource for design professionals, to promote more uniform statewide criteria for plan review and construction inspection of projects within the jurisdiction of DSA which includes State of California public elementary and secondary schools (grade K-12), community colleges and state-owned or state-leased essential services buildings. This IR indicates an acceptable method for achieving compliance with applicable codes and regulations, although other methods proposed by design professionals may be considered by DSA.

This IR is reviewed on a regular basis and is subject to revision at any time. Please check the DSA website for currently effective IRs. Only IRs listed in the document at <http://www.dgs.ca.gov/dsa/Resources/IRManual.aspx> at the time of plan submittal to DSA are considered applicable.