



Legislation Text

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Int. No. 2264

By Council Members Cornegy and Chin (by request of the Mayor)

A Local Law to amend the New York city building code, in relation to cold-formed steel construction

Be it enacted by the Council as follows:

Section 1. Table 1704.3.4 of chapter 17 of the New York city building code, as added by local law number 8 for the year 2008 is amended to read as follows:

TABLE 1704.3.4

**REQUIRED VERIFICATION AND INSPECTION OF
COLD-FORMED STEEL LIGHT-FRAME CONSTRUCTION**

Verification and inspection	Continuous	Periodic	Referenced Standard	Code Reference
1. Material Verification:				
a. Verify that identification markings conform to AISI S200 and as specified in the approved construction documents.		X	AISI 200, Section A5.4	
b. Verify that material is clean, straight and undamaged.		X		
2. Inspection of general framing:				
a. Verify that member sizes conform to the approved construction documents.		X		
b. Verify that member layout conforms to the approved construction documents.		X		
c. Verify that proper bearing lengths are provided in accordance with approved construction documents.		X		
d. Verify that punched holes and sheared or flame cut edges of material in members are clean and free from notches and burred edges.		X		
3. Inspection of framing connections and anchorages:				
a. Verify that screws, bolts, and other fasteners conform to approved construction document requirements for diameter, length, quantity, spacing, edge distance, and location.		X	AISI S200, Section D	

b. Verify that manufactured connectors, such as joist hangers, caps, straps, clips, ties, hold-downs, and anchors conform to approved construction document requirements for manufacturer, type, gauge, and fastener requirements.		X	AISI S200, Section D	
4. Inspection of welding:				
a. Inspect welds in accordance with Table 1704.3.		X	AWS D1.3	
5. Bracing:				
a. Verify that temporary bracing, shoring, jacks, etc., are installed, <u>modified</u> , and not removed until no longer necessary, in accordance with the approved construction documents and approved erection drawings, <u>as required by Sections 3305.6.6.8 and 3305.6.7.5.</u>		X		
b. Verify that permanent bracing, web stiffeners, bridging, blocking, wind bracing, etc., are installed in accordance with the approved construction documents and approved erection drawings, <u>as required by Sections 3305.6.6.8 and 3305.6.7.5.</u>		X		
c. Where a cold-formed steel truss clear span is 60 feet (18 288 mm) or greater, the special inspector shall verify that the temporary installation restraint/bracing and the permanent individual truss member restraint/bracing are installed in accordance with the approved truss submittal package.		X		2210.3.4

§2. Section BC 3305 of chapter 33 of the New York city building code is amended by adding a new section 3305.6 to read as follows:

3305.6 Cold-formed steel light-frame construction. The installation of cold-formed steel light-frame construction, the installation of decking on cold-formed steel light-frame construction, as well as the use of such framing and decking during construction or demolition operations shall be in accordance with the requirements of AISI S240 and the following sections. The design of cold-formed steel light-frame construction and decking on cold-formed steel light-frame construction shall meet the requirements of Chapter 22.

3305.6.1 Cutting, notching, and splicing. Cutting, notching, and splicing of cold-formed steel structural members shall be performed only in accordance with specifications as indicated on drawings, including but not limited to erection drawings, approved by a registered design professional.

3305.6.2 Uniform bearing surface. A uniform bearing surface shall be provided under cold-formed steel structural members. In no case shall the gap between the bottom track and the uniform bearing surface exceed ¼ of an inch (6.4 mm). Leveling shall be subject to the approval of a registered design professional and shall be achieved through the use of either load bearing shims or grout.

3305.6.3 Corrosion protection. The following precautions shall be taken to prevent corrosion of cold-

formed steel structural members:

1. Dissimilar metals shall not be used in direct contact with cold-formed steel framing members unless approved for that application by the registered design professional of record for the cold-formed steel framing system.
2. Cold-formed steel framing members shall not be embedded in concrete unless approved for that application by the registered design professional of record for the cold-formed steel framing system.
3. Fasteners shall have a corrosion-resistant treatment, or be manufactured from material not susceptible to corrosion.
4. Welded connections shall be protected with a treatment, approved by the registered design professional of record for the cold-formed steel framing system, to retain corrosion resistance of the welded area.

3305.6.4 Screw connections. Screw fasteners in cold-formed steel structural members shall extend through the steel connection with a minimum of three exposed threads.

3305.6.4.1 Stripped screws in direct tension prohibited. Stripped screws in direct tension shall not be permitted.

3305.6.4.2 Stripped screws in shear connections. Stripped screws in shear connections shall only be permitted if the number of stripped screw fasteners does not exceed 25% of the total number of fasteners in the connection.

3305.6.5 In-line framing. Each joist, rafter, truss, and structural wall stud (above or below) shall be aligned vertically in accordance with the limits depicted in Figure B1.2.3-1 of AISI S240.

Exception: The alignment tolerance depicted in Figure B1.2.3-1 of AISI S240 shall not be required to be met when a structural load distribution member is specified in accordance with the approved construction documents.

3305.6.6 Joists, decking, and shoring and bracing. Joists, temporary decking, permanent decking, and shoring and bracing for joists and decking shall be installed in accordance with the requirements of Section 3305.6.6.1 through 3305.6.6.9.

3305.6.6.1 Installed as indicated on drawings. Joists, temporary decking, permanent decking, and shoring and bracing for joists and decking shall be installed as indicated on drawings, including but not limited to erection drawings, approved by a registered design professional. Such drawings shall be specific to the site and shall, at a minimum, indicate the following details:

1. Joists;
2. Permanent decking material;
3. Allowable temporary decking material;

4. Members and fasteners, including bridging, strapping, stiffeners, and placement of diaphragm;
5. Shoring and bracing, whether permanent or temporary, for joists, trusses, and decking, through all phases of work, including interim sequences;
6. Allowable designated temporary loading areas, or if no designated temporary loading areas are specified, include a note that no temporary loading is allowed;
7. Types of materials and maximum loads allowed in each temporary loading area;
8. The permissible live and construction loads of the decking (temporary and permanent) and structure outside of temporary loading areas;
9. The minimum spacing of deck screws required for loading of the deck (temporary and permanent) during construction; and
10. Conditions to be satisfied before temporary shoring and bracing can be removed.

3305.6.6.2 Lateral bracing of floor joists. Floor joists shall be laterally braced. Types of bracing to maintain structural integrity include but are not limited to steel straps screwed to top and bottom flanges, bridging between joists, web reinforcement, cross bracing, diagonal strap bracing, wall anchorage, or any other details as specified on the approved drawings.

3305.6.6.3 Ceiling joists and roof trusses. Ceiling joists and roof trusses shall be installed in accordance with one of the following:

1. With full bearing over the width of the bearing wall beneath;
2. Minimum 1 1/2 inch (38 mm) bearing end condition; or
3. In accordance with design drawings approved by a registered design professional.

3305.6.6.4 Account for all loads during construction. Framing and decking, whether temporary or permanent, shall be designed to sustain all anticipated loads to be imposed by construction activity, including construction loads, concentrated loading caused by material delivery, and loads generated by the movement of material and equipment.

3305.6.6.5 Bracing and shoring for temporary loading areas. Bracing and shoring shall be provided for all temporary loading areas and shall be designed to support the maximum load allowed in the temporary loading area. In no case shall the required shoring be designed for a construction load of less than 100 psf. Bracing and shoring shall ultimately bear upon permanent structure or earth capable of sustaining the loads transmitted. The design shall also specify the criteria for the removal of any temporary bracing or shoring.

3305.6.6.6 Floor joists to be braced prior to installation of decking. No decking or section of decking shall be placed on a joist until the joist has been fully installed and braced in accordance with Sections 3305.6.5 and 3305.6.6.

3305.6.6.7 Placing loads on cold-formed steel. Loads shall be placed on cold formed steel in

accordance with section 3305.6.7.

3305.6.6.8 Removal or modification of temporary shoring and bracing. No temporary shoring or bracing shall be removed until the cold-formed steel special inspector required by Chapter 17 has verified the shoring or bracing is no longer required in accordance with item number 10 of Section 3305.6.6.1. Modifications to temporary shoring or bracing shall be verified by the special inspector. In addition to the documentation required by Chapter 17, the special inspector shall document the verification in accordance with the checklist required by Section 3305.6.8.

3305.6.6.9 Deviations. Deviations from the drawings required by Section 3305.6.6.1 that are not immediately corrected shall be brought to the attention of the registered design professional who prepared the drawings.

3305.6.7 Placing loads on cold-formed steel. The placing of loads during construction or demolition work on cold-formed steel framing or on decking on cold-formed steel framing shall be in accordance with the requirements of Sections 3305.6.7.1 through 3305.6.7.6.

3305.6.7.1 System in place. No person, material, or equipment shall be permitted on any joist, temporary decking, or permanent decking, until all members, fasteners, shoring, and bracing have been installed as indicated on the drawings required by Section 3305.6.6.1.

3305.6.7.2 Maximum loads. Loading shall not exceed that as indicated on the drawings required by Section 3305.6.6.1.

3305.6.7.3 Placed as indicated on plans. Construction loads shall only be placed in areas and to the extent as indicated on the drawings required by Section 3305.6.6.1.

3305.6.7.4 Marking the temporary loading area. Temporary loading areas shall be clearly marked on the deck by spray paint or equivalent means. The markings shall indicate the boundaries of the loading area and the maximum loads allowed in the temporary loading area as specified in the drawings required by Section 3305.6.6.1.

3305.6.7.5 Verification by special inspector. No construction load shall be placed on a floor or portion of a floor until the temporary or permanent decking for the floor or such portion is in place and the cold-formed steel special inspector required by Chapter 17 has verified compliance with Section 3305.6.6, including but not limited to the drawings required by Section 3305.6.6.1. At a minimum this special inspection shall be performed at least once for each floor. In addition to the documentation required by Chapter 17, the special inspector shall document the verification in accordance with the checklist required by Section 3305.6.8.

3305.6.7.6 Verification inspection by a competent person. Immediately prior to the placement of any person, material, or equipment on a section of cold-formed steel framing for the first time, or on a section of decking on cold-formed steel framing for the first time, a competent person designated by the construction superintendent, or where the project does not require a construction superintendent, a competent person designated by the permit holder, shall determine that the structure is ready to receive the person, material, or equipment by performing an inspection that:

1. Verifies compliance with applicable drawings, specifications, and regulations, including but not limited to the approved construction documents, the erection drawings, the manufacturer

specifications, and the requirements of Section 3305.6;

2. Ascertain the weight of the material or equipment to be placed, and determines it does not exceed that specified in the drawings required by Section 3305.6.6.1;
3. Confirms that any special inspections for the cold-formed steel required by Chapter 17 and Section 3305.6 have been successfully completed; and
4. Verifies compliance with the requirements of Sections 3305.6.7.1 through 3305.6.7.4.

3305.6.7.6.1 Record of designation of competent person. The designation of the competent person required by Section 3305.6.7.6 shall be recorded in the construction superintendent's log required by Section 3301.13.13, or where the project does not require a construction superintendent, the designation of the competent person shall be documented in the form of a notarized letter on the letterhead of the permit holder. The record letter shall state the name and contact information of the competent person, the date of designation, and shall be signed and dated by the permit holder, the competent person and the person who designated the competent person.

3305.6.7.6.2 Record of inspection. The results of the inspection shall be documented in accordance with the checklist required by Section 3305.6.8.

3305.6.7.6.3 Does not diminish responsibility. The designation of a competent person does not alter or diminish any obligation imposed upon the construction superintendent or the permit holder to maintain a safe site and ensure compliance with the requirements of this code.

3305.6.8 Inspection checklist. The results of the verification inspections required by Sections 3305.6.6.8, 3305.6.7.5, and 3305.6.7.6 shall be documented on a verification inspection checklist signed and dated by the person who performed the inspection. The verification inspection checklist shall be developed by the designer who prepared the drawings required by Section 3305.6.6.1.

§3. This local law shall take effect 120 days after it becomes law. This local law shall not apply to applications for construction document approval filed prior to such effective date, except that it shall apply to permits issued prior to such effective date upon renewal. The commissioner of buildings may take such measures as are necessary for the implementation of this local law, including the promulgation of rules, prior to such effective date.