

Decks

Building Permit Application- the application must be completed and signed by the owner of the property, or the owner may designate an agent to act on his/her behalf authorizing the agent to obtain and be responsible for all matters pertaining to said permit, by signing a letter to that effect.

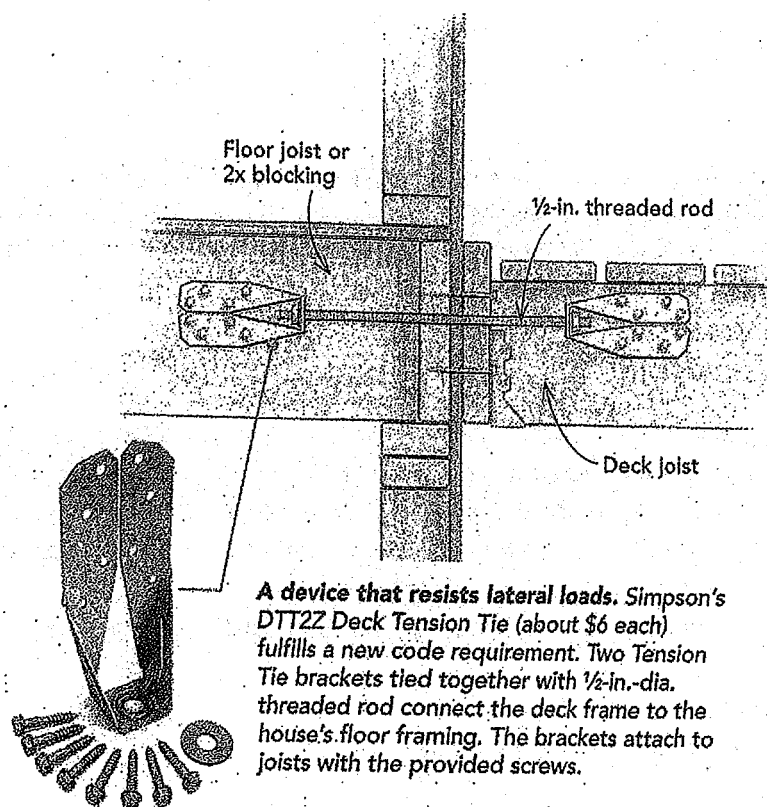
Owner of the property- must submit proof of ownership by a copy of the deed.

Construction Drawings - Need to submit two (2) sets of drawings of the proposed deck.

- ⇒ Ledger Attachment Requirements: Attach to Band Board or Foundation Wall. If attachment can not be verified the deck should not be attached to the house.
- ⇒ Footings: Must be 48" deep. If solid bedrock is hit above the frost line- the rock must be pined after inspection by the Building Dept.
- ⇒ Post to Beam Attachment: notch post to accommodate beam or use post to beam column cap.
- ⇒ Joist Span must be indicated.
- ⇒ Show guard and railing and stair details.

Setbacks to property lines- Show location of deck on property or draw on sheet of paper and show left, right, front and back setbacks.

Workers' Compensation and Liability Insurance- Proof of insurance must be submitted from the contractor at the time of application. The Town of Lloyd is to be named certificate holder on the form. An exempt form can be submitted if there are no employees. A homeowner can get an exempt form at the Building Dept. Contractors with no employees can get the form on the website www.web.state.ny.us



A device that resists lateral loads. Simpson's DTT2Z Deck Tension Tie (about \$6 each) fulfills a new code requirement. Two Tension Tie brackets tied together with 1/2-in.-dia. threaded rod connect the deck frame to the house's floor framing. The brackets attach to joists with the provided screws.

A new code requirement for decks

Q I heard recently that the International Residential Code (IRC) has a requirement about lateral loads for decks. I've always used 1/2-in. lags or through bolts to attach ledgers to rim joists, and I assumed this fulfilled the load requirements. Is the lateral-load requirement new? Will I have to do more than lag or bolt the ledger to the rim joist?

—JASON WALSH
via email

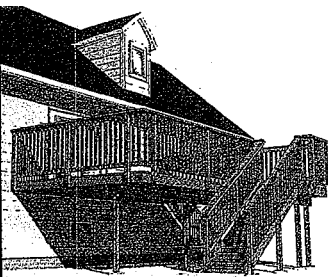
A Associate editor Chris Ermides replies: No and yes. The section from the International Residential Code to which you're referring (R502.2.2) says that decks have to be designed for both vertical and lateral loads. That part has been on the books for years and is meant to keep the deck from pulling away from the house. But the 2009 IRC does have a new provision that gets specific

about what's required to support a lateral load.

The new code section (R502.2.2.3) states that "hold-down tension devices" be installed in at least two locations per deck. Whether you are attaching a deck that's 3 ft. long or 30 ft. long, you will be required to use the hold-down tension devices in two locations.

Each hold-down device must "have an allowable stress capacity of not less than 1500 lb." The hold-down devices might be tough to find, though, because right now, only Simpson's DTT2Z Deck Tension Tie (www.strongtie.com) meets the design-load requirements.

To learn more about the IRC's new deck-code changes and to join a discussion about how to implement them, look for Mike Guertin's post titled "2009 Deck Code Changes—Pay Attention!" in our "Daily Fix" blog at FineHomebuilding.com.



5 Steps to a Safer and Stronger Deck

Decks

What you need to know to make your deck strong and safe

Most experts agree that the average life expectancy of a wood deck is 10 to 15 years. There are millions of decks in the U.S. that are beyond their useful life and may be unsafe. Since 2003, deck collapses have caused thousands of reported injuries* and several deaths.

As you evaluate the safety and construction of your new or existing deck, knowing these simple steps will help to ensure your deck is structurally sound and properly maintained. We've included a list of warning signs, so you'll know what to keep an eye out for on your deck.

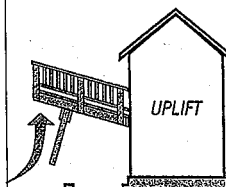
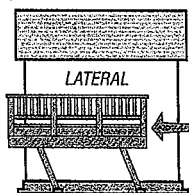
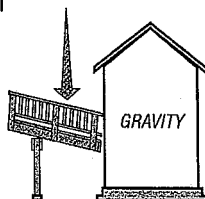
1. Check Out Your Deck

The first step in making your deck safe is knowing that it may not be. Decks are potentially the most dangerous part of the house, according to some experts. Factors, such as improper construction, exposure to the elements and lack of maintenance can make your deck unsafe. It's important to look for warning signs (*see page 2*). If you are unsure about the safety of your deck, consult with a professional such as a structural engineer or contractor.

2. Carry the Weight

For most homeowners, the deck is a popular gathering place for friends and family. Like a house, a deck must be designed to support the weight of people and objects placed on it as well as the forces of Mother Nature like wind, snow and earthquakes. Knowing how weight and other forces can affect the safety of your deck is important. There are three types of forces that put pressure on your deck, causing strain to the critical connections that keep it together:

- Gravity – downward pressure typically caused from people standing on the deck or snow and ice.
- Lateral – a back and forth (*horizontal*) motion caused by people walking on the deck and/or leaning on a railing. Wind and earthquakes also can create lateral movement.
- Uplift – wind flows under the deck creating a lifting effect. People standing on the overhang of the deck also creates upward pressure on the connection that attaches the deck to the adjacent support structure, which is typically your home.



3. Create a Path

A continuous load path, that is. A continuous load path is a method of construction that uses metal connectors to create a series of solid connections within the structure of the deck. This path transfers the load or weight of the deck through its frame and into the ground and adjacent support structure (*typically your home*). If your deck is built with a continuous load path, it will be better equipped to resist the forces that can weaken your deck.

4. Combat Corrosion

Decks and the metal hardware that keeps them connected and safe are exposed to the elements every day. Over time, metal connectors, screws and nails can corrode and weaken the structure of your deck, especially if the right product is not used. If you live in an area prone to moisture, such as along the coast or near bodies of water, the risk of corrosion is much higher. Chemicals in pressure-treated woods and other corrosive elements also can damage your deck. Using connectors, screws and nails that are made from stainless steel is the best way to combat corrosion. When choosing connectors, take into account where you live and how weather and the environment may affect your deck. For critical information about corrosion and connector selection, visit www.strongtie.com/corrosioninfo.

5. Maintain a Safe Deck

Just like other parts of your home, regular maintenance and inspection are required. To prolong the life of your deck, you need to check for things like loose boards or protruding nails. You also should keep your deck clean from debris and depending on the type of deck boards used, keep them sealed to protect against water and sun damage.

*Based on data collected by the U.S. Consumer Product Safety Commission's National Electronic Injury Surveillance System.

5 Steps to a Safer and Stronger Deck

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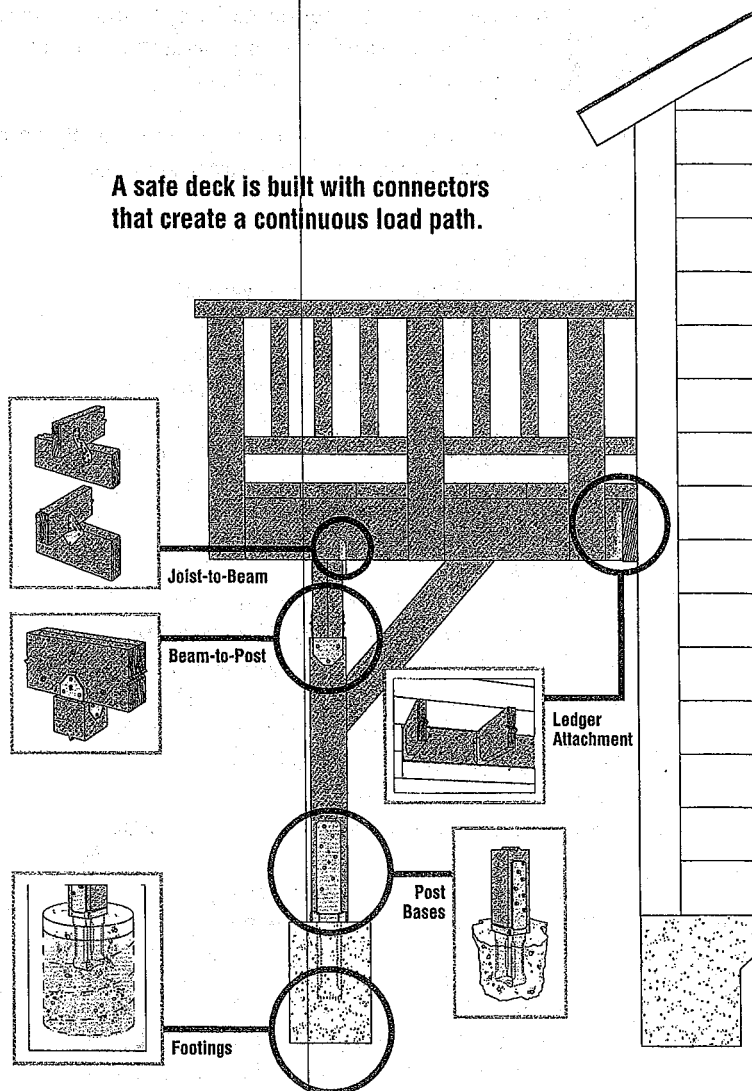
What you need to know to make your deck strong and safe.

Is Your Deck Unsafe? Look for the 5 Warning Signs

If you see any of these warning signs you should consider repairing, retrofitting or rebuilding your deck.

- 1. Missing Connections:** A deck should be built using a series of wood members, nails, screws and metal connectors to create a continuous load path (see image on right). Look at how your deck is built—if all you see is nails, your deck may be unsafe.
- 2. Loose Connections:** Depending on how the deck was built, vital connections may have degraded over time due to various factors. Issues such as wobbly railings, loose stairs and ledgers that appear to be pulling away from the home are all causes for concern.
- 3. Corrosion of Connectors and Fasteners:** Metal connectors, nails and screws can corrode over time. Look for red rust and other signs of corrosion that can weaken the structure of your deck.
- 4. Rot:** Wood can rot and degrade over time with exposure to the elements. Wood members within the deck frame that have rotted may no longer be able to perform the function for which they were installed, making your deck unstable.
- 5. Cracks:** As wood ages, it is common for cracks to develop. Large cracks or excessive cracking overall can weaken your deck.

A safe deck is built with connectors that create a continuous load path.



Repairing or Retrofitting an Existing Deck

If you've determined your deck is unsafe, you'll need to either repair or retrofit it or in some cases, rebuild it altogether. If rebuilding your deck is not feasible, there are improvements you can do on your own to strengthen your deck. However, some cases may require the professional services of an engineer and contractor. Remember, when hiring a professional, be sure they are licensed and have a

good reputation. Once the work is done, don't forget about your deck—it needs to be checked and inspected on a regular basis.

The Simpson Strong-Tie® **Deck Framing Connection Guide** can help you through the process of making your deck safe, secure and code compliant. You can download the guide or request a copy at www.strongtie.com/safedeck.

Reference Table for footing size (Bearing Area)

Round	Square	Big Foot
8" diameter = 50.26 sq in	8 in sq = 64 sq in	BF20 = 214sq in
10" diameter = 78.53 sq in	10 in sq = 100 sq in	BF 24 = 452 sq in
12" diameter = 113.03 sq in	12 in sq = 144 sq in	BF 28 = 615 sq in
14" diameter = 153.93 sq in	14 in sq = 196 sq in	BF36 = 1017sq in

IV Girder Spacing and Size; Spacing of Columns

span of beams bearing on girder	Span of Girder				
	6'	8'	10'	12'	14'
6'	2x6	2-2x6	2x8	2x10	2-2x10
8'	2-2x6	2-2x6	2x8	2x10	2-2x10
10'	2-2x6	2x8	2x8	2x10	2x12
12'	2-2x6	2x8	2-2x8	2-2x10	2-2x12
14'	2-2x8	2-2x8	2-2x8	2-2x10	2-2x12
16'	2x10	2-2x8	2-2x10	2x12	2-2x12

V. Joist Selection

spacing of beams	Span of Joist					
	6'	8'	10'	12'	14'	16'
14"	2x6	2x6	2x6	2x8	2x8	2x10
16"	2x6	2x6	2x8	2x8	2x10	2x10
18"	2x6	2x6	2x8	2x8	2x10	2x12
24"	2x8	2x8	2x10	2x10	2x12	2x12

Note: interpolation of Tables IV and V is permitted

VI. Cantilevers

Beams and floor joists may cantilever 2x the nominal depth of the member. Members that are doubled up ("sistered") may cantilever 3x the nominal depth of the members. To extend cantilevers, submit calculations.-

VII. Guards and Railings

- Guards: if deck is 30" or more above the adjacent finished grade, a guard is required. It must be a minimum of 36" above the deck. Posts shall be 4" x 4" minimum, spaced a maximum of 6'-0" O.C. It will be connected to a structural member (Beam or Girder) with not less than 2-3/8" diameter through bolts and washers – no spacing will be greater than 4".
- Railings will be provided for every staircase with four or more risers. Height will be between 34" and 38" above the nosing. Newel post shall be a minimum 4" x 4" anchored with 2-3/8" diameter – through-bolts with washers through the stringer.

This office is available to provide the applicant with further assistance.

J. A. Daidone, R.A.
Building Dept Deputy Inspector
March 23, 2010

GUIDE TO DECK CONSTRUCTION

I. SUBMISSIONS

Provide two (2) copies of exhibits that will indicate the extent of the projection in relation to the existing structures and its compliance with the Zoning resolution and Building Code. The documents will provide a record for future reference. Submissions with alternate materials and/or methods of construction submitted by a N.Y. State-registered design professional, or referencing manufacturing standards will be considered.

II. STRUCTURAL CRITERIA

- a) If deck is supported by an existing structure, connection must be verified to be by a positive thru-bolt system or the deck must be free-standing. (Ref. R.502.2.1)
- b) Materials:
 - 1) Structural members shall be #2 grade or better, pressure-treated.
 - 2) Decking shall be 5/4 minimum thickness pressure-treated or a species of wood or a composite that is resistant to exposure to the elements.
 - 3) Fasteners exposed to the weather shall be Type 3161 S.S., or hot-dipped galvanized metal.
- c) Design Standards:
 - 1) Assumed dead-load (weight of deck): 10 lb/square foot
 - 2) Assumed live-load (superimposed weight): 40 lb/square foot
 - 3) Assumed bearing capacity of the soil is 2000 lb/square foot. If after inspection of the excavation for footings, the bearing capacity of the soil is in doubt, the Building Department will instruct modification.
 - 4) Footing will extend a minimum of 48" below the finished grade or bear on solid rock.
 - 5) Columns:
 - (a) Use 4" x 4" columns if unsupported length is 10'0" or less
 - (b) Use 6" x 6" columns if unsupported length is 16'0"

III. FOOTING DESIGN

- a) For free-standing deck:
 - 1) Area of deck: $L \times W = \text{Area}$
 - 2) Total load : $DL + LL \times \text{Area} = \text{Total Load}$
 - 3) Total load / (divided by) number of footings = Load per footing
 - 4) 2000 lbs (divided by) the load per footing = required area per footing
- b) Attached deck:
 - 1) Area of deck carrying load = $L \times W / (\text{divided by}) 2 = \text{Area}$
 - 2) Total load $DL + LL \times \text{area} = \text{total load}$
 - 3) Total load / (divided by) number of footings = load per footing
 - 4) 2000 lbs (divided by) the load per footing = required area per footing

See tables that follow



Building Permit Application

Town of Lloyd

12 Church St., Highland, NY 12528

845-691-2144 x112

Please supply **ALL** relevant data below. Please follow submission checklist to make sure you are submitting all required information. **Any missing information will result in a delay of the issuance of the permit.**

DATE OF APPLICATION: _____ BUILDING PERMIT # _____

JOB ADDRESS: _____

SECTION-BLOCK-LOT # _____ COST OF CONSTRUCTION: _____

Proposed Structure Size: _____ Setbacks to Property Lines: Front _____ Rear _____
Left _____ Right _____

JOB DESCRIPTION: _____

OWNER OF PROPERTY: _____ TENANT: _____

Mailing Address: _____

Contact Name, Number and email: _____

Contractor Name and Address: _____

Contact, Number and email: _____

The owner of the property covered by this application and the undersigned applicant agree to conform to all applicable laws of this jurisdiction, and NYSFP&BC, to adhere to the approved plans and specifications, and to permit the Code Enforcement Officer and Deputies to enter upon to inspect the property at all reasonable times.

Signature of Owner/Authorized Agent

Print Name of Owner/Authorized Agent

TO BE COMPLETED BY THE BUILDING DEPARTMENT

REVIEWED BY: _____ DATE APPROVED: _____

APPROVED BY: _____

FEE: \$ _____ CHECK # _____

MEMORANDUM OF UNDERSTANDING

Owner of record: _____

Address: _____

Tax Map SBL#: _____

Building Permit # for this application: _____

The owner of this property covered by this application and the undersigned applicant agree:

1. To conform to all applicable laws of this jurisdiction and the NYS Fire Protection and Building Code.
2. To adhere to plans and specifications affixed hereto.
3. To permit the Building Inspector of the Deputy Building Inspector to enter upon to inspect the property at all reasonable times.
4. I understand and agree that all work this is covered prior to inspection shall be required to be uncovered for inspection.
5. I have read and understand the instructions on the Building Permit application.
6. Prior to application for Certificate of Occupancy, I understand that I will have to submit a certified "As Built" drawing, stamped by a New York State Licensed Land Surveyor, Licensed Professional Engineer, or Registered Architect.
7. The "As Built" drawing shall show all structures on the lot and the distances to the lot lines, the elevations of the first floor of the principal or new structure, location and contours of any structures controlling stormwater run-off and the location of any catch-basins on the property. Waiver from this requirement is issued only at the discretion of the Building Department Director.
8. I understand and acknowledge that state and local laws prohibit "any type of occupancy" without a Certificate of Occupancy being issued by the Town. Substantial fines and penalties can be accrued.

Applicant's Signature

Date