1765 Restoration Road
Rochester MN 55902
507-282-8206

The following items are conditions for permit issuance and strict compliance is mandatory.

1. Construction documents and a signed copy of the plan shall be kept at the site of the work, and open to inspection by the building inspector. MN1300.0130 Subp. 6

2. The attached sheet can be used as a construction guide.

3. Decks, porches and/or balconies exposed to the weather shall be constructed of an approved wood with natural resistance to decay such as redwood, cedar or treated wood. Before using an alternative building product, check with your local building official. MSBC1303.2000

4. Footings to be a minimum of 42" deep for frost. MN1303.1600

5. Decks with floor surface located more than 30 inches above floor or grade shall have guards not less than 36 inches in height not allowing the passage of a sphere larger than 4 inches in diameter. MSBC1309/R312.1.2 – R312.1.3

6. REQUIREMENTS FOR ALL STAIRS: MSBC1309/R311.7-R311.7.8.4
    1. 36" minimum width
    2. 10" minimum tread
    3. Use 3 – 2 x 12 stringers
    4. Double joist around openings
    5. 34"-38" high continuous gripable handrail with ends returned to wall.
    6. 7¾" maximum rise
    7. Minimum of 6'8" headroom
    8. Use Joist Hangers

    Open risers are permitted, provided that the opening between treads does not permit the passage of a four inch (4") diameter sphere.

    The greatest riser height and tread depth within any flight of stairs shall not exceed the smallest by more than 3/8 inch.

    Guards on stairs shall not be less than 34" in height measured vertically from the nosing of the treads. MSBC1309/R312.1.2 exception #1

    Nothing four and three-eighth inches (4-3/8") or more in diameter shall pass through the guards (on stairways). MSBC1309/R312.1.3

7. An inspection of post holes is required prior to the placement of concrete in the holes. MN1300.0210 Subp 6

8. All footings to bear on undisturbed non-organic soil. MSBC1309/403.1

9. Ledger boards shall be lagged to the building and all connections between the deck and building shall be flashed. MSBC1309/R703.4

10. Lateral load connection devices shall be installed in a minimum of two locations per deck. Each device shall have an allowable stress design capacity of not less than 1500 lbs. or equivalent devices. MCBC1309/R507.9

11. Beams shall be provided with a minimum of 1-1/2 inches of solid bearing, be notched into or rest on top of the columns, or have metal brackets that provide adequate bearing to distribute the load installed on both sides of the beams. MSBC1309/R502.6 and R606.6.3

12. Handrails shall comply with MSBC1309/R311.7-8 (See attached handout)

13. Provide signed rafter certifications including truss layout for trusses to be used displaying conformance with TPI 95 criteria for 35# live load design. Rafter certifications and truss layout shall be on jobsite at time of framing inspection. MSBC1309/R502.11.4

14. Provide 7/16" minimum roof sheathing with 24/16 panel index. Use plywood clips on all non-supported joints. MSBC1309/R503.2.1.1(1)

15. Windows/doors shall be installed and flashed in accordance with the manufacturer's written installation instructions. Manufacturer's written instructions shall be on jobsite at time of framing inspection.MSBC1309/ R609.1

16. **Flashing:** Approved corrosion resistant flashing shall be applied shingle fashion in such a manner as to prevent entry of water into the wall cavity or penetration of water to the building structure framing components. The flashing shall extend to the surface of the exterior wall finish. MSBC1309/R703.4

17. Roof assemblies subject to wind uplift pressures that exceed 200 lbs. shall have rafter or truss ties provided at bearing locations. This includes the overhang. MSBC1309/R802.11.1

18. Building shall meet 115 mph wind load. MSBC1309 Table R301.2(1)

19. Roof shall meet 35# live load. MSBC1303.1700

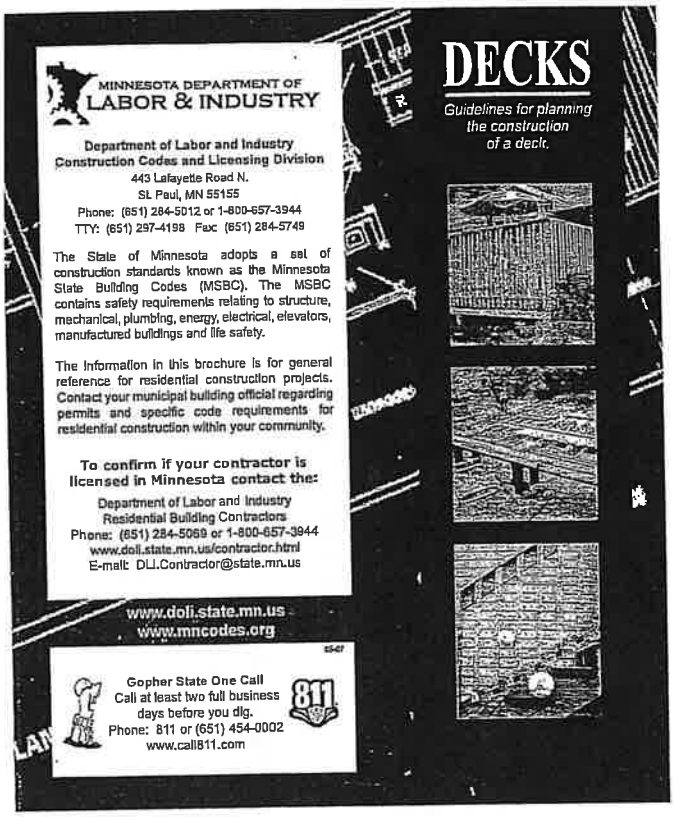
20. Install proper wind bracing. Bracing shall be designed for 115 mph wind load. MSBC1309/R301.2.1

21. Any glazing closer than 24" to either edge of a door shall be safety glazed. MSBC1309/R308.4

22. Post the attached Inspection Record Card on the jobsite. MN State Bldg. Code 2003 Sec 1300.0210 Subp 3.

24. This structure must comply with all portions of the Minnesota State Building Code whether noted on this plan or omitted. Failure to note any detail(s) on the plan does not remove the builder from the responsibility of complying with the Building Code. Plan review was done in accordance with the current Minnesota Building Code. Plan review does not waive any additional code compliance issues found on site. MN1300

23. a. The term "complete" shall include all work proposed in the approved permit. All building permits issued shall complete construction of the project within one hundred and eighty (180) days after the permit is issued, without additional approval. If at the time of application, the project is anticipated to not be completed within one hundred eighty (180) days , the applicant shall provide the project's anticipated timeline. CMS may adjust for reasonableness and approve project timelines as part of the permit review process up to five hundred and forty (540) days. Projects anticipated to exceed five hundred and forty (540) days shall seek approval from the jurisdiction's applicable governing body.
b. A permit holder may request extensions in increments of one hundred and eighty (1800 days. CMS may approve up to two extensions if CMS judges steady and continuous progress is being made. Permit holders requesting more than two extensions shall make an application for a new permit. The new permit application shall state the reason and demonstrate that circumstances were beyond the control of the permit holder.



Permits

Building permits are required for all decks that are attached to the home or are 30 inches or more above grade. Decks and platforms not more than 30 inches above adjacent grade and not attached to a structure with frost footings, do not require a building permit and may require a zoning or land-use permit.

Decks and platforms are required to meet the land-use requirements of the community's zoning code. An important first step is to contact the local planning and zoning department with questions.

A municipality may require permit fees, plan reviews and inspections

Permit fees are established by the municipality. The plan review is done by the building official in order to spot potential problems or pitfalls that may arise. The building official may make notes on the plan for your use. Inspections are performed at various stages of construction to verify code compliance. Actual permit costs can be obtained by calling your local building inspection department with your estimated construction value.

Your building inspector will need:

1. An application for permit.
2. A site plan or survey.
3. A deck plan with all applicable structural details.

Required inspections

1. **Footings:** After the holes are dug, but prior to pouring of concrete!
2. **Framing:** To be made after framing is completed. This inspection can be completed at the time of the final inspection if all parts of the framing will be visible and accessible with prior approval of the building official.
3. **Final:** Is done after completion.

Setbacks from property lines vary depending upon the city and zoning district your home is located in. Contact the building department in your community for the requirements in your location. This is an important first step in the planning for any deck project.

Notice regarding pressure-treated wood

When a pressure-preservative-treated wood is used, it must comply with the American Wood Preservers Association UI Standard based on exposure (exterior) and use (above ground or ground contact). The lumber must bear the quality mark (stamp or end tag) of an approved inspection agency. Designers, builders and home owners need to verify that proper hardware (hangers, nails, brackets) are appropriate with the particular treatment of the lumber. This not only applies to decks utilizing these products, but sill plates and posts as well. Additional information is available online at www.doli.state.mn.us/bc_residential.html.

General building code requirements

The 2007 Minnesota State Building Code adopts the 2006 International Residential Code (2006 IRC). All "R" code references provided in this brochure pertain to the 2006 IRC.

a. Footings must extend to frost depth (if attached to the house).

b. Decks need to be designed for a 40-pound-per-square-foot live load and balconies to a 60-pound-per-square-foot live load. Decks exposed to the weather must be constructed of approved wood with natural resistance to decay such as redwood, cedar or treated wood. Ledger boards must be bolted or lagged to the building and all connections between the deck and dwelling must be flashed. Before using alternative building products, check with your local building official.

Construction Codes and Licensing

c. Columns and posts in contact with the ground or embedded in concrete, earth or masonry must be of pressure-treated wood approved for ground contact.

d. Cedar or redwood posts need an 8-inch separation from the ground.

e. All decks, balconies or porches, open sides of landings and stairs that are more than 30 inches above grade or a floor below must be protected by a guard not less than 36 inches in height. Grade is measured at edge of structure. [illegible] guard opening limitations states required guard on open sides of stairways, raised floor areas, balconies and porches shall have intermediate rails or ornamental closures which do not allow passage of a sphere 4 inches (102mm) or more in diameter. Exceptions: 1. The triangular openings formed by the riser, tread and bottom rail of a guard at the open side of a stairway are permitted to be of such a size that a sphere 6 inches (152 mm) cannot pass through. 2. Openings for required guards on the sides of stair treads shall not allow a sphere 4⅜ inches (107 mm) to pass through [illegible].

f. If a stairway is to be provided, it must be no less than 36 inches in width. Stairways may be constructed having an 7¾-inch-maximum rise (height) and a 10-inch-minimum run (length). The largest tread rise and tread run may not exceed the smallest corresponding tread rise or run by more than ⅜ inch. Stairway illumination is required by the code. Open risers are permitted, provided the opening between the treads does not permit the passage of a 4-inch-diameter sphere.

g. Handrails are required on all stairways having four or more risers. All required handrails shall be of the following types or provide equivalent graspability.

1. Type I. Handrails with a circular cross section shall have an outside diameter of at least 1¼ inches (32 mm) and not greater than 2 inches (51 mm). If the handrail is not circular it shall have a perimeter dimension of at least 4 inches (102 mm) and not greater than 6¼ inches (160 mm) with a maximum cross section of dimension of 2¼ inches (57 mm).
2. Type II. Handrails with a perimeter greater than 6¼ inches (160 mm) shall provide a graspable finger recess area on both sides of the profile. The finger recess shall begin within a distance of ¾ inch (19 mm) measured vertically from the tallest portion of the profile and achieve a depth of at least 5/16 inch (8 mm) within ⅞ inch (22 mm) below the widest portion of the profile. This required depth shall continue for at least ⅜ inch (10 mm) to a level that is not less than 1¾ inches (45 mm) below the tallest portion of the profile. The minimum width of the handrail above the recess shall be 1¼ inches (32 mm) to a maximum of 2¾ inches (70 mm). Edges shall have a minimum radius of 0.01 inch (0.25 mm). [illegible].

The top of handrail must be not less than 34 inches nor more than 38 inches above the nosing (front edge) of treads and they must be returned to a wall or post.

h. The electrical code requires overhead power lines to be located a minimum of 10 feet above decks and platforms. Existing lines may need to be raised if a new deck is to be installed beneath them.

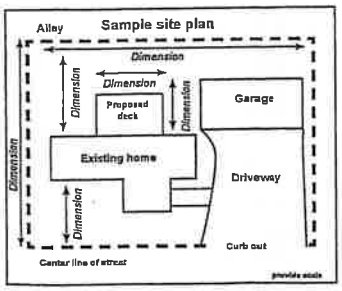
i. When locating a deck, care must be given to the location of outside gas and electric meters, wells and septic systems. These may need to be relocated to allow for construction of the deck. Septic systems and wells may be difficult to relocate, requiring an alternative location for the deck. Contact your local building department prior to placement of any deck that will interfere with these devices.

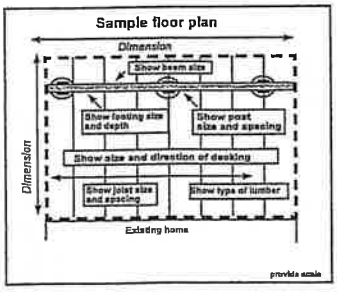
j. Some communities use a remote outside water-meter-reading device that may need to be relocated to allow for construction of a deck. These devices must be relocated properly and may require special tools. Prior to placement of any deck that will interfere with the operation or accessibility of the reader, contact your local building department or water department to obtain information and procedures about relocating these devices. Note: For specific code requirements, please contact your local building department.

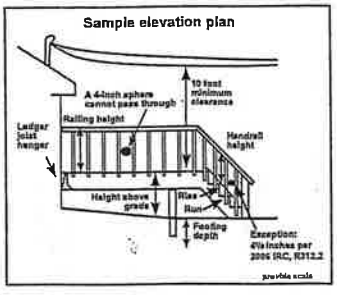
Plans: Site, floor and elevation

The text and sample drawings below show the minimum detail expected to ensure the permit process proceeds smoothly. Two sets of each site, floor and elevation plan are required. Plans do not need to be professionally drawn. Plans should include all of the information requested and drawn to scale.

A certificate of survey or site plan should be drawn to scale that indicates the lot dimensions, the location and size of the existing structure(s) and the location and a size of the proposed structure. Indicate the setbacks from property lines of the existing and proposed structure(s). Include the septic system area and wells, if applicable.







Floor plan

1. Proposed deck size.
2. Size and spacing of floor joists.
3. Size and type of decking material.
4. Size, type, location and spacing of posts.
5. Size and type of beams.

Elevation plan

1. Height of structure from grade.
2. Size and depth of footings.
3. Guard height and spacing (if any).
4. Stairway rise or run and handrail height (if any).
5. Clearance of overhead wires (if applicable).

DTT *Deck Tension Ties*

DTT tension ties are safe, cost-effective connectors designed to meet or exceed code requirements for deck construction. These versatile DTT connectors are also load rated as a holdown for light-duty shearwalls and braced wall panel applications.

For new construction or to make an existing current deck code-compliant, the DTT1Z can be used as a tension-tie to satisfy the 2015 IRC provision for a 750 lbs. lateral load connection to the house at four locations per deck. This new code detail permits the lateral connection from the deck joists to be made to top plates, studs, or headers within the supporting structure, which eliminates the need to access to the floor joists inside the home.

The new DTT1Z fastens to the narrow or wide face of a single 2x with Simpson Strong-Tie® Strong-Drive® SD Connector screws or nails and accepts a ¾" machine bolt, anchor bolt, or lag screw *(washer required)* or can be installed with the new Strong-Drive SDWH Timber-Hex HDG screw with an integral washer. The DTT2 fastens easily to the wide face of a single or double 2x using Simpson Strong-Tie Strong-Drive SDS Heavy-Duty Connector screws (included) and accepts a ½" machine bolt or anchor bolt.

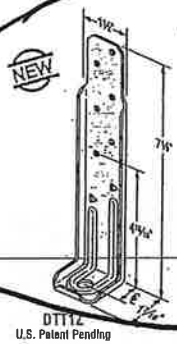
The DTT2 can be used to satisfy the IRC provision for a 1,500 lbs. lateral load connection at two locations per deck. Additionally, the DTT2 has been tested and evaluated in deck guardrail post applications to resist the code-specified lateral forces at the top of railing assemblies. The DTT2 is also available with longer 2½" Strong-Drive SDS Heavy-Duty Connector screws *(model DTT2Z-SDS2.5)* to achieve higher loads when needed.

MATERIAL: 14 gauge

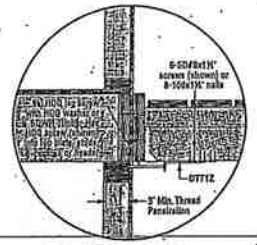
FINISH: DTT1Z/DTT2Z—ZMAX® coating;
DTT2SS—Stainless steel; see Corrosion Information, pages 13-15.

INSTALLATION:
- Use all specified fasteners. See General Notes.
- A standard cut washer *(included)* must be installed between the nut and the seat.
- Simpson Strong-Tie Strong-Drive SDS Heavy-Duty Connector screws install best with a low speed high torque drill with a ¾" hex head driver.
- Strong-Drive SD Connector screws install with a ¼" hex head driver.
- Strong-Drive SDWH Timber-Hex HDG screws install with a ½" hex head driver.

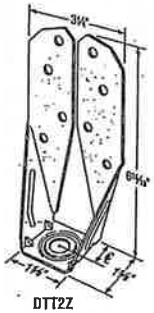
CODES: See page 12 for Code Reference Key Chart.



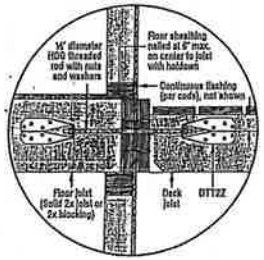
DTT1Z
U.S. Patent Pending



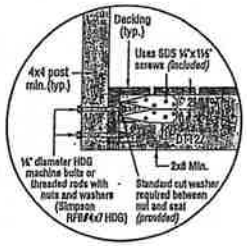
Typical DTT1Z Deck-to-House Lateral Load Connection
For more information on lateral load connections, see technical bulletin T-DECKLATLOAD



DTT2Z



Typical DTT2Z Deck-to-House Lateral Load Connection
For more information on lateral load connections, see technical bulletin T-DECKLATLOAD



DTT2Z Installed as a Lateral Connector for a Deck Guardrail Post
For more information on guardrail post connections, see technical bulletin T-GRDRLPST

These products are available with additional corrosion protection. Additional products on this page may also be available with this option, check with Simpson Strong-Tie for details.

Model No.	₵	Anchor Dia.	Fasteners	Minimum Wood Member Thickness	Allowable Tension Loads DF/SP	Allowable Tension Loads SPF/HF	Code Ref.
DTT1Z	¾	½" or SDWH[1]	6-SD #9x1½	1½	840	840	160
			6-10dx1½		910	640[1]	
			8-10dx1½		910	850	
DTT2Z/DTT2SS	⁹⁄₁₆	½	8-¼"x1½" SDS	1½	1825	1800	I6, L8, F6
				3	2145	1835	
DTT2Z-SDS2.5	⁹⁄₁₆	½	8-¼"x2½" SDS	3	2145	2105	

1. Allowable loads have been increased 60% for wind or earthquake loading with no further increase allowed.
2. DTT1Z installations with allowable loads below 750 lbs. do not satisfy the 2015 IRC requirements for deck-to-house lateral load connections.
3. The Strong-Drive® SDWH Timber-Hex HDG screw with a minimum of 3" of thread penetration into dry lumber has an allowable withdrawal load (160) of 1380 lbs. into SP, 1225 lbs. into DF and 1020 lbs. into SPF/HF.
4. Load values are valid if the product is flush with the end of the framing member or installed away from the end.
5. The guardrail post illustration above addresses an outward force on the guardrail. An additional DTT2Z can be added at the lower bolt to address an inward force.
6. A ½" HDG round washer is required when using a lag screw.

TABLE R507.2
FASTENER SPACING FOR A SOUTHERN PINE OR HEM-FIR DECK LEDGER AND A 2-INCH-NOMINAL SOLID-SAWN SPRUCE-PINE-FIR BAND JOIST[a, f, g]
(Deck live load = 40 psf, deck dead load = 10 psf)

JOIST SPAN	6' and less	6'1" to 8'	8'1" to 10'	10'1" to 12'	12'1" to 14'	14'1" to 16'	16'1" to 18'
Connection details	On-center spacing of fasteners[d, e]						
½ inch diameter lag screw with 15/32 inch maximum sheathing[c]	30	23	18	15	13	11	10
½ inch diameter bolt with 15/32 inch maximum sheathing	36	36	34	29	24	21	19
½ inch diameter bolt with 15/32 inch maximum sheathing and ½ inch stacked washers[b, h]	36	36	29	24	21	18	16

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm. 1 pound per square foot = 0.0479 kPa.

a. The tip of the lag screw shall fully extend beyond the inside face of the band joist.

b. The maximum gap between the face of the ledger board and face of the wall sheathing shall be ½ inch.

c. Ledgers shall be flashed to prevent water from contacting the house band joist.

d. Lag screws and bolts shall be staggered in accordance with Section R507.2.1.

e. Deck ledger shall be minimum 2 × 8 pressure-preservative-treated No. 2 grade lumber, or other approved materials as established by standard engineering practice.

f. When solid-sawn pressure-preservative-treated deck ledgers are attached to a minimum 1-inch-thick engineered wood product (structural composite lumber, laminated veneer lumber or wood structural panel band joist), the ledger attachment shall be designed in accordance with accepted engineering practice.

g. A minimum 1 × 9¼ Douglas Fir laminated veneer lumber rimboard shall be permitted in lieu of the 2-inch nominal band joist.

h. Wood structural panel sheathing, gypsum board sheathing or foam sheathing not exceeding 1 inch in thickness shall be permitted. The maximum distance between the face of the ledger board and the face of the band joist shall be 1 inch.

TABLE 507.2.1
PLACEMENT OF LAG SCREWS AND BOLTS IN DECK LEDGERS AND BAND JOISTS

	MINIMUM END AND EDGE DISTANCES AND SPACING BETWEEN ROWS			
	TOP EDGE	BOTTOM EDGE	ENDS	ROW SPACING
Ledger[a]	2 inches[d]	¼ inch	2 inches[b]	1⅝ inches[b]
Band Joist[c]	¾ inch	2 inches	2 inches[b]	1⅝ inches[b]

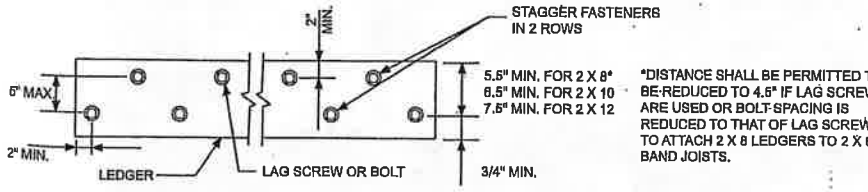
For SI: 1 inch = 25.4 mm.

a. Lag screws or bolts shall be staggered from the top to the bottom along the horizontal run of the deck ledger in accordance with Figure R507.2.1(1).

b. Maximum 5 inches.

c. For engineered rim joists, the manufacturer's recommendations shall govern.

d. The minimum distance from bottom row of lag screws or bolts to the top edge of the ledger shall be in accordance with Figure R507.2.1(1).



For SI: 1 inch = 25.4 mm.

FIGURE R507.2.1(1)
PLACEMENT OF LAG SCREWS AND BOLTS IN LEDGERS