

KENNETT TOWNSHIP DECK CONSTRUCTION GUIDE



Please use this guide when applying for decks, either new or replacement.

Please email us with any questions at: permits@kennett.pa.us

Reminder:

PLANS MUST REFERENCE THE 2021 IRC

- *Permit submissions must be complete, no partial applications will be accepted.*
- *Deck permit submissions MUST include construction details which include the following:*
- *Ledger Details*
- *Flashing Details*
- *Footer Details (all footers must be at least 36" deep)*
- *Framing Detail*
- *Hardware &*
- *Handrail details*

All forms MAY be emailed to the permitting office.
NO cellphone pictures please, must be PDF or Scan.
Packets may be mailed to the address below:

Kennett Township/Permits
801 Burrows Run Road
Chadds Ford, PA 19317

Plans and Specifications

General Notes

Decks constructed according to this guide are not to be used for hot tub support. Decks for hot tubs have heavy design loads that are outside the scope of this guide and generally require a structural engineer's sealed design.

Decks shall not be attached to house overhangs (cantilevers), cantilevered box or bay windows, brick or stone veneers, or chimneys. These decks would require self supporting construction methods or a design stamp by a Pennsylvania licensed engineer.

Footings / Piers

Footings / Piers shall be properly sized for the design and loading of the deck. Post holes for pier footings must be excavated to a minimum of **thirty-six (36) inches** in depth below grade. If within 5' of foundation depth shall be as deep as house footer. Piers must be sized per Section R507.3 or by a registered design professional. Locations of posts will be determined by the size of the deck proposed and must be indicated on plans.

Framing

Beam and joist size must be clearly indicated on plans. Ledger board shall be secured according to the chart provided within (Please see Span Chart Table – R 507.9.1.3(1)). Alternative fasteners are allowed if specifically tested for ledgers and will require submittal of test data.

No screws are permitted in framing unless approved for the use such as Simpson SDS screws.

All deck measurements - widths and lengths - must be clearly indicated on plans, so the sizes of proposed materials can be checked for the proper span.

Railings

Railings are required around all elevated (30" or more above ground level) deck areas, at a minimum of thirty-six (36) inches height, and maximum spacing permitted between balusters or spindles may not permit a 4-inch sphere. Handrails are also required on stairs with four or more step and must be continuous for the full length of the stairs. Handrail ends shall terminate back into a wall or post.

Deck Boards

Must be a minimum thickness of 5/4" or plastic composite installed in conformance with the manufacturer's installation instructions.

REMEMBER: Applicant must call PA ONE CALL (8-1-1) 3 days prior to any excavation.

Materials

All wood decks must be constructed of pressure treated lumber or other approved material; and all fasteners, nails, etc. must be of galvanized steel. Teco nails should be used.

Roofing nails shall not be used.

REQUIRED INSPECTIONS FOR ALL DECKS:

1. **FOOTER INSPECTION**- Footer or post hole inspection for the deck footings prior to pouring of concrete. Footing inspections are required before the concrete is poured and all holes must be cleaned, dry and free from loose dirt. Footer must be 36" below grade.
2. **FRAMING INSPECTION**- framing inspection will take place when all the beams and joists have been placed.
3. **FINAL INSPECTION**- the final inspection will take place when work is complete. Note: framing can be done at the same time as the Final inspection if the framing is **not less than five (5) feet above grade.**

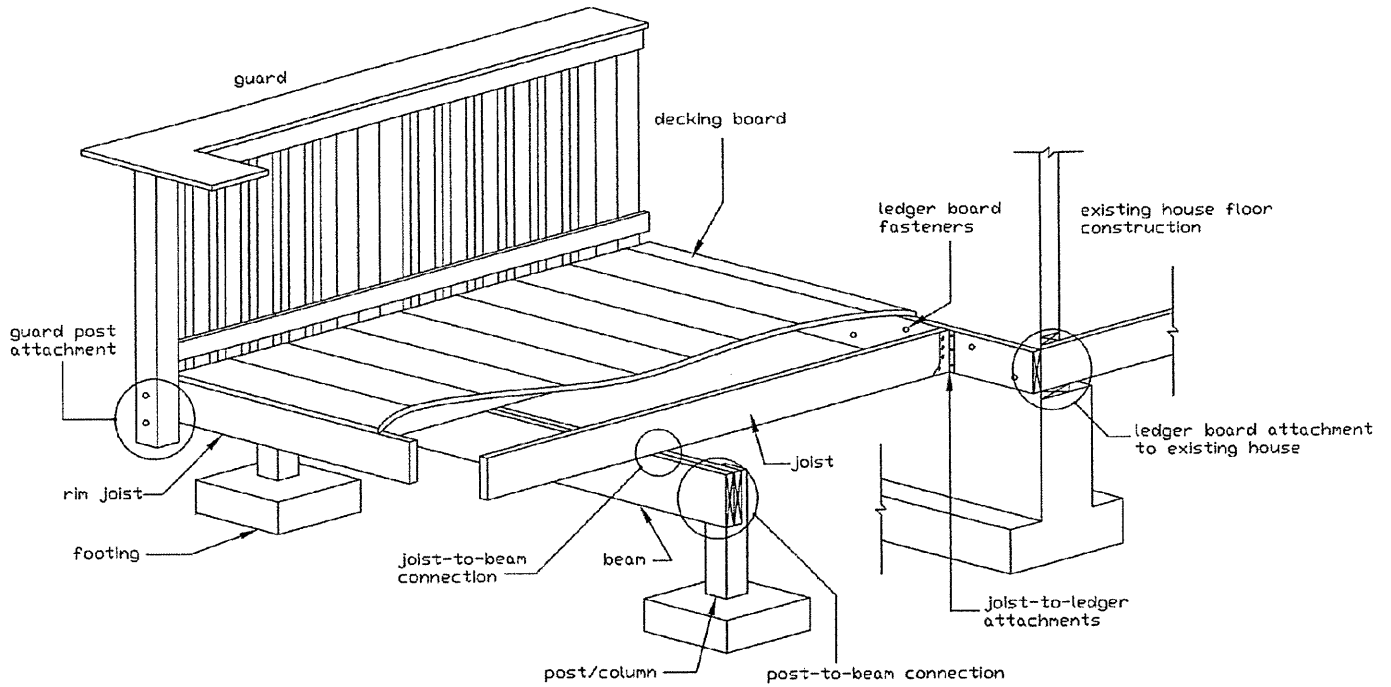
Please know that Kennett Township requires a minimum of forty-eight (48) hour notice for all inspection requests.

Inspection requests are done through email and must include:

- ❖ **Permit #**
- ❖ **Type of Inspection**
- ❖ **Person who will be on site**
- ❖ **Contact phone #**

Typical Deck Details

Based on the 2018 International Residential Code
and Pennsylvania Uniform Construction Code
Amendments



GENERAL INFORMATION

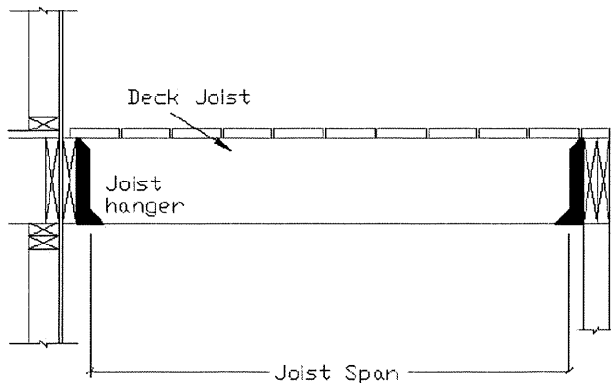
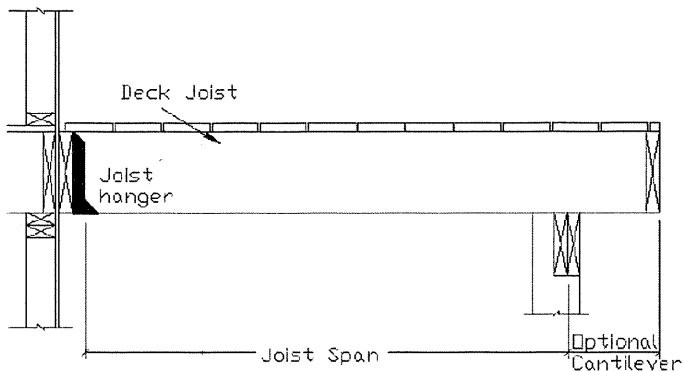
1. Definition: Deck – An exterior floor system supported on at least two opposing sides by an adjoining structure and/or posts, piers, or other independent supports.
2. All wood in contact with the ground, embedded in concrete in direct contact with the ground or embedded in concrete exposed to the weather that supports permanent structures intended for human occupancy shall be approved pressure-preservative treated wood suitable for ground contact use. [R317.1.2]
3. Wood/plastic composites used in deck boards, stair treads, handrails and guardrail systems shall comply with the provisions of ASTM D 7032 and shall be installed per the manufacturer's instructions. [R507.3]
4. Lag screws, bolts and washers shall be hot-dipped galvanized or stainless steel.
5. All screws and nails shall be hot-dipped zinc-coated galvanized steel, stainless steel, silicon bronze or copper. All steel bolts shall be of one-half-inch diameter or larger.
[R317.3]
6. To resist corrosion, fasteners shall meet the requirements of ASTM A 153. [R317.3]
7. All connectors (post anchors, joist hangers, post-to-beam connectors) shall be galvanized or stainless steel. [R317.3.1]
8. Where exterior decks attach to a wall or floor assembly of wood-frame construction, corrosion-resistant metal flashing or approved non-metallic material shall be installed to prevent water from contacting the house band joist. [R703.4/R507.2 footnote a]
Bare aluminum shall not be used in direct contact with lumber treated with preservatives that contain copper (such as ACQ, Copper Azole or ACZA)
9. All of the following inspections are required during construction of deck:
 - Footing inspections are required before the concrete is poured. All holes must be cleaned and free from loose dirt.
 - Framing inspections must be completed before the decking may be attached, unless otherwise noted.
 - Final inspection shall be scheduled when all construction of the deck has been completed.
10. It shall be the duty of the permit holder or their agent to notify the building official that such work is ready for inspection. It shall be the duty of the person requesting any inspections required by this code to provide access and means for inspection of such work.
11. All inspections must be made at least 48 hours in advance. All construction documents shall be on the jobsite, and provided to inspector upon request.
12. Decks may not be occupied until all inspections have been completed and a final approval (in the form of a certificate of occupancy) has been issued by the Building Code Official.

FOOTINGS

All footers must be a minimum of 36" below grade and bear on undisturbed, natural soil. Deck footings closer than 5'-0" to an existing exterior house wall must bear at the same elevation as the existing footer of the house. **The size of footings supporting piers and columns shall be based on tributary load and the allowable soil pressure of 1500 psf** (unless soil test data is provided). [R403.1.1] Do not construct footings over utility lines or enclosed meters - Call 811 before you dig.

JOIST SIZING AND SPAN

Deck joists are permitted to cantilever not greater than one-fourth of the actual, adjacent span. [R507.5] Joist framing into the side of a ledger board or beam shall be supported by approved joist hangers. Joists bearing on a beam shall be connected to the beam to resist lateral displacement. [R507.7]



DECK POST-TO-BEAM CONNECTIONS

Deck post-to-beam connections shall be by either approved post cap or the notching of a 6x6 post to allow the beam to rest directly on the post. The remaining portion of the 6x6 post shall be minimum 2-1/2" and shall use through-bolts with washers and nuts. [R507]

DECK POST-TO-FOOTING CONNECTIONS

Deck posts shall bear onto footings and be restrained to prevent lateral displacement at the bottom support. This may be achieved by using an approved manufactured connector or with a minimum 12-inch post embedment into concrete or soil surround pier. [R507.3]

BRACING

Exterior landings, decks, and stairs shall be positively anchored to the primary structure to resist both vertical and lateral forces or shall be designed to be self-supporting. Attachment shall not be accomplished by use of toenails or nails subject to withdrawal. [R507.8]

Freestanding decks shall require diagonal bracing both parallel and perpendicular to the beam at each post. If it is attached to the house in accordance with the information contained herein, then the bracing perpendicular to the house shall not be required.

LEDGER ATTACHMENT

The deck ledger shall be minimum 2-inch by 8-inch nominal pressure-preservative-treated southern pine, incised pressure-preservative-treated Hem-fir, or approved, naturally durable, No. 2 grade or better lumber. [R507.9.1.1] For any other grade or species, or other connection details or loading conditions, the deck ledger connection shall be approved by a registered design professional. [R507.9.1.4]

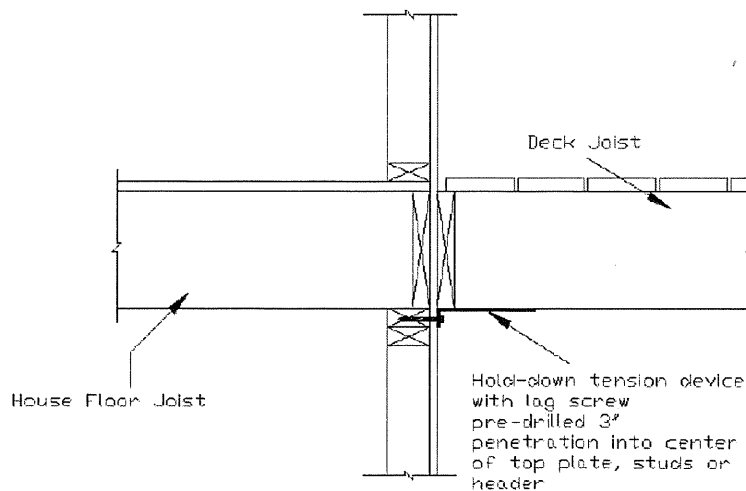
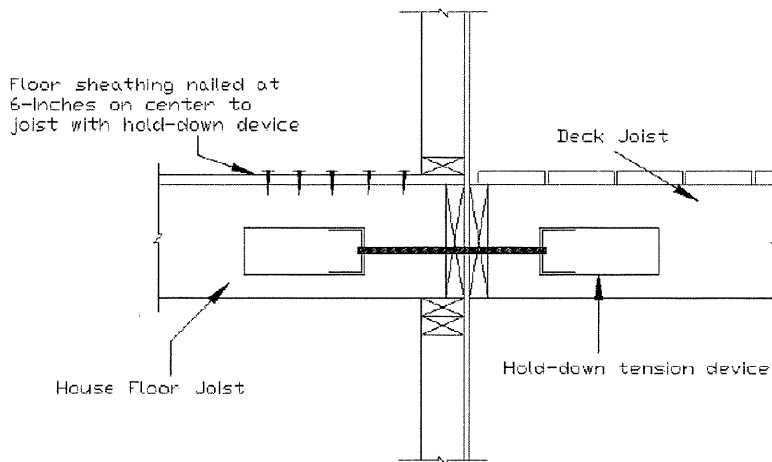
Deck ledgers shall not support concentrated loads from beams or girders, nor shall be supported on stone or masonry veneer. [R507.2.1]

The band joist shall be minimum 2-inch-nominal, solid-sawn, spruce-pine-fir lumber or a minimum 1-inch by 9-1/2-inch dimensional, Douglas fir, laminated veneer lumber. Band joists shall be fully supported by a wall or sill plate below. [R507.9.1.2]

The connection between a deck ledger and band joist shall be constructed with 1/2-inch lag screws or bolts with washers in accordance with Table 4. Lag screws, bolts and washers shall be hot-dipped galvanized or stainless steel. The removal of siding and installation of flashing is required between the house and the ledger. NOTE: YOU MAY NOT ATTACH LEDGER BOARDS TO EXISTING CANTILEVERS, OPEN WEB TRUSSES OR STONE OR MASONRY VENEER. If these conditions occur, the deck must be freestanding.

Where supported by attachment to an exterior wall, decks shall be positively anchored to the primary structure and designed for both vertical and lateral loads. [R507.8] Hold-down tension devices (such as the Simpson Strong-tie DTT2Z) shall be installed in not less than two locations per deck, within 24-inches of each end of the deck and each device shall have an allowable stress design capacity of not less than 1500 pounds (see example in Figure 5). If hold-down tension devices (such as the Simpson Strong-tie DTT1Z) are used, the minimum allowable stress design capacity of each device shall be 750 pounds and be installed in not less than four locations per deck (see example in Figure 10). [R507.9.2] Refer to manufacturer's installation instructions for specific information.

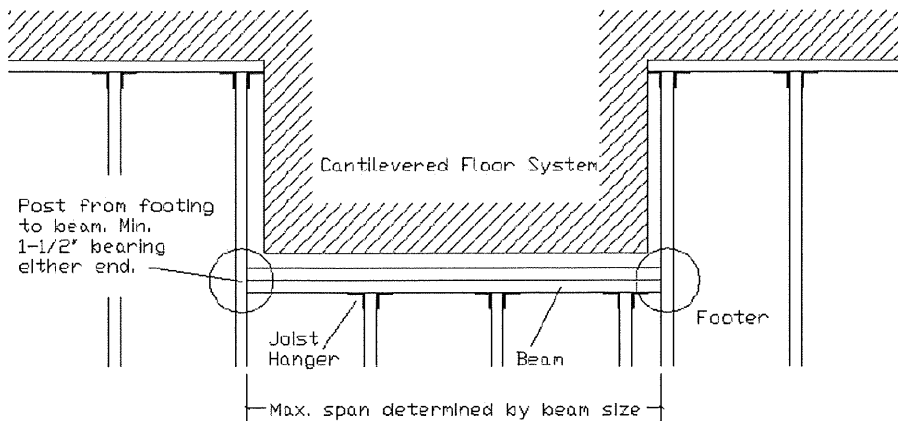
Where positive attachment cannot be verified during inspection, decks shall be self-supporting/free standing. [R507.1] Note: Tension devices used with I-joists must be installed per I-joist's manufacturer's engineered installation instructions.



FRAMING AROUND A CANTILEVERED FLOOR SYSTEM

Attaching the ledger to a house overhang, chimney or bay window shall be prohibited.

Use an alternate deck framing plan to achieve structural stability without fastening to the projection.



DECK RAILING REQUIREMENTS

Porches, balconies, ramps or raised floor surfaces located more than 30" above the floor or grade, within 36" horizontally to the edge of the open side, shall have railings or guards not less than 36" in height. [R312.1.1/R312.1.2] Open sides of stairs with a total rise of more than 30" shall not have railings less than 34" measured vertically from the tread nosing.

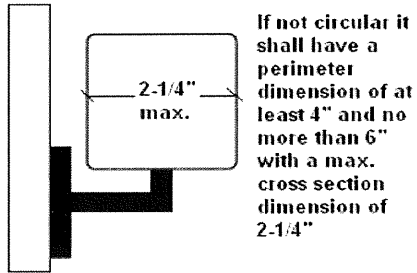
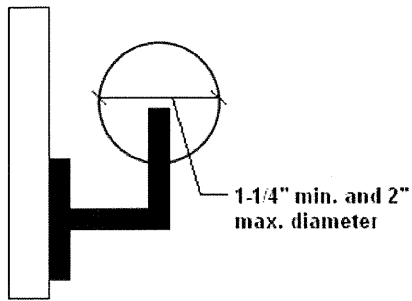
Required railings on open sides of stairways, raised floor areas, balconies and porches shall have intermediate rails or ornamental closures which do not allow the passage of a sphere **4" or more in diameter**. [R312.1.3]

The maximum riser height shall be 8-1/4" measured vertically between leading edges of adjacent treads. The minimum tread depth shall be 9" measured horizontally from beginning to end of tread. [PA UCC] Handrails may not be less than 34" nor greater than 38" above tread nosing and must be continuous throughout the run of stairs.

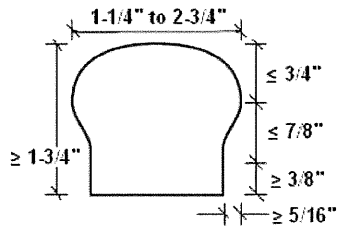
DECK STAIR HANDRAIL REQUIREMENTS

Handrails shall be provided on at least one side of each continuous run of treads or flight with four or more risers. Handrails shall be located between 34" and 38" measured vertically from the sloped plane adjoining tread nosing. It shall be continuous for the full length of the flight. Handrails shall terminate back to post/wall.

Handrail shall comply with one of the following options:



Graspable finger recess area
required on both sides



IF YOU HAVE ANY QUESTIONS PLEASE EMAIL US:

permits@kennett.pa.us