

INSTALLATION GUIDE

Deck Construction: Structural Framing and Marine Grade Decking®



LEARN MORE



FOR THOSE WHO DARE TO BUILD BETTER

GENERAL INFORMATION

Safety
Installation Tips

INSTALLATION STEPS

Section 1: Deck Layout
Section 2: Installing the Ledger
Section 3: Locate and Dig Footings
Section 4: Install Posts
Section 5: Assemble Beam(s)
Section 6: Install Drop Beam(s) on Posts
Section 7: Install Joists
Section 8: Mid-Span Blocking
Section 9: Attaching Front Rim Joist
Section 10: Stair Stringer(s) Installation
Section 11: Railing Installation
Section 12: Deck Board Installation
Section 13: Additional Considerations

Owens Corning Lumber

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Toledo, OH 43604 USA
1-800-GET-PINK

[owenscorning.com/lumber](https://www.owenscorning.com/lumber)



SAFETY CONSIDERATIONS

When handling Owens Corning Lumber products, it is recommended to wear gloves and long/ cutting sleeves. Wash skin with soap and water after handling to avoid irritation.

Download our Safety Data Sheets at [owenscorning.com/lumber](https://www.owenscorning.com/lumber)

INSTALLATION TIPS

Job Site Storage: Store Owens Corning Lumber products on a flat, level surface with supports every two feet. Avoid laying loose boards on uneven surfaces or leaning boards, as they may, like all composites, tend to bend toward that surface particularly in the high heat of summer.

Directional Lines: A raised line runs end to end on one side of each board. When installing, ensure all directional lines face the same direction for a uniform deck.

Screw Lines and Markings: DO NOT USE PENCIL ON Owens Corning Lumber products. Use a blue chalk line or a blue wax-coated carpenter pencil. Red chalk is not advised as it is difficult to remove.

Screws: Stainless steel composite deck screws are recommended. They resist rust and use reverse threading for a cleaner install.

Minimum Screw Lengths:
2.5" Screws for 1 x 8"
1.5" Screws for 1/2 x 6", 1/2 x 10"

Minimum Spacing:
End to end: 1/16" (3/16" recommended)
Side to side: 1/16" (3/16" recommended)

Cutting: Ensure a sharp blade is used for clean and smooth cuts. Using excessively dull blades may damage the cap stock.

SECTION 1: DECK LAYOUT

Determining Perimeter

- Use stakes and string lines to outline the deck perimeter.
- Confirm square using the [3-4-5 triangle method](#).¹
- Mark beam lines, post locations, and stair access points.

Layout Considerations

- Structural framing layout
- Beam and joist sizing
- Stair and railing details
- Footing depth and type

Permitting and Design

- Submit approved drawings to local building department for permit review.
- If required, stamped engineering reports can be found through the [DRJ website](#)

Stair Requirements

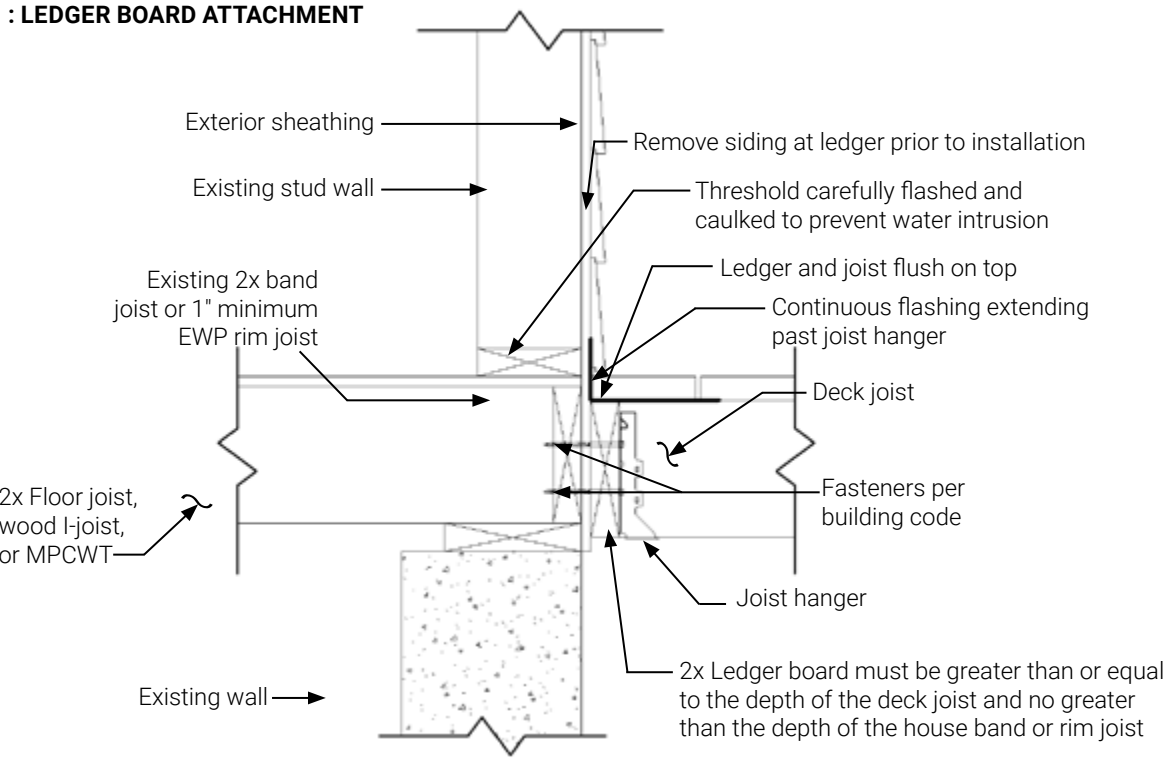
- If stairs are required, determine if a stair landing or intermediate support is necessary.
- Review the span tables to determine if a stair landing or intermediate support is necessary.
- Determine total rise and run.
- If rise exceeds 12 feet, plan for intermediate landing.
- Landing pad must be minimum 36" deep, anchored to concrete or ground screws



SECTION 2: INSTALL 2X OWENS CORNING LUMBER LEDGER

Attach ledger board to structure per building code. **Figure 1 (below):** general attachment of ledger board to band joist or rim joist. Ledger board depth should match the size of the joist framing. Please note Owens Corning Lumber 2x8 Joists have a nominal depth of 7.5" compared to wood (7.25")

FIGURE 1 : LEDGER BOARD ATTACHMENT



¹ Dr Decks, "3-4-5 Method: Instantly Square Anything!," YouTube Shorts



SECTION 3: LOCATE AND DIG FOOTINGS

Options for digging footings:

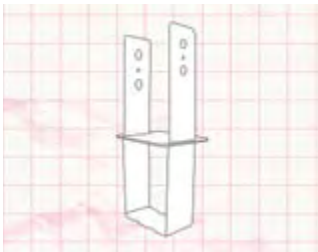
- **Sonno Tubes:** Use sonno tubes for concrete footings to provide a stable base for posts.
- **Traditional Footing / Thickened Slabs:** Traditional footings or thickened slabs can be used as an alternative to sonno tubes.
- **Ground Screws / Helical Piles:** Ground screws or helical piles can be used for footings in certain soil conditions.

Base Connections

- Use anchor bolts to secure the base connection of posts to the footings.
- Works with standard post bases (e.g., Simpson Strong-Tie CB66, MiTek PA66ETZ/PA44ETZ)

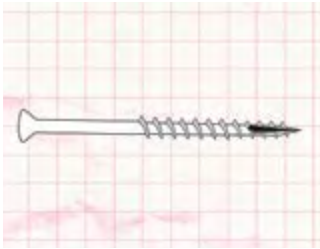
Measure post locations using a plumb-bob off of the ledger. It is not recommended to use the house framing as a reference point as walls may not be plumb

SECTION 4: INSTALL POSTS



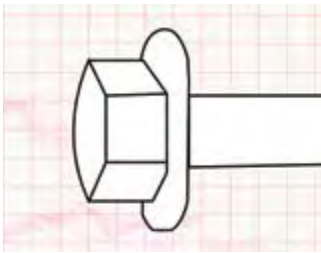
POST BASE

- Works with standard post bases (e.g., Simpson Strong-Tie CB66, MiTek PA66ETZ/PA44ETZ)¹



CONSTRUCTION OR STRUCTURAL SCREWS

- Such as #17 drill point with self-drilling thread
- At least 3" to 3.5" long



FASTENERS

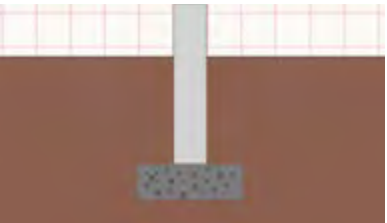
- Should be flat at the contact point of the head
- For taper or undercut heads, see **Secure Screwing** section

TABLE 1: ALLOWABLE BEARING CAPACITIY

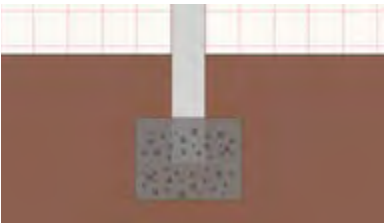
PRODUCT	ALLOWABLE COMPRESSION LOAD (lb)					
	POST HEIGHT					
	≤ 9 ft.	10 ft.	11 ft.	12 ft.	13 ft.	14 ft.
OCL-SCP 6x6 ³	18,500	15,250	12,500	10,500	9,000	7,750
OCL-SCP 4x4 ⁴	6,250	5,000	4,250	3,500	3,000	2,500

SI: 1 in = 25.4 mm, 1 ft = 0.3048 m, 1 lbf = 4.448 N
1. Maximum post height is 14 ft. above grade.
2. Post shall be diagonally braced to prevent side-sway and buckling.
3. These results may be applied to all loading scenarios (full bearing, notched, post-cap/base).
4. These results may be applied only to full bearing loading scenarios.
5. 8ft assumption for footings here

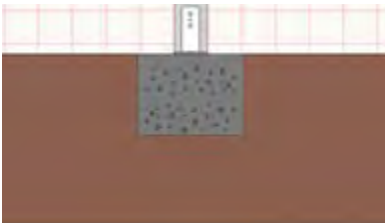
Step 4.1 Anchoring Post



Post shall be set on a solid footing in ground or above ground to prevent settling into soil.



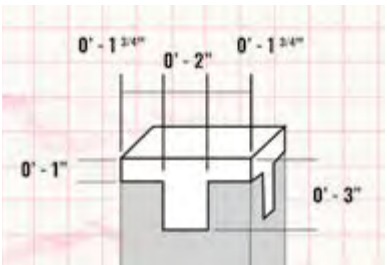
Post may be embedded into concrete pouring. Post does not need to be set IN concrete. Soil backfill is suitable.



Attachment to poured concrete slab should be by suitable fastener that allows full base of post to be supported by a flat surface, such as with the Simpson Strong-Tie CB66 or MiTek EPG series. Stand-off brackets that elevate the post base without full post surface (sidewalls and inner web) are not appropriate for use.

Note: Code-compliant foundation options are designed by others and often assume maximum 8' free span of height.

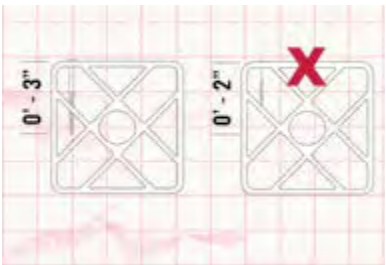
Step 4.2: Securing and to Prevent Cracking



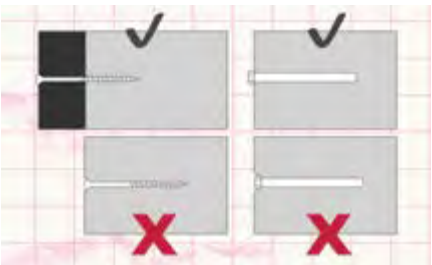
Screwing should be targeted at the outer edge, from 0.25" to 1" from edge, and farther than 1" from end of the post to prevent cracking.

Any post screwing in the center 3.5" should be done at least 3" from the end of the post.

Screws should be construction screws or structural screws, such as #17 drill point with self-drilling thread. Fasteners that will be tightened flush to post should be flat at the contact point of the head with the post wall as in the case of round-head, pan-head, hex bolts, etc. Taper or undercut heads can be used when securing Owens Corning Lumber boards to the face of the post, and the fastener head will embed into the attached material, not the post.



Screws should be at least 3" long to 3.5" long to engage the inner web of the post and prevent cantilever action on the penetration through the sidewall.



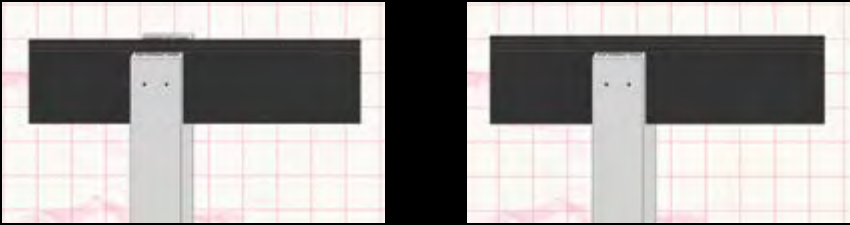
Caution should be taken not to overtighten the screw or bolt that would lead to sidewall deflection into the post. This can be accomplished by adjusting the torque/clutch setting on the drill driver to prevent draw-in.



Step 4.3: Attaching Beam to Post

This can be accomplished by using the suitable brackets, such as column caps from Simpson or MiTek. Bracket selection should prevent shifting, rolling, or uplift per design requirements.

The center of the post can be used as conduit for electrical connections where appropriate.



SECTION 5: ASSEMBLE BEAM(S)

Tables 2 and 3 Maximum post spacing recommended for 2x Owens Corning Lumber. The maximum beam cantilever is 2' or ¼ of the length of the beam span between posts, whichever length is less. This length is measured from the exterior side of the post to the end of the beam.

For decks requiring support at more than 3 locations, please contact Owens Corning Lumber support team.

How to Use Table 2

- Determine the length of joist to be used for your deck (e.g., 10').
- Find applicable "length of joist" column in Table 3 (e.g., 10').
- Using the beam size and # of plies (e.g., 2x10 beam that is 3-ply), find the maximum Owens Corning Lumber post spacing (e.g., 8'-2" post spacing).
- If applicable, add cantilever(s) to determine final beam length (e.g., if the 8'-2" post spacing has a beam with two cantilevers on each end, the maximum beam length is 12'-2").

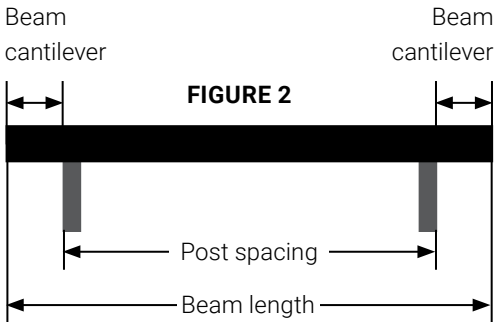


TABLE 2: MAX. POST SPACING FOR SUPPORT AT 2 LOCATIONS

BEAM SIZE	# OF PLYS	LENGTH OF JOIST (FT)							
		EXPANDED TABLES AVAILABLE IN DRJ REPORT WITH JOIST SPAN UP TO 16'							
		4'	5'	6'	7'	8'	9'	10'	11'
POST SPACING (FT)									
2x6	2	5'-1"	4'-11"	4'-9"	4'-7"	4'-5"	4'-4"	4'-3"	4'-1"
	3	5'-10"	5'-7"	5'-5"	5'-3"	5'-1"	4'-11"	4'-10"	4'-9"
2x8	2	6'-11"	6'-8"	6'-5"	6'-3"	6'-1"	5'-11"	5'-9"	5'-8"
	3	8'-0"	7'-8"	7'-5"	7'-2"	6'-11"	6'-9"	6'-7"	6'-5"
2x10	2	8'-7"	8'-3"	8'-0"	7'-9"	7'-6"	7'-3"	7'-1"	6'-11"
	3	9'-10"	9'-5"	9'-1"	8'-10"	8'-7"	8'-4"	8'-2"	8'-0"
2x12	2	10'-2"	9'-10"	9'-5"	9'-2"	8'-11"	8'-8"	8'-5"	8'-3"
	3	11'-8"	11'-3"	10'-10"	10'-6"	10'-2"	9'-11"	9'-8"	9'-5"

LL = 40 and DL = 10 PSF. Decks shall be designed for 40 PSF live load per IRC Section R301.5 or a ground snow load up to 40 PSF LL. OC™ Lumber products use proprietary materials and conditions not prescribed in IRC Section 507.1. OC decks use design requirements, which are considered proprietary intellectual property and trade secrets, pursuant to IRC Section 301.1.3, IRC Section 1706.2, IRC Section 1707.1, and IRC Section R104.11. OC decks use proprietary materials and conditions not prescribed in IRC Section 507.1.

How to Use Table 3

- Determine the length of joist to be used for your deck (e.g., 10').
- Find the applicable "length of joist" column in Table 4 (e.g., 10').
- Using the beam size and # of plies (e.g., 2x10 beam that is 3-ply), find the maximum Owens Corning Lumber post spacing that supports a 10' joist (e.g., 8'-6" post spacing).
- If applicable, add cantilever(s) to determine final beam length (e.g., if the 8'-6" post spacing has a beam with two cantilevers on each end, the max. beam length is 12'-6").

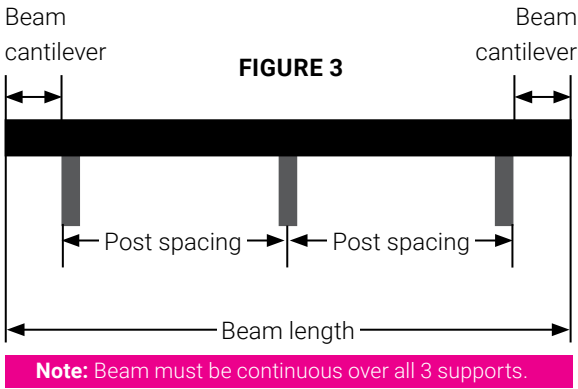


TABLE 3: MAX. POST SPACING FOR SUPPORT AT 3 OR MORE LOCATIONS

BEAM SIZE	# OF PLIES	LENGTH OF JOIST (FT)							
		EXPANDED TABLES AVAILABLE IN DRJ REPORT WITH JOIST SPAN UP TO 16'							
		4'	5'	6'	7'	8'	9'	10'	11'
POST SPACING (FT)									
2x6	2	5'-3"	5'-1"	4'-11"	4'-9"	4'-7"	4'-6"	4'-5"	4'-3"
	3	6'-1"	5'-10"	5'-7"	5'-5"	5'-3"	5'-2"	5'-0"	4'-11"
2x8	2	7'-3"	6'-11"	6'-8"	6'-6"	6'-4"	6'-2"	6'-0"	5'-10"
	3	8'-3"	7'-11"	7'-8"	7'-5"	7'-3"	7'-0"	6'-10"	6'-8"
2x10	2	8'-11"	8'-7"	8'-3"	8'-0"	7'-9"	7'-7"	7'-5"	7'-3"
	3	10'-2"	9'-10"	9'-6"	9'-2"	8'-11"	8'-8"	8'-6"	8'-3"
2x12	2	10'-7"	10'-2"	9'-10"	9'-6"	9'-3"	9'-0"	8'-9"	8'-7"
	3	12'-1"	11'-8"	11'-3"	10'-11"	10'-7"	10'-4"	10'-1"	9'-10"

These properties are based upon test data and use nominal design dimensions (i.e., 1.5" by 5.5", 1.5" by 7.5", and 1.5" by 9.25" section properties). See DrJ Report span tables for cantilever lengths. LL = 40 and DL = 10 PSF. Decks shall be designed for 40 PSF live load per IRC Section R301.5 or a ground snow load up to 40 PSF LL. OC™ Lumber products use proprietary materials and conditions not prescribed in IRC Section 507.1. OC™ Lumber products use design requirements, which are considered proprietary intellectual property and trade secrets, pursuant to IRC Section 301.1.3, IRC Section 1706.2, IRC Section 1707.1, and IRC Section R104.11. OC™ Lumber uses proprietary materials and conditions not prescribed in IRC Section 507.1.

Beam(s) Assembly

FIGURE 4: Assemble 2-ply beam(s) as applicable using 2x Owens Corning Lumber boards and #10 x 3" stainless steel composite deck screws, staggered in 2 rows. If a splice is required, use 2 screws at each end of splice. Splices shall be located only over interior posts.

- 1 = 3" End distance
- 2 = 1.5" Edge distance
- 3 = 2.5" Spacing between rows
- = Screw from back
- = Screw from front

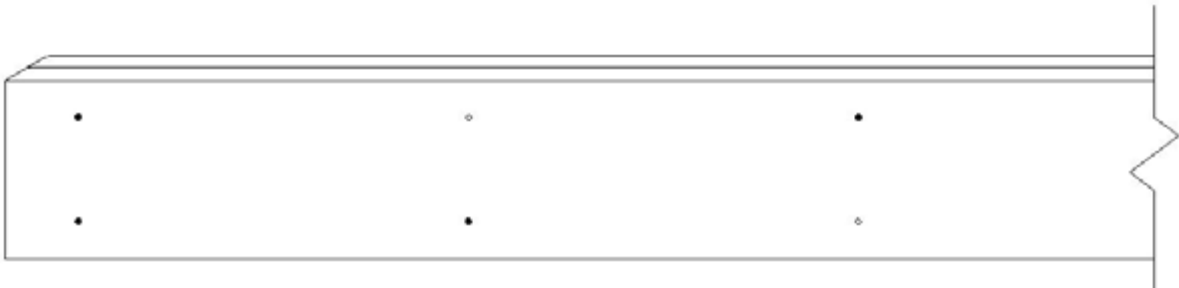
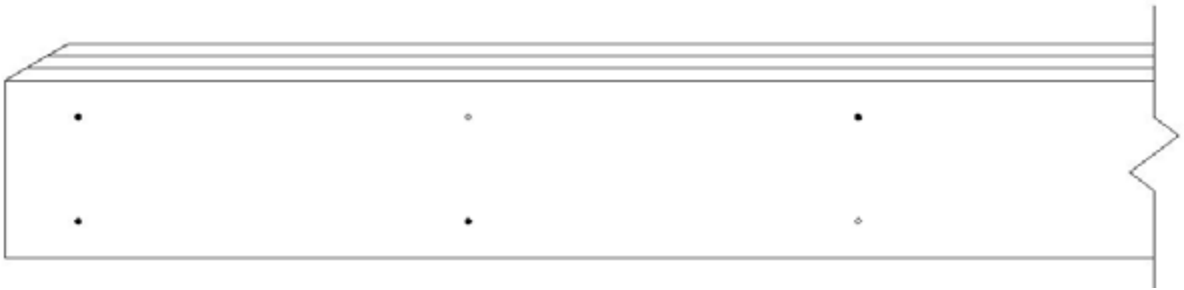


FIGURE 5: Assemble 3-ply beam(s) as applicable using 2x Owens Corning Lumber boards and #10 x 3" stainless steel composite deck screws, staggered in 2 rows. If a splice is required, use 2 screws at each end of splice. Splices shall be located only over interior posts.

- 1 = 3" End distance
- 2 = 1.5" Edge distance
- 3 = 2.5" Spacing between rows
- = Screw from back
- = Screw from front



SECTION 6: INSTALL DROP BEAM(S) ON POSTS

FIGURE 6: Secure 3-ply carrying beam to each Owens Corning Lumber post using a code-compliant beam-to-post connector with minimum uplift capacity of 2,000 lbs (see next page).

FIGURE 7: Secure 2-ply carrying beam to each notched Owens Corning Lumber post with two rows of #10 x 3" screws per table below with minimum 1½" edge distance (see next page).

TABLE 4: JOIST SIZE AND # OF SCREWS

JOIST SIZE	# OF SCREWS
2x6	2
2x8	3
2x10	4
2x12	4

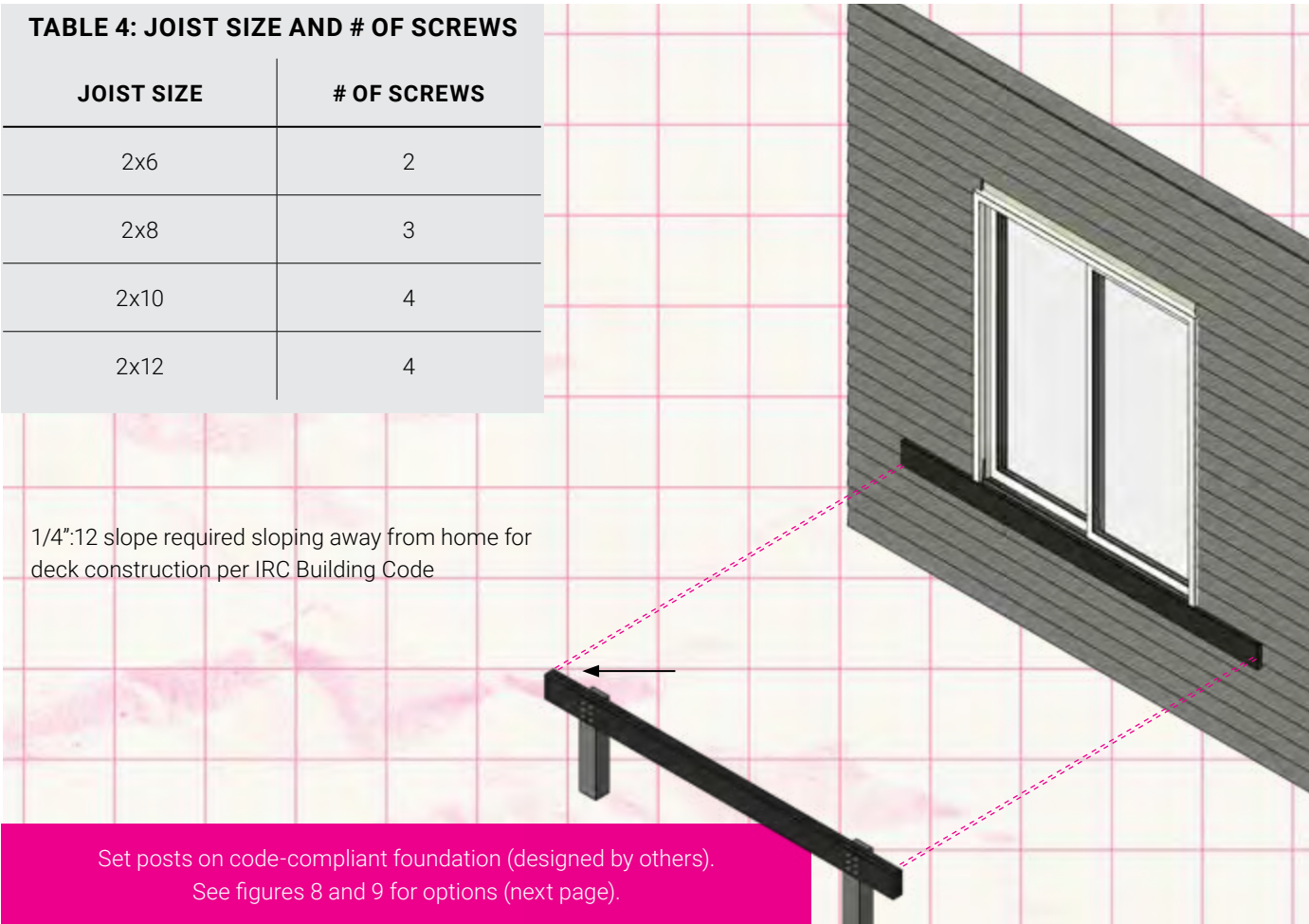


FIGURE 6: 3-PLY BEAM WITH POST CAP ATTACHMENT (BEAM-TO-POST CONNECTOR BY OTHERS)

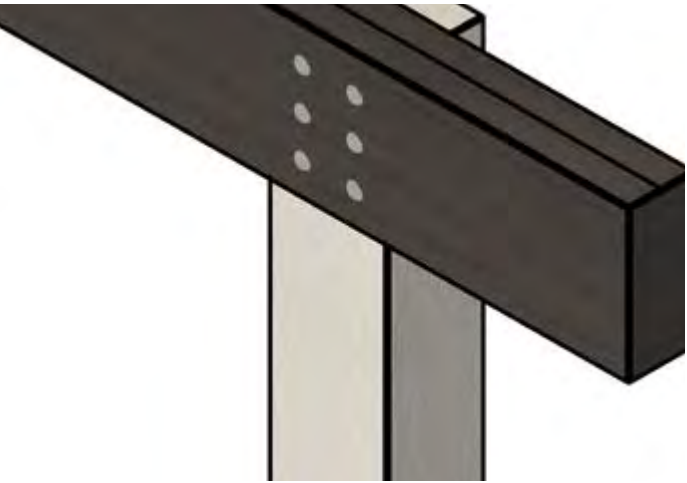


FIGURE 7: 2-PLY BEAM WITH NOTCHED POST

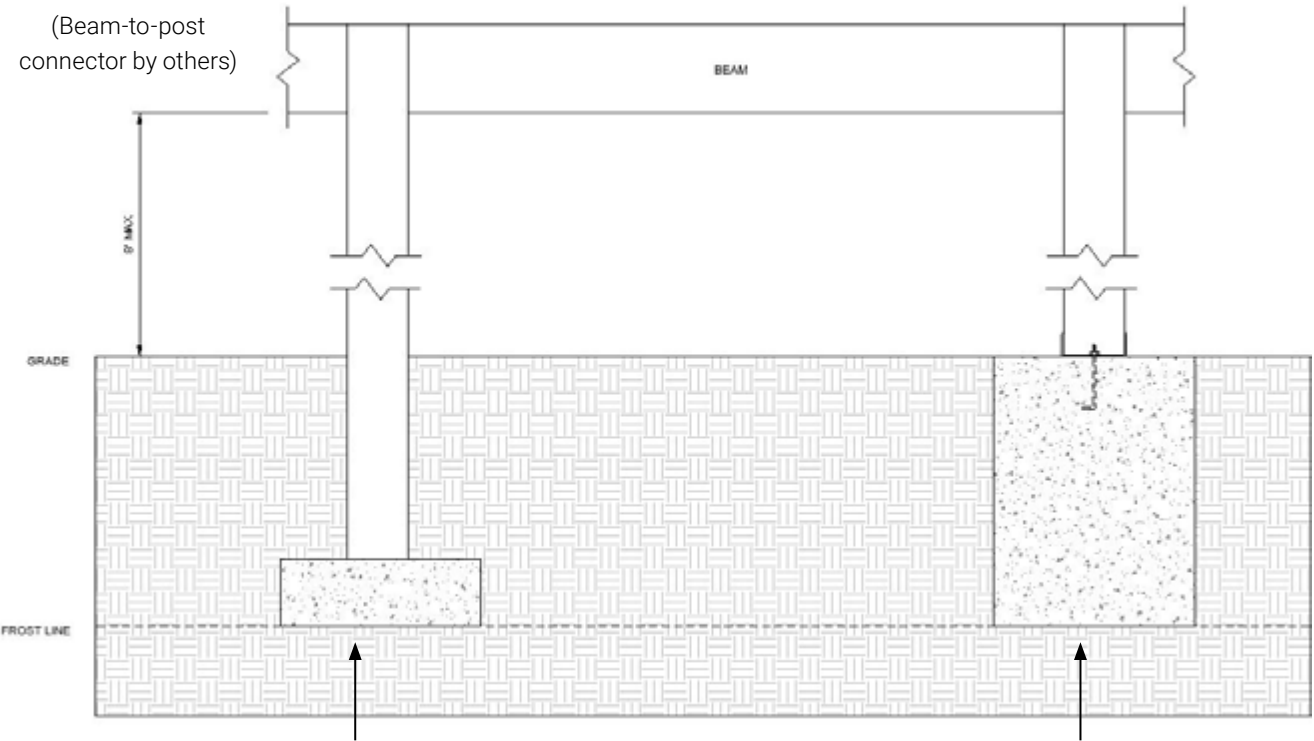


FIGURE 8: POST FOUNDATION BACKFILLED WITH DIRT OR CONCRETE

FIGURE 9: POST FOUNDATION MOUNTED ON CONCRETE PAD USING ABOVE-GROUND CONNECTOR WITH MINIMUM UPLIFT CAPACITY OF 2,000 LBS

Note: Code-compliant foundation options are designed by others and often assume maximum 8' free span of height.



SECTION 7: INSTALL JOISTS

- Install Owens Corning Lumber 2x double band joist using a double 2x joist hanger with a minimum gravity capacity as outlined on the table next to this
- Secure the joists together with two rows of #10 x 3" stainless steel composite deck screws staggered 12" on center.
- Install subsequent single 2x joists at applicable on-center spacing found in Table 1 using a single 2x joist hanger with a minimum gravity capacity as outlined on page 2.
- Hanger attachment per manufacturer instructions using #9 2.5" hex-head exterior connector screws. Note: Not designed for bracket use with smooth-shank or nail fasteners.
- Complete joist installation with a 2x double joist at opposite edge of ledger.
- Secure each joist to the drop beam using a hurricane tie with a minimum uplift capacity of

Joist-to-Ledger Connections

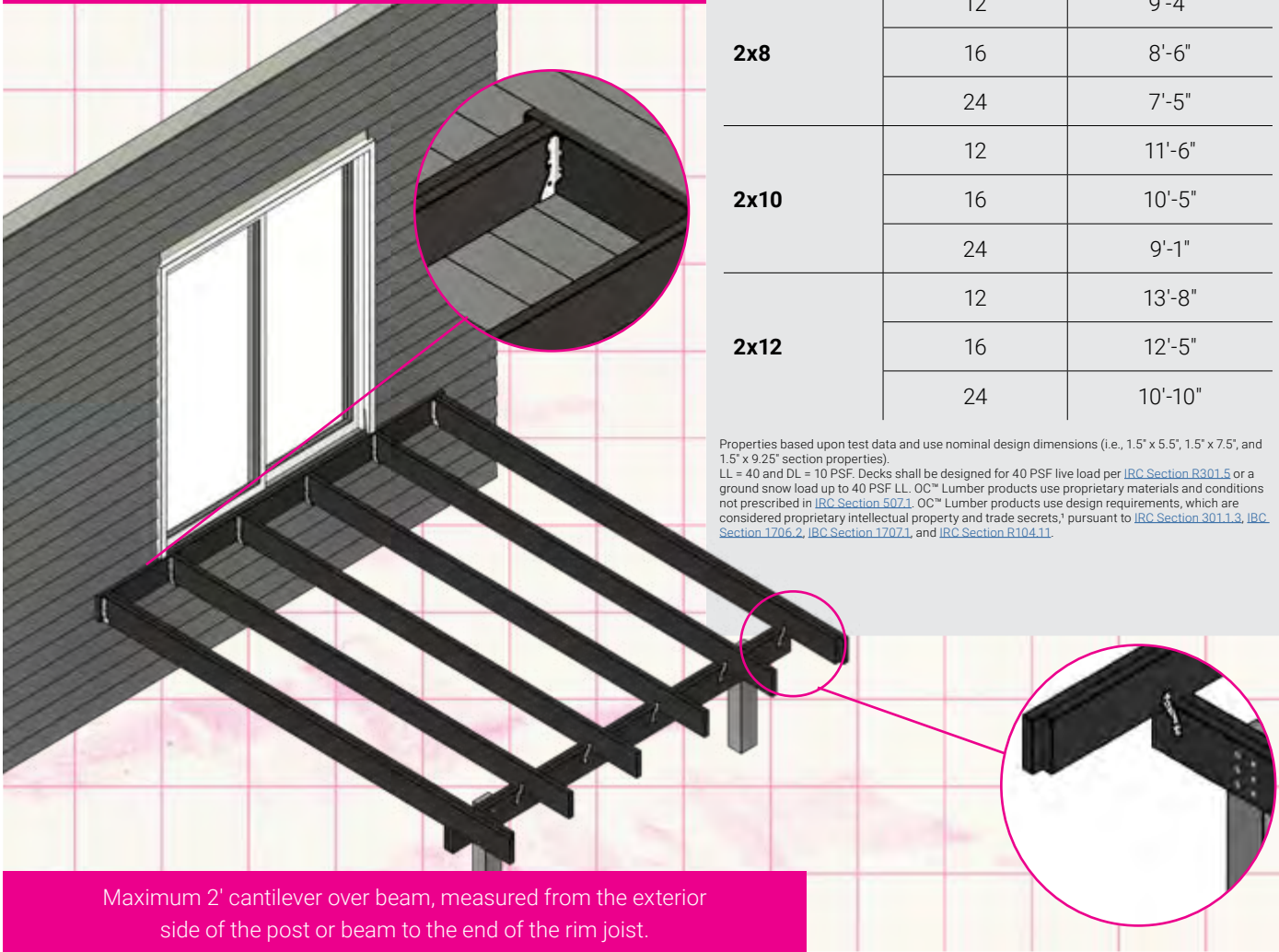
- Double 2x6 joist hangers with minimum gravity capacity of 685 lbs
- Double 2x8 joist hangers with minimum gravity capacity of 980 lbs
- Double 2x10 joist hangers with minimum gravity capacity of 1,170 lbs
- Single 2x6 joist hangers with minimum gravity capacity of 345 lbs
- Single 2x8 joist hangers with minimum gravity capacity of 490 lbs
- Single 2x10 joist hangers with minimum gravity capacity of 545 lbs
- Hurricane ties with minimum uplift capacity of 500 lbs
- Angle brackets
- #9 x 2.5" Hex-head exterior connector screws for hanger and bracket

TABLE 5: MAX ALLOWED JOIST SPANS

JOIST SIZE	SPACING (IN)	SPAN (L/240)
2x6	12	6'-10"
	16	6'-2"
	24	5'-5"
2x8	12	9'-4"
	16	8'-6"
	24	7'-5"
2x10	12	11'-6"
	16	10'-5"
	24	9'-1"
2x12	12	13'-8"
	16	12'-5"
	24	10'-10"

Properties based upon test data and use nominal design dimensions (i.e., 1.5" x 5.5", 1.5" x 7.5", and 1.5" x 9.25" section properties).
LL = 40 and DL = 10 PSF. Decks shall be designed for 40 PSF live load per [IRC Section R301.5](#) or a ground snow load up to 40 PSF LL. OC™ Lumber products use proprietary materials and conditions not prescribed in [IRC Section 507.1](#). OC™ Lumber products use design requirements, which are considered proprietary intellectual property and trade secrets, pursuant to [IRC Section 301.1.3](#), [IRC Section 1706.2](#), [IRC Section 1707.1](#), and [IRC Section R104.11](#).

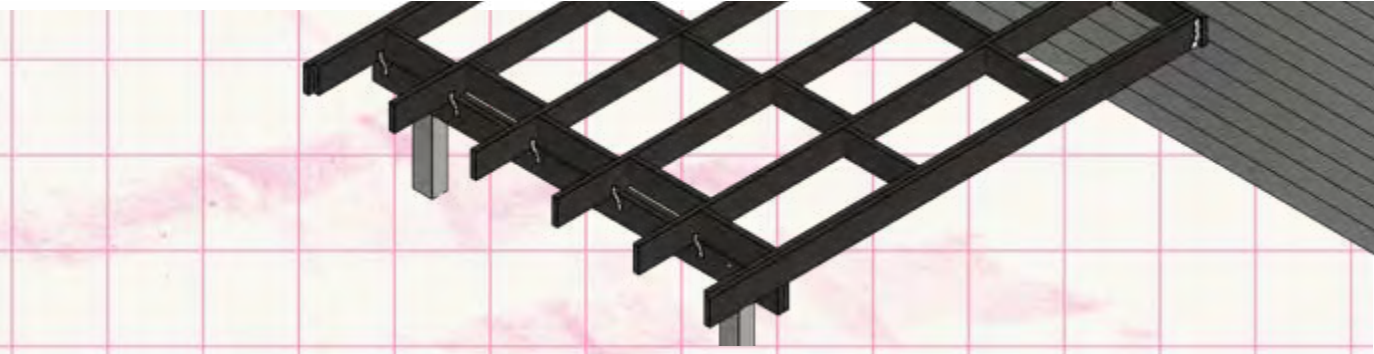
Repeat Step 5 until all joists are installed, ending with a double joist.



Maximum 2' cantilever over beam, measured from the exterior side of the post or beam to the end of the rim joist.

SECTION 8: ADD MID-SPAN & BEARING BLOCKING

Install 2x blocking between each joist at 4'-5' spacing between the ledger board and the drop beam. Similar blocking is also recommended over the drop beam. Stagger block as shown to allow the use of two equally spaced #10 x 3" coated deck screws, with a 1½" edge distance through the side of the joist into the centerline of each block.



SECTION 9: ATTACH FRONT RIM JOIST

Attach first front rim joist at all joist locations through the side of the rim board into the centerline of each joist using a #10 x 3" screw per table below with a minimum 1½" edge distance.

Install second rim board, securing the rim boards together with two rows of #10 x 3" screws staggered 12" on center with a minimum 1½" edge distance. Secure second rim board at corners with required number of screws per table below, passing from the face of one board centered into the end of the adjoining board.

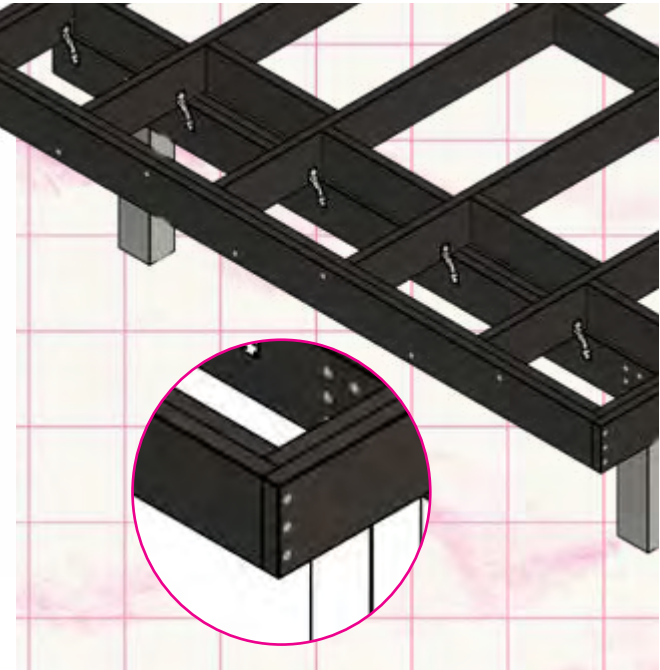
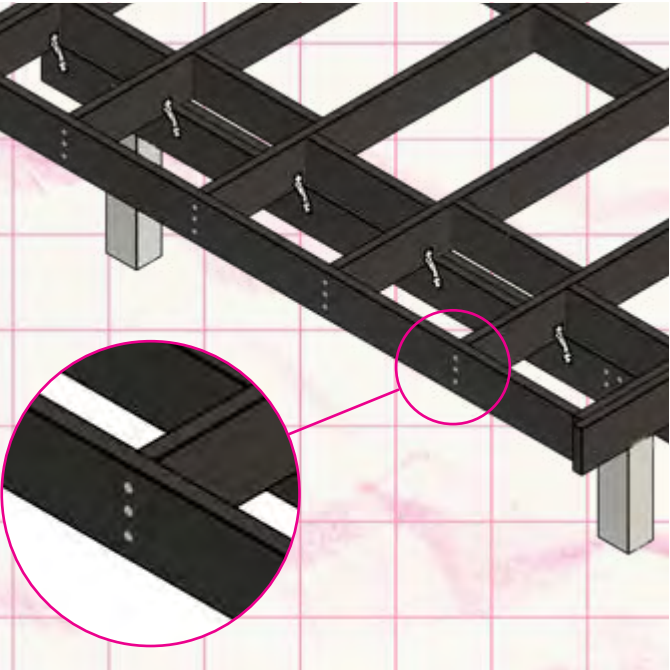


TABLE 6: JOIST SIZE AND # OF SCREWS

JOIST SIZE	# OF SCREWS
2x6	2
2x8	3
2x10	4
2x12	4

“OC Lumber is the only set of stringers I’d die on a hill for against these wild New England seasons. Even in -10° this material stands strong.”

-@historicdistrictwoodworking
Effingham, NH

SECTION 10: STAIR STRINGER INSTALLATION

Step 10.1: Determining Stair Layout

The first step in designing and installing stair stringers is to determine the layout of the stair, which includes:

- total rise
- total run
- number of steps
- tread width
- riser height
- stringer spacing.

The layout of the stair will depend on building code requirements, materials selected and desired layout. A good rule of thumb is to keep your stairs between 7-8”.



PRO TIP: HOW TO DETERMINE RISE AND RUN

Learn from pro builder Jon Dawson the best way to determine the height of your stairs and the number of stairs needed based on your rise and run.



Step 10.2: Mark and Cut Stringers

Once the layout of the stair is determined, the next step is to mark and cut the stringers. The stringers are generally cut from 2x10 or 2x12 lumber depending on the span and load of the stair.



Marking: The tread and riser lines can be marked using a framing square and stair gauge, or using a prefabricated stair stringer template.



Cutting: The stringers are cut along the tread and riser lines, forming notches that support the steps.



Finishing: The stringers are cut with a circular saw and finished with a handsaw or jigsaw. Note to avoid overcutting the notches.

FIGURE 10: 2X12 RECOMMENDED STRINGER LAYOUT



FIGURE 11: 2X10 RECOMMENDED STRINGER LAYOUT



Make sure your throat thickness is a minimum of 5”. The throat thickness of a stair stringer is the minimum distance between the top and bottom edges of the stringer, measured at the narrowest point of the notch. The throat thickness is important for strength and stability. It can be increased by using a smaller riser height or smaller tread width.

How to Use Table 7

1. Determine the live load on the stair stringer. For residential projects this is usually 40 PSF.
2. Determine what kind of deflection criteria to use - The larger the L/XXX number, the stiffer the stairs. For reference, wood usually follows an L/360 recommended deflection. Owens Corning Lumber Stair Stringers can be safely used at any of the deflection criteria listed however the deck will experience more movement at lower L/ values. .
3. Determine the required span needed. This span value is the horizontal dimension that the stringer travels, not vertical. If the span is too long, consider adding an intermediate support or landing.
4. Compare chosen spans to the maximum recommended span and use the appropriate spacing that is larger than your required span.

TABLE 7: MAXIMUM ALLOWABLE STAIR STRINGER SPANS PER LOADING CRITERIA

LIVE LOAD (PSF)	STRINGER SPACING	TOTAL LOAD¹ (Dead Load + Live Load)		LIVE LOAD ONLY	
		L/180	L/240		
40	8"	8'-6"	7'-8"	7'-8"	6'-8"
	10"	7'-10"	7'-2"	6'-10"	6'-2"
	12"	7'-5"	6'-9"	6'-5"	5'-10"
	14"	7'-0"	6'-5"	6'-1"	5'-6"
50	8"	8'0"	7'-3"	7'-3"	6'-2"
	10"	7'5"	6'-9"	6'-4"	5'-9"
	12"	7'0"	6'-4"	5'-11"	5'-5"
	14"	6'8"	6'-0"	5'-8"	5'-2"
60	8"	7'7"	6'-11"	6'-5"	5'-10"
	10"	7'1"	6'-5"	5'-11"	5'-5"
	12"	6'8"	6'-0"	5'-7"	5'-1"
	14"	6'4"	5'-9"	5'-4"	4'-10"
70	8"	7'3"	6'-7"	6'-1"	5'-6"
	10"	6'9"	6'-2"	5'-8"	5'-2"
	12"	6'4"	5'-9"	5'-4"	4'-10"
	14"	6'0"	5'-6"	5'-1"	4'-7"
80	8"	7'0"	6'-4"	5'-10"	5'-3"
	10"	6'6"	5'-11"	5'-5"	4'-11"
	12"	6'1"	5'-7"	5'-1"	4'-7"
	14"	5'10"	5'-3"	4'-10"	4'-5"

¹Total load includes a 12 PSF dead load
The span is defined as the distance between supports | Minimum throat depth of 5" | Minimum of three stringer stair assemblies tied together with stair treads | These span calculations do not take into account for creep or external factors such as temperature, freeze thaw cycles, UV exposure etc. IRC requires a minimum of 40 PSF live load in addition to the self weight of the stair. Stringers must not exceed 14 inches on center. Per IRC Section 311 stair riser height shall be a maximum of 7.75" and stair tread depth (run) shall be a minimum of 10".



Step 10.3: Stair Stringer Spacing

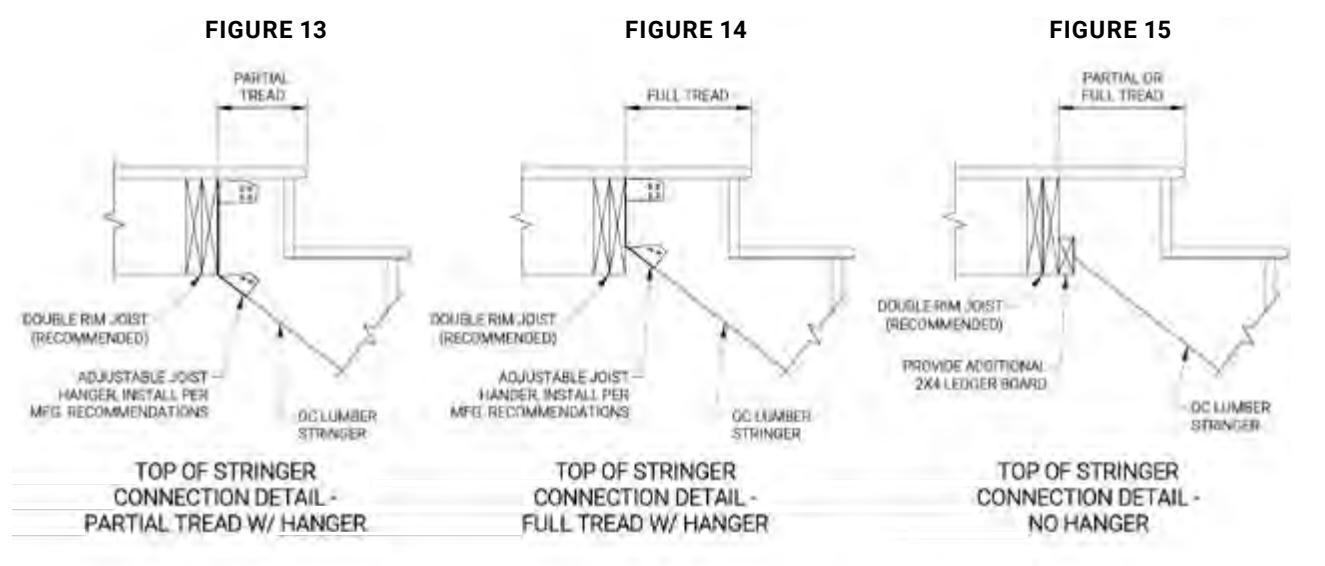
Blocking should be provided between the stair stringers at the end of the stringer. Like blocking for a deck, this blocking will provide additional bracing to prevent lateral movement or twisting of the stringers.



FIGURE 12: MID-SPAN SUPPORT DETAIL

Step 10.4: Stair Stringer Attachment to Deck

The stair stringers must be attached to the deck or landing securely and safely, to prevent any movement or separation.



The attachment method depends on the type and height of the deck or landing, as well as the local building code requirements. The most common methods of attaching stair stringers to the deck are using metal hangers, brackets, or straps. The metal connectors must be rated for outdoor use and compatible with the type of fasteners used. The ledger boards or rim joists must be properly flashed as required by the applicable building code.

“Owens Corning Lumber has quickly become our tabasco sauce of framing products. We put this stuff on everything!”

*-Jeremy Wilkins, @deckmasterj
Greenville, SC*

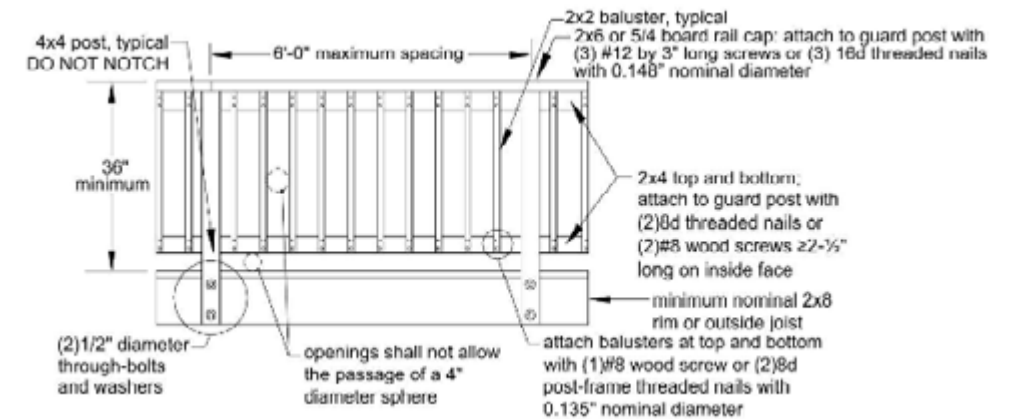
SECTION 11: INSTALLING DECK RAILING

Railings are not just a decorative feature of your deck—they play a critical role in both safety and design.

Because of their dual purpose—aesthetic appeal and structural safety—**railings must be built correctly and in compliance with local building codes.**

Note: Selected figures within this section are sourced directly from the American Wood Council (AWC) DCA 6 and are used for reference

FIGURE 16: EXAMPLE RAILING DETAIL (FROM DCA 6)



Step 11.1: Install 4x4 Posts Prior to Decking

Begin by installing the 4x4 posts that will support the rails before the decking is installed. Posts should extend 36 inches above the deck surface to meet local building code. Check your local code before making cuts, as requirements vary.

Step 11.2: Secure the Posts

Use ½-inch through-bolts from the outside to secure the posts. This ensures strength and leaves a clean bolt head visible on the deck face. On the inside, use two deck tension ties for posts that run parallel to the joists. This makes the posts as strong as the rest of the deck.

FIGURE 17: GUARD POST TO RIM JOIST

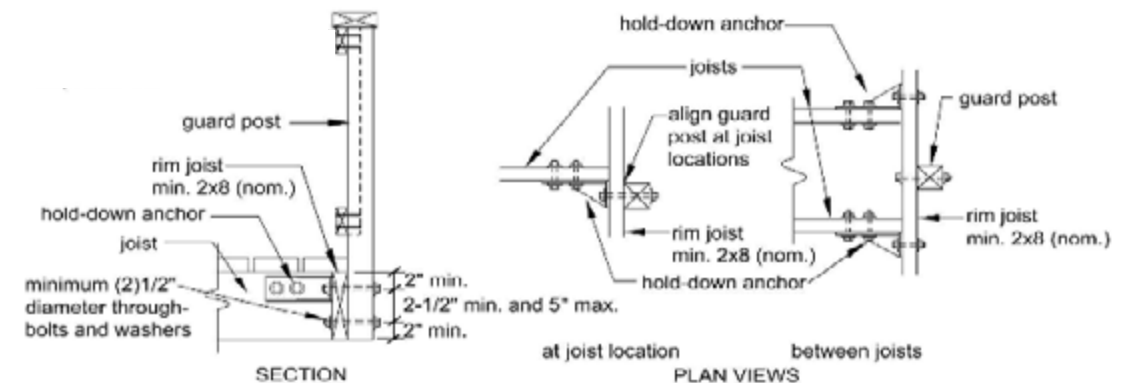
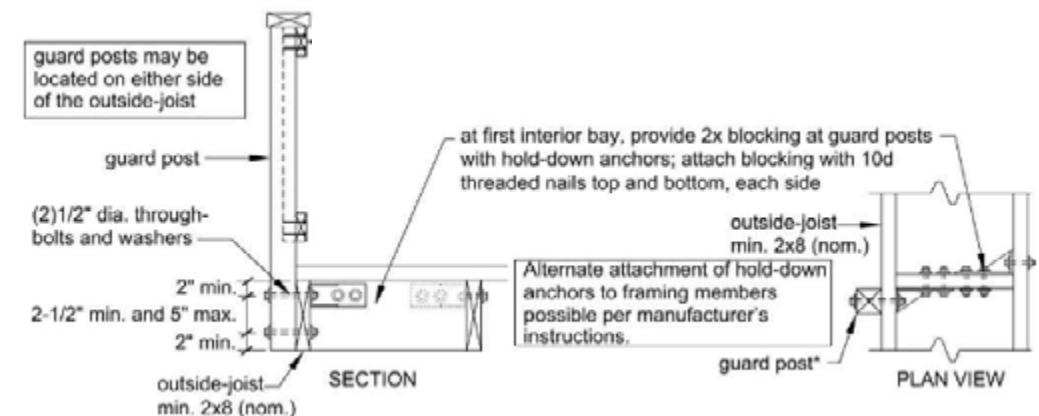


FIGURE 18: GUARD POST TO OUTSIDE JOIST



Step 11.3: Space the Posts

Posts should be spaced evenly along the deck. The maximum spacing allowed depends on the post material and local building code. Always verify with your local code official.

Step 11. 4: Prepare the Rail Components (Figure 16)

The handrail system consists of four parts:
Top Rail: Made from 2x4 lumber.
Bottom Rail: Made from 2x4 lumber.
Balusters (Spindles): Made from 2x2 lumber.
Rail Cap: Made from 2x6 decking material.

Step 11.5: Calculate Baluster Spacing and Mark Baluster Locations

To determine the number of balusters, use a railing calculator app or find a formula to use. The space between balusters must be less than 4 inches to meet code

The most common used formula is
Spacing = **Total Opening Width – (Number of Balusters × Baluster Width) / Number of Spaces**

Total Opening Width = distance between the inside faces of the posts.
Number of Balusters = how many balusters you plan to install.
Baluster Width = the actual width of each baluster (usually 1.5” for a 2x2).
Number of Spaces = Number of Balusters + 1 (because there’s one extra space at the end).

Once calculated, lay out the baluster positions on both the top and bottom rails at the same time for consistency.

Step 11.6: Position the Rails and Attach the Balusters

Use 4x4 blocks to space the bottom rail up off the deck. The top rail should be flush with the top of the posts..Screw the balusters into place. Ensure each baluster is plumb (perfectly vertical).

Step 11.7: Install the Rail Cap

Place the 2x6 decking material on top as the rail cap. At corners, miter the cuts for a clean, finished appearance.

Note:
For more information on handrail attachment, please see AWC DCA 6. Owens Corning Lumber is compliant with handrail attachments described in this document

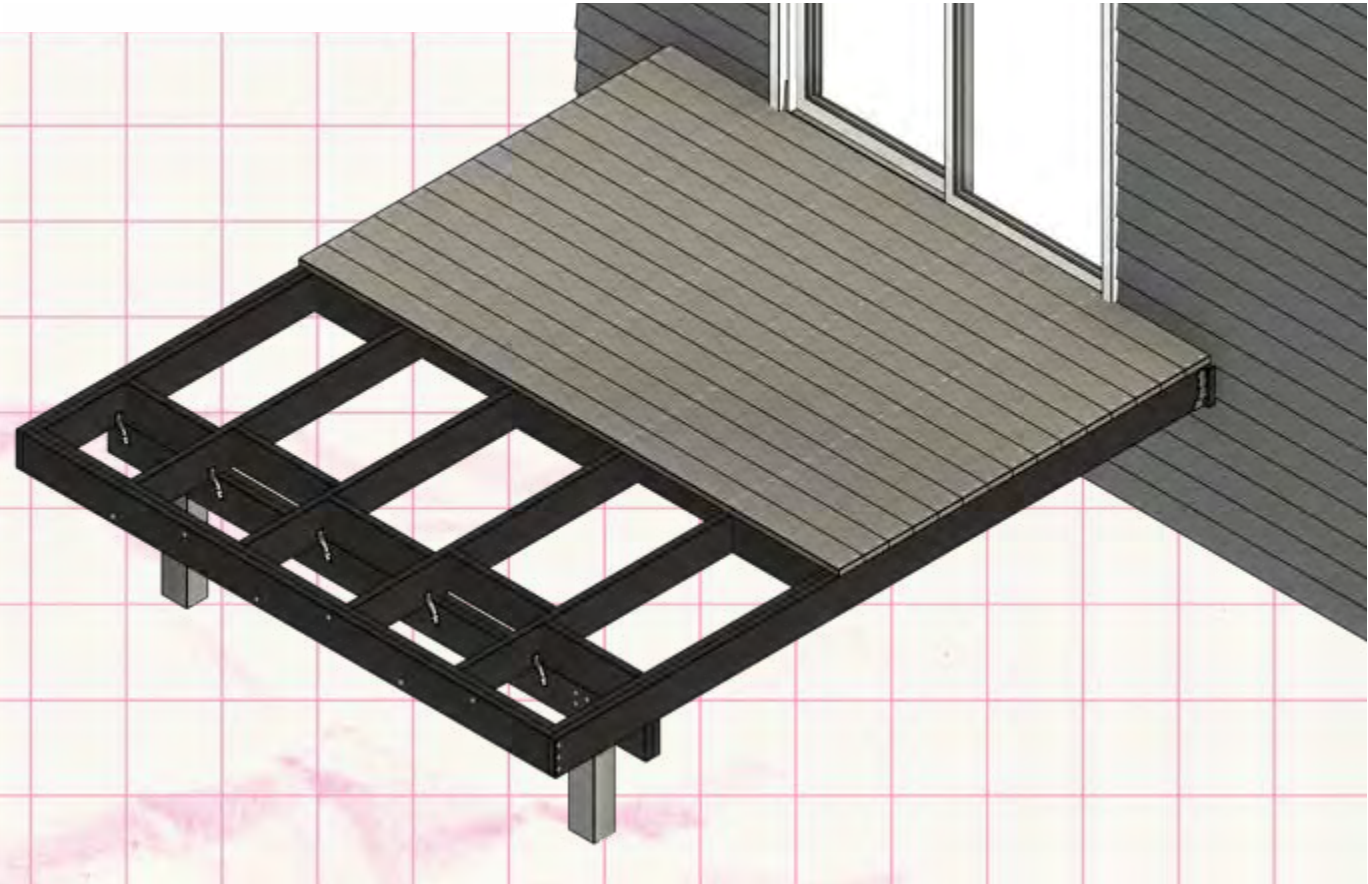


Railing project photos courtesy of @TACustomDecks&Docks

SECTION 12: DECK BOARD INSTALLATION

Ensuring Proper Spacing

Install deck boards perpendicular to the joists with a recommended end-to-end and side-to-side spacing of 3/16" between each board (1/16" minimum spacing). Secure each board to all joists using two #9 x 2.5" composite deck screws. Overhangs up to 2" from each side are acceptable.



Butt Joints

For optimal performance and appearance, Owens Corning recommends staggering butt joints or utilizing a picture frame layout. Butt joint spacing should be maintained within a minimum of 1/16" and a maximum of 3/16". These practices help manage expansion, contraction, and visual consistency. It is recommended to evaluate joint layout and spacing during installation to become familiar with product behavior and ensure best results. Ensure butt joints are installed level so one board does not sit higher than the adjacent board. This can create a tripping hazard and lead to premature delamination.

Expansion and Contraction

Owens Corning Marine Grade Decking® typically expand 3/16" over a 16’ span. Install boards during moderate temperatures to minimize movement. Always include expansion gaps at ends and transitions. In order ot allow for expansion and contraction, we allow for 1/32" of an inch over 8ft and in cold weather, 1/16" of an inch (Like wood compariosn, our product expands and contracts similar to wood but only this amount

Hidden Fastener Options

Owens Corning deck boards are approved for use with edge fastening systems such as CAMO, GRK, and other compatible products. While the boards feature a square edge profile, users may choose to route the edges to accommodate hidden fastener systems. This modification is optional and should be performed with care. Owens Corning does not guarantee performance or compatibility of routed boards with hidden fastening systems. It is recommended to route and evaluate a board to become familiar with its behavior prior to full installation

SECTION 13: ADDITIONAL CONSIDERATIONS WHEN WORKING WITH OWENS CORNING LUMBER

Ripping Boards Lengthwise

Ripping structural boards lengthwise may significantly reduce their original strength and integrity. While this can be done for aesthetic purposes, this practice is not approved for structural applications. No structural capacity is guaranteed for ripped boards. Users must follow all applicable safety guidelines. Ripping may result in curling, bending, or other deformation of the

How to Handle Sawdust

Cutting Owens Corning Lumber produces fine plastic shavings—not traditional sawdust. These HDPE shavings are heavier and denser, meaning they fall directly to the ground rather than staying airborne like wood sawdust. This makes cleanup easier but still essential for safety and jobsite care.

Best Practices:

- Lay a tarp or drop cloth beneath the cutting area to catch HDPE shavings and cutoffs.
- Sweep or vacuum the tarp regularly to prevent slipping hazards and keep the workspace clean.
- Avoid allowing shavings to enter soil, landscaping, or storm drains.
- Once cutting is complete, gather the tarp and transfer collected material into a sealed bag or container.
- Dispose of the material in a designated construction dumpster or follow local recycling guidelines for HDPE plastics.



Although Owens Corning Lumber is 100% wood free, it is designed to cut, drill and fasten similarly to wood. This makes it compatible with most standard woodworking tools.

Tools

- Circular saws, miter saws, jigsaws – for cutting boards to size.
- Drills and impact drivers – for driving screws and installing plugs.
- Routers and biscuit jointers – for creating clean joints and edge profiles.
- Use carbide-tipped blades and bits for best results when cutting HDPE and fiberglass-reinforced boards.

Hardware

- Use #9 x 2.5” stainless steel composite deck screws for optimal pull-through resistance.
- Plugs: Use color-matched plugs for a seamless finish.
- Hidden fasteners: Compatible systems include EB-TY, TigerClaw, and other edge-mount clip systems.
- Blocking and joist hardware: Use corrosion-resistant joist hangers and



MATERIAL TAKEOFF TOOL & TECHNICAL INFORMATION

ENTER PROJECT DIMENSIONS

For the purpose of this tool, we assume a standard 4' x 8' sheet of material. If you are using a different size, please adjust the dimensions accordingly. The tool will calculate the total material required based on the dimensions you enter.

Width (ft. in.)

ft.

in.

Thickness (in.)

ft.

in.

End Overlap (ft. in.)

ft.

in.

Decking

ft.

in.

Additional Items

ft.

in.

TAKE OFF SHEET

Type	Size	Standard Length (ft.)	End Overlap	Recommended Coverage	Total Order Quantity
Deck	4' x 8'	8'	0'	100%	100
Plank	4' x 8'	8'	0'	100%	100
End Cap	4' x 8'	8'	0'	100%	100
Trim	4' x 8'	8'	0'	100%	100
Other	4' x 8'	8'	0'	100%	100

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PLAN SMARTER. FASTER.

Our Material Takeoff Tool helps you quickly generate a materials list to support your project planning. It's a great starting point for estimating needs and streamlining your workflow. For design specifications, be sure to check out our technical documentation and span tables.



Scan for Takeoff Tool



Scan for DRJ Listing



Scan for Span Tables



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