LUMBERCON INSTALLATION GUIDE

DECK & JOIST • CONTRACTORS • HOMEOWNERS

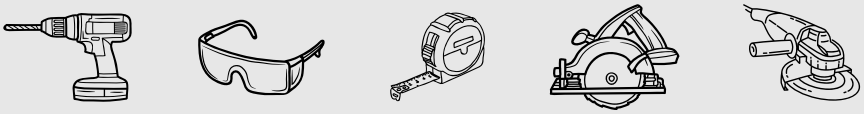
This document provides clear instructions for the installation of LumberCon deck and joist planks. It is designed to help novice and professional builders efficiently complete installations, ensuring all necessary steps are followed to achieve a high-quality, durable result.

INSTALLATION REQUIREMENTS

LumberCon planks should be installed following the same principles as traditional wood decking and in accordance with local building codes. It is the contractor's responsibility to ensure that each installation meets the necessary structural requirements and complies with all relevant codes. Improper installation is not the responsibility of LumberCon. All projects should be reviewed by a licensed architect, engineer, or building official before installation.

TOOLS REQUIRED

- Personal Protective Equipment (PPE):
  - Safety gloves
  - Ear Protection
  - Approved dust mask or respirator suitable for concrete dust or/and water spray during cutting.
- Typical carpentry construction tools can be used except for the below should be added.
- Concrete and Steel Cutting Tools:
  - Power saw (standard circular saw is acceptable) with cutting blade capable of cutting both concrete and embedded steel
  - Masonry cutting blades, preferably diamond cutting blade for optimal performance and durability *(ex. Norton Diamond Value Plus Wet/Dry Turbo Rim Diamond Saw Blade)*
  - Angle grinder equipped with masonry or diamond cutting blades
- Drilling Tools:
  - Battery-powered or corded electric hammer drill
- Masonry drill bits sized appropriately:
  - For through-holes, use a bit 1/16 inch larger than the shaft of the fastener
  - For countersinking, use a bit sized to match the diameter of the fastener head to ensure a flush finish
  - Follow manufactures recommendations for drill size of concrete anchors (Tapcon screws work well).



LIMITATIONS OF USE

LumberCon planks are designed for use as decking and joists only. They are not to be used as structural columns or support posts. Any use outside of these guidelines may compromise the integrity of the system and void any warranty.

HANDLING & TRANSPORTING

INDIVIDUAL PLANKS

Weight: Lumbercon planks weigh roughly three times as much as wood, use proper carrying technics and numbers of workers at both ends of a plank. Lumbercon planks longer than 12 feet must be lifted and carried in the vertical "I" position, not flat. Transport the planks in the vertical "I" position to minimize stress on the material and reduce the risk of damage during transport. Edges must be protected.

BUNDLES OF PLANKS

Planks are generally shipped in bundles of 19 units, positioned vertically. These bundles are heavy, so always use appropriate equipment such as a forklift to lift and move the planks off the carrier. Never attempt to move the bundles manually, use mechanical assistance if available. Ensure that the bands are not cut until the planks are on a flat, level, and stable surface.

FORKLIFT HANDLING & UNLOADING

When unloading planks from a truck or trailer, it's critical to prevent any direct contact between the forklift forks and the planks. Place a piece of wood (¼" to ¾" thick) across the forklift forks before lifting the planks to avoid contact with the bottom or sides of the material. Direct contact can cause cracking, spalling, or chipping, which will not be covered under LumberCon's warranty or replacement policy.

INSTALLATION PREPARATION

JOBSITE CLEANLINESS & SURFACE PROTECTION

During installation, ensure that the deck surface remains free from dirt, sand, or debris from masonry work (such as concrete, tile, or landscape blocks). Accumulation of these materials can damage the deck and create tripping hazards. Regular cleaning of the deck surface throughout the construction process is recommended to protect both the material and safety on site.

INSTALL AFTER OTHER CONSTRUCTION WORK

It's important to install LumberCon decking after all other major construction work (e.g., roofing, siding, painting) is complete. Installing planks too early can expose them to damage from spills, debris, or other construction-related hazards.

CHECK LOAD CAPACITY

Before beginning installation, verify that the supporting substructure is engineered to carry the required dead load: 12.5 lb/ft^2 minimum for 1 ¼ in. Lumbercon decking planks plus the substructure dead load and required Live load. Confirm joist sizing, spacing, and bearing conditions meet or exceed these load requirements prior to fastening any LumberCon planks.

MATERIAL INSPECTION PRIOR TO UNLOADING

Before unloading any planks, inspect all materials for visible signs of damage. If any damage is observed, contact LUMBERCON immediately to report the issue.

WORKING WITH LUMBERCON

SAFE HANDLING OF INDIVIDUAL PLANKS

- Carry planks in joist mode (vertical orientation along their 8-inch or 12-inch dimension) when possible and required for planks over 12'.
- Do not lift planks from the center while lying flat, as this may cause stress and lead to cracking or damage. While these do not affect structural integrity, they are unnecessary and avoidable.
- During installation, planks should be handled vertically, positioned over the deck support, and then rotated into their flat, final resting position.

CUTTING & DRILLING GUIDELINES

To minimize the risk of cracking or spalling during modification:

- Always provide adequate support beneath the plank when sawing or drilling.
- When sawing Lumbercon plank, it must be fully supported over the full length of the plank, use a full length perfectly flat wood plank under the Lumbercon plank, dunnage at adequate spacing can be used to separate the wood from the concrete so only the concrete is cut.
- Avoid applying localized pressure without support, especially near edges or fastener holes.
- Keep holes at least ¼ in. from prestressed wires (wires are located 2' in from edge, running parallel to the length of the board)
- Drill pilot holes 1/16 in. larger than screw shaft. Drill countersink with masonry bit or masonary countersink bit.
- Drill from the finished side so any blow-out of the concrete at the drill exit will not be seen.
- For 8 in. planks, one centered screw per end is sufficient.

FASTENING SYSTEMS

- Recomend used Tapcon (or equivelent) when bolting into Lumbercon products.
- Hidden fasteners are acceptable if underside access is available.
- When creating beams with multiple planks, stagger bolts clear of the prestressed wires (2 in. from edges).

FASTENING LUMBERCON PLANKS

- Planks use prestressed wires tensioned to 6,500 lb - do not over-tighten screws.
- Install one centered screw at each board end.
- When using LumberCon as joists and decking, use 3 in. stainless steel screws to avoid prestressed wires in the LumberCon joist.
- Standard hangers, connectors, and stainless screws are compatible.

BUTYL TAPE

- Use Butyl double-sided tape for added hold, reduced squeaks, and to level low spots. Available through LumberCon (3/8" x 1/2" x 20').

PROPER STORAGE OF PLANKS

When storing planks in a flat position:

- Support the planks at points located one-quarter of the total length from each end with 4"x4" or 6"x6" blocking.
- This method helps prevent sagging, warping, or damage to the structural integrity of the plank.

CARE & CLEANING

LumberCon requires minimal maintenance compared to traditional decking. We recommend sealing the concrete, whether colored or natural, to protect against staining and surface wear.

- Penetrating Sealers: These soak into the concrete and leave the surface natural. When using a penetrating sealer, light pressure washing is safe for routine cleaning.
- Surface Sealers: These form a film on top of the plank. Use low to moderate pressure when washing to avoid damaging the sealer layer.

Inspect the surface annually and reapply sealer as needed to maintain protection and appearance. Avoid harsh acids or aggressive abrasive cleaning methods.

FREQUENTLY ASKED QUESTIONS

How does LumberCon compare to standard lumber with installation time?

The superior span characteristics of LumberCon will mean that less structural materials will be needed compared to wood. LumberCon planks require a minimal amount of screws to secure, speeding the entire installation process up.

What is the fire performance of LumberCon?

Excellent. LumberCon is a noncombustible, prestressed concrete plank system with an ASTM E84 Flame Spread Index of 0 and a Class A fire rating. Concrete does not ignite, melt, or produce toxic smoke, providing exceptional fire resistance and protecting structural framing under extreme heat. LumberCon is ideal for WUI zones and any project requiring top-tier fire safety and code compliance.

What is the expansion and contraction for the material?

A 20′ long LumberCon plank expands only 0.05″ or a little more than 1/32″.

How does temperature affect LumberCon?

LumberCon planks will not overheat when exposed to high temperatures; instead, they naturally match the surrounding ambient temperature. Unlike many composite deck boards that can soften, warp, or become uncomfortably hot in direct sunlight, concrete remains stable, resists thermal expansion, and maintains its structural integrity even under intense heat.

Can I rip LumberCon Planks (lengthwise)?

Yes. LumberCon planks can be ripped outside the embedded prestressed wires, which run parallel to the length of the board and are located 2 in. from each edge. Maintain at least ¼ in. clearance from the wires when cutting. If a narrower rip is required and one wire is removed, provide additional blocking at 24 in. spacing or as needed to support the reduced board width.

RECOMMENDED PRODUCTS

BLADES

- Norton 7-in Wet/Dry Continuous Rim Diamond Saw Blade - Model #50508-038
- Norton 7-in Wet/Dry Turbo Rim Diamond Saw Blade - Model #50509-038
- DEWALT 7-in Wet/Dry Segmented Turbo Rim Diamond Saw Blade - Model #DW4702
- Norton 4-1/2-in Wet/Dry Continuous Rim Diamond Saw Blade - Model #50505-038

DRILL BITS

- Please choose a carbide-tipped drill bit rated for concrete use. The size will be dependent upon which fastener you choose, always size up about 1/16 in. (i.e. if you use a ¼ in. screw, you will need to use a 5/16 drill bit.)

FASTENERS

- Simpson Strong-Tie TTN25400PFSS Titen 1/4 in. x 4 in. **Phillips Flat-Head** Stainless-Steel Concrete and Masonry Screw
- Simpson Strong-Tie TTN25400HSS Titen 1/4 in. x 4 in. **Hex-Head** Stainless-Steel Concrete and Masonry Screw
- FastenMaster FMHLGM412-250 HeadLOK Heavy-Duty **Flathead Fastener**, 4-1/2 Inches
- Butyl Rubber Sealant - Multi-Purpose Butyl Rope and Putty Tape

WIRE PROTECTION ON CUT ENDS

- Sikaflex®-1A Elastomeric Joint Sealant / Adhesive
- UGL 30507 10.5 Oz Drylok Masonry Crack Filler

COLOR CUSTOMIZATIONS

- Sika Color 350 Antiquing Agent

SEALERS

- Ghostshield Siloxa-Tek 8500 Penetrating Water and Salt Repellent Water-based Flat Ready-to-use Concrete Sealer
- SCOFIELD Cureseal-W Abrasion Resistant Sealer
- DECO 20 Clear Penetrating Concrete Sealer

REPAIRS

- QUIKRETE Zip and Mix FastSet 3 -lb Mortar Concrete Repair Kit

2" X 8" PLANKS USED AS DECKING

Nominal Size: 1.75" x 7.75"

SPAN *feet*	**SPAN** *inches*	**ALLOWABLE LOAD** *pounds per sq. foot*
1.0'	12"	2340
1.5'	18"	2340
2.0'	24"	1315
2.5'	30"	835
3.0'	36"	575
3.5'	42"	415
4.0'	48"	320
4.5'	54"	245
5.0'	60"	195
5.5'	66"	160
6.0'	72"	135
6.5'	78"	115
7.0'	84"	95
7.5'	90"	80
8.0'	96"	70
8.5'	102"	55
9.0'	108"	45
Deflection based upon maximum L/360		

2" X 8" PLANKS USED AS JOISTS *Nominal Size: 1.75" x 7.75"*	
SPAN *feet*	**ALLOWABLE LOAD** *pounds per sq. foot*
4'	1090
4.5'	860
5'	690
5.5'	565
6'	470
6.5'	400
7'	340
7.5'	295
8'	255
8.5'	225
9'	200
9.5'	175
10'	155
10.5'	140
11'	125
11.5'	115
12'	100

2" X 12" PLANKS USED AS DECKING

Nominal Size: 1.75" x 11.75"

SPAN *feet*	**SPAN** *inches*	**ALLOWABLE LOAD** *pounds per sq. foot*
1.0′	12″	2340
1.5′	18″	2340
2.0′	24″	1315
2.5′	30″	835
3.0′	36″	575
3.5′	42″	415
4.0′	48″	320
4.5′	54″	245
5.0′	60″	195
5.5′	66″	160
6.0′	72″	135
6.5′	78″	115
7.0′	84″	95
7.5′	90″	80
8.0′	96″	70
8.5′	102″	55
9.0′	108″	45

Deflection based upon maximum L/360

2" X 12" PLANKS USED AS JOISTS *Nominal Size: 1.75" x 11.75"*	
SPAN *feet*	**ALLOWABLE LOAD** *pounds per sq. foot*
4'	2330
5'	1500
6'	1134
7'	830
8'	640
9'	500
10'	408
11'	337
12'	283

3" X 12" PLANKS USED AS DECKING *Nominal Size: 2.5" x 11.75"*		
SPAN *feet*	**SPAN** inches	**ALLOWABLE LOAD** *pounds per sq. foot*
2'	24"	2500
3'	36"	2400
4'	48"	1300
5'	60"	870
6'	72"	600
7'	84"	440
8'	96"	340
9'	108"	260
10'	120"	210
11'	132"	175
12'	144"	150