

Ipe Decking Installation Instructions - eDeck.com

Ipe decking is one of the most durable natural wood decking available. When properly installed and maintained, you should have a beautiful deck that should last for decades. The following Ipe Decking Installation Instructions have been prepared to help the installer achieve the best results with your deck installation. eDeck has tried to accumulate and present the best information possible. Due to the variance in nature-grown products, as well as general disagreement among professionals, we can only advise and make recommendations based on our own personal experience as well as feedback from suppliers and contractors who have used these methodologies. It is the sole responsibility of the installer and owner to adequately test and determine final applications. Follow all manufacturers' recommended application instructions when using proprietary products such as cleaners and finishes.

Safety and Tools

- First and foremost, always check and follow local building codes.
- Proper safety equipment should be worn at all times.
- Wear safety glasses when working with hardwoods.
- Warning: dust masks are required when cutting and sanding hardwoods, as hardwood dust can potentially cause breathing problems. A dust collector or fan to blow away dust while working is recommended.
- Be careful lifting hardwood lumber. Hardwood density is much greater than typical domestic softwoods we work with, and therefore heavier.
- Always use the proper tooling when working with hardwoods.
- Tools:
 - Use carbide-tipped saw blades when sawing.
 - Pre-drill holes in dense hardwoods like Ipe. Only use high quality drill bits that are recommended for hardwoods, such as a fast spiral carbide bit. Keep the bits cool and keep shavings out of the hole. Dipping the bit in cutting oil will keep it cooler, however be careful not to get any oil on the deck surface as it can stain it. A cup of water will work as well.
 - Use bending tools such as the BoWrench to straighten crooked boards and hold them in place while fastening.
 - Use only high quality stainless steel trim head screws or hidden fastener system. #2 Square bit drivers are recommended to minimize screw head stripping.

Material Handling and Storage

- Store Ipe deck boards outdoors or in a garage.
- Store out of direct sunlight and keep dry by covering. Covering also prevents premature oxidation and fading.
- Stored decking should be kept off the ground (2x4 or 4x4 "dunnage" scrap pieces of lumber work great).
- Use dunnage between rows of stacked lumber for ventilation during acclimation.

- Stack deck boards with the longest lengths on the bottom, building to the shortest lengths on top. Ipe is heavy, so use enough support dunnage so that you stack does not sag from its weight. Line your dunnage up vertically for maximum stabilization and to prevent boards from warping.
- Allow wood to acclimate and stabilize to installation environment humidity levels before installation! The wood will lose some moisture while air drying and may shrink laterally in warmer, dryer climates. It may expand laterally in moist climates.
- Allow a minimum of two weeks to properly acclimate the wood if possible. Failing to properly acclimate the wood before installation could cause the wood to crack, buckle, warp, etc. after installation.
- Ipe will naturally darken upon exposure. There may be lighter/darker areas on boards that will darken and even out after exposure. Note that all wood will oxidize and turn gray after regular exposure. Depending upon the climate, you may see full gray within a year if you do not put any finish on your deck.

Cutting

- Use all safety precautions when using tools, including wearing safety glasses and breathing mask.
- Carbide-tipped saw blades are recommended for smooth cuts.
- Due to the density of the wood, go slower as you cut through the wood to get a smooth cut without excess dulling of the blade. This will minimize splintering on the bottom of the board.
- It is recommended that you use a 10" to 12" compound miter saw to ensure smooth, straight cuts.
- Always cut with the good face up to minimize end-cut splintering.
- Seal all fresh-cut ends with an end-sealer immediately after cutting in order to minimize splitting. We carry anchor seal specifically for this application.

Installing

- Ipe should never be attached to a solid surface such as concrete. Sleepers, stringers or joists should be used to fasten the deck boards to the structure. Proper drainage and ventilation should be considered to avoid movement, cupping and checking.
- Ventilation – Allow for air flow underneath and between the deck boards in your design for maximum long-term stability. Follow proper gapping/spacing recommendations below for best results. Decks should be built at least 24" above the underlying surface and have open ventilation from three sides.
- Spanning – For minimal waste, we recommend that you build your deck on 12" spans. Otherwise, follow these standard spans for installation for minimal deflection of the deck surface

Ipe Joist Spacing Recommendations	
Nominal Size	100 psf Span

1×4	16" on center
1×6	16" on center
5/4×4	24" on center
5/4×6	24" on center
2×4	24" on center
2×6	24" on center
2×8	24" on center

- Gapping – Allow a minimum of 1/8" gap between board widths on 4" wide decking, and 3/16" gap between board widths on 6" wide decking for drainage, airflow and expansion. Use 1/8" and 3/16" strips of scrap plywood for gauging. If you have poor ventilation, wider is always better.
- Expansion – Hardwood decking may expand by as much as 1/8" on 6" wide boards and 1/16" on 4" wide boards during times of high moisture, thus proper gapping is recommended.
- Shrinkage – Air dried hardwood decking can shrink laterally approximately 1/16" or more on 4" wide boards, and up to 1/8" or more on 6" wide boards. Shrinkage will be less on kiln-dried (KD) boards. Expect more shrinkage of width in hot or dry areas.

Fastening

- Face screwing – use stainless steel trim head screws for superior corrosion resistance and maximum holding power, driven with a slow speed drill into a pilot hole and countersink to prevent splitting. Use two fasteners to attach decking to each joist, approximately 3/4" from the edge of each side of the board. It takes approximately 3.5 screws to cover 1 square foot if you are 16" on center.
- Many contractors use #7 x 2-1/4" stainless steel "trim head" screws with a square or hex drive head.
- Pre-drill to the diameter of the screw shank to avoid splitting. The screw tip will bite into the joist below to hold the board in place.
- Trim head screws are recommend as wider heads may break off. The narrow head also produces a lower visible profile.
- To determine screw length needed, multiply the wood thickness by 2.5.
- Pre-drill to avoid splitting. Screws require a pilot hole, and if plugging you will need a countersink tool. Use of a countersink/drill bit combo is recommended. Judge the depth of the countersink based on the screw head size, typically the plugs used will be 3/8". Trim heads require little to no countersink, while wider heads require a deeper countersink. Also consider the depth of the countersink if using plugs to hide the screw heads.
- While coated or galvanized steel fasteners have been used, they stain the wood black and have a shorter service life, and are therefore not recommended.

- In addition to screwing, use a bead of high quality exterior adhesive, similar to PL Premium or PL 500, between the deck boards and joists on all installations.
- DO NOT USE NAILS. Hand nailing Ipe will cause the wood to split; pneumatic nail guns tend to curve the nail back out of the wood, and can be extremely dangerous due to the density of the wood.
- Plugging will help conceal the fastener head. Plugging is an aesthetic that is sometimes preferred, however is labor intensive. Use species specific 3/8" diameter plugs (Ipe Plugs for Ipe) and set the depth of your countersink using a stop collar to accommodate the plug, approximately 1/4" deep. Using a dab of exterior adhesive, such as PL500 or TightBond2, tap the plug into place using a rubber mallet and allow the adhesive to set. Using an electric hand planer, plane the remaining material nearly flush with the deck board. Go over again with a belt sander, spot sanding where needed to ensure flush plug. Alternately, many contractors use a sharp chisel with the bevel face down parallel with the deck surface and chisel away excess material. While this method is quicker, it will lead to raised and indented areas on the plugs. Spot sanding can minimize this result.
- Hidden fasteners, although labor intensive, can eliminate the screw head from showing on the deck surface if the plugging aesthetic is not desired.
- Most hidden fasteners, such as the Eb-Ty, are installed from the top side of the deck onto kerf cuts made either by a biscuit joiner or by a three-winged router bit into the side of the deck board. Deck boards are also available "pre-grooved" along both sides of the board for receiving hidden fasteners. Fasteners screwed into the decking from the underside are not recommended because they do not directly anchor the deck boards properly to the joist potentially resulting in failure, nor are they readily accessible for repairs.
- When installing hidden fasteners, angle the screw through the fastener, through the deck board, and into the joist. This will require pre-drilling a pilot hole.
- A drawback to using a hidden fastener system is the difficulty in removing a board for repair. Face screwing requires removing the screws on each individual board that needs to be removed, and possibly removing plugs. Many boards may have to be removed to get to the damaged board that has been installed with hidden fasteners
- Other hidden fastener systems, like CAMO Hidden Fastener System and the KREG Deck Jig, use a method to "pocket screw" the fastener on the shoulder, or eased edge, of the deck board, thereby hiding the screw head from the face. This system is typically less expensive than a clip system and more stable since you are putting two screws into each joist.

Sanding

- Spot sand where necessary
- Orbital sanding is not recommended as it can leave circular scratches in the grain

End Sealing

- End sealing all cross-cut boards with a wax-based product is recommended to minimize cracking, which may occur as moisture escapes the wood.

- It is recommended that fresh cuts be sealed immediately after cutting.
- AnchorSeal is one of the better products on the market for this type of application. It goes on much like paint, and dries to a waxy clear finish. It can be applied by brush, sponge, or rag.
- Do not get end sealer on the face of the board, as it will cause staining.
- For best results, follow the manufacture's instructions on the container.

Finishing

- Before applying finishes, brush and clean the surface to remove dirt and dust.
- Due to the density of Ipe sealers or finishes are not necessary. If you require minimal maintenance and choose not to apply a finish, your deck will oxidize and weather naturally to a silver/gray tone. A clear oil-based sealer or a product such as Flood Seasonite may help reduce the potential for surface checking, however it will not protect the wood from graying.
- To maintain the hardwood's rich color, use a transparent penetrating oil-based finish with UV inhibitors such as Messmer's UV Plus.
- Due to Ipe wood density and subsequent impermeability, apply several thin coats of a finish that is designed for hardwoods. Over-application can cause sticky and glossy surfaces as a result.
- Fully spot test any oil- or water-based coating before general application to determine compatibility. eDeck recommends Messmer's brand products that are specially formulated for hardwoods, such as Messmer's UV Plus. Other products that have been used successfully by hardwood deck installers include Total Wood Protectant (TWP), Woodrich Brand, Ready Seal and Penofin.
- Re-apply finishes annually or as needed. Clean the deck thoroughly before re-finishing. Products such as Woodrich Brand Wiping Stains may not need to be stripped if you have regularly maintained your deck and are using the same product over the top of the old finish.
- Follow all manufacturers' instructions for applying sealers and finishes.