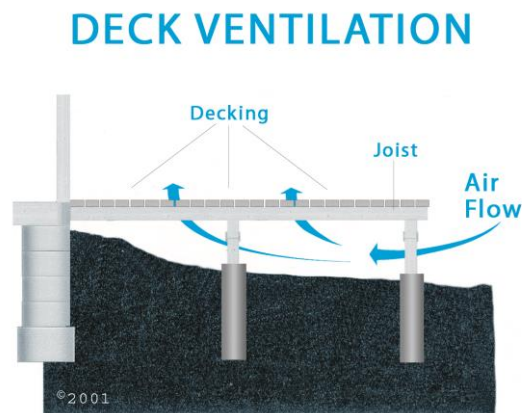


Technical Bulletin-Deck Ventilation

The importance of ventilation and air flow under and around wood decking in improving product stability and performance has been well understood. Adequate ventilation of the deck is essential for long term stability, durability and to minimize cupping. Air should always be allowed to flow freely from outside and under the deck. Air Dried decking is typically delivered with a moisture content between 18% and 25% and is more prone to contraction immediately after installation if equalization has not been fully achieved. Air Dried decking may shrink up to 1/8" on 4" face and 1/4" on 6" face depending on the moisture content at time of installation, climate and site conditions. Iron Woods® Kiln Dried Decking is pre – stabilized to a moisture content typically between 14 and 18% which results in minimal shrinkage or expansion. Decking which is over dried to a moisture content under 12% will have the potential to expand and buckle so make sure you allow your decking to acclimate prior to installation. Assuming decking has been allowed to stabilize, allow gaps of between 1/8 and 1/4 inch to allow for drainage, airflow and expansion and contraction. These gaps are typically set automatically with hidden fastener systems. Face fastening systems usually provide an appropriate gapping tool. Follow manufacturer's instructions for fastener selection and applications. The importance of managing water cannot be overlooked. Roof water should be directed away from decks and water should shed out from underneath the deck and not be allowed to accumulate. Drainage should be addressed prior to joist installation.



By Experience we know that most deck claims have the following issues in common as per the image of the deck above..

- 6" wide Deck Boards - 1x6 decking is more problematic than 5/4x6 decking. Air dried decking is more problematic than kiln dried decking.
- Hidden Fasteners - . Hidden fastening is more problematic than face fastening. EbTy fasteners are more problematic than Deck Wise fasteners.
- Poor Ventilation - Close to grade, Closed perimeter and roof decks are by nature poorly ventilated.
- Shared stringer at Butt Joints – Not enough room to put one clip on each board at butt joints. Face fasteners too close to ends equals reduced holding power and end splitting.

Poor Ventilation Solutions

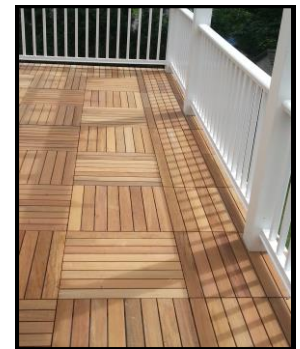
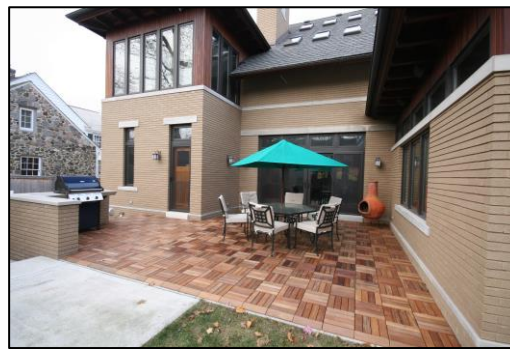
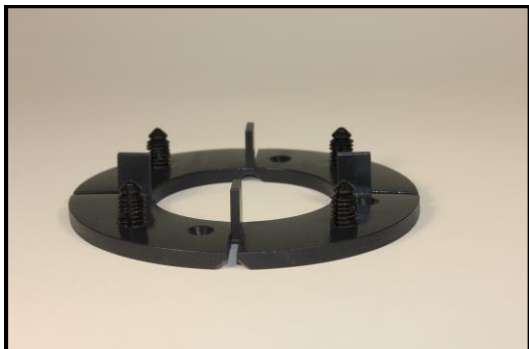
The stress that high moisture under a deck combined with the impact of sun and heat to the surface of a deck causes stress that can result in increased checking, cup and twist. This being said there are applications that simply cannot avoid the reduction of ventilation by design. Decks at grade or on roofs are not that uncommon, so how do we reduce problems in these applications.

First off it is important to understand that dimensional stability is directly related to decking thickness and width ratios. Instability increases as the board widens related to its thickness. As an example a 1x4 is more stable than a 1x6 and a 1x6 is much more stable than a 1x12. By experience we know that a 5/4x4 deck board, air dried or kiln dried, provides the most stable performance in poorly ventilated residential decks regardless of the fastening method



You may also wish to consider products such as Iron Woods® Roof Deck Tile, Decking and Pedestal Systems which are specifically designed for less well ventilated applications. Our roof deck systems were developed specifically for poorly ventilated commercial and residential deck construction. They are constructed of wood slats that have a stable thickness to width ratio. The use of shorter length components provides a highly cost effective and unique deck construction option.

Iron Woods® Commercial Grade Heavy Duty 12" x 12" and 24" x 24" Deck Tile system allows for drainage and can be applied directly to any flat surface using or our Elevations EPDM pedestals. If you want to build a deck literally at grade, a cost effective solution is to pour a concrete slab and apply these tiles directly on top.



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Iron Woods® Commercial Grade Elevations™ 24" x 24" Deck Tiles are another great option when building a poorly ventilated deck. They can be set on low profile EPDM rubber pedestals directly on a flat surface, attached to pressure treated landscape timbers set into the ground or installed using our slope compensating pedestal systems for roof applications.



Iron Woods® Elevations™ 24" x 24" Deck Tiles are a great option for conventionally constructed decks as well. Simply double your stringers 24" on center and fasten down at the corners with 4 Pro Plugs™ per tile. Iron Woods® deck tiles provide a unique appearance while at the same time significantly lowering overall construction costs. Deck tiles can be installed to create a wide range of designs and patterns.



Timber Holdings USA does not assume any liability other than those outlined in Iron Woods® product warranties. Finishing, cutting, drilling or installation of the product always confirms acceptability of material quality on the part of the installer at time of installation.