



Natural wood
Made to last

Product Guidelines

This document is a high-level summary of key guidelines when specifying and installing Kebony. We strongly encourage you to review other relevant documentation such as Installation Guides and Specification Sheets, which are available on the Kebony website.

Click here to access the Installation Guides and Spec Sheets for both Decking and Cladding Products <https://us.kebony.com/modified-wood-technology/technical-data/>

PRODUCT EXPECTATIONS

COLOR

Kebony is a Dually modified™ wood with the parent species being Radiata pine in the case of Kebony Clear or Scots pine in the case of Kebony Character. As with all natural woods, Kebony will fade to a silver-gray patina if installed outdoors. The amount of time this process takes can vary greatly, as it depends on exposure to environmental factors such as, but not limited to sun, precipitation, wind, temperature, usage, etc.

If you wish to maintain the original color rather than having it gray, you may apply a finish. Additional details about finishing Kebony can be found in the Weathering and Finishes section of this document.

MOVEMENT

Kebony will swell slightly from edge-to-edge after installation, with maximum widthwise swelling of 4% for Clear and 6% for Character. Please note that Kebony will swell in width after installation rather than shrink, as is typically the case with other natural woods. Once acclimated, although to a lesser extent than other natural woods, Kebony will continue to move as environmental conditions change. As with any natural wood, proper ventilation and airflow are critical to best performance.

Kebony material should be kept covered prior to installation and properly fastened during installation, or it will lift up and/or move from side to side relative to the surface of the deck framing. Refer to the relevant Installation Guide for details.

SURFACE SCRATCHES

As with any natural wood decking product, Kebony can become scratched through handling/installation/use. A simple way to remedy a small surface scratch is to sand it out with fine-grit sandpaper. Doing this will make the deck surface slightly different in color, but if left to weather, it will even out to the same silver-gray patina over a period of time.

Additional details about dealing with surface scratches can be found in the Use, Care, and Maintenance section of this document.

SURFACE CHECKING

As with all natural woods, Kebony can be expected to develop surface checking. The development of checks will occur as Kebony acclimates.

Stresses develop in the course of acclimating and are normal with all natural woods. These differential stresses can often contribute to checking. Additionally, during the initial acclimation process, the outside of the wood inevitably adapts quicker than the interior, which also causes differential stresses to develop within the wood. The combined effect of these stresses often results in the formation of surface checking.

For those Kebony customers sensitive to surface checking, it may possibly be reduced by using a finish. Additional details about finishing Kebony can be found in the Weathering and Finishes section of this document.

STAINS

Like all wood, Kebony can be stained by certain foods, drinks, and chemicals. Be cautious when eating or drinking, and avoid using sunscreen or anything in an aerosol can while on the deck. Clean up any spills as quickly as possible.

CLEANING KEBONY

You should periodically clean your Kebony wood to remove dirt, leaves, pollen, and other organic debris. This can help avoid stains as well as mold and mildew from forming on the surface. Soap and water can clean most stains. In some cases, light sanding may be required. Please see the Use, Care, and Maintenance section of this document for more information.

MOSS/MOLD

As with all natural woods, depending on the climate conditions and location of the installation, moss and mold can grow on the surface of Kebony if it's not kept clear of organic debris. Please see the Use, Care, and Maintenance section of this document for additional details.

CONTACT WITH METALS AND METAL RUN-OFF

Kebony can be fastened to or in contact with aluminum, enameled, powder-coated, or foiled fixtures without concern for discoloration. In some cases, surface water runoff from Kebony wood can result in the discoloration of adjacent materials. For example, it could cause black stains on zinc fixtures and keep copper looking polished.

Drainage and runoff from galvanized or iron-based fixtures onto Kebony can result in black discoloration of the wood.

With respect to metal framing, it is important to ensure that there is no direct contact between Kebony and the exposed metal surfaces. This requires the use of G-tape or some sort of butyl tape or some other physical barrier to create a separation between the metal and the boards.

Water run-off from Kebony onto copper parts may result in color variations on the copper surfaces. While copper normally goes through surface oxidization to a dark green or black surface color, water runoff from Kebony will keep copper shiny with the original copper color on the affected surfaces.

END CRACKING

As with all natural woods, naturally occurring end-cracking may occur. There are a few ways to mitigate this. One option is to finish the wood with a product like Cutek Extreme which is a high-performance, oil-based wood stabilizer. This requires that the board surface as well as the ends be coated with Cutek Extreme. A second option is to use an end grain sealing wax on the ends of the boards. Further details may be found in the Specification Guidelines section of this document.

SPECIFICATION GUIDELINES

DECKING

Kebony supplies Kebony Clear decking materials (#2637, #2638, #2522, #2226, #2558, #2746, #2747). These deck boards are for installation in outdoor use above the ground and not in contact with soil.

Some of these boards, namely the 5/4x4" (#2558), 5/4x6" (#2226), 2x4" (#2746), 2x6" (#2522) and 2x8" (#2747), are occasionally used for other applications such as fins, louvers, trim, site furnishings, pergolas, screens, fencing, etc.

CLADDING

Kebony supplies stocked cladding materials as either fully integrated systems – Click-in Cladding System™ (CCS) – or individual ShipLap profile boards in both Character (#2216) and custom-profiled Clear (many additional profiles). Many additional Character cladding profiles can be found on our website, all of which are custom-order items. <https://us.kebony.com/>

OTHER PROFILES

In addition to decking and cladding, Kebony offers custom-profiled dimensional lumber such as 2x3", 2x4", 2x8", 1x4", 1x6", 1x8" and other dimensions. Additionally, we offer Clear Rough Sawn wood that can be custom profiled into a profile of your choosing

FASTENERS

All fasteners must be stainless steel (SS). 304 SS is the most common and suitable for most applications. 316 SS is considered marine grade and should be used when installed in such environments. The specific grade selected should be determined by site-specific details, taking into account things such as proximity to salt water, etc. This applies to both Kebony Clear and Character

FASTENER LOCATION

DISTANCE TO EDGE

Kebony Clear: Always maintain at least 1" to any edge and pre-drill all holes

Kebony Character: Always maintain at least 1" to any edge with self-tapping wood screws, otherwise pre-drilling is required.

END SEALING

KEBONY CLEAR

- It is recommended that all ends are treated with end grain sealing wax, whether they are cut on-site or uncut from the factory. This protects the wood and reduces the risk of ends splitting.
- The Saicos End-Grain Sealing Wax has been proven to work well. It can be sourced here: <https://saicosna.com/interior/saicos-end-grain-sealing-wax.html>
- The use of a foam roller is strongly recommended to help achieve a clean, accurate application of the sealing wax.
- Please note that the application of an end sealer can result in wicking onto the board surface which may be visible. Due to this and other factors, we recommend that you test your chosen end-grain sealing wax on some scrap material before using it on the project.

KEBONY CHARACTER

- For Character Cladding: a standard end-grain wax sealer should be applied to all cut faces when it is cross-cut or ripped. For Character Decking: an end-grain wax sealer with a fungicide should be applied to all cut faces when it is cross-cut or ripped. If an integrated fungicide is not available then treat with a wood preservative/fungicide first, followed by the end-grain wax sealer.
- Uncut ends of Kebony Character from the factory are not required to be treated but may optionally be coated with an end sealer/wax to reduce the possibility of end cracking.
- Please note that the application of an end sealer can result in wicking onto the board surface which may be visible. Due to this and other factors, we recommend that you test your chosen end-grain sealing wax on some scrap material before using it on the project.

PRE-DRILLING

Kebony Clear: Clear requires pre-drilling for any penetration through the board. Please ensure that the fastener location guidelines detailed above are followed.

Kebony Character: Character does not require pre-drilling provided that self-tapping wood screws are used. If standard, non-self-tapping wood screws are used then pre-drilling is required. Please ensure that the fastener location guidelines detailed above are followed.

DECK BOARDS AND SPANS

- Kebony Deck Boards are products #2637 and #2638
- Kebony 2x6 Boardwalk is #2522
- Kebony square-edged, ungrooved deck boards are #2226 and #2558
- Kebony 2x4 decking is #2746
- Kebony 2x8 Boardwalk is #2747
- **Spans:** Please refer to the table in the ICC Evaluation Service report ESR-3756, or on the respective product spec sheets for 5/4x4" (#2558), 5/4x6" (#2226), 2x4" (#2746), 2x6" (#2522) and 2x8" (#2747), all found on this page: <https://us.kebony.com/modified-wood-technology/technical-data/>
- **Fasteners:** Various fastener solutions are available
 - #2637 and #2638 Decking
 - **Fastenator (hidden fastener):** A versatile hidden fastener that quite readily allows for custom designs with angles, picture framing, etc.
 - **ProPlug System for Kebony (plug-based hidden face fastener):** A versatile plug-based hidden fastener that quite readily allows for custom designs with angles, picture framing, etc.
 - **Conventional face-fastening with exposed fasteners:** A versatile solution that quite readily allows for custom designs with angles, picture framing, etc.
 - 5/4x4" (#2558), 5/4x6" (#2226), 2x4" (#2746), 2x6" (#2522) and 2x8" (#2747), Decking (non-edge-grooved boards)
 - **ProPlug System for Kebony:** plug-based hidden face fastener as detailed above
 - **Conventional face-fastening** with exposed fasteners as detailed above and in the respective Installation Guide
 - **Edge fastening systems** such as Camo using 2 3/8" edge screws – only into softwood framing and only for 5/4x6" (#2226), 5/4x4" (#2558), 2x6" (#2522) and 2x4" (#2746). 2x8" (#2747) – must be face-fastened with three fasteners. Edge fastening is not permitted for 2x8" (#2747).
- **Board Lengths:** Each of the SKUs listed in this section are produced in 10', 12', 14', and 16' lengths. Specific lengths and tallies of lengths are subject to availability
- **Ground Clearance and Ventilation:** Attention to ground clearance and the associated ventilation issues are key to any successful deck build. Please review the Ground Clearance and Ventilation section of this document for further details.

METAL FRAMING & SURFACES

Kebony can be fastened to or in contact with aluminum, enameled, powder-coated, or foiled fixtures without concern for discoloration. In some cases, surface water runoff from Kebony wood can result in the discoloration of adjacent materials. For example, it could cause black stains on zinc fixtures and keep copper looking polished.

Drainage and runoff from galvanized or iron-based fixtures onto Kebony can result in black discoloration of the wood.

With respect to metal framing, it is important to ensure that there is no direct contact between Kebony and the exposed metal surfaces. This may require the use of a G-tape, some sort of butyl tape or some other physical barrier to create a separation between the metal and the boards.

Water run-off from Kebony onto copper parts may result in color variations on the copper surfaces. While copper normally goes through surface oxidization to a dark green or black surface color, water run-off from Kebony will keep copper shiny with the original copper color on the affected surfaces.

STORAGE OF KEBONY

Kebony should not be exposed directly to the elements before installation. Kebony should be kept enclosed in its original packaging or re-wrapped if previously opened. Ideally, Kebony should also be stored indoors or under cover.

Additionally, it's good practice to flip over (reverse) the top boards so that they are face-to-face, i.e. the top face of the board is not directly exposed to the elements. This keeps the face of the board from being exposed to the elements prematurely.

FRAMING/SUBSTRUCTURE

This should be made from materials of equivalent or better longevity than Kebony to ensure that the entire structure is durable

To prevent moisture migration or trapping of moisture in the structure, use a barrier between the joists and the decking to protect the joists and increase the longevity of the structure. Suitable products are joist tape (e.g. G-Tape), sill tape, spacer blocks, etc.

SLIP RESISTANCE

Multiple Kebony deck boards have been tested for wet and dry slip resistance according to ASTM E303. Complete reports including context and application tables can be found here: <https://us.kebony.com/modified-wood-technology/technical-data/>

CLICK-IN CLADDING SYSTEM (CCS)

- CCS rails must be mounted on a hard, flat surface. CCS is typically installed over wood frame construction with wood studs and sheathing. Please contact your supplier if mounting on a different substrate.
- CCS can be installed horizontally, vertically, or diagonally in either 16" or 24" O.C. configurations*

**Note: Diagonal installations require a 16" O.C. configuration*

- CCS consists of two components, rails and boards.
 - #2682 (1x6) or #2683 (1x8) boards
 - #2171 Narrow Gap Rail for 1x6
 - #2172 Wide Gap Rail for 1x6
 - #2173 Narrow Gap Rail for 1x8
 - #2174 Wide Gap Rail for 1x8
- Spec sheets and Installation Guides for CCS can be found here:
<https://us.kebony.com/modified-wood-technology/technical-data/>
- Fasteners for CCS when installed into wood studs and sheathing:
 - Use min 2-½" ring-shanked nails
 - Example fastener:
 - 15° Wire Coil, Full Round Head, Ring-Shank Siding Nail - 2-1/2" long
 - T13A250SNJ - Type 316 Stainless Steel - 1800 pcs
 - S13A250SNBP - Type 304 Stainless Steel - 900 pcs
 - S13A250SNC - Type 304 Stainless Steel - 3600 pcs
 - https://www.strongtie.com/sidingfencingtrimnails_collatednails/sn15cra_cnail/p/15-wire-coil-full-round-head-ring-shank-siding-nail#ProductDetails

SHIPLAP AND OTHER CLADDING PROFILES

- Individual ShipLap profile boards in both Character (#2216) and custom-profiled Clear (#K90XX514) are available. Many additional Character cladding profiles can be found on our website, all of which are custom-order items.
<https://us.kebony.com/modified-wood-technology/technical-data/>
- Aside from CCS which uses a hidden rail and clip fastener system, all other cladding profiles require face fastening.
- In the case of Kebony Clear products such as #K90XX514 or custom run profiles, one can optionally use the Pro-Plug system to hide the fasteners
- For all Character products, exposed fasteners are used. Nails are not to be used

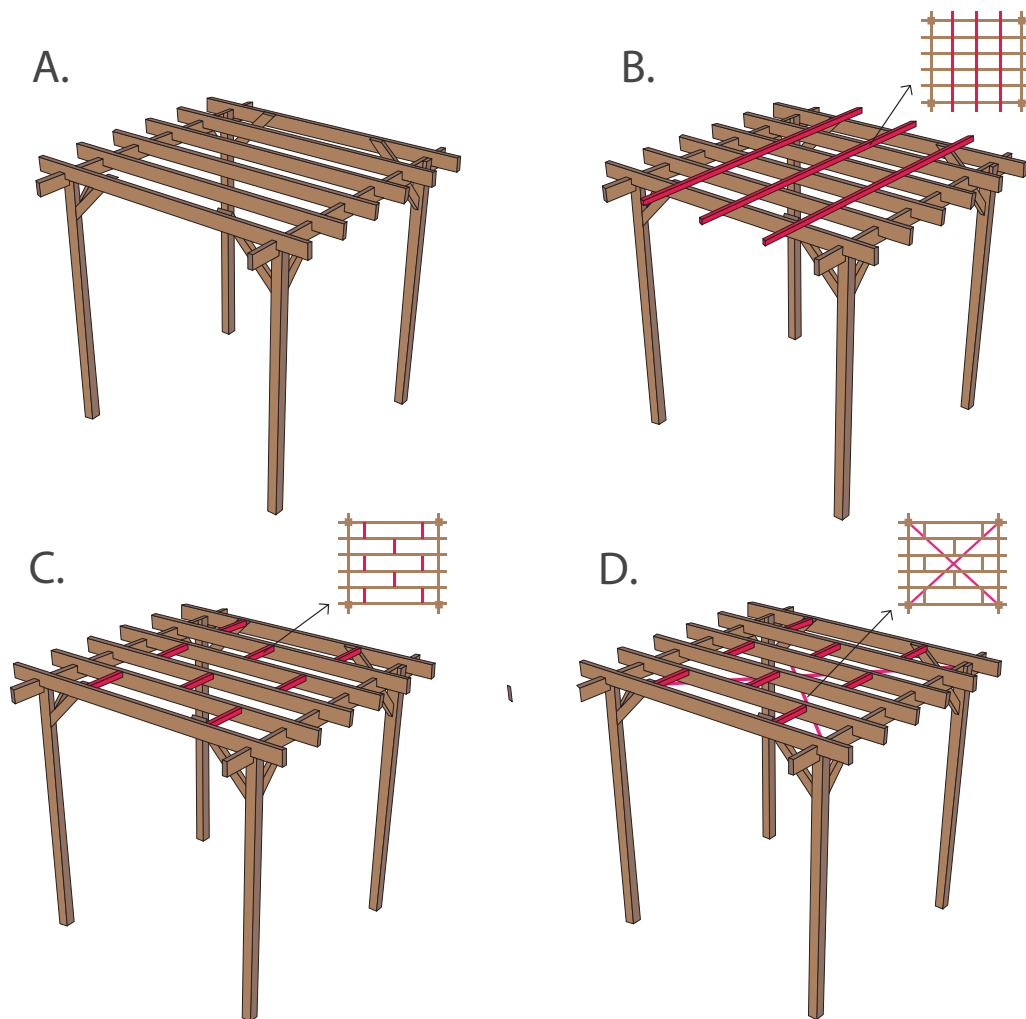
PERGOLA-TYPE DESIGNS / FENCES / DEFLECTION, ETC.

PERGOLA DESIGNS

- When considering designs such as pergolas, Kebony is commonly used on the narrow edge of the board.
- In general, wood will not deflect much at all under its own weight in this on-edge orientation, Kebony is no different. You can typically expect a maximum deflection of 1/2" over the longest length 16' board.
- While the risk still exists for 2x material, the risk is quite low that the board will twist or bend sideways. The same cannot be said for 1x material which would be far more prone to doing so. As a result, some measures should be considered in the design to mitigate the risk.

Some example conceptual approaches are depicted in the below graphics. These are not designs for construction. They are simply meant to illustrate some possible approaches to stiffening the structure and reducing the risk of boards twisting or bending.

- A. Example of a basic pergola design.
- B. Pergola with cross members.
- C. Pergola with stiffeners between boards in an offset pattern.
- D. Pergola with both offset stiffeners and cross-bracing wire/cable.



FENCING

When building fencing, please note that Kebony is not meant for ground contact use. When Kebony boards are used on edge, it's important to keep in mind that the width of a Kebony board will swell up to 4% of the board width. Adjusted gapping to allow for this swelling should be allowed for by the installer.

RESOURCES

Additional resources are available on the [Kebony.us](https://www.kebony.us) website in the [Technical Data](#) section:

- Sustainability
- Comparisons
- Product Datasheets
- Installation
- Certifications and Tests
- CSI
- Material Safety Information
- CCS Drawings

KEBONY DECKING GROUND CLEARANCE & VENTILATION GUIDELINES AND REQUIREMENTS

12" minimum clearance above exposed ground: For decks with standard clearance of 12" above grade or greater, only minimal ground preparation under the deck is required, but is strongly recommended. However, there are requirements typical of best practices for deck construction for ensuring proper ventilation to be able to have a deck height of 12".

1.5" minimum clearance: For decks with clearance less than 12" above grade and down to 1.5".



Figure 1



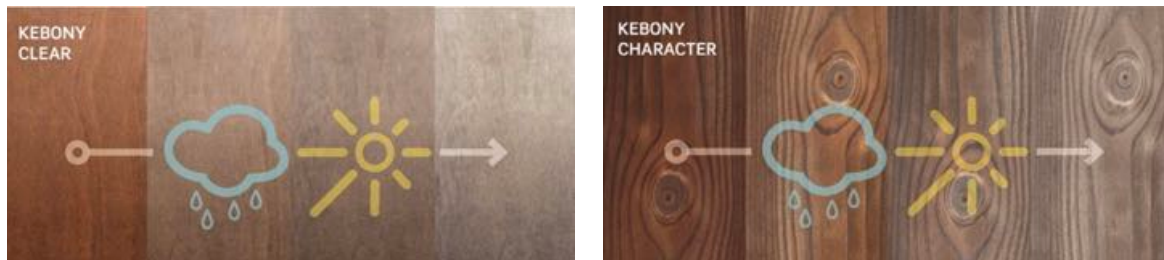
Figure 2

Provided that the below are implemented as applicable to maintain the warranty and claim justification. The deck structure can be placed on sleepers or a joist/beam system.

Design Feature	Clearance of 12" above grade or greater	Clearance between 1.5" to 12" above grade
The structure below the decking must be properly ventilated so that wood that gets wet can quickly and evenly dry out again.	✓	✓
Cover the soil/ground with an impermeable membrane or concrete. This suppresses the growth of vegetation and facilitates water runoff.		✓
Ventilation - Install ventilation grates where the deck comes up against a wall in order to facilitate airflow. Leave at least a 3/4" (19 mm) air gap from the edge of the deck surface to the main structure (e.g. house) to ensure adequate airflow. (Figure 1)	✓	✓
Ensure that the ground or concrete slopes away from the structure in a manner that drains quickly and avoids the pooling of water/moisture, facilitating water runoff from underneath the deck. A minimum 1.5-degree slope is typically sufficient.	✓	✓
Install vertical ventilation screens placed on the outer fascia or faces of steps. (if these are part of the design)	✓	✓
For any fascia, leave at least a 1" (25.4 mm) ground clearance gap from the bottom of any edge to ensure airflow. (Figure 2)	✓	✓
Drains underneath the deck. (optional - if the design supports it)		✓
Leave at least a 3/4" (19 mm) air gap from the edge of the deck surface to any other deck element such as a post or a hot tub, etc. to ensure adequate airflow.	✓	✓
Avoid design details that allow moisture to accumulate in the end grain.	✓	✓

WEATHERING AND FINISHES

Kebony, as all natural woods, will fade to a silver-gray patina if installed outdoors. As Kebony wood is exposed to UV rays and water, the lignin on the wood's surface breaks down and water washes it away. This fading is normal for all natural woods, and the graying of Kebony does not affect the stability or structural integrity of the wood. The amount of time this process takes can vary greatly as it depends on exposure to environmental factors such as, but not limited to: sun, precipitation, wind, temperature, usage, etc.



MAINTAINING THE COLOR

FINISHING YOUR KEBONY DECK WHEN NEW

Applying a finish is not required to maintain the Kebony warranty, but is optional if you want to keep the wood's original darker color or change the color. This can be done using a tinted finish, which protects against UV rays and weather.

PRO TIP: Please remember that the UV inhibitors in finishes reside in the pigment. The more pigment, generally speaking, the longer the color retention before recoating is needed. Clear coating with no pigment may fade the surface sooner than not using a coating.

For those Kebony customers sensitive to surface checking and wishing to mitigate against potential end-cracking, it may be reduced by using a finish.

While Kebony does not have an official finish, clients who have chosen to finish their Kebony installations have recommended the following:

CUTEK® Extreme: CUTEK Extreme is a high-performance, oil-based wood stabilizer with a unique self-healing effect that penetrates deeply into the wood. CUTEK® Extreme will not flake or peel. More information can be found here: <https://cetekstain.com/us/product/extreme/>.

CUTEK Extreme is available in a clear, untinted version but there are also available colortones that can be used with Kebony. As above, keep in mind that UV protection of finishes is typically enhanced when there is color in it. These colortones can be viewed here <https://cutekstain.com/us/product/colortones/>. The most commonly chosen CUTEK colortone for maintaining the original color of Kebony is Honeycomb.

CUTEK Extreme can help preserve color (if a colortone is used) and also mitigate checking and cracking. CUTEK Extreme will allow the wood to weather more evenly and mitigate checking. Adding a colortone may change the color and will further delay the weathering process.

Prior to applying CUTEK Extreme on new Kebony, you can improve the absorption of CUTEK® Extreme by removing any mill glaze. This can be achieved either mechanically by sanding with 80-grit sandpaper or chemically using CUTEK Wood Reviver.

In time, exposed CUTEK Colourtones will gradually fade rather than splitting or peeling. This is an indication that a re-application of CUTEK is needed. This facilitates easy maintenance; clean with water mixed with CUTEK® Restore or CUTEK® Quickclean and a recoat is all that is required.

For application of CUTEK Extreme over another finish, use CUTEK Wood Stripper first before applying the CUTEK Extreme.

CUTEK® Extreme is available for online purchase and also at stocking dealers. Please check here to find a dealer nearest you: <https://cutekstain.com/us/find-a-stockist/>

CUTEK also offers products for cleaning and preparing wood for finishes. Please consult their website or speak with them or a dealer to see if these may be appropriate for your application.

USE, CARE, AND MAINTENANCE

MAIN APPLICATIONS

Kebony is the right choice for exterior above-ground applications, where durability, environmental friendliness, and low maintenance are desired.

Kebony is produced from sustainably sourced lumber and bio-based inputs. The bio-based inputs are polymerized to a stable solid inside the wood fibers, yielding a stable, hard, and durable wood material.

PRODUCT SAFETY

Kebony is not toxic to humans or the environment, neither in use nor when disposed of as waste.

MACHINING / FURTHER PROCESSING*

Kebony boards can be processed with normal hardwood tools and machinery.

Kebony Clear may be sanded, planed, or machined without negative effects on durability.

Kebony Character should not be further processed.

** Follow the guidelines detailed in the Kebony Milling and Machining Guidelines document when working with Kebony.*

DIMENSIONAL STABILITY

Kebony is a natural wood product which means that there will be some swelling and shrinkage due to changes in relative humidity. However, the Kebony process significantly increases the dimensional stability of the wood. Maximum swelling across the boards from completely dry to completely saturated with water is:

- About 6% of the board width for Kebony Character
- About 4% of the board width for Kebony Clear

It's important to note that Kebony typically swells in size upon installation rather than shrink. It is for this reason it is important to follow the storage guidelines listed throughout this document.

APPEARANCE AND SURFACE TREATMENT (AFTER INSTALLATION)

Kebony boards have a deep brown color that will turn to a silvery gray patina over time. The speed of this graying process depends on Kebony's exposure to UV and moisture.

CLEANING AND MAINTENANCE

One of the many benefits of selecting Kebony dually modified wood for your decking installation is that its durability is guaranteed while requiring very little maintenance. Kebony decks are most often left uncoated, making basic cleaning the only element of care needed.

All outdoor wood surfaces must be cleaned when soiled, with decking cleaned at least once every spring or more often as required. Make sure to inspect your decking after cleaning to see if any repairs are required, and perform those repairs as soon as possible.

Cleaning the surface of your Kebony installation can be done simply and efficiently. To remove deposits of dirt, sand, and other particles, only a brush and water are needed. For surface contamination of mold or algae, water containing ordinary household cleaning agents or detergents suitable for external household use may be used in combination with a brush. Following the use of any cleaning products, including the options listed below, the entire surface should always be rinsed with clean water.

When selecting cleaning agents for your Kebony deck, it is recommended that instructions printed on the product labels are followed closely with respect to use, safety precautions, and waste disposal. The manufacturer's handling and application guidelines should be considered when selecting cleaning agents. In addition, cleaning products with a pH greater than 12 should be avoided. To further ensure a positive outcome, testing the cleaning agent on an inconspicuous area of the deck before cleaning the entire installation is encouraged. Heavily contaminated surfaces may be cleaned with alkaline detergents or detergents containing oxalic acid or hypochlorite. Ensure that you follow the manufacturer's instructions.

To remove black stains and discoloration caused by incompatible metal parts* such as zinc and iron, oxalic acid may be used for cleaning. It is important to follow the manufacturer's instructions, and it should be noted that strong cleaning agents like this one may lighten the surface of your Kebony installation. The affected areas may be spot-cleaned, or the entire surface of the deck can be cleaned to avoid color differences.

**Please refer to the Metal Interaction section in both the Product Expectations and Specification Guideline sections of this document.*

High-pressure washing is not recommended for use on Kebony products. The boards may, however, be washed with high-pressure washers that are equipped with brushes that reduce and diffuse the water jet to safe levels. The water jet of a high-pressure washer should never be applied directly to the wood surface without suitable brushes.

SANDING YOUR KEBONY INSTALLATION

Kebony boards that are newly milled sometimes acquire a sheen called “mill glaze”. This happens in the machining process and can be remedied by sanding. A chemical treatment to remove mill glaze is another option. Please see the preceding Weathering and Finishes section for details.

It is important to note that when sanding, you will find that the layer of Kebony underneath is a different color than the exposed layer. This can cause color differences if only a section of the board is being sanded. The board will eventually all fade into the same silver-gray patina, but to avoid color differences, you may consider sanding the entire board rather than a portion.

Sanding can be used to remove scratches from Kebony deck boards as well. The board should be sanded using fine-grit sandpaper. As previously mentioned, sanding the whole board is encouraged to maintain a uniform color.

STORAGE

Kebony should not be exposed directly to the elements before installation. Kebony should be kept enclosed in its original packaging or re-wrapped if previously opened. Ideally, Kebony should also be stored indoors or under cover.

Additionally, it's good practice when working with an uncovered unit of Kebony to flip over (reverse) the top boards so that they are face-to-face, i.e. the top face of the board is not directly exposed to the elements. This will help reduce the likelihood of having boards with different degrees of fading.

WASTE DISPOSAL

Waste from Kebony boards can be disposed of in the same manner as untreated wood. Kebony can be burnt like untreated wood, and will not release any other smoke components than those released when burning untreated wood.