

Table 2 - Dock Types Pros & Cons

Dock Type	Pros	Cons
Floating	Inexpensive, easy to build, adaptable to most shorelines, moves with lake level, minimal impact to lake bottom (weighted anchors needed), minimal shoreline impact possible.	Minimum water depth (3+feet) needed, must be removed in winter to prevent ice damage, may not be suitable for mooring boats, (may cause erosion to shoreline,) large size may be needed to obtain stability
Seasonal Pipe/Wood Post	Allows for small dock width/footprint, stable, relatively lightweight, minimal shoreline impact possible	Minor impact to lake bottom, must be removed in winter to prevent ice damage, not suitable for mooring large boats
Pile	Can be very stable, minimal shoreline impact possible, construction allows for small dock footprint, may be suitable for mooring large boats depending on dock size	May require energy intensive de-icing to prevent winter ice damage, permanent impact to lake bottom
Crib	Very stable, suitable for mooring large boats	May require energy intensive de-icing to prevent winter ice damage, permanent impact of lake bottom, largest footprint/impact on lake bottom, expensive to build, may cause erosion to shoreline
Cantilever/Suspension	No impact to lake bottom, generally not affected by winter ice	Expensive; some shoreline impact required to anchor dock
Seasonal Lift	Designed for easy removal from water, not affected by winter ice	Minor impact to lake bottom, moderately expensive, some shoreline impact to anchor lift hinge point or lift by barge.
Roll in	Designed for easy removal from water, not affected by winter ice	Minor impact to lake bottom, may be expensive, cleared area and gradual slope on shoreline needed, dock material limited to lightweight materials such as aluminum

DO

If you have a permanent dock:

clean your dock with a bristle scrub brush. You can use a solution of baking soda and water to aid in cleaning. There are scrub brush/pad products designed for use in a power drill available at hardware stores that can be used in place of hand scrubbing.

If you remove your dock:

Use the same scrub-brush and baking soda technique or use high-pressure water spraying away from the lake. Use caution while doing this to avoid disturbing the ground and vegetation with the sprayer.

DON'T

- ◆ Use bleach to clean your dock. Chlorine will kill living organisms in the area.
- ◆ Use chemical cleaning solutions on your dock. These chemicals are harmful to the lake ecosystem and it is illegal to put them in the water.



Resource List

Maine State Planning Office. 1997. *The Waterfront Construction Handbook: Guidelines for the Design and Construction of Waterfront Facilities*. Maine State Planning Office, Maine Coastal Program, Augusta, ME. 93 pp. www.maine.gov/spo

Cottage Life, 2008. *Dock Primer: A Cottager's Guide to Waterfront Friendly Docks*. The Fisheries and Oceans Canada – Ontario Edition. www.cottagelife.com

NOAA, May 2005. *Management of Small Docks and Piers: Best Management Practices*. National Oceanic and Atmospheric Administration (NOAA). www.noaa.gov

NHDES, 2010. *Pressure Treated Wood: Can It Be Used in New Hampshire's Waters? Environmental Fact Sheet: WD-BB-19*. NH Department of Environmental Services (NHDES). www.des.nh.gov

State of Illinois, March 2001. *Lake Notes: Pressure-Treated Wood*. Illinois Environmental Protection Agency. www.epa.state.il.us

Stan Lebow, February 8-10, 2004. *Alternatives to Chromated Copper Arsenate (CCA) for Residential Construction*. USDA Forest Service, Forest Products Laboratory, Madison, Wisconsin. www.usda.gov

"Lake Friendly" Dock Choices



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LSPA

Devoted to the Environmental Quality of the Lake Sunapee Watershed

Building or replacing a dock is no easy task. There are many different construction materials and many different types of docks. This document serves as a guide providing you with the pros and cons of dock materials and types as well as a list of resources should you wish to do more research. It also provides tips for cleaning and maintaining your dock. Please be aware that all new or rebuilt docks require a permit from the NH Department of Environmental Services (NH DES). More information can be found on their website des.nh.gov

The "Lake Friendly" Dock

The most lake friendly docks are those that have the least impact to the shoreline and the lake bottom and are narrow and short. Lake friendly maintenance of a dock means using no wood treatment or cleaning chemicals. Many common materials used for constructing a dock and their pros and cons are listed in **Table 1**. Dock types and their pros and cons are listed in **Table 2**.

Unsustainable Wood Products

Redwood and some South American woods such as mahogany and ipe are slow decaying woods but are only available by removing them from rainforests. Rainforests are home to the world's largest varieties of animal and plant species (biodiversity) and also produce a large percentage of atmospheric oxygen. We suggest other options listed in **Table 1**.

Forest Stewardship Council (FSC) Wood

Purchase FSC certified wood if possible. FSC is an independent, non-governmental, non-profit organization that promotes the responsible management of the world's forests. More information can be found on their website www.fsc.org

Pressure-Treated Wood (PTW)

The primary reason for using PTW has been to reduce wood rot. Prior to 2004 most PTW contained arsenic and copper along with other treatment chemicals. EPA banned the use of arsenic in PTW for residential use on January 1, 2004 because of its high toxicity. While PTW sold at lumber yards today no longer contains arsenic, it still contains other chemicals that are

harmful in small quantities to fish and other aquatic organisms. The US Environmental Protection Agency recommends that PTW should not be used where it comes into contact with public drinking water. **NH DES however advises against the use of pressure treated wood in any waters in the state.** Since there have been concerns about potential health and environmental impacts from these chemicals leaching into soil and water, **Table 1** provides suggested alternatives and their pros and cons.

Wood Treatment

The most lake friendly treatment for wood is no treatment at all as it avoids the use of any chemicals that may be harmful to our environment and you. If you feel you must treat your dock, do it on land over a tarp to catch any spills or drips and let it dry thoroughly before you place the dock in the water. **Don't treat the wood while it is in the water.**

Dock Cleaning

Over time a "green/brown slime" or biofilm may form on your dock. This is part of a natural process in the lake, a growth of bacteria and algae working together. The bacteria provide a substrate for the algae to live on, while the algae supplies oxygen to the bacteria. However, it can be slippery and for some is not aesthetically pleasing. LSPA has provided tips to address this issue, on the back of these pamphlet.



Table 1 - Dock Construction Materials Pros & Cons

Dock Material	Pros	Cons
Aluminum	Very long lasting, low maintenance, lightweight, high strength suitable for posts/piles & stringers, recyclable material	Expensive, not forgiving of boat impacts, planking can heat up in the sun
Stainless Steel	Very long lasting, low maintenance, recyclable material, high strength suitable for posts/piles & stringers	Very expensive, not forgiving of boat impacts, planking can heat up in the sun, material generally not used/available for deck planking
Galvanized/Coated Metal	Long lasting, low maintenance, high strength suitable for posts/piles & stringers, recyclable material	Expensive, not forgiving of boat impacts, planking can heat up in the sun, material generally not used/available for deck planking
Eastern White Cedar	Naturally rot resistant w/o need of preservatives, can be burned or left to rot in woods at end of lifespan	Expensive
Western Red Cedar, Cypress	Naturally rot resistant w/o need of preservatives, can be burned or left to rot in woods at end of lifespan	Very expensive, slow growing trees not easily replaced
Red Oak, Eastern Hemlock, Spruce, Douglas Fir, Tamarack	Low price, moderate to high strength woods best for piles and dock cribbing, long lasting when fully submerged in water, can be burned or left to rot in woods at end of lifespan	Generally not very rot resistant or as long lasting as other alternatives in this Table when used at or near water line
Composite woods (plastic + wood)	Low maintenance, long lifespan. decay resistant, may be made of recycled materials	Expensive. planking can heat up in the sun, low strength suitable for decking only, may be difficult to clean, may not be easily recycled/disposed of at end of lifespan
Vinyl, Fiberglass, or Other Plastic	Low maintenance, long lifespan, may be made of recycled materials	Expensive, planking can heat up in the sun, low strength suitable for decking only, may be difficult to clean, may not be easily recycled/disposed of at end of lifespan
Pressure Treated Lumber (generally made of southern yellow pine)	Low price, rot resistance	Treatment chemicals are harmful to aquatic organisms and are corrosive to untreated metal and aluminum, wood must be disposed of properly at end of lifespan, NHDES advises against the use of pressure treated wood in any waters in the state