

What to Look for When Buying a Dock Deicer



Everything You Need to Look for When Buying a Dock Deicer or Ice Eater

Ice is far more dangerous to your dock than you might first assume. Ice jacking, winter kill, and ice expansion can destroy your fish, dock, and boats.

How? We'll dive into the details below, but ice can cause havoc to your dock. While some larger ships will be able to withstand the cold, your dock and smaller watercraft are in danger.

Dock de-icers are your saving grace. Dock de-icers pull warmer water from below the surface up to the top to keep the water above freezing point and to melt ice that has already formed. By keeping the water around your dock warm, structures will be undamaged, and boats will be

safe. De-icers can even create a haven for fish during the winter as portions of your lake or pond freeze over.

Without de-icers or some other method of keeping the water from freezing, fish in smaller lakes or ponds can be totally killed off in a harsh winter. The phenomenon is also known as 'winter kill.'

De-icers are essential if you own a dock in an area with sub-freezing temperatures. But how do you choose a de-icer? What separates a good one from a bad one?

This article will answer all that and more. Keep reading to keep your dock, boats, and fish safe this winter.

Ice, Ice, Danger

Ice creeps up during the winter seasons. At first, it seems harmless and makes beautiful reflections on the lake. Some may even enjoy it when a lake or pond freezes over so that they can ice skate or play hockey with friends and family. Don't let it fool you though, ice can also be dangerous and cause costly damages that will take time-consuming repairs. Ice can pose the obvious danger to humans and animals of slipping on or falling through the ice, but also the somewhat forgotten danger to your dock, fish, and boats.

Let's briefly breakdown why.

Ice Jacking

Ice jacking can be extremely damaging for docks, piers, marinas, and even shorelines. Ice jacking essentially lifts the pilings that support your dock as the water fluctuates. As the pilings are lifted out of their foundation they break which in turn can further damage your dock while also rendering it useless. Ice jacking occurs when the water levels fluctuate up and down either because of the tide, regulation by man, or rapid changes in weather conditions.

As the water and ice repeatedly rise and fall, damages occur. It starts when the water freezes at a high point and then the water recedes while leaving the top layer of ice in place. After the water settles it re-freezes and creates another layer of ice. The water level then begins to rise and that ice breaks and then is forced into the top layer of ice. Sometimes the top layer of ice will break before the lower level of ice forms. This just causes a lower level of ice to form quicker and thicker. As the ice forms around the pilings and is then pushed upwards by the rising water it will lift the pilings out of their foundation or even break them in half.

Ice jacking can be difficult to prevent, but you can put measures in place to keep your dock safe and keep damages to a minimum. If left unchecked, ice jacking can put your dock out of service and cost you a lot of money. Not only is it the money that you lose, but the time in use also. If your dock is damaged in the winter, repair work probably won't be able to begin until warmer temperatures come around sometime in the Spring. This means that you will miss out on some great days that dock owners and marina guests would love to enjoy. There is nothing more frustrating than a nice Spring day coming around and not being able to use your boat or dock because of damage that old man winter caused. As you can see it is key to protect not only your dock pilings from damages but also the deck itself.

Ice Expansion

Ice expansion causes damage similar to the way that ice jacking does. As water freezes, it expands, and as it expands it can break, shift, crack, or lift dock pilings out of their foundation. This causes damage to not only the pilings but also to the deck as it no longer has support. It is not uncommon to have piers and docks collapse once pilings start breaking or jacking.

Ice expansion can be a threat whether the body of water is large or small. On one hand, a larger body of water means more water which equals thicker ice and more pressure from the ice. On the other hand, a deeper body of water means there is more warm water that can be pulled to the surface with the use of a dock deicer or ice eater to keep ice from forming and to melt existing ice.

Smaller bodies of water can also be a threat because they will freeze quickly and if the water is shallow there is less opportunity to pull warm water to the surface. Once shallow water freezes there is no way to put a dock deicer or ice eater to use if there is no unfrozen water. If you have a smaller lake or pond it is important to be prepared and have your ice eater in place before temperatures start reaching the freezing point of 32 degrees Fahrenheit.

The best way to prevent ice expansion damage is to establish a buffer zone around what you are protecting. Using a dock deicer or ice eater to bring warmer water up from deeper depths will create warmer sections of water between your dock and the ice will keep damage to a minimum.

Winter Kill

Harsh winters with thick ice and heavy snowfall can cause winter kill, the most common cause of fish death, and the death of all forms of aquatic life. As ice forms over the water, it forms an opaque layer that keeps sunlight from coming through. With a lack of sunlight, the aquatic

plants will produce less oxygen for fish to thrive in. Eventually, the plants will start to decompose which results in a double-edged sword. Not only are the plants now dead and not producing any oxygen, they are now decomposing which uses up any remaining oxygen in the water and causes other plant life and fish to die quicker.

There are several things to look out for that will make winter kill even worse. Low water levels in the fall, early and/or heavy amounts of snow, and ice that forms earlier and/or melts later than normal. The harsher the winter, the more winterkill to be on the lookout for. One of the worst conditions is ice with just a few inches of snow or more on top of it. Once you get over 3 inches of snow over ice there is almost no sunlight that will get through and you will see oxygen levels deplete quickly without help. The reason for hope is that your lake or pond only needs to retain an ice-free zone equal to 1% of its surface area to save the fish.

How Do I Stop This?

Not to worry, dock de-icers, also known as ice eaters, [can protect your dock](#) structure, pier, marina, fish, and aquatic plant life from winter frost. Dock de-icers come in two forms:

Bubblers

Bubblers release small air bubbles (hence the name) through a hose. The hose is perforated, lays underwater, and is powered by an air compressor. Bubbler de-icers can be advantageous because they don't stir up sediment near as much as a deicer could in some situations.

If de-icers stir up sediment, it can cause an increase in algae in the spring and summer months. Air bubblers may serve you better if your lake bed has a lot of sediment and that sediment will be disrupted when using a deicer.

One disadvantage of air bubblers is that bad weather can damage the bubbler's compressor if it stays outside, and uncovered docks don't provide much cover for the compressor. If you will have to keep the compressor out in the weather you will probably need to find a way to protect it, such as building or placing a small structure over it.

Agitators

Agitators are essentially fans that pull warmer water from the bottom of the lake. This is the most popular style for a dock deicer or ice eater in most situations. The deicer hangs suspended underwater by cables or mooring lines. Propellor fans thrust warmer water upwards

towards the freezing surface to melt existing ice and to keep new ice from forming.

The effect of bubbles and warmer water gently rushing to the surface keeps ice at bay. Agitators can also melt ice already formed. What's more, is that agitators can be hung under boats to protect their hulls.

Angling agitators in different directions can create differently shaped openings to further protect your dock. By angling the ice eater you can create an oval or elliptical shape to protect longer areas. Even during the summer, angled agitators can keep algae from forming and funnel debris away from your dock or swimming area.

How Do I Pick a Dock De-Icer?

[Picking a dock de-icer](#) takes some level of expertise and understanding. While it will take planning and talking to an expert to arrange the perfect set up, we can pinpoint the basics.

There are five main considerations when selecting a dock de-icer. Let's run through them.

1. Size and Location

This isn't referring to the de-icer but rather the space you plan to use it in. How large is the area of water that you need to clear? Overburdening a single de-icer during a long winter can put stress on the unit and yield diminishing returns.

For geographical locations with long, cold winters, you will need more horsepower. If the area to be de-iced is large, you may need multiple de-icers. For very large docks, such as marinas, you may need several de-icers for full protection.

Please research the freezing temperatures and weather predictions where you plan to de-ice.

2. Water Depth

If you use an agitator, [deeper water means warmer water](#). The water at the lake-bed will be warmer if the water levels are deeper. There is, however, a sweet spot.

If the water is too deep, the fans will not be able to spread warm water well. If the water is too shallow, there isn't enough warm water to be propelled toward the surface.

3. Type of Water

The more salt in a body of water, the lower the freezing point of the water. Salt or brackish water may need fewer de-icer units than freshwater. You may need a special type of anode or protection for units in saltwater, while others may be ready for either freshwater or saltwater.

4. Power Source

Remember to select a de-icer that matches the voltage of your power source. Usually, this will be 115V or 230V. Remember, both will use the [same amount of electricity](#).

5. Obstructions

Any dock pilings, boats, or floats can obstruct, re-route, or restrict warm water flow. Restricting warm water flow will limit the effect of your de-icers.

[Contact a professional](#) to help you find the right specs and location for your de-icer. Remember to buy from a [reputable business](#). That way, if you get your calculations wrong - you're not stuck with the wrong equipment.

Slippery Slopes

De-icing isn't always straightforward; there can be complications and downsides. De-icing devices can disturb and damage the biodiversity of your lake or pond.

Picking de-icing devices that are too strong can open up an area large enough to allow ice to drift into your dock in windy conditions. Once the ice starts to melt it will break up and those pieces of ice can be forcefully pushed into your dock and cause damages. This is why you don't want to melt a bigger section of ice than is necessary.

Many lakes have rules or even laws that you must post when an ice eater or dock deicer is in use. This is to protect people who may walk or skate on the ice thinking that the temperatures have been below freezing for a while and the ice is thick. It is very important to follow these rules to protect yourself and others. It is also important to note that you should never have a dock deicer or ice eater in the water when swimmers are present. This may not be a concern in the winter, but when using an agitator as a muck mover to keep an area free from algae and debris in warmer months it is very important to pay attention to this as it could cause electrocution.

Did We Break the Ice?

We hope this guide helped you map out your immediate concerns. Mounting a brand new dock de-icer can be overlooked, but could also save you thousands of dollars in damages over a single winter. The added cost of a dock deicer or ice eater can cause some people to balk, but it is better to look at it as an important insurance policy to protect from the costly damages and time-consuming repairs.

There are many variables to a perfect de-icing rig. Always work with a professional to help you pick the best set up that matches your specific space.

Make sure to check out the rest of [our blog](#) for more water-related tips, guides, and quality products. If you are ready to take a look at some dock de icers or ice eaters for sale, [click here](#).

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