



— *Outdoor Ice Rink Systems* —



*How to Build
a Skating Rink*

Completed Rink Frame



Rink Frame with Iron Sleek Liner. Ready for Fill-Up!



We recommend viewing the "Building a Backyard Ice Rink" video on YouTube at: www.youtube.com/ironsleek

Components for an Iron Sleek Standard Skating Rink Kit



- Ice Rink Liner
- Ice Rink Brackets - "Sleeks"
(Qty. Supplied for 5 foot spacing)
- Corner Brackets (Qty. 8)
- Installation Tools (Qty. 2)
- Includes all required screws and hardware

** Grounds with more than 9" pitch will need additional Iron Sleek Brackets and Iron Sleek Extender brackets. Contact Iron Sleek or refer to the installation spacing chart included in the Iron Sleek 12-pack.*

Lumber Requirements for Skating Rink



- 2" x 12" x 10'
To calculate the Qty. required use formula:
 $(\text{Length} + \text{Width}) * 2/10$

- 2' x 4' x 18"
Used to mount the installation tool. Consider getting at least 3 or 4 of these. Pressure treated wood is recommended for the install tool.

** For pitches greater than 9", extra lumber will be needed.*

Recommended Tools



- Spray Paint
- Phillips Screwdriver
- Long Tape Measure
- ½" Socket Driver
- Phillips Driver Bit
- Power Drill
- Staple Gun
- Heavy Mallet
- String
- Line Level or Transit
- Carpenters Square
- Yard Stick or Ruler

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Assembling the Iron Sleek Ice Rink Brackets

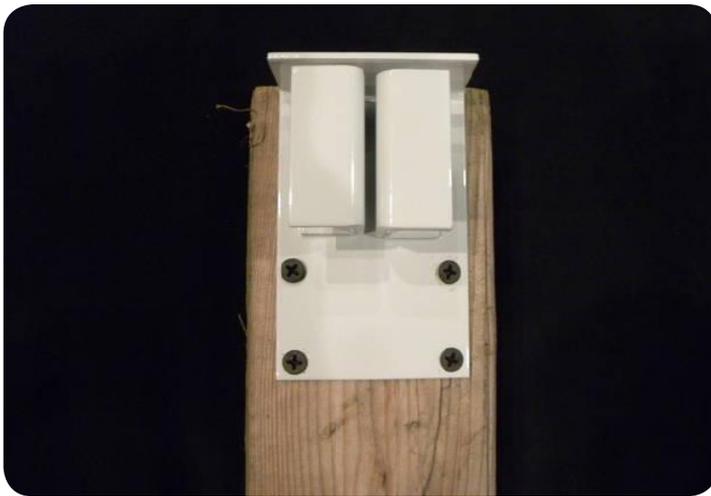


Assemble the Iron Sleek Brackets according to the picture to the left.

Insert the 1/4-20 screw (included) through the white vertical to black reinforcement according to picture to the left. Repeat on other side.

Use a Phillip's screwdriver to gently tighten screws.

Building the Installation Tool



Using a power drill and the wood screws provided, attach the installation tool flush to the end of an 18" long 2"x 4".

Have a few extra 2"x 4" pieces available as they tend to split after several sleek installs. The installation tool can be remounted to the new 2"x 4".

** To save some time, consider attaching a steel mending plated behind the install tool where you pound. It will keep your 2"x 4" from spitting.*

Determining the Pitch

This concept is well documented on YouTube, Google, etc. It may be easier to reference the web to better understand how to measure pitch. You may also want to consider renting a "transit laser" or consulting with someone who works construction. The method below using a line level should get you in the ballpark:

- Roughly mark the locations of all 4 corners of the rink with spray paint.
- Visually identify the "High Point" and "Low Point" and mark them.
- Insert a stake at the High Point (low water spot).
- Set a string 4 inches from the ground on the Stake (this will represent your water height).
- Stretch the string with a line level attached and measure with a ruler to the Low Point (high water spot).
- Verify the Low Point by checking several other points around the proposed rink perimeter.
- Once you find the Low Point, measure the distance between the string at level, and the ground.

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Determining the Pitch - Continued

If your water height is over 12" inches, you will need additional Iron Sleek components (see instruction chart). This problem is easily solved with Iron Sleek Extender Brackets for more board height and the Iron Sleek Outrigger brackets for high water support. Feel free to call our support center for recommendations. The first recommendation is always to consider moving your rink to another more level location to save you money, time, and effort.

Notes: This is the concept of water level as it is related to the pitch of the land. Iron Sleek recommends you ask the advice of someone who is familiar with this concept to help you or consider renting a transit laser from your local hardware store. A transit laser is easy and accurate beyond the rinks requirements.

Building the Rink Frame

This next section describes how to build a geometrically sound, rectangular rink frame. While there are many ways to do this, Iron Sleek's recommendation is to build the frame structure from "seam to seam."

The 2'x 12' pieces of lumber will share an Iron Sleek™ Bracket where they meet, at the seams. The bracket has been designed with screw holes to attach to each board at the joint. Additional brackets will be added to the balance of the frame after all seams have been joined with the brackets.

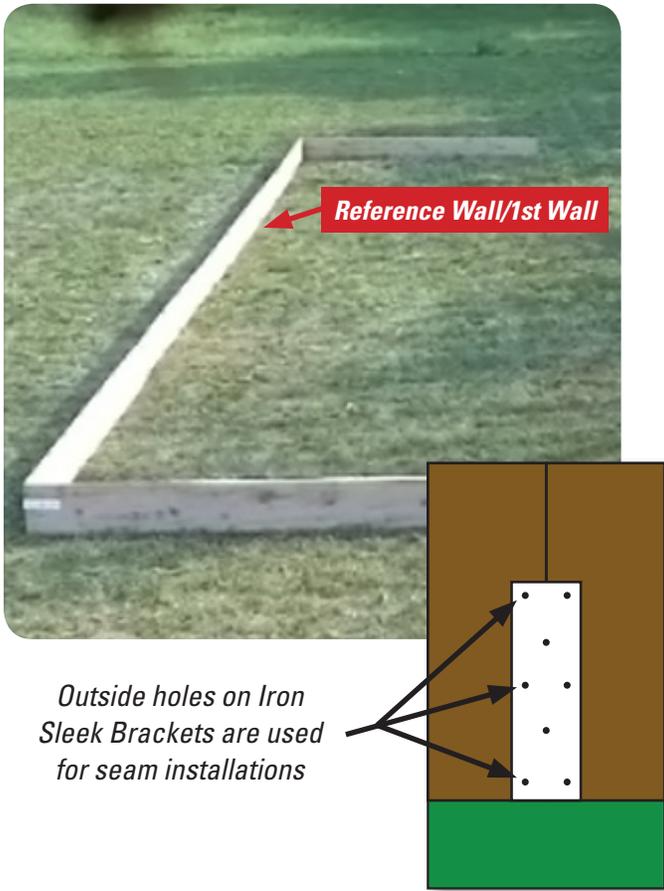
Rink Rectangle Geometry

CAUTION: If your rectangle is not straight and square, and ends up being more tilted, you may fall short on lumber and liner. Below is a strategy that will help guide you toward building a true rectangle that will be straight and square.

- 1) The 1st wall, also known as the "Reference Wall": This will be the first STRAIGHT wall and it will determine the position of the next 3 walls.
- 2) The 2nd Wall: Use a Carpenters Square along the reference wall and the second wall, to determine an exact 90° degree angle.
- 3) The 3rd Wall: This wall should be parallel to the reference wall
- 4) The 4th Wall: This is the closing wall. It will remain flexible and you will be able to close the rink without any additional lumber.
- 5) The 2nd Story: A second story is only required for higher pitched layouts, or water levels over 10". It is also a nice option for the hockey players out there looking for better puck retention.

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Building the 1st Wall (Reference)



Pull the string tightly, lengthwise across where you plan to position the first rink wall.

Use stakes to keep the string taut and spray paint over the line. This will be your STRAIGHT reference line that will be used to create the Reference Wall shown to the left.

You will need a Corner Bracket for each end of the Reference Wall and a Slek at each seam. Place a 10' board at each end, at 90° degrees from the Reference Line. Along the Reference Line, lay out enough boards to reach the desired length of your rink, this straight wall will be your Reference Wall.

Fasten the first Corner Bracket using the provided lag bolts. Install your first Iron Slek Bracket on the first seam on the Reference Wall in a position such that it could be shared by the next board.

Drive 2 screws into one board. Drive 2 screws into the 2nd board. Keep adding boards "Seam to Seam" until the desired length is met. Fasten the 2nd Corner Bracket using the lag bolts provided.

Building the 2nd Wall



As pictured to the left, get the Carpenters Square and tuck it in the corner against the Reference Wall and the 2nd Wall, the Perpendicular Wall. For larger rinks (esp. park and recs), a Carpenters Square will not be accurate enough. You will want to use triangulation or, the "3-4-5 method". There are some great references on the web on how to use this method or give us a call.

Pull a string line to the inside of the board of the 2nd Wall, which is now square with the Reference Wall. Spray paint over taut line.

Follow the same procedure for the "Seam to Seam" installation as described in the previous step. Add boards to reach the desired rink width along the spray painted line to keep things square.

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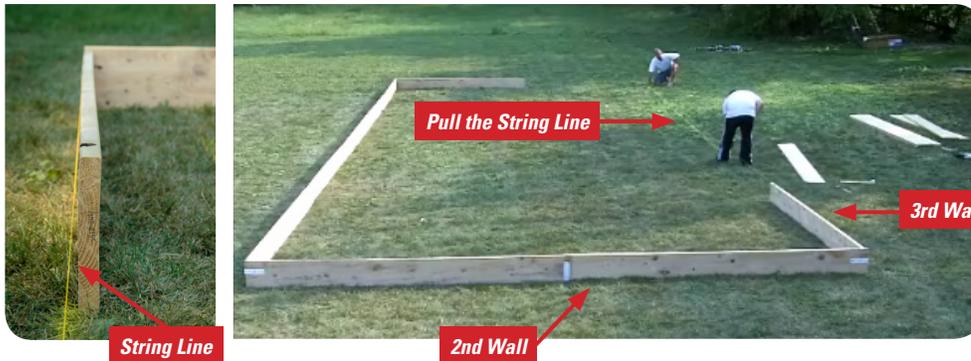
Building the 3rd Wall



Layout the third corner and fasten an Iron Sleek Corner Bracket using the lag bolts.

Mark the width on the opposite side of the reference wall with spray paint in at least 2 spots.

Stretch the string line from the 3rd corner so that it passes through the width marks. Spray paint the entire line. It will be parallel to the reference wall.



Along this new line, lay out the boards required to reach the desired length. The Parallel Wall is now ready to secure with sleeks.

Install Sleeks from "seam to seam." Fasten the final Corner Bracket using the lag bolts.

Building the 4th Wall (Closing Wall)



Now with 3 rink walls complete, the 4th wall is fully defined.

Layout the boards for the width so that the rink could swing to a close. With just sleeks at the seams, you will have plenty of adjustment to swing the walls so that they angle to close the rink frame without even cutting a single piece of lumber.

Sleek Mid-Board Installation



Start dispersing the Iron Sleek Brackets for mid-board installation according to the chart provided in your Sleek box or on our website. This is also a good time to recheck your level. It is important to know the anticipated water levels so that you can be smart about where you put additional brackets needed to withstand the water pressure. If you are confused about this, please give us a call. Place the sleeks tight up against the rink boards and then install them as shown to the left. Use the 2 screws in the center of the sleek to attach to the mid-board.

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The Second Story (Optional)



If you have a high water level or want better hockey puck retention, you will want to add a 2nd story to your rink. Attach a 2nd story using the Extension Bracket, as pictured here. The Extension Brackets can be mounted on a seam or mid-board. We also recommend you cut a chamfer on the 2nd story end board to avoid a sharp corner. When adding extension brackets, you should add more Iron Sleek Brackets for more support against the leverage. Extension Brackets are not included in our kits.

DO NOT TAKE ANY SHORTCUTS WITH IRON SLEEK BRACKET SPACING. WATER PRESSURE CAN BE DECEIVING AND IS OFTEN UNDER-ESTIMATED.

Installing the Liner/Tarp



Preparing for the Liner/Tarp

Take a good look at your boards. Remove any protrusions, staples, splinters, etc. that could be harmful to liner. Be very patient and pay special attention to the bottom of the boards where the water pressure is higher.

Check the board frame bottoms for gaps between the board and the land. Mark all gaps. If you can fit a few fingers between the board frame and the ground, generously pack dirt under and around the board to eliminate the gap. This will help prevent the disaster of having the liner bubble under the board once filled with water pressure. Soil works well but Iron Sleek base cove is the best solution for gaps as soil could wash away under freeze thaw scenarios.

*****DO NOT USE SNOW to fill gaps. It will melt!*****

Walk the inner rink area inside your frame. Carefully remove any objects that could damage the liner (sticks, big rocks, or anything sharp or pointed).



Laying out the Liner/Tarp

(You will need at least 2 people for a medium size rink)

Wait for the cold...and then be very careful handling the liner! Low or no wind day is ideal. Place the rolled up liner at the deep end along the length of the rink so that there is excess available in case of a miscalculation on the pitch. **HAVE YOUR HOSE READY IN ADVANCE.** Filling will happen immediately after the rink is lined.

*****Do not walk on the liner unless URGENT.*****

Carefully unroll the liner across the entire length of the rink. The white side should be up. Most Iron Sleek Liners are white on both sides but we do have some customs where the liner is White/Black.



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Installing the Liner/Tarp - Continued



Stretch and Tuck the Liner

- Grab the liners edges and carefully open it up to full width. Try to avoid tall creases as they could be a hassle on the low water end.
- Any excess length in the liner should favor the side of the rink that you expect to have the highest/deepest water level.
- Loosely tuck the liner down along the inner side of the board frame.
- Be especially sure to loosely tuck the rink corners. Not tucking corners is a common mistake. The liner is intended to be an impermeable for the water. The earth and the boards should hold the load, not the liner!



Filling the Rink

- Start the hoses on the low water side so that the water travels across the rink to the ground's low point (the high water side). This will help keep the liner weighed down because water will accumulate in the pockets and create puddles along its path to the high water side.
- It is best to prop the hose so that the water shoots into the rink or cover the hose with a sock or something soft and permeable. A hose dangling on a rink liner for days with a metal nozzle could cause damage. Parks and recs should pay special attention to this because they use larger water supplies.
- Keep the liner loose while making sure that it does not end up back in the water. After you have a minimum of 3"-4" of water in the rinks low end, reach in again and re-tuck the liner (see left).

*****Do not let your rink overflow.*****

An overflowing rink will loosen the ground and potentially compromise the strength of the bracket installation.



Securing the Rink Liner

It is now time to staple the liner to the rink board frame using a staple gun. Keep your staples low so that the wind does not blow the liner up. As an alternative to low cost staples, Iron Sleek offers liner clips and our highly recommended Rink Topper foam.



Note: If you are still shy of 3"-4" of water and realize your water depth is higher than expected, consider adding a "2nd Story" to your rink. You should use Iron Sleek Extension Brackets to easily mount the 2nd story and more Iron Sleek™ Brackets for added water pressure support. With Iron Sleek, mistakes are recoverable. You can install sleeks into frosted ground, add second stories, and mount extension brackets at any time during your rink build!

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