



# WARNING

Climbing is an inherently dangerous activity and serious injury or death may result from the physical demands of, or falls sustained while climbing. Likewise, the installation of climbing walls involves certain inherent risks and extreme caution must be exercised in order to prevent injuries from occurring during installation, or from the use of the climbing wall thereafter. Individuals and organizations are solely responsible for learning the proper techniques and safety procedures for the installation and use of all NICROS, Inc. products. The purchaser assumes all risk and accepts full responsibility for any injury, disfigurement or death resulting from the installation, use and/or misuse of the products. Please double check and climb safe!

## When installing this product:

- ! ALWAYS use proper safety equipment while using power tools (Safety glasses, hearing protection, etc.).
- ! ALWAYS check for, and become familiar with, the location of all utilities (electrical, plumbing etc.) and any pre-stress cables within the wall before drilling any holes.
- ! ALWAYS follow manufacturer's safety recommendations when using power tools, ladders, etc.
- ! ALWAYS position the wall so nearby items do not pose safety concerns. An eight foot minimum clearance is recommended as a safety zone.
- ! DO NOT install this product without the assistance of a professional experienced person in both rock climbing and engineering principles. Improper installation may result in the structural failure of the rock climbing wall, the supporting structure, or both, which may lead to serious injury or death as a result of the structure or supporting structure collapsing on the climber.

## When using this product:

- ! NEVER climb without using proper safety gear, including an appropriate landing surface.
- ! For traverse/bouldering walls, NEVER climb without a properly trained and experienced spotter.
- ! For full-height climbing walls, NEVER climb without being belayed (either by an automatic belay device or a properly trained and experienced belay partner).
- ! NEVER attempt to climb without first receiving proper training.
- ! NEVER allow children to climb without adult supervision.
- ! ALWAYS provide appropriate training for supervisory staff.
- ! NEVER use the threaded inserts in your Nicros-EasyWall™ for top anchors or lead anchors, Serious injury and/or death may occur from improper use of the threaded inserts.
- ! ALWAYS perform regular maintenance and inspection of Nicros-EasyWall™ panels.
- ! ALWAYS establish a risk management program for the wall.

# Table of Contents

Nicros-EasyWall™ can be installed over a number of pre-existing walls. See below for the type of wall you have and go to the appropriate section in this manual. If you do not find the type of wall you plan on attaching the panel to, either consult NICROS, Inc. or a Structural Engineer to determine the suitability of your installation. NICROS, Inc. does not recommend installing Nicros-EasyWall™ over steel stud walls.

In addition, after the “Installation of your Nicros-EasyWall™” sections of this manual, use the other sections of this manual for handhold installation procedures, landing mat installation procedures, and other products that are available for your climbing wall.

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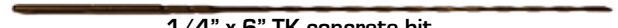
# Installation of Nicros-EasyWall™ onto concrete or hollow block walls

## Tools and hardware needed:

- Hammer drill
- Chalk line
- Wood shims
- Tape measure
- Ladder
- Nine 5/16" washers (included - not pictured)
- 1/4" x 6" TK concrete bit (included)
- Ratchet handle or 6.5" Nicros-EasyDriver™
- 5/16" x 1 3/4" socket
- Nine 1/4" x 3 1/4" Torx Hex Washer head Kwik Con Screws



1/4" x 6" TK concrete bit



6.5" Nicros-EasyDriver™



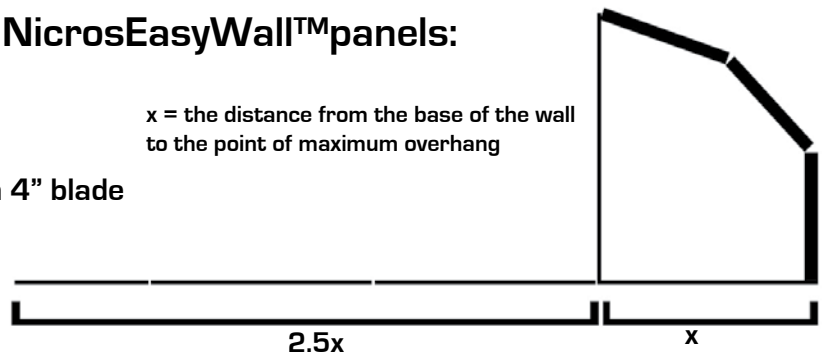
5/16" x 1 3/4" socket



1/4" x 3 1/4" Torx Hex Washer head Kwik Con Screw

## Additional Materials for cutting NicrosEasyWall™ panels:

- Electric drill
- 1" spade bit
- Reciprocating saw or jigsaw with minimum 4" blade
- Wood rasp



If your wall overhangs, make certain that your ground clearance is 2.5 times the distance between the base of the wall and the furthest overhanging point

**ACKNOWLEDGMENT**-The information below was obtained from [www.us.hilti.com](http://www.us.hilti.com)



The Kwik-CON II+ fastening system is convenient to use. Simply insert the carbide-tipped SDS+ or TK bit directly into the rotary hammer. No special adapters are needed.



Drill a hole 1/2" deeper than the required screw penetration.



Change the rotary hammer setting to rotation only. Lock the compact setting tool over the special detent receiver on the bit.



Adjust the depth location and set the screw. It's that easy.

## Determining Correct Fastener and Hole Depth

The KWIK-CON II+ masonry fastening system consist of the KWIK-CON II+ drive tool and a matched tolerance carbide-tipped drill bit. Consistent performance and maximum pullout strength are attained when all system elements are used properly.

KWIK-CON II+ fasteners come in three diameters: 1/4", 3/16" and 3/8". Fastener diameter and embedment depth affect pullout strengths. Application strength requirements and safety factors should be considered when determining the embedment depth and fastener diameter.

## Fastener Length (A+B)

The length of the KWIK-CON II+ fastener to be used is determined by combining the thickness of the fixture being attached (A) with the desired depth of embedment in the masonry material (B). It is recommended that a minimum of 1" and a maximum of 1-3/4" embedment be used in determining fastener length.

## Hole Depth (B+C)

A matched tolerance carbide-tipped drill bit is supplied with each combo box of KWIK-CON II+ fasteners. In all cases, the hole must be at least 1/2"(C) deeper than the depth of the fastener embedment. Normal safety precautions should be observed when drilling holes to avoid electrical or other utility installations and reinforcement bars.

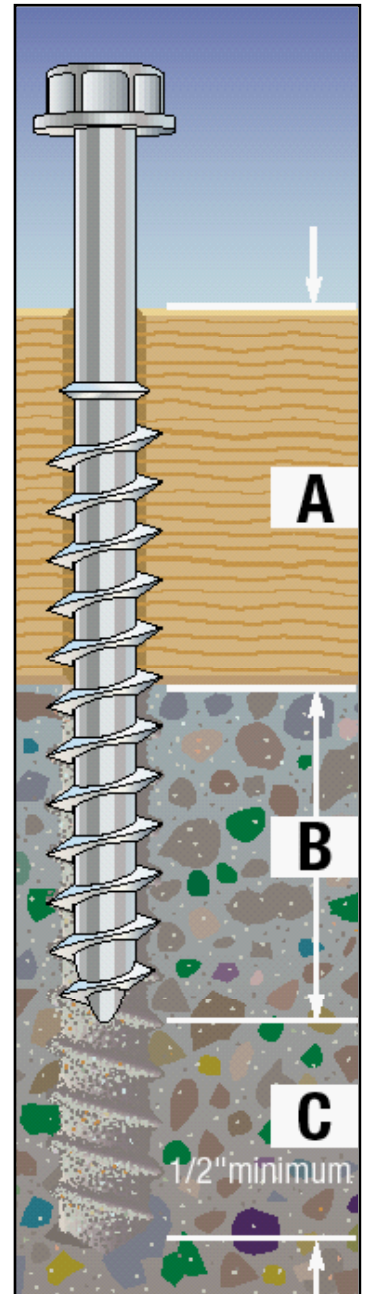
## Hole Diameter

The diameter of the drilled hole is also important to the performance of the KWIK-CON II+ masonry fastening system. Use Hilti matched tolerance carbide-tipped bits to obtain consistent fastener performance and maximum pullout strength.

Refer to manufacturers instructions.

Manufacturers instructions provided by [www.us.hilti.com](http://www.us.hilti.com)

A = Fixture Being Attached  
B = KWIK-CON II+ Embedment (minimum 1", maximum of 1-3/4" recommended)  
A+B = Length of KWIKCON II+ recommended for application  
B+C = Depth of Hole Drilled (must be at least 1/2" deeper than KWIK-CON II+ embedment)



## Installation procedures

Climbing Industry standards recommend a minimum eight foot of clearance from the climbing wall to any obstacles. If your wall overhangs, make certain that your ground clearance is 2.5 times the distance between the base of the wall and the furthest overhanging point. Double check that there are no potential hazards in the area you plan on installing your Nicros-EasyWall™. Once you have determined the location of your climbing wall, please follow these tips for installing your Nicros-EasyWall™.

1. Prepare and clear the area of all debris and obstacles.

**! Remember to remove every obstacle from the wall that can be removed to ensure that the wall is installed correctly.**

**! Have an electrician or other licensed professional remove any electrical fixtures.**

**! Double check to make sure the chosen location provides sufficient landing zone for the completed installation.**



2. Measure 48" from the floor at each end of your intended Nicros-EasyWall™ location. Make a mark,



**Note: You can mount your Nicros-EasyWall™ panels above your landing surface by adding the thickness of your landing mats to the height you measured.**

3. Snap a chalk line between the marks.

4. Since most floors are not perfectly flat, you will need to determine the high point of your floor. To do this, make several measurements from your chalk line to the floor. If any of these measurements are less than 48", you need to raise your chalk line so that shortest measurement equals 48". For example, if the shortest measurement is 47", you will need to raise the chalk line 1".



5. Set the first panel in place and use wood shims to bring the panel level with the chalk line if necessary.

**! Before completing the next step, verify the location of all utilities (electrical conduit, plumbing pipes, etc.) Within the existing wall to avoid drilling into them.**



6. Using a hammer drill and a TK concrete bit, drill through the nine mounting holes in the Nicros-EasyWall™ into the concrete until the front of your drill just touches the Nicros-EasyWall™ panel, being careful not to press into the front of the panel with the barrel of the hammer drill.

**! Use proper safety equipment when operating power tools (safety glasses, hearing protection, etc.).**

7. Insert Nine quick con screws through nine of the 5/16" washers.



8. Fasten the panel to the wall by attaching the Nicros-EasyDriver™ over the TK concrete bit and driving in the screws you just threaded through washers tighten with the ratchet and 5/16" socket.

**! Do not over tighten.**

9. Repeat steps 5,6,7,8 for entire bottom row of panels before moving onto the next row of panels above.

10. For rows of panels above the first row, set panels on edge of panel directly below. Follow steps 6 and 7 for the remaining panels. Note how the cracks in the Nicros-Easy Wall™ panels line up.



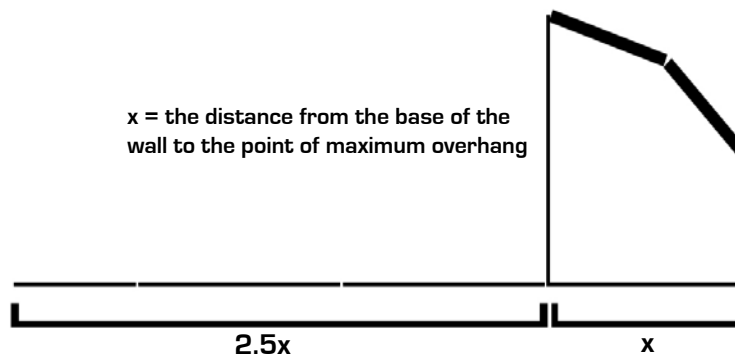
**! Make sure to properly support the panels until they are securely bolted to the wall.**

## Installation of Nicros-EasyWall™ onto wood stud walls

**! Nicros-EasyWall™ is not recommended for installation onto metal stud walls.**

**! Warning:** If installing Nicros-EasyWall™ panels into ACQ treated lumber, it is important to order stainless steel mounting hardware. Metal products in contact with pressure-treated wood must be corrosion resistant. **DO NOT** install your Nicros-EasyWall™ panels into ACQ treated lumber using the standard zinc-plated, carbon-steel, or aluminum lag screws. For more information, go to the Southern Pine Council's website at [www.southernpine.com](http://www.southernpine.com) or talk to your local wood distributor.

**! If your wall overhangs, make certain that your ground clearance is 2.5 times the distance between the base of the wall and the furthest overhanging point.**



## Tools and hardware needed

Chalk line

Level

Tape measure

Ladder

Stud Finder

Phillips head screwdriver

Ratchet handle and 9/16" socket

Nine 3/8"x2-1/2" lag screws (included)

Nine 7/16" SAE washers (included)

36 #10x2-1/2" wood screws or similar appropriate fasteners for fastening plywood to wood studs

Electric drill, 3/16" bit and 1/16" bit 4'x8' sheets of 3/4" plywood.

One sheet of plywood for every two Nicros-EasyWall™ panels is required.

(This is not needed if going directly into a wooden playset or other preset wooden structure.)



## Additional Materials for cutting Nicros-EasyWall™ panels:

Electric drill

1" spade bit

Reciprocating saw or jigsaw with minimum 4" blade

Wood rasp

## Installation Procedures

Climbing industry standards recommend a minimum of 8 foot of clearance from any obstacle for a vertical climbing wall. Make sure there are no potential hazards in the area you plan on installing your Nicros-EasyWall™. Once you have determined the location of your climbing wall, please follow these tips for installing your Nicros-EasyWall™.

Due to the fact that most studs are not perfectly straight or centered, Nicros recommends installing a 4'x8' sheet of 3/4" plywood first. Nicros-EasyWall™ panels will then be attached to the plywood.

1. Prepare and clear the area of all debris and obstacles. Remember to remove every obstacle from the wall that can be removed to ensure that the wall is installed correctly.

**! Have an electrician or other licensed professionals remove any electrical fixtures.**

**! Double check to make sure the chosen location provides sufficient landing zone for the completed installation.**

2. Using a stud finder, mark locations of all studs at top and bottom.

3. Place the plywood so that the edge of the plywood lines up with the center line of the stud.

4. Using an electric drill and 1/16" drill bit, drill through the plywood and the wood studs. Use the # 10x2-1/2" wood screws to attach the plywood to the existing wall. Wood screws must be placed every 6" along every stud.





**! Use proper safety equipment when operating power tools (safety glasses, hearing protection, etc.).**

5. Measure 48" up from the floor at each end of your intended Nicros-EasyWall™ location.

(NOTE: You can mount your Nicros-EasyWall™ panels above your landing surface by adding the thickness of your landing surface to the 48" dimension.)

6. Snap a chalk line between the marks.

7. Since most floors are not perfectly flat, you will need to determine the high point of your floor. To do this, mark several measurements from your chalk line to the floor. If any of these measurements are less than 48", you need to raise your chalk line so that the shortest measurement equals 48". For example, if the shortest measurement is 47", you will need to raise the chalk line one inch.



8. Set the first panel in place and use wood shims to bring the panel level with the Chalk line.

9. Using an electric drill and 3/16" drill bit, drill through the nine mounting holes in the Nicros-EasyWall™ panel until the front of your drill touches the Nicros-EasyWall™ panel, being careful not to press into the front of the panel with the barrel of the drill and plywood.

**! Verify the location of all utilities (electrical conduit, plumbing pipes, etc.) within the existing wall to avoid drilling into them.**

**! Use proper safety equipment when operating power tools (safety glasses, hearing protection, etc.)**

10. Fasten the panel to the plywood using the lag screws provided and tighten with the ratchet and 9/16" socket.

11. Repeat steps 8,9,10 for entire bottom row of panels before moving on to the next row of panels above.

12. For rows of panels above the first row, set panels on edge of panel directly below. Follow steps 9 and 10 for the remaining panels. Note how the cracks in the Nicros-EasyWall™ panels line up.



**! Make sure to properly support the panels until they are securely bolted to the wall.**

## Cutting of Nicros-EasyWall™ panels

In some cases, Nicros-EasyWall™ panels may need to be cut or trimmed. This may be to cut the panel to a length less than 48" or to remove a section of a panel to fit around an existing fixture (electrical outlet, etc.). A reciprocating saw or jigsaw with a minimum of a 4" metal cutting blade can be used to cut your Nicros-EasyWall™ panel.



## Cutting or trimming a panel to length

1. Mark the panel to be cut on the back of the panel.

**! If the mark falls within 1-1/2" of any of the 9 mounting holes, DO NOT make this cut as you will cut through the internal mounting hardware.**

**! If trimming a panel to length, the distance from the cut edge of the panel to the line of the mounting holes MUST NOT exceed eight inches.**

**! Measure twice, cut once!**

2. Using a reciprocating saw or jigsaw, carefully cut the panel to length.

**! Use a minimum of a 4" blade to avoid binding the saw blade while cutting.**

**! Use proper safety equipment when operating power tools (safety glasses, hearing protection, etc.).**

3. Use a wood rasp to remove any sharp edges along the cut edge of the panel.

4. No matter what cuts you make, your panel or panel piece should be attached to the existing wall by a minimum of 2 pre-set Nicros-EasyWall™ panel attachment points.

5. For additional questions about potential cuts, please call a customer service rep at 651.778.1975.



## Cutting a hole in Nicros-EasyWall™ panels

1. Mark the location of the hole on the panel to be cut on the back of the panel.

**! If the mark falls within 1-1/2" of any of the 9 mounting holes, DO NOT make this cut as you will cut through the internal mounting hardware.**

**! Measure twice, cut once!**

2. Using an electric drill and a one inch spade bit, drill a pilot hole large enough to accommodate the saw blade of the cutting tool being used.

**! Use extreme caution when using a spade bit.**

**! Use proper safety equipment when operating power tools (safety glasses, hearing protection, etc.).**

3. Cut out the hole in the panel along the pre-marked line using a reciprocating saw or jigsaw.



**! Use a minimum of a four inch blade to avoid binding the saw blade while cutting.**

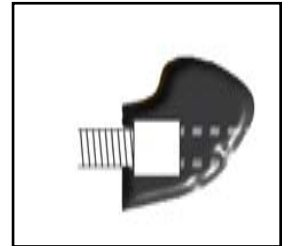
**! Use proper safety equipment when operating power tools (safety glasses, hearing protection, etc.).**

4. Use a wood rasp to remove any sharp edges along the cut edge of the panel.

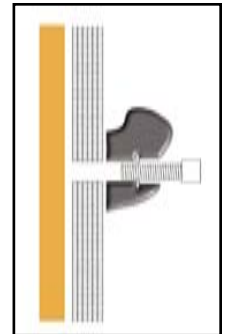
## Handhold Installation Instructions

1. Special care is required during the handhold installation process.

**! All bolts should protrude no greater than 3/4" from the back plane of the handhold. Failure to use the proper length bolts could result in damage to your Nicros-EasyWall™ not covered under warranty.**



2. After finding the proper type and size bolt, insert it through the hole in the handhold and out the other side. Ensure that the bolt sticks out no more than 3/4" from the back side of the handhold.

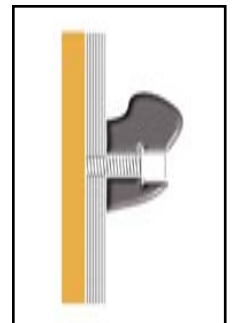


3. Line the bolt up with a threaded insert and using the proper allen wrench (either 5/16" or 7/32"), tighten the handhold onto the wall.

**! Be sure not to cross thread the bolt when tightening the hold onto the wall.**

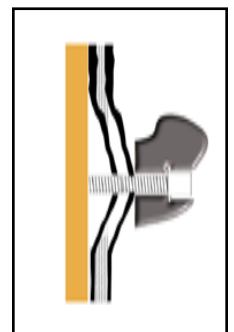
Nicros carries three different bolts, each in a variety of lengths.

The figure on this page shows how the handhold and bolt are placed through the Nicros-Easy Wall™. Make sure to use the proper size and type of bolt.



4. Tighten the bolt snugly until the hold will not rotate, and then tighten another partial turn, giving careful attention not to crack the handhold.

5. Allow the hold to settle for a minute, and then check that it is still tight. If not, re-tighten the hold. All bolts should protrude no greater than 3/4" from the back plane of the handhold. The bolt should go through the Nicros-EasyWall™ and not hit the existing wall. Periodically check to make sure holds remain tight.



If the bolt is too long, you risk bottoming the bolt out against the existing wall and actually forcing the panel to pull out off of the wall.

# Landing Mat Installation.

The most common landing surface product we have for bouldering walls is our mats. We offer a number of different options so that you can find products that will fit with your facility's needs. Although there is no climbing industry standard that specifically dictates the thickness or dimensions of a landing surface mat, We recommend that the landing surface cover an area up to 8 feet from the base of an 8-12 vertical wall and that it be suitably thick to protect a climber's fall. If the wall is overhanging, additional landing surface area will be needed.

Nicros offers four different mat systems that connect to the bottom of the climbing wall. When the wall is not in use, the mats simply fold up against the wall and the closure system cables are hooked over holds and the mats are locked down.



All of our mats are made with 1 3/8" polyethylene while the remaining thickness is polyurethane. Each mat's covering is made with 18oz. vinyl and all of the mats are approved as fire retardant.

In addition to the mats that have the built-in closure system, Nicros offers several types of custom landing surfaces. If a custom built climbing wall is being installed in your facility, a custom landing surface is often a great option to accommodate all the contours of the base of your wall.

Lay the mats out side by side with the four foot dimension against the climbing wall and the six or eight foot dimension sticking out away from the climbing wall. The logo should be facing down toward the ground so when the mat is lifted up in place, the "Do Not Climb" warning is facing out and is right side up.

Determine the fasteners you will use to attach your landing surface mats to the existing wall. The mats will not attach directly to the climbing wall, but right under it.

**! Make sure that if you are installing mats, you have installed your panels up the height of the thickness of your mats so that you don't lose any height on your climbing wall once the mats are installed.**

1. Line up the metal grommets clips to the eye hooks on the bottom of the existing wall. Don't attach them yet in that it's easier to attach them to the existing wall prior to attaching them to the mats.



2. Pre-drill pilot holes into the existing wall. Run the proper fasteners through the grommets and into the pilot holes using a socket for the appropriate sized fastener.

3. Attach the metal grommets clips to the eye hooks on the bottom of the existing wall.

4. Velcro the mats together.

5. Run the cabling through the eye hooks at the top or far end of the mats.



6. At the same height up the wall as the length of your mats, pre-drill and attach a bolt hanger to the existing wall just right or left of the Nicros-Easy-Wall™ using an appropriate 3/8" bolt. This will serve as the location for the lock system to hold the mats up when the wall is not in use.



7. Once the mats are installed, simply lift the mats into place and lock down to the two bolt hangers on either end of the wall when the climbing wall is not in use.



**! Be sure to completely remove the cable system from the eye hooks on the top or far end of the mats so they are not a hazard for the students while they are climbing. They can simply be threaded back through at the end of a climbing session.**

## Extras for your wall.

Nicros also provides other accessories like the ball holder and the hula-hoop holder. These accessories provide added challenges for your climbing wall. Obstacle courses, relay races, and other games and activities can be created so kids can work climbing technique without even knowing they're learning!

