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## **RUBBERSIDEWALKS™' INSTALLATION FIELD MANUAL**

**Follow the FOUR CARDINAL RULES & your project will be a SUCCESS:**

- 1) Proper base materials, and compaction are key. Except for Class 2 Permeable Base (which includes angular fines), no fines should be used. Rubbersidewalks™ is permeable, and our goal is to have good drainage in all materials. Please talk to RSI about regional soil properties and available local materials before the job. All sites require evaluation and design by a Soils Engineer or authorized expert.
- 2) Be careful to never damage a tree trunk, or tree root.
- 3) Tighten paver joints/seams as you go along.
- 4) When removing existing hardscape, remove less than the specified length.

### **SECTION 1**

#### **PRE-INSTALLATION**

#### ***SITE INSPECTION - REQUIRED***

Each site is different. Please consider the following issues prior to site prep and Installation:

- Site Accessibility
- Site Work Schedule Restrictions
- Site Security
- Site Utilities
- Adjacent trees and tree root growth & protection
- Sub base and sub grade soil type and conditions
- Climate conditions

#### **TOOLS & EQUIPMENT NEEDED:**

- Sod Cutter (if required to remove sod / dirt to desired depth)
- Hand Tools: Flat Head Shovels, Mallets, Hammers, Scissors and/or Blade
- Cutting Tool, Steel Pry Rod (with Flat Blade End)
- Landscape Rakes & Notched Screed (to distribute sub-base materials evenly)
- 3,600cf~4,000cf+ Vibratory Plate Compactor (to achieve 95% compaction)
- Drill with Right-Angle Adapter, 11/32" Drill Bit for Rubbersidewalks™ & 5/16"
- Concrete Drill Bit
- Skill Saw, Worm Drive, Ripping Blade (with Simple Green for cutting)

lubrication)

- Steel Pipes / String line or 2"x 4" Wood for demarking sides & levels
- Builders' Level (for leveling sub-base & installation)
- Air Spade or tree root trimming equipment (minimal, only if required)

### **MATERIALS TO BE SUPPLIED BY CONTRACTOR:**

- 3/4-Minus crushed angular rock (no fines) for base
  - 1/2" crushed aggregate angular (to create leveling layer) for base
- or
- Class 2 Permeable base (with angular fines) for base & leveling layer
  - Mirafi 500x Geotextile Fabric or equivalent permeable geotextile (off 12½' roll width preferred)



**Mirafi 500X**

**NO SAND, DECOMPOSED GRANITE, OR STONE DUST**

**(It compacts nicely—and then the fines wash out.**

**Rubbersidewalks™ are flexible and will conform to a washed out base!)**

## **MATERIALS PROVIDED BY RSI (Rubbersidewalks order):**

- Rubbersidewalks™ Modular Pavers (24" x 30" x 1-7/8", 54 pounds each)
- Self-Gripping Connecting Dowels (100 ct./ bag)
- Permaloc Brick Block Aluminum Paver Restraints (8-foot segments, 40 ct./ box)
- Permaloc Brick Block Restraint Spiral Spikes (250 ct./box)

### **RUBBERSIDEWALKS & ACCESSORIES**



**MATERIALS PROVIDED BY TERRECON, Inc. (Terrewalks® order):**

- Terrewalks® Modular Pavers (24" x 30" x 1-7/8", 37 pounds each)
- Permaloc Brick Block Restraint Spiral Spikes (250 ct./box)

**TERREWALKS® & ACCESSORIES**



**Optional Finishing Materials:**

- Stabilized Pathway Sand or Silica Sand (minimal abrasive properties)
- Gray Concrete & Mortar Filler and Sealant (DAP or similar)
- Backerod (closed cell foam cord)



### Installing Rubbersidewalks & Terrewalks requires the following steps:

- 1) Break out existing concrete (use jackhammers near trees; no backhoes)
- 2) Tree root inspection
- 3) Excavation of trench to 4"-6" depth & compaction of soil (without damage to tree roots.)

#### CONSULTING ARBORIST REQUIRED

#### Soils Engineer required to evaluate soil quality and stability

- 4) Base Layer geotextile placed on top of soil
- 5) Base material laid and prepared
- 6) Leveling layer base material laid and prepared

#### INSPECTION REQUIRED (5&6)

- 7) Geotextile laid on top of screeded leveling layer, and secured
- 8) Place & connect Rubbersidewalks™ pavers
- 9) Place and secure Permaloc paver restraints

#### 10) CUSTOMER INSPECTION AND SIGN OFF

### STEP ONE – BREAK OUT



- Break out existing concrete. If Rubbersidewalks™ is to be installed within existing hardscape leave in place two inches of concrete on each end. For instance, if spec for Rubbersidewalks™ is 20 feet, break out 19 feet 8 inches. This allows a final cut to take place during installation to accommodate the variables in recycled rubber materials.
- If Rubbersidewalks™ is to be book-ended by a fresh pour of concrete this rule does not apply. It is easiest to finish Rubbersidewalks™ within fresh concrete on at least one end.
- Use jack hammer near trees. NO BACKHOES. Do not use a backhoe near trees or tree roots, as it can damage them.
- On sides, clear additional 3" per side to accommodate restraint flange. Flange goes outward unless next to curb or wall. Flange is 1/8" thick.



**STEP TWO – TREE ROOTS**

**ARBORIST INSPECTION REQUIRED**



**(TREE ROOTS CONTINUED)**

- Access need for tree root trimming. Work with consulting arborist.
- Trim roots as little as possible. Roots do not need to be cleared to 4” depth.
- Roots can be left intact up to 1.875” from grade (flush to base of paver.)
- Directional root trim when necessary.

**TREE ROOT INSPECTION**

<b>DATE:</b>	<b>CONSULTING ARBORIST:</b>
<b>SPECIES OF TREES:</b>	<b>AGE OF TREES:</b>
<b>CONDITION &amp; HEALTH OF TREES:</b>	
<b>ROOT INTERFERENCE with INSTALLATION (Describe):</b>	
<b>CUTTING REQUIRED (if yes Describe):</b>	
<b>CUSTOMER/ARBORIST INSPECTION SIGNATURE REQUIRED:</b>	

**STEP THREE – TRENCH PREPARATION, NATIVE SOIL (& LAYER ONE GEOTEC)**

- Excavate to at least 4” or more if depth can be achieved without damage to tree roots; (Depth contributes to increased permeability and stability.)
- Rough grade native soil at 5” to 6” (recommended) below finish and compact with vibra plate. Use caution when working around tree roots.
- Follow Soils Engineer evaluation regarding need for French drains, sheet drains or other method for drainage.



### STEP FOUR

- Place first layer of geotextile. This is essential to keep native earth from flowing into the crushed rock layer and compromising the installation. Geotextile is 12.5' wide. Using scissors or cutting tool, cut width according to the width of installation plus 6 inches. Cut length flush on end sections where butted against existing concrete.



### STEP FIVE – BASE PREPARATION - LOWER LAYER



**THE KEY TO SUCCESS IS IN BASE MATERIAL AND BASE PREPARATION!**



Class 2 permeable base illustrated

Set string lines to base installed height: 1-7/8" below finish grade.

Take special care around tree roots. Protect with geotextile as needed.

Apply 2-1/2"-6" layer of Class 2 Permeable base (preferred) or 2-1/2"-6" layer of 3/4" Crushed Aggregate Base. Distribute & compact.

Set string lines to finish grade.

Apply 1-1/2" layer of 1/2" Crushed aggregate rock. Compact and screed

Compact each lift to 90%.





**STEP SIX – BASE PREPARATION - LEVELING LAYER**

**INSPECTION REQUIRED**



**BASE INSPECTION REPORT:**

<b>DATE:</b>	<b>INSPECTED BY:</b>
<b>LAYER ONE GEOTEXTILE PLACED:</b>	
<b>Lower Layer BASE MATERIAL USED:</b>	<b>COMPACTION:</b>
<b>Leveling Layer BASE MATERIAL USED:</b>	<b>COMPACTION:</b>
<b>DRAINAGE ISSUES (if yes, Describe measures taken):</b>	
<b>SIGNATURE REQUIRED:</b>	

**STEP SEVEN – LAY & SECURE TOP LAYER GEOTEXTILE**





- Geotextile is 12.5' wide. Using scissors or cutting tool, cut width according to the width of installation plus 6 inches. Cut length flush on end sections where butted against existing concrete.
- Place geotextile on top of sub-base extending edges by three inches on each side.
- Temporarily stake/spike geotextile to soil on either side of bed, cinching fabric tautly. Be careful to not stake into tree roots.

END OF BASE PREPARATION SECTION



## LAY & CONNECT RUBBERSIDEWALKS™ PAVING TILES

- Using self-gripping dowels, put two pavers together to create one horizontal pair (4' wide or 5' wide depending on site). You must make pairs first, then attach to next set of pairs, etc.
- Insert dowels into remaining face of each pair (4 dowels).
- Put second pair together, then slide onto first pair. Mallet or hammer to tighten seam. Tighten seams as you go. (Occasionally dowel holes need to be worked, or cleared out.) Continue along site.

Seam width: 1/2" is too large, 1/16"-1/8" is ideal. Due to the inconsistent nature of recycled tire rubber, variables of up to 1/4"+ are possible, or yield a part slightly off-square. This may require 'jogging' of pavers, or swapping out one for another to make a better fit.





- If sections are butted against existing concrete on one end, do open-side last. If sections are butted against existing concrete on both sides, do concrete-end sections first, then work an inner pair into place.
- Dowel-end sections into existing concrete.
- Joined pavers can be lifted and dowel-fit into next paver but some cold joints will be required.
- Pavers facing hardscape, for instance a curb, should be doweled in, using one dowel per paver.
- Walk on and check each paver. Make sure pavers are at same height of existing concrete. Make sure no drop out exists underneath. Make corrections as needed.

Remove remaining wooden form, and remove temporary stakes.

When working on installations of three or more tiles in each set width, it is recommended to assemble these on a sheet of geotextile, then slide set into position to join previous doweled set.

Walk on and inspect each Rubbersidewalks™ paving tile. Make sure all are at the same height of existing concrete, and that no drop-outs exist in the sub-base underneath. The plate compactor may be used over the top of installed paver tiles to level-out the finish





## STEP NINE – LAY & SECURE PAVER RESTRAINTS

- Lay rails of Permaloc Brick Block paver restraints flush along outer edges of placed pavers with flange facing outward. (Do not use substitute paver restraints.)



- Drive spiral spike through hole in flange and into ground every 24" Make sure spike catches both layers of fabric. Do not drive spike into tree roots.



- On outer edge, at approximate midpoint of each paver, drill a 1 1/32" hole, 1 1/2" deep, through restraint and paver (one hole per paver.) Tap in a self-gripping dowel, leaving 1 1/2" of the dowel sticking out & exposed. Exposed dowels will be covered by replaced soil, and make maintenance easier. Replace soil along sides.

## FINISHING



Existing concrete is rarely at a perfect right angle, which may result in gaps. Also, pavers may have slight variations. Gaps can be filled with silica, or with concrete/mortar filler and sealant.

## SPECIAL CONDITIONS – CUTTING PAVERS

Rubbersidewalks™ may need to accommodate a curve, radius, tree well or other unique need.

Rubbersidewalks™ pavers can be cut in the field using a ripping black (Skill Saw, worm drive) while spraying with soapy water.



Make sure to have a bottle of Simple Green soap handy, to lubricate the blade and keep down heat and smoke.

Cutting is made easier by placing a wood plank on top and bottom of paver. It is often easier to cut the paver in passes, after a top cut, flip the paver over and make an aligned bottom cut.

Rubbersidewalks™ can be cut for light poles and parking meters, making room for irrigation lines, creating radii, and jogs for tree wells. A notch can be routed in the bottom of the paver to fit over tree roots.



### SPRINKLER HEADS

Sprinkler heads placed close to the edge of the bed may require leaving a space between restraints (cut restraint, as needed.) This will not affect the stability of the installation.



### SPRINKLER PIPES

If pipes are laid in such a way that the spikes will hit them, you will need to turn the flange inward. This may require trenching a 3" x 1/4" area to accommodate the flange. The paver must be installed flush to the base.



### Cleaning Pavers

Rubbersidewalks™ may be cleaned using the same methods as concrete. Sweep, **light** spray wash or mop, or steam clean.







Thank you from TERRECON, Inc.





**ONE PAGE INSPECTION SHEET**

**CUSTOMER:** \_\_\_\_\_ **DATE OF COMPLETION:** \_\_\_\_\_

**CONTRACTING COMPANY:** \_\_\_\_\_

**TREE AND TREE ROOT INSPECTION:**

<b>DATE:</b>	<b>CONSULTING ARBORIST:</b>
<b>SPECIES OF TREES:</b>	<b>AGE OF TREES:</b>
<b>CONDITION &amp; HEALTH OF TREES:</b>	
<b>ROOT INTERFERENCE with INSTALLATION (Describe):</b>	
<b>CUTTING REQUIRED (if yes Describe):</b>	
<b>INSPECTION SIGNATURE REQUIRED:</b>	

**BASE INSPECTION:**

<b>DATE:</b>	<b>INSPECTED BY:</b>
<b>Bottom Layer BASE MATERIAL:</b>	<b>COMPACTION:</b>
<b>Leveling Layer BASE MATERIAL USED:</b>	<b>COMPACTION:</b>
<b>DRAINAGE ISSUES (if yes, Describe measures taken):</b>	
<b>SIGNATURE REQUIRED:</b>	

**FINAL INSPECTION - CUSTOMER INSPECTION REQUIRED**

<b>Date:</b>	<b>Inspected by:</b>	<b>Title:</b>
<b>No damage to tree or tree roots:</b>		
<b>Proper sub base and base materials:</b>		<b>Drainage:</b>
<b>Sufficient compaction:</b>		
<b>Good layout and appearance; clean cuts:</b>		
<b>Majority seams connected with dowels:</b>		
<b>End pavers doweled to hardscape or recast:</b>		
<b>Rails spiked in and doweled to pavers:</b>		
<b>Authorized Customer Signature Required:</b>		

**FAX SHEET TO 714 964 8600**