



Installation Manual 2023



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Before You Start

This installation manual is designed to assist the professional installer by presenting them with the unique characteristics of Protect-All flooring products and Protect-All installations.

Protect-All flooring installation requires safe work habits in a safe environment. Installers must review and follow all safety and health information available such as Safety Data Sheets (SDS), labels, instructions, specifications and other pertinent publications.

The installation of Protect-All must be performed by a professional flooring installer familiar with the unique characteristics of Protect-All, local building codes and ASTM Standards. The professional installers must have at least two years of commercial flooring experience. Before installing Protect-All flooring, professional installers must attend and pass the Protect-All flooring installation training class prior to a Protect-All flooring installation.

Contact Protect-All Flooring at 800.544.9538 for complete details.

Tools and Equipment

The professional installer must have all of the standard tools and equipment needed for testing and preparing the subfloor/underlayment, floor layout, mixing and spreading adhesives, power grooving, installing homogeneous vinyl sheet flooring, base, corners and metal transitions trim.

General flooring tools for all Protect-All installations

- Electric seam groover capable of handling a 4.7 mm blade (Wolff® Master Groover or Leister®)
- Skiving trim knife and sharpener
- Oscillating multi-tool with Imperial 505 blade
- Electric or battery-powered drill
- Straight-cut tin snips
- 1/8" x 1/8" x 1/16" V-notched trowel
- 1.5 – 2 horsepower wood plunge router with 3/4" straight bit
- 12" metal framing (speed) square
- Metal paddle mixer (for the 2-part adhesive)
- Caulking gun
- Gorilla Tape® – or equivalent
- Under scribe tool or white chalk
- Electric hammer drill w/masonry bit
- Hammer
- Metal rasp
- 6' metal straight edge

Unique tools required for Protect-All Rapid Weld

- 4.7 mm (3/16") width grooving blade for optimal seam characteristics.
- Protect-All Rapid Weld dispenser kit with rechargeable batteries and charger
- Protect-All Rapid Weld seam tool and 3-in-1 base tool (included in dispenser kit)
- Mixing nozzles and Protect-All Rapid Weld Tape
- Teflon roller

Subfloor Preparations

Interior and Exterior Preparations

Install Protect-All flooring over structurally-sound, clean, dry, concrete or concrete board (1/2" minimum), or underlayment grade plywood. Installation over existing flooring is covered on Page 7 in this manual. Installing over other substrates and/or existing finishes is at the sole discretion of the professional installer and end user.

NOTE: Protect-All flooring is not recommended to be installed over gypsum-based subfloors, underlayment or fillers.

Concrete Floor Preparations

All on-grade and below-grade concrete floors must have an existing vapor retarder of 10 mil/0.010 in. installed below the slab. Consult the following standards: ASTM E1745-97, ASTM 2170-11, 1643-11 and ACI 302.1 R-15 (www.astm.org and www.concrete.org).

The concrete subfloor must be clean, dry, smooth, structurally sound and free of any foreign substances. Paint of any type, varnish, oil, wax, stain and old adhesive residue must be removed. The substrate must be flat (F_c20) and level (F_l15), except for sloping to drains. A concrete surface profile (CSP) may also be needed, keeping the CSP at 1-2. Prior to the installation, the floor must be swept and shop vacuumed to ensure all dust has been removed.

Rough, uneven, score marked and structurally sound cracked concrete should be flattened and smoothed using the appropriate filler. Fillers and leveling compounds must be of a non-gypsum, cementitious type and be moisture, mildew and alkali-resistant. The leveler must have a minimum of 3500 psi. The type of cementitious leveling compound to use is at the discretion of the installer and end user.

NOTE: Cement type underlayment boards (minimum 1/2") can be used under Protect-All flooring as long as it is installed according to the manufacturer's full recommendations and must be a minimum of 3,500 psi.

I. Relative Humidity Requirements

The adhesive for Protect-All flooring requires an RH (Relative Humidity) of 95% or less. The requirements for RH testing are to conduct three separate testing areas within the first 1,000 square feet and one test every 1,000 square feet thereafter. Suspended concrete floors must meet the standard criteria as on-grade concrete floors.

RH Test – Required

PH Test – Required results: 8 to 10

PSI – Required: Minimum of 3,500 psi

II. Adhesion Test

If the RH test is 95% or less, a final adhesion test is required. Concrete curing or drying compounds can reduce the adhesion of Protect-All specified adhesives. Removal of these products is required prior to adhering Protect-All flooring. The adhesion test consists of a 12-by-12-inch piece of Protect-All adhered using the appropriate subfloor preparations and the PA-295 two-part urethane adhesives.

If after 72 hours the 12-by-12 piece is completely bonded, the concrete subfloor is satisfactory for a Protect-All installation.

III. Control Joints or Other Non-Moving Joints

Vacuum clean the joint and fill with cement-based patch. Ensure the area has been sanded flat, is clean of dust and debris and properly cured before applying adhesive. An elastomeric compound can also be used.

Expansion joints or other moving joints are not recommended to be bridged, even with an ECB membrane. A joint cover strip should be used, keeping both sides of the joint free to move independently.

IV. Moisture Mitigation

If high Moisture Vapor Emission Rates (MVER), relative humidity levels or alkalinity levels exist, a surface-applied vapor reduction system will be needed. If a moisture reduction system is chosen, it must be covered with a cementitious skim coat at a minimum strength of 3,500 psi when fully cured. The selected manufacturer, and not Protect-All, must do any compatibility testing with Protect-All and PA-295 urethane adhesives.

The moisture or vapor retarder performance and warranty are solely the responsibility of the manufacturer, end user and installer.

Moisture Mitigation products must be a two-part system for proper adhesion with Protect-All adhesives.

Follow the manufacturer's guidelines for installation and perform a bond test prior to installation of Protect-All flooring.

Radiant-Heated Floor Preparations

Protect-All flooring may be installed over radiant-heated floors provided the maximum temperature of the floor does not exceed 85 degrees and maximum water temperature does not exceed 110 degrees. Ensure radiant heated floors are turned off 48 hours before installation. After 48 hours, turn on heat gradually at 5-degree increments to avoid overheating.

Wood Floor Preparations

Below-grade plywood installations are not recommended.

Marine-grade plywood of 3/4" thickness is recommended for the finished subfloor or underlayment in cooler and freezer areas.

Oriented Strand Board (OSB), strip wood, solid board or plank-type subflooring will require covering with a suitable underlayment. Wood underlayment must be structurally sound and designed for resilient flooring. Protect-All flooring can be installed over suspended wood subfloors. Panels must be clean, free of any dirt, wax, oil or adhesive residue. All wood underlayment or subfloor must be properly fastened at the joints and free from movement. Reference the most current version of ASTM F1482, Standard Practice for Installing and Preparation of Panel Type Underlayment to Receive Resilient Flooring.

NOTE: Luan products are not recommended for use under Protect-All flooring.

Metal Floor Preparations

Metal surfaces can be abraded to achieve adhesion. Another option may be to apply a 3/4" marine-grade plywood or 1/2" concrete board with a bond test prior to the installation of Protect-All. Diamond plated floors with an embossed pattern will telegraph through Protect-All when applied directly without a proper skim coat.

Repairs

The following guidelines must be met to perform a successful repair.

- I. The existing subfloor must be clean of any foreign substance to ensure a proper bond.
- II. The substrate must be dry, and a moisture test must reveal an RH of 95% or less.
- III. Remove existing sheets up to and including the affected area where the repair is to be performed. The seamed area needs to be completely free of grease or contaminants.
- IV. New sheets of Protect-All must be fully adhered with an approved adhesive.

- V. Prior to applying Protect-All Rapid Weld, hereafter referred to simply as “Rapid Weld”, to seams, existing sheets must be cleaned of all residue.
- VI. Sheets must be re-seamed with Rapid Weld and allowed to cure.

If any or all of these conditions cannot be met, there is a high probability of failure.

Existing Floors

Protect-All highly recommends the complete removal of the existing flooring down to the subfloor for assurance of a structurally sound substrate and to ensure satisfactory adhesion of the recommended adhesives. Protect-All will not be responsible for any product failure caused by subfloor related issues.

In certain circumstances it may be possible to install over an existing floor with the following steps taken to ensure a proper bond:

- I. Moisture testing must be done in accordance with the appropriate ASTM standards. Partial removal of the existing flooring may be necessary to achieve accurate results.
- II. Existing quarry tile, ceramic tile, terrazzo and porcelain tile must be sound and without cracks or lifting, and the grout must be intact.
- III. All paints, sealers and existing epoxy finishes must be removed by mechanical measures such as bead blasting or scarifying. The use of chemicals is not recommended, as the residue could adversely affect the bonding process.
- IV. A suitable cementitious self-levelling compound must be used to completely encase the existing floor, and make flat all depressions and grout lines. The patch must cure to a minimum of 3,500 psi.
- V. VCT, sheet vinyl and cushioned vinyl of any sort are not recommended to be installed over, and must be completely removed.

The responsibility of determining if the existing subfloor is suitable rests solely on the installer and flooring contractor. Protect-All reserves the right to decline a warranty request if we deem the following steps weren't done properly when installing over an existing floor. When in doubt it is best to remove the existing floor.

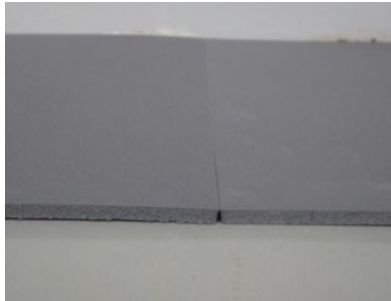
Installation of Protect-All Flooring Full System

The installation should not begin until the work of all other trades has been completed. If the job requirements do not permit this, cover the floor with plywood or OSB to protect the subfloor, adhesive and Protect-All flooring before, during and after installation.

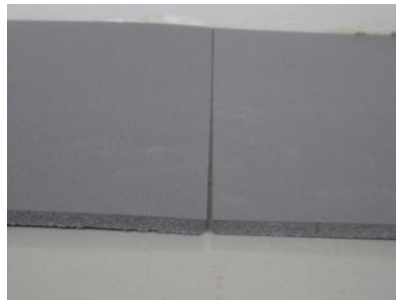
It is important a job only uses flooring from the same dye lot number to ensure a consistent color. Protect-All flooring is made from 90% recycled content and each dye lot batch can vary in color. Each sticker has a batch number indicating the run date.

Install the flooring material with a tight fit, ensuring no more than a 1/16" tolerance to walls and all penetrations at all times. Do not allow gapping or voids between the seams.

Rapid Weld is not designed to fill voids in seams. (See additional instructions for Loose Lay Installation.)



Correct: Cut sheets tight without gapping



Incorrect: Gap in Protect-All seam

Sizes

The 24" square cut tiles have a mark on the side of the tile indicating the machine direction. A square notched trowel size 1/16" x 1/16" x 1/16" is recommended for 24" square tiles.

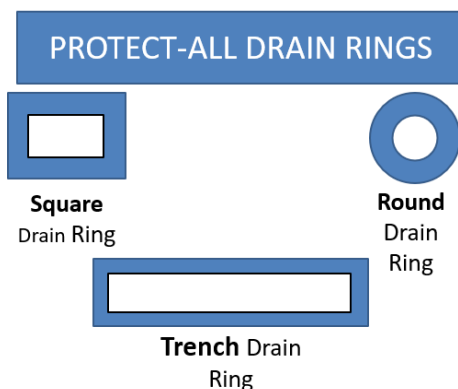
The 5' x 8' and 5' x 5' sheets must be laid out to eliminate four-corner seams. A staggered joint of 48" is recommended. Determine the best layout to utilize larger pieces at termination points.

Drain Ring Information

It is important to keep seams from going through drains.

Stainless-steel drain rings are to be purchased from Protect-All using the Drain Ring Order Form, and are custom ordered for each job.

Drain rings should be ordered two-to-three weeks prior to the start of any job. Do not rely on the specs or drawings, as many drains will be slightly different in actual size.



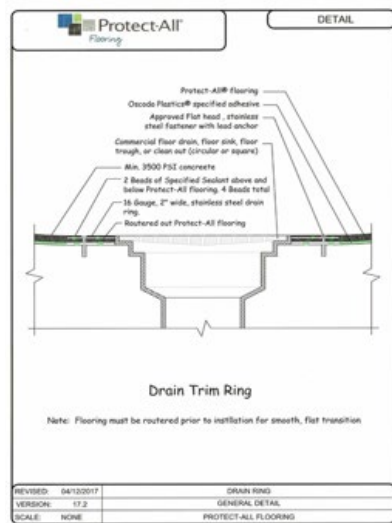
Measure the drains on-site. Add 1/8" to the diameter of round drains and 1/8" to the outside of both measurements on rectangle or square drains.

Stainless-steel drain rings are required on 1/4" material to be installed around all floor drains, floor troughs, unelevated floor sinks, trench drains, cleanouts and any floor penetration of 3" or greater.

All stainless-steel drain rings have a 2" frame.

Floor drains, of any type and size, must be properly sloped before applying Protect-All flooring.

Drains, fixtures or casings should be set 1/4" higher than the subfloor, as this will ensure the drain and Protect-All are flush at the surface once the floor is installed.



Drain Ring Installation

Once the floor has been dry laid, locate the drains by using a piece of chalk, outline the edge of the drain opening. Lay the Protect-All back into the area where the drain is to be cut and tap on the material to get a transfer of the chalk onto the backing of the Protect-All flooring. This will give you an accurate template where the drain meets the material.

An under-scribe tool can also be used for this procedure.

Once the drain is cut, move the Protect-All sheet to a flat, even surface. Place the drain ring around the drain and scribe the Protect-All 1/4" flooring, being careful to only cut an 1/8" depth to match the thickness of the drain ring to be inserted.

Using a router, milling for these drain rings must take place prior to adhering the flooring to the substrate.

Set the depth of the router with a 1/2" or 3/4" straight bit so the top of the drain ring is slightly below the top of the finished floor by about the depth of a credit card. By doing this, it allows enough space for E6100® sealant to fill the gap when the drain ring is permanently installed.

Practice milling with the router on scrap pieces first.

Using a permanent marker or chalk, make a mark approximately 3/16" around the inside circumference of the scribe cut. This line will be used as a "Do not cross" line to assist when using the plunge router.



Dotted line / Chalk line drawn



Using an angled skiving knife



Skiving Knife



Oscillating blade multi-tool

After using the router to cut a relief or recessed area, use a bent skive knife to slice the remaining uncut material from the relief. Keep the knife flat and level with the flooring to help against cutting through the fragile routed area. An oscillating multi-tool can also be used, which is beneficial when working with square or rectangle shaped drains to more easily cut the corner material.

Once the skiving is complete, use a wet/dry vacuum to remove any loose debris. Place the drain ring inside the routed area to check to make sure the drain ring fits.

Place the sheet of Protect-All into the area where it is to be installed.

The drain rings will be permanently installed once the sheets are glued.

If installing on a concrete subfloor, you will need to drill holes using a hammer drill and place lead anchors into these holes.

The area around the drain that the adhesive was intentionally left 1" away from the opening will now get adhered with a generous bead of E6100. To complete this process, simply lift the exposed edge of the Protect-All with a hook knife or putty knife.



Squeeze E6100 underneath the flap and press with a hand roller to ensure the adhesive spreads underneath. Clean excess with a damp cloth.

In the final stage of the drain ring installation, place two rings of E6100 in the area where the ring will be placed. One ring should be on the outside of where the predrilled holes are, and one on the inside of these holes. You will need to secure the drain ring with #12 1/4" stainless-steel screws.

Adhering Protect-All

Adhering Protect-All flooring can begin after the floor has been laid out, and drain rings and transition strip reliefs have been cut. Be sure to use Protect-All specified adhesives for gluing the flooring.

I. Adhesive Information

Current specified adhesives for use is PA-295. It is low VOC, solvent-free and non-flammable. PA-295 is available only in two-gallon units and will cover 160 sq. ft. with the appropriate trowel. PA-295 is an urethane-based, two-part adhesive with a 1.5-quart hardening additive. Mixing should take place over a large disposable tarp.

The adhesives are packaged in separate containers marked Part A and Part B. Empty the complete contents of Part B into Part A. Mix using a rotary motion while at the same time lifting from the bottom until the entire contents have been mixed thoroughly and the color is uniform (no streaking).

Pot life is approximately 45 minutes at 70 F (21 C).

PA-295 cures after approximately 12 hours. Normal traffic can be allowed after this time.

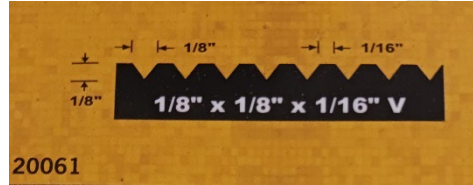
Recommended trowel size: 1/8" x 1/8" x 1/16" V-notch up to 80 sf/gal.

PA-295 is VOC compliant with no chlorinated solvents. It is also nonflammable and has a shelf life of two years. More information on all Protect-All adhesives can be obtained through our website, or by calling the Technical Department at 800.544.9538.

Open Times	30% RH	50% RH	80% RH
50°F /10°C	90 mins	90 mins	90 mins
70°F/21°C	75 mins	75 mins	75 mins
90°F/32°C	60 mins	60 mins	60 mins



PA-295 Part A and Part B



II. Adhering Protect-All

Leave a void around the drain of 1" in circumference. When spreading the glue up to the drain, use the top of the trowel and "race track" the beads of adhesive surrounding the drain. This will give an added amount of protection if water does penetrate past the drain opening. The circular bead will help to contain the water from spreading out into the rest of the sheets.

Before laying sheets into adhesive, inspect for any air bubbles that may have occurred during troweling. Pull the Protect-All sheets back at the seams to apply adhesive onto the substrate. Using an 1/8" x 1/8" x 1/16" V-notch trowel, apply the adhesive with beads in a single direction with no swirls.



Always have a bucket of warm soapy water available for spills and clean-up. Excess adhesives on top of Protect-All must be removed immediately.

NOTE: Cured adhesive cannot be removed from the sheets.

Roll the surface of the floor within 15 minutes of setting into the adhesive using a minimum 100-pound roller, and again 45 minutes to one hour later. Rolling should begin in the middle of the sheets moving out toward the seams. Adhesive that oozes up through the seams must be cleaned immediately.

All seams must remain tight. The use of Gorilla Tape or an equivalent tape at perpendicular angles across the seams will help ensure this.

The adhesive must be allowed to set according to the recommendation by Protect-All Flooring before welding can begin.

Grooving Seams

Protect-All seams of 1/4" must be grooved at depth of 3/16" using an electric power groover with a blade width of 4.7 mm for best results.

The finished groove must be positioned so the material is removed equally from both sides of the seam.

When grooving the cross seams, it is suggested you treat the "T" intersection between the cross seam and the long seam as though this is a wall. If placing the groover in an attempt to start exactly at the intersection, the blade may catch and kick back. This will permanently damage the adjoining sheet and it will need to be replaced. This is not an easy fix because of the flooring already being installed with a two-part epoxy adhesive.

Seams the power groover cannot reach must be hand-grooved using a utility knife and straight edge. Ensure the hand-grooved seam is of the same depth and width as the power grooved seam.

Clean the groove by removing any debris next to, and inside the groove using a wet/dry vacuum prior to applying the Rapid Weld.



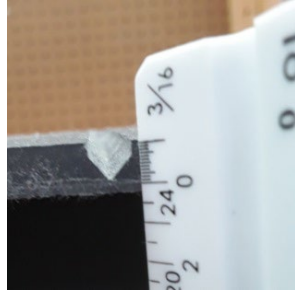
Rear wheel of groover



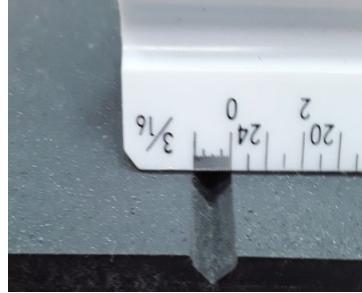
T seam using groover



Power groover



Proper groove depth



Proper groove width

Protect-All Rapid Weld

I. Storage and Warming Recommendations for Rapid Weld

It is possible Rapid Weld may not dispense correctly because of colder temperatures. The cause of the cold condition can range from shipping conditions, material stored in unheated warehouses and being stored on cold concrete even in a warm building.

Through extensive testing we have determined if Rapid Weld is warmed correctly and thoroughly it will perform as expected when dispensed as instructed in our installation manual. In order to sufficiently warm Rapid Weld the following steps should be followed to ensure the best results:

- a. Store Rapid Weld in a dry, warm location between 65 and 75 degrees Fahrenheit, and it should not attain a temperature higher than 120 degrees.
- b. Inspect Rapid Weld before installation to determine if it is ready to be used. The Rapid Weld should flow freely in a paste-liquid state with a shiny glossy appearance when purged before attaching the mixing nozzle.
- c. If Rapid Weld texture is lumpy or chunky, thoroughly warm Rapid Weld in a warming bag for two-to-three hours in accordance with the manufacturer's instructions. Contact your Regional Sales Manager for details and availability on purchasing a Warming Bag from the Protect-All distribution network. The warming bag will allow you to warm up to six Rapid Weld cartridges at once. Cartridges should be warmed throughout, not just the exterior of the tube.



Warming bag holds six Rapid Weld tubes

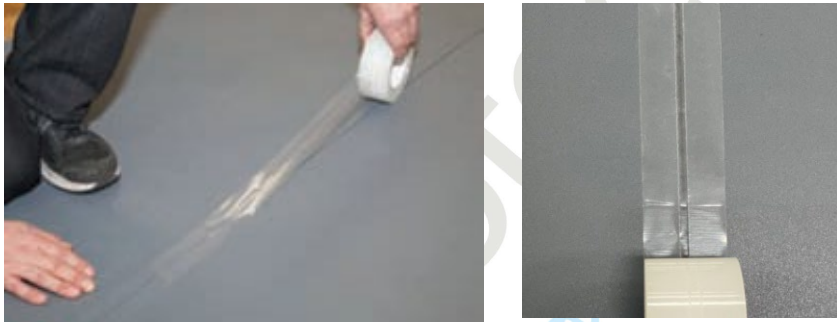
- d. **NOTE: Rapid Weld must not be warmed in a microwave oven for any reason.**
- e. We recommend you test Rapid Weld a couple of days before you start the installation so it will be ready to install when you are.

More information on Protect-All Rapid Weld can be obtained through our website, or by calling the Technical Department at 800.544.9538.

II. Applying Protect-All Rapid Weld Seam Tape

Apply the Protect-All Rapid Weld Seam Tape so it is centered over the groove. If the perforated section is not centered, it can result in an improper finished weld, leaving a ridge of Rapid Weld on one side or a gap on the other. When taping an end seam, be sure to tape both ends to eliminate any Rapid Weld from getting on the surface of the Protect-All flooring.

1. Apply Protect-All Rapid Weld Seam Tape over a groove.

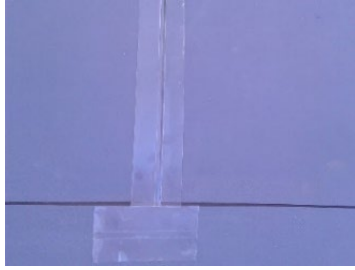


2. Seal the tape to the floor using a small hand roller.



3. Remove the perforated center of the tape.

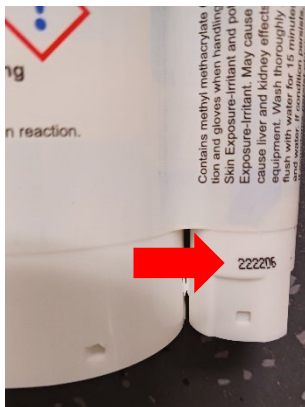




Proper taping of a cross seam.

III. Cartridge Preparation

Verify the expiration date of Rapid Weld before using by adding one year from the given production date. To determine the age of the cartridge, the date in Julian form will be printed at the bottom of the smaller connected tube. Cartridges have either six or nine-digit numbers. For six-digit numbers, the first three digits signify the year, and the last three indicate the day of the year it was produced. For nine-digit numbers, the first three numbers indicates the day of the year. The very last number after 91818 signifies the year.



222 represents 2022, 206 is the 206th day of the year.



203 means the 203rd day of the year, the 2 means 2022



Dual Drive Rapid Weld dispenser

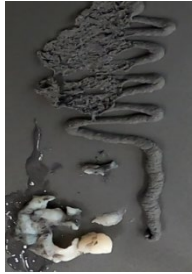
IV. Loading Dispenser

To load the Rapid Weld dispenser, insert the 490 mL Rapid Weld cartridge into the dispensing gun with the small cartridge on top. Unscrew the end cap and remove the plastic insert.

When starting a new tube, use a piece of cardboard or scrap Protect-All to dispense the Rapid Weld until Part A (white) and Part B (color) flow from the end. The two parts will look shiny and smooth in texture. If the Rapid Weld appears matted and chunky, this could be an indication the cartridge may have gotten cold. Always purge an unused tube to inspect the material before use. While it is not recommended to be used for the seam if it is lumpy or chunky, it is not considered defective.



Correct: Purged Rapid Weld



Incorrect: Cold Rapid Weld

V. Application of Protect-All Rapid Weld

- a. Install the mixing nozzle and secure with the previously removed cap.



Cartridge inserted into dispenser

- b. Dispense the Rapid Weld onto a scrap of Protect-All or cardboard until a consistent color is achieved. Once this step has begun, you must continue to move product through the nozzle. The Rapid Weld is curing from the time the two parts begin mixing in the nozzle. Dispense Rapid Weld into the taped seam.



Rapid Weld dispensed into groove

- c. Once Rapid Weld is applied into the grooved seam or to the intersection of the base and floor to create a cove, smoothing of the Rapid Weld must always be completed immediately. If the consistency of the weld appears smeared or has a texture which looks like it has small lumps, it most likely is the result of being cold. Heating the cartridge for two-to-three hours in a warming bag will bring the Rapid Weld back to its intended state.
- d. Using the Protect-All Floor Seam Finishing Tool, immediately smooth along the uncured weld at a 20-degree angle with light pressure to smooth the seam. Correct pressure is achieved when a thin layer of Protect-All Rapid Weld is visible on the tape and there is a crown in the seam. To achieve a smooth finished weld, complete this step in one pass from start to finish.
NOTE: If the tape is clean after this step, too much pressure was applied with the seaming tool. Immediately remove the tape prior to the Rapid Weld curing.



Seam Finishing Tool



20-degree angle



Tape Removal

Remember to only apply as much Rapid Weld as can be smoothed with the Seam Finishing Tool in a short period of time, generally three-to-five lineal feet of seaming is recommended per interval.

Practice seams may be necessary to gauge your delivery. Generally, this process is best performed in teams of two or three installers. While one person is dispensing Rapid Weld into the seam, one is smoothing the Rapid Weld and one is removing the tape and cleaning any residue that has possibly spilled over onto the sheet with a damp rag.

When using Rapid Weld on the floor, it is recommended to weld the shorter (cross) seams first.

Overlap the Rapid Weld tape at the end of the seam to prevent it from spilling onto the Protect-All floor.

Starting in one corner of the floor (e.g. north/south east/west) will allow enough time to have a cured seam by the time you begin the long seams and will not affect the hardened intersection of the seam previously welded.

All foot traffic must remain off the Rapid Weld seams until a full cure has been achieved (usually 20 to 30 minutes).

Any uncured Rapid Weld can be removed from the surface of the Protect-All flooring using a clean, damp rag. **Cured Rapid Weld on the surface CANNOT be removed by cleaning agents or mechanical means.**

Protect-All Rapid Weld Repairs

There are several reasons a seam may need to be repaired.

- I. Excessive concave
 - a. Incorrect use of the seaming tool smoothing the Rapid Weld can cause a concave dip in the center of the seam. To correct this, always use the seaming tool at a 20-degree angle to the floor when smoothing. This allows the Rapid Weld to penetrate to the bottom of the groove while not allowing too much pressure to scrape it out.
 - b. There are three fixes to repairing this issue. If the seam looks as though there is a definite problem, use the rear metal side of the 3-in-1 tool to completely remove the Rapid Weld from the groove before it cures, wipe off any excess Rapid Weld from the groove and surrounding areas and repeat the seam process.
 - c. If only a small portion looks incorrect, allow the weld to cure, as long as there is no spillage outside the groove area and cut out the Rapid Weld using a straight edge and a utility knife. Reapply new seam tape over the area where the seam is to be repaired and dispense Rapid Weld into the affected area.
 - d. Smooth the new seam to blend with the existing seam and allow to cure for 20 to 30 minutes. If the existing seam is only concave with no other problems, apply seam tape and Rapid Weld to add an additional smaller amount of weld to fill the recessed area and smooth with the seam tool at the correct 20-degree angle.



Using a knife and straight edge for repairs

- II. Uneven application
 - a. Because of the length of seams being made, sometimes lifting the seaming tool is necessary to change direction or to wipe excess Rapid Weld from the tool. When this happens, it is common for irregularities in the appearance to occur in the form of high spots or smearing.
- III. Improper alignment of the Rapid Weld Tape.
 - a. Once the seam has been performed and the tape is removed, if the perforated center of the tape was misaligned, a ridge of weld could possibly cure higher on one side than what is expected. The other side would then have a void. It is important to note wherever the center perforation is removed, the Rapid Weld will be applied.
 - b. If any or all of these conditions exist, a repair is necessary. Cut out the Rapid Weld using a straight edge and a utility knife and reapply seam tape. Dispense Rapid Weld into the affected area and smooth the new seam to blend with the existing seam and allow to cure for 20 to 30 minutes.
 - c. It is not necessary to remove all of the affected material from the groove, as Rapid Weld will bond to existing Rapid Weld.

Be sure to always do a self-inspection of the seams before leaving the job site and repair any incorrect seams.

Cove Base Installation

I. Standard Cove Base

Protect-All currently offers 1/4" thick by 6" cove base in 30' rolls. Please check with your Protect-All distributor for availability of colors. If the color of Protect-All you are working with is not available in 30' rolls, cutting the base out of 1/4" sheet material will be necessary.



Turning 5' x 8' sheets into 6" x 8' strips

Join the seams of the base, hand groove the material after the base is installed on the wall. Use the same method as floor welding with Rapid Weld, only as a vertical seam to duplicate the appearance of a groove and seam made with an electric groover.

The flat base can be installed immediately adjoining the adhered sheets. Begin installing the base at a door jamb or straight wall and not on an outside corner. This is done because the base must be wrapped around outside corners in a continuous fashion.

In order to wrap outside corners with 1/4" material, cutting a relief on the back of the material is required at a depth of 1/8" and one-to-two inches wide. Create this relief by using a plunge router with a 3/4" straight bit and a straight edge as a guide.



Make a relief by cutting 1/8" deep relief on back

Adhere the base to the wall using a 3" or 4" band of acrylic, web-reinforced, two-sided tape. E6100 can also be used to glue cove base as you would with cove base adhesive, in an "S" pattern.



Using web reinforced tape



Using E6100

Immediately hand roll the base to smooth and set the adhesive or help the tape transfer to the wall.

II. Flash/Integral Cove Base

Protect-All can be flash coved. A 6" base is recommended for most installations, but can be made wider if necessary by cutting Protect-All sheets to the desired size.

When figuring the layout, make sure you leave no more than 51" from the second-to-last piece and the wall. This allows for 6" up the wall so scribing is possible to correct any wall irregularity.



Hand roller for use on base adhesive

Flash cove Protect-All by measuring down from the back side of the sheet which will be flash coved, making a mark on both ends of the sheet to draw a straight line.

Using a router and a $\frac{3}{4}$ " straight router bit, center the bit on the line and router the depth of half of the material thickness ($\frac{1}{8}$ "). To complete an inside corner, router a relief on both sides where the Protect-All is to be flash coved. Measure 6" down the back side of the Protect-All and draw straight lines using a straight edge.



Router the back side which is textured



Finished flash cove

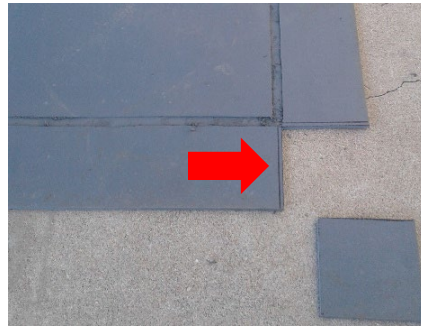
Where these lines intersect will be the inside corner. Do not route beyond the point where the lines intersect.

It is important to make up for any irregularity in the wall to add $\frac{1}{4}$ " extra material length on each side of the cut line.

Once cut, fold the lines together to form the inside corner.



Don't intersect relief



Corner cutout



Placed in corner

Outside corners will require a boot to one side of the corner.

The location of the boot should be in as inconspicuous an area as possible, usually where a cabinet or machinery will be placed.

The boot section should be 6" up the wall and at least 3" that connects with the floor. Adding an extra 1/4" over the 3" section will allow the ability to scribe the sections when being installed. (See arrows)

To install the boot into the floor, hand groove the seam with a straight edge and utility knife, matching the "V" groove produced by the electric groover.

Use Rapid Weld to bond the sections as you would with other seams.



Up close boot after weld



Cove Cap Installation

Protect-All cove cap is available in aluminum, PVC or stainless-steel. Cove cap is required at the top of the Protect-All cove base in wet applications.

The 1" flange on the cove cap should face down over the base unless the cap is being applied ahead of the wall tile or Fibre-Reinforced Plastic (FRP), in which case the 1" flange faces up. In this circumstance, the cap should be secured to the wall using E6100 and temporarily fastened with a cove cap screw spaced 10" to 12" apart, or where necessary to connect to walls. Pre-drill the holes using an 1/8" drill bit. Use screws and anchors appropriate for the wall type.

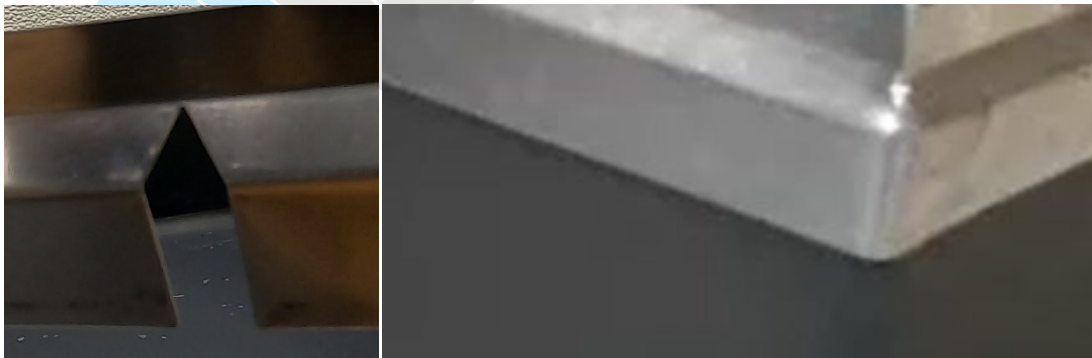


Pre-drill using 1/8" drill bit

Be especially careful when drilling into walls under sinks or other areas where concealed pipes could be damaged. Consult the plumbing diagram or plumbing contractor before mechanically attaching cap.

The cove cap is temporarily attached and fitted around both inside and outside corners. The corners can be ordered as factory pre-notched 2-foot sections, both inside and outside corners.

Cutting the cove cap can be done by using typical tin snips. Inside and outside corners can be custom cut on the job site by measuring to where the corner meets with the turn, and marked with a pencil or marker. Approximately 3/16" on each side of the mark, making a cut toward the bend of the cap.



Join the two cuts with a peak, before the second bend of the metal

Using this "house" method, the corners will wrap around the change in wall direction in a continuous piece.



Seal back of cove cap with E6100 before securing to wall



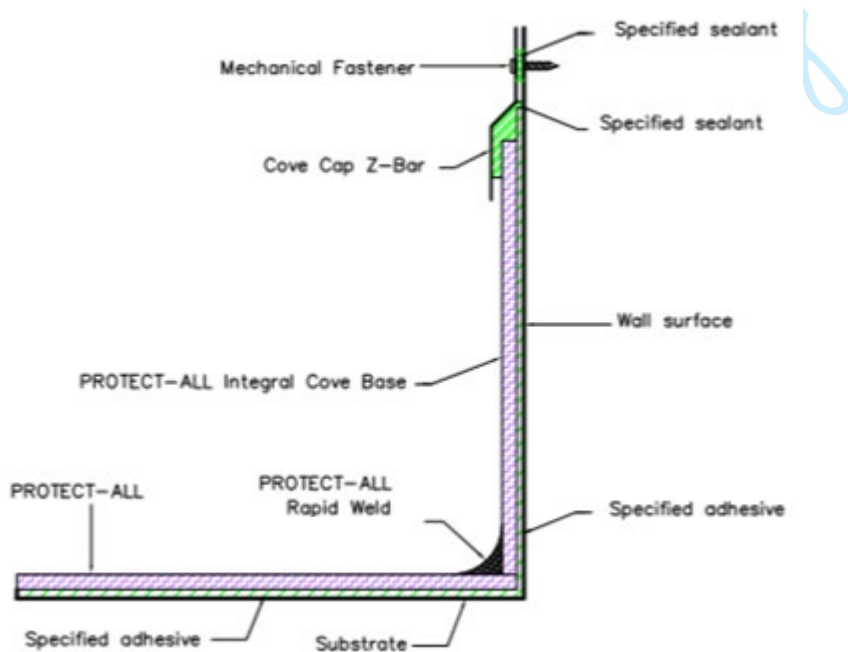
E6100 applied to top of base metal

Apply a generous 3/8" bead of E6100 on the top edge of the installed base.

A 1/4" bead of the E6100 should be applied to back of the 1/2" flange (facing up) that attaches to the wall for greater water protection.

Finish the cove cap by applying a small amount of E6100 to the finished inside corners.

Door jambs, fixed objects and floor penetrations, such as plumbing, electrical and condensation lines, must be sealed by applying E6100. Pre-clean the area using denatured alcohol on a clean rag to remove any dirt or oils prior to applying the E6100 sealant.



Corner Cove Welding

I. Corner Cove

Corner cove welding can begin once the cove base is attached to the wall and the cove cap is temporarily attached. Apply a continuous 1/4" bead of Rapid Weld at the 90-degree transition where the Protect-All base sits on the floor.



Apply 1/4" bead along seam of base and floor

Using the 3-in-1 tool, immediately begin to smooth the uncured Rapid Weld to create a minimum of 3/8" cove to transition the base and the floor.



Radius finishing tool

Adequate pressure must be applied to both the base and the floor with the head of the 3-in-1 tool to contain and control where the weld will go. If Rapid Weld is smeared outside of the cove area, it will need to be cleaned immediately with a damp rag. As stated previously, cured Rapid Weld cannot be removed.



Smoothing seam

II. Corner Cove Repair

The corner cove installed should be at least 3/8" in radius, as this is the requirement from health inspectors.

If the cove is less than 3/8" or is not smooth, simply repeat the same process with the 3 in-1 tool by going over the original cured corner cove.

Rapid Weld will always adhere to existing Rapid Weld.

Vertical Base Seams

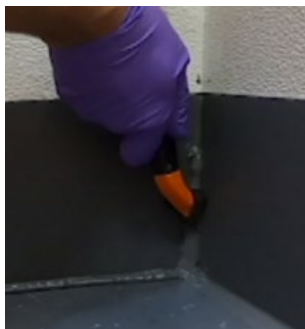
Once the Rapid Weld cures in the corner cove, vertical seaming for the corners can begin.

Remove the dry-fitted cove cap previously installed in the areas where the corners intersect to allow access to the top of the base.

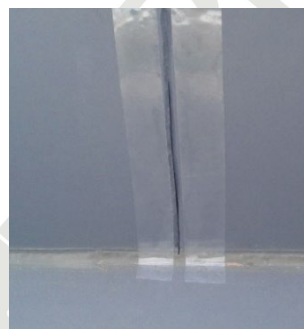
Using the same method as performing a cove, apply a 1/4" bead of Rapid Weld vertically into the area where the two pieces meet in the corner.

Use the 3-in-1 tool to smooth the Rapid Weld vertically to complete the process.

No Protect-All Rapid Weld Tape is required. Any excess weld must be cleaned with a damp rag before it cures. To join two ends of the base together, hand groove a vertical seam and use Protect-All Rapid Weld Tape as you would a normal seam.



Use 3-in-1 tool to make a corner weld



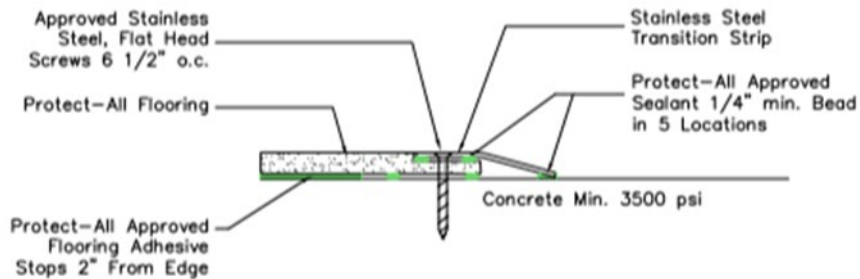
Use seam tool to hand groove the vertical seam

Stainless-Steel Transition Strips

Stainless-steel transition strips are required at locations where Protect-All transitions with another flooring type, or when it ends at the substrate.

Mill the Protect-All sheet to make level with the metal transition to be installed with the use of a router prior to setting the floor into the adhesive.

Using a straight 1/2" or 3/4" bit, cut a relief so the transition fits snugly into the cut area (see above description). Mechanically fasten the transition using stainless-steel screws and anchors the same as floor drains.



Corner Guards

After the cap has been replaced, install 4" corner guards on outside corners to protect them from damage. Before fastening with stainless-steel screws, insert E6100 into the screw holes and attach the corner guard.

Finishing the Installation

Finish the installation by applying a generous amount of E6100 to the door jambs and floor penetrations. Fixed objects such as plumbing, electrical and condensation lines must also be sealed by applying E6100 in order to make the installation watertight. Pre-clean the area using denatured alcohol on a clean rag to remove any dirt or oils prior to applying the sealant.

Light Commercial and Residential Installation

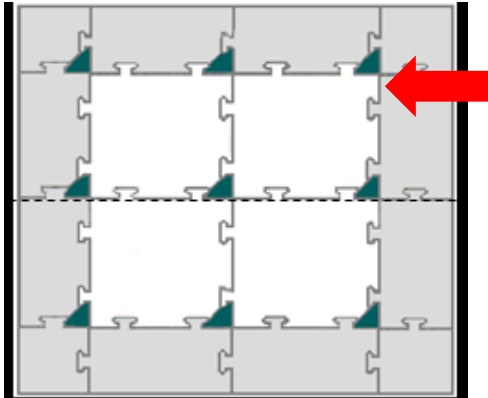
Loose Lay Installation

Protect-All sheets can be loose laid for temporary use as protection of other permanently installed floors, bare and sealed concrete or wood flooring. Loose lay installation should never be done in areas where there is heavy rolling traffic or in areas where floor drains are present.

Layout of the sheets should be done in an ashlar or brick style, leaving approximately 1/4" gap around the perimeter of the room. If Rapid Weld is used to join the sheets, groove the Protect-All with the same 4.7 mm blade and seam as you would fully adhered sheets. Keep in mind, once seamed with Rapid Weld they are permanently joined.

Interlocking Tile Installation

The 18" x 18" interlocking tiles must always be installed in a loose-lay fashion and oriented in the same direction following the corner with the arrow. The use of adhesives is not recommended. All standard floor preparations must be followed.



Measure the room and multiply width by the length to find its total area, (e.g. 12' W x 10' L = 120 square feet). Divide the total by 2.25 to get the actual number of tiles needed, (e.g. $120 \div 2.25 = 53.33$, round up to 54). A cutting allowance of seven to 10% must be added.

For best appearance, establish how the tiles are to be set out before starting the project. The arrowhead corner orientation must be maintained throughout the installation for proper fit and appearance (see diagram above).

- Find the center point of the room.
- Measure across the room and mark the center.
- Measure the room in the other direction and mark the center.
- Snap a chalk line across both center points, the intersection of the two lines (illustrated above as the dotted lines) is the center of the room.

Begin at the center and work out to each wall. Lay tiles in place until the walls are reached, maintaining the orientation of the arrowhead tile corners.



Cut-offs from one side of the room installation (up to 9" wide, for maximum border width) can be used on the opposite side of the room to complete the perimeter of the installation field tiles. (see illustration above, border shaded in gray).

Leave at least a 1/4" space at all perimeter walls to allow for expansion and contraction.

NOTE: Interlocking tiles can be installed in exterior applications. They are intended for dry, loose-laid applications and must never be used as a substitute for permanent flooring in any wet area or be permanently adhered or welded at the joints.

Seam Sealer Installation

To help protect light duty installations on Protect-All Gloss finish or Matte finish where Rapid Weld is not used or required, Oscoda Plastics® Seam Sealer can be used to seal joints of installed sheets or tiles. You will need:

- Oscoda Plastics Seam Sealer
- Clear packing tape
- Crain 460 applicator

Prior to seaming, make sure all seams are clean and free of adhesive and dirt. Inspect the flow of the seam sealer from the applicator before attempting to seal the seam. Do not shake the can of Seam Sealer or the applicator before use as it may create air bubbles in the seam.

Apply packing tape lengthwise on the area to be seam sealed. **Do not use Protect-All Rapid Weld Tape because of the aggressive adhesion which may damage the gloss finish.**



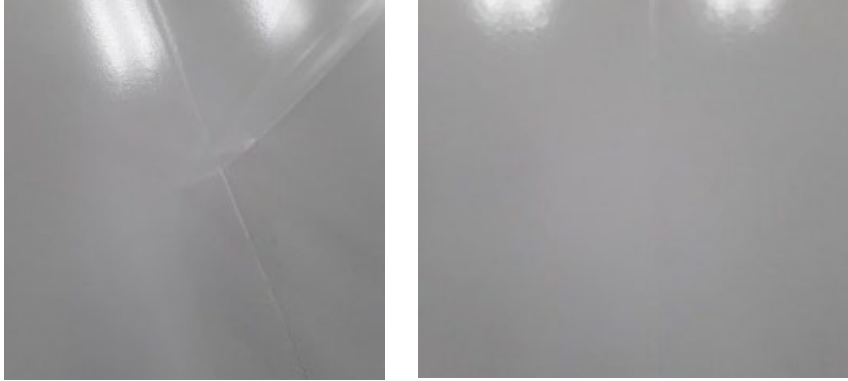
Cut through the applied tape

Crain 460 Applicator

Seam sealer tip

Apply sealer

Using a Crain 460 seam sealer applicator, apply the seam sealer into the cut line of the packing tape, allowing the sealer to penetrate into the two separate pieces of Protect-All material. Remove the packing tape and discard.



Protect the seamed area from dust, dirt and traffic for two hours. Curing time may vary depending on site conditions. Re-inspect the joint and fill any areas that may have been missed using the same method as before.

1/8" Protect-All Installation

1/8" Protect-All should be installed in the same manner as 1/4" material, but should **not** be used in areas where floor drains are installed.

When cutting a groove for 1/8" Protect-All, the depth of the 4.7-mm blade must be set to 1/16" due to the overall thickness difference. Seaming with Rapid Weld is performed the same as 1/4" material.

Specialty Installations

Sports Flooring

- I. Game Lines
 - a. Matte Finish Options

The following paints have been tested and found acceptable for use with Protect-All flooring. It is recommended the paint selected for usage be tested prior to an application to ensure it is acceptable and will bond to Protect-All. If acceptable, game lines may require two-to-three coats. The paint should be applied in light coats and allowed to dry before applying the next coat. Temperature and humidity will affect the curing or drying times of paints. Contact these manufacturers or your local distributor for suppliers nearest to you.

b. Paint

Benjamin Moore & Co.[®] - DTM Acrylic Semi-Gloss

c. Line Marking Tape

3M™ industrial line tape has various styles and colors available. Check with the manufacturer for recommended sources.

d. Gloss Finish Options

The gloss surface where game lines will be present must be abraded prior to application of paint lines. Only the areas where the paint will be applied should be abraded with a very fine 320 to 600 grit sandpaper.

Exterior Installation

All Exterior Protect-All must be fully-adhered using Protect-All's specified adhesives. Standard floor preparations previously stated apply. Temperature changes, sunlight and adhesive cure rates greatly effect exterior installations. Moisture testing along with pH testing is required. Installation by spanning expansion joints is not recommended.

Temperature during installation and adhesive curing (seven days) should be maintained at 65 to 75 degrees Fahrenheit. Areas should be protected from precipitation with an overhead covering at all times. "Tenting" the area to provide constant shading is recommended given the day/night temperature variables.

Rapid Weld should not be used for outdoor applications, as it is not UV stable and may change color when exposed to direct sunlight. Oscoda Plastics Seam Sealer should be used in place of Rapid Weld to seal the joints from water and debris using the same techniques described in this manual.

Install no more flooring than can be adhered, welded and allowed to cure within the same day.

Wall Installation

Protect-All flooring can be installed on walls in both 1/4" and 1/8" thickness.

It is important to have all prep completed on the wall surface before installation begins. Installation should be done with help from at least one other person, as the weight of the sheet and gravity will make it difficult to keep the material upright.

Determine the point where the sheet will end on the wall, and with a laser level or bubble level mark a line with pencil the entire length. This is where the cove cap will be fastened. Align the cap along the line and insert screws partially to hold the cap loosely. If installing on drywall or

concrete block, anchors may be necessary to insert into the holes drilled for additional support. Do not tighten screws completely.

Once the prep and cap have been completed, use a 1/8" x 1/8" x 1/16" V-notch trowel to apply specified adhesive to the back (rough side) of the Protect-All sheet. Rubber gloves should be used when lifting the sheet against the wall, folding the material under the partially installed cap. While one or more people hold the sheet to the wall, use a hand roller to smooth any bumps from the bottom up. Apply a 3/8" bead of E6100 under the cap at the top of where the Protect-All ends. Complete the cap install by tightening the screws and wiping excess adhesive with a damp cloth. Allow 12 hours for adhesive and E6100 to cure.



Cove cap on wall



Corner cove on wall

Wall Seams

If wall seams are necessary, use a straight edge and utility knife to hand groove the two sheets once the adhesive cures. Use Rapid Weld and Protect-All Rapid Weld Tape as you would on the cove base vertical seams and smooth the seam with the seaming tool. Inside corners where sheets meet at a 90-degree joint are done with the radius tool. No taping is required.

Care and Maintenance

Matte Flooring

Do not use a mop to clean Protect-All flooring that has a matte surface.

Solvent-based products such as oven cleaner, acetone, lacquer thinner, paint thinner or other similar products are not recommended for use in cleaning Protect-All flooring.

You will need:

- Approved Cleaner
 - Simple Green®
 - Signet® FC3
 - Ecolab®
 - Kay QSR 2 in 1 Cleaner
 - No Rinse Alkaline Floor Cleaner
 - Oasis™ 115 XP
- Floor scrubber
- Hose attached to hot water source

- Large squeegee with flexible vinyl or rubber blade
- Safety glasses
- Protective gloves
- Wet floor sign

Optional tools:

- Power floor scrubber with blue or green cleaning pads
- Wet/dry vacuum (if floor drains do not exist)
- Pressure washer set at 180 psi and 180 degrees

Cleaning Steps

The following cleaning procedure must take place daily for heavy grease areas, and weekly for normal traffic (non-greasy) areas.

- I. Broom sweep areas to be cleaned first. If possible, move equipment away to clean behind hard-to-reach areas.



- II. Place "Wet Floor" signs in areas that are to be cleaned.



- III. Mix four ounces of Simple Green per gallon into a bucket of hot water and agitate to create a sudsy mix.

- IV. Spread the diluted mixture onto the floor surface and leave for seven to 10 minutes to allow the solution to dissolve any buildup of grease.
- V. Use a 3M™ Doodlebug™ Pad or floor scrubber to clean the high-grease and high-traffic areas first, and then the remainder of the floor.



- VI. Squeegee the solution to the floor drain or wet/dry vacuum for removal.



- VII. Complete the process with a final clean hot water rinse.



VIII. Remove water with a squeegee to a drain or wet/dry vacuum. Allow to air dry.



If the floor has a significant buildup of grease and oil, the use of a power scrubber with a blue or green pad can help to remove the buildup. If a power scrubber is not available, the previous steps will have to be repeated until all grease, oils, animal fats, dirt and stains have been removed.

If using a power floor scrubber, use only the blue or green cleaning pads and keep the floor wet while scrubbing. **Never dry scrub using power scrubbers.**

If scuffing is present from soft-soled shoes, use an ordinary tennis ball to quickly remove them. Larger or more deeply imbedded scuffs may need to be removed by using Soft Scrub® cleanser and a rag. Larger scuffed areas can be cleaned with a power scrubber with a blue or green pad and water.

The official cleaning video and poster can be found on our website, protect-allflooring.com.

Gloss Flooring

Protect-All Gloss products have a factory-applied UV-cured urethane coating and is designed for "dry areas" only.

Gloss products should not be installed in areas that would expect to have standing liquids on the floor for long periods.

Protect-All Gloss products do not require any special buffing, waxing or cleaning. Light broom sweeping, dusting, dry or damp mopping are all that is needed.

You will need:

- Large floor duster or soft bristle broom
- Mop bucket with wringer filled with clean warm water
- Clean cotton mop or microfiber floor mop

- Bona® floor cleaner
- Wet floor signs, if damp mopping

Clean Protect-All Gloss flooring at least once weekly to maintain its natural luster.

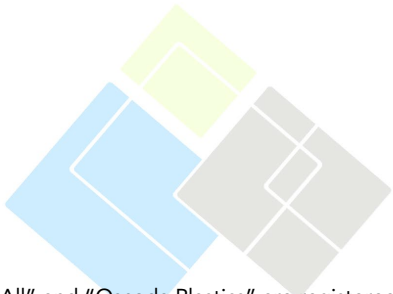
Cleaning Steps

- I. Use a large floor duster, soft bristle broom or dry mop to clean the floor initially.
- II. Place wet floor signs in areas to be cleaned.
- III. Apply a small amount of the Bona floor cleaner in a spray bottle to any spill, stain or black scuff mark first.
- IV. Use a microfiber mop or string mop to clean the remaining floor. The damp mop must be rung out thoroughly, leaving a minimal amount of liquid on the floor.
- V. Stubborn black scuff marks can be removed by hand using a tennis ball and a small amount of Bona cleaner.

Thank-you for your interest in Protect-All Flooring. Please refer to these guidelines to help you answer any technical questions that may arise during the installation process.

If at any time you need additional instruction or have questions regarding Protect-All products, cleaning or technical information, please call our Technical department at 800.544.9538 or visit our website, protect-allflooring.com

Protect-All®
Flooring



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