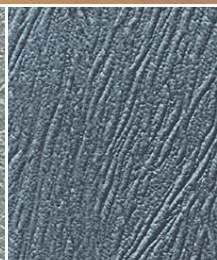
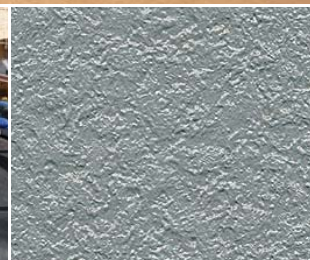




LONDECK

BY LONSEAL



TECHNICAL MANUAL FOR EXTERIOR PRODUCTS

Lonseal Inc.
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Carson, CA 90745
www.lonseal.com
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Exterior Resilient Sheet Vinyl Decking
Revised: 10/11/2011

Londeck Technical Manual for Exterior Products

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FOR ORDERS

Please fax completed purchase-order form to Customer Service at **888-LONSEAL** (888.566.7325).
For questions, please call **800.832.7111**.

FOR SAMPLES

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Conditional Advisory

IMPORTANT DISCLAIMER

Despite any statements here that may appear to the contrary, Lonseal, Inc. assumes no liability for the performance, effectiveness, or related maintenance efficacy of any of the products, companies or services described herein. None of the statements herein shall be construed as an explicit endorsement by Lonseal, Inc. of the products, companies, or services described herein, nor shall any legally binding relationship between Lonseal, Inc., and any or all of these products, companies or services be construed nor is such implied. Lonseal, Inc. assumes no liability for circumstances that may result from the application or use of any of the procedures or products/services described or recommended herein or for any circumstances arising from factors beyond the control of Lonseal, Inc. as the flooring manufacturer/distributor.

2 About Lonseal

Lonseal, Inc. was founded in the United States in 1972 as a subsidiary of our Japanese parent company. Lonseal has provided commercial flooring to the U.S. Navy and the world's largest commercial transport manufacturers. In the 1980s, Lonseal teamed with some of the country's leading designers to unveil its first high-fashion, low-maintenance embossed flooring products, becoming the only manufacturer of embossed resilient sheet flooring.

Our corporate office and warehouse facilities are located in Carson, California. Today, we sell and distribute a stunning array of embossed, exterior, smooth, sport, and wood-pattern surface styles throughout not only the United States, but worldwide.

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About This Manual

Purpose

This manual contains information about Londeck, Lonseal Inc.'s waterproof sheet decking material.

Audience

Information in this manual is intended for use by decking contractors, flooring installers and flooring specifiers.

It is recommended that professional decking and floor installers have a minimum of five (5) years of journeyman experience and tools to fully adhere Londeck to properly-prepared substrates using only those adhesives and sundries as supplied or otherwise specified by Lonseal, Inc. On specified projects, the contractor must be experienced with installation procedures and the recommendations of Lonseal, Inc., prior to commencing work.

Professional decking installers must possess the same level of experience and tools as detailed above, in addition to experience with single-ply roofing/decking.

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About Londeck

Product Information

SPECIFIER NOTE:

Lonseal is a great product for indoor applications where a durable, low-maintenance, high-traction surface is desired. For interior installations, follow the installation guidelines in the *Lonseal Technical Manual for Interior Flooring Products*.

Londeck is a calendared waterproof sheet decking composed of PVC. Londeck is primarily designed as a completely waterproof, fully-adhered, single-ply walking deck system for outdoor use. It is a lightweight, sound absorbing, waterproof material for walking decks and balconies. Embossed for added slip resistance, it is highly resistant to foot traffic and the elements. Londeck features an extensive history of unsurpassed service under a wide variety of exterior conditions.

Lonseal is not responsible for issues resulting from improper installation including, but not limited to, telegraphing of substrate; smoothing compound issues, adhesives, or fasteners; seam failure and bond failure, blemishes, or aesthetic issues stemming from inferior workmanship.

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Storage & Conditioning

Londeck products and sundries must be stored and installed in strict conformance to the requirements set forth in this manual. The storage temperature for rolls, adhesives and sundries is 65° - 85° F (18° - 29° C) for 48 hours before and during installation. Store all materials on a smooth, flat, level, dry surface with Londeck rolls standing on end.

Tightly wrap opened rolls and store on end. Rolls that are not stored standing on end may become egg-shaped (i.e., develop flat spots that make installation difficult).

Labeling

All rolls delivered from Lonseal, Inc. in Carson, California, shall bear labeling that clearly identifies the contents. All adhesives and sundry items shall be clearly labeled. MSDS for adhesives and chemicals can be obtained by visiting Lonseal's website at www.lonseal.com.

Dimensions

LONDECK AND LONDECK SIERRA

Width	Length	Thickness	Roll Weight	Pattern Repeat
72" (1929 mm)	60' (18.3M)	.080" (2.0 mm)	245 lb.	None

Directional Marking

There is currently no directional marking to indicate the direction of the sheet. Use only lead pencils to mark sheets to assure that each sheet runs in the same direction. **Do not use ink or marking pens of any kind.**

SPECIFIER NOTE:

Roll lengths may be increased on a special-order basis. Pattern availability and design may be changed or altered any time at Lonseal's discretion. Refer to www.lonseal.com for our latest product offerings.

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Installing Londeck

When to Install Londeck

Do not attempt to install Londeck unless conditions permit. In some climates, installation of Londeck is limited to months where weather conditions accommodate installation requirements. In some cases, it may be possible to enclose an area to maintain substrate temperatures and ensure satisfactory installation.

DEW POINT CALCULATOR CHART											
Relative Humidity	Ambient Air Temperature – Degrees Fahrenheit										
	20	30	40	50	60	70	80	90	100	110	120
90%	18	28	37	47	57	67	77	87	97	107	117
85%	17	26	36	45	55	65	75	84	95	104	113
80%	16	25	34	44	54	63	73	82	93	102	110
75%	15	24	33	42	52	62	71	80	91	100	108
70%	13	22	31	40	50	60	68	78	88	96	105
65%	12	20	29	38	47	57	66	76	85	93	103
60%	11	19	27	36	45	55	64	73	83	92	101
55%	9	17	25	34	43	53	61	70	80	89	98
50%	6	15	23	31	40	50	59	67	77	86	94
45%	4	13	21	29	37	47	56	64	73	82	91
40%	1	11	18	26	35	43	52	61	69	78	87
35%	-2	8	16	23	31	40	48	57	65	74	83
30%	-6	4	13	20	28	36	44	52	61	69	77

SURFACE TEMPERATURE AT WHICH CONDENSATION OCCURS F°

Dew Point

Dew Point is the temperature at which moisture will condense on the surface. No coatings should be applied unless the surface is a minimum of 5° F above this point. Temperature must be maintained during curing.

INSTALLER NOTE:

Do not proceed until all installation conditions are met. Upon commencing the installation, you accept responsibility for the condition of the substrate and the outcome of the installation. See the *Dew Point Calculator Chart* above to determine the proper time to install Londeck. Prior to installation, check your daily newspaper for dew point information.

Example: If air temperature is 70° F and relative humidity is 65%, the dew point is 57°degrees F. No coating should be applied unless surface temperature is a minimum of 62° F.

Fans: To eliminate condensation from forming on the Londeck surface, place fans to maintain continuous airflow above the floor.

Priming: If the slab is too dry and causes the adhesive to set too quickly, prime the slab with diluted latex emulsion.

Where to Install Londeck

SPECIFIER NOTES:

Above-grade slabs poured in metal pans take significantly longer to “dry” and have been known to require several months to well over a year to be safe to install upon.

Londeck is not compatible with, and must never contact, rubber or asphalt.

If after reading this manual, you have any questions, contact the Lonseal Technical Department before specifying Londeck over concrete, lightweight concrete, metal, fiberglass (or any other substrate not referenced in this manual).

A suitable alternative underlayment panel as manufactured by Weyerhaeuser Multiply must be installed in conformance to Lonseal specifications.

Provide adequate venting for enclosed deck structures. Decks lacking adequate ventilation may fall prey to dry rot in addition to mildew and mold proliferation.

The optimal Londeck installation is over properly-constructed and vented **plywood** surfaces.

This manual provides guidelines that are designed to ensure optimal installation conditions over **plywood deck surfaces**. When these conditions are not met, the probability for problems increases. Lonseal accepts no responsibility for installations that fail to meet these guidelines.

Lonseal does not recommend installing the Londeck product directly to existing coverings of any kind. Always prepare the installation site to “like new” condition.

Concrete or lightweight concrete should be approached with caution. Possible bubbling due to the presence of moisture in those substrates could result in installation failure.

Metal and fiberglass substrates require a high degree of skill and understanding of the relationship between the substrates and various adhesives required by Lonseal. Always check with Lonseal before installing to such substrates.

Retrofit. If Londeck is specified for a deck project that is to be built onto an existing structure, part of the exterior wall must be demolished sufficiently for proper flashing to be installed. Deck substrates can be water damaged because of leakage due to improper or non-existent flashing.

Londeck installation can be very adaptive. For instance, if a deck is 6' wide and 10' long, two sides are open and two sides go against the structure, a seam would typically be required somewhere in the floor to allow for 4" – 6" for flashing up the walls. To avoid a seam, consider laying the Londeck flat, applying a bead of Geocel 2300® at the walls and attaching the flashed Londeck with a sample overlapping seam near the wall (see *Supplies Used for Installation* in this section on page 20 for more information about Geocel 2300®).

Substrate Requirements & Preparation

SPECIFIER NOTE:

If it is to be capped with another layer of underlayment prior to installation of Londeck, subfloor sheeting material must be ¾" (20 mm) thick but does not have to be underlayment grade.

Suspended Wood Decks

Plywood.

Plywood substrate panels must be acclimated to match ambient humidity and be free of contaminants such as paint, grease, wax, bituminous (asphalt) residue, etc. Grind or file protuberances such as nail heads, uneven joints or the like, as these can telegraph through to the surface causing accelerated wear. Cementitious panels have little structure prior to installation. If the existing covering is solid and well adhered, it may be left in place and encapsulated by covering with ½" (13 mm) underlayment panels.

Maintain substrate temperature at 65° - 85° F (18° - 29° C) for 48 hours prior to, during and 48 hours after installation. Temperatures that drop to freezing immediately after installation can not only damage the adhesive, but compromise the adhesive bond. Likewise, **installing Londeck in excessively hot or cold conditions can result in failure of the adhesive to form an adequate bond.**

New Construction

1. If to be used as the underlayment substrate, the subfloor shall be minimum ¾" (20 mm) tongue and groove, exterior glued, underlayment grade plywood bearing the **APA – The Engineered Wood Association** (hereinafter referred to as **APA**) stamp.
2. Acclimate underlayment panels on the job site in keeping with APA guidelines. An electronic moisture meter shall indicate not more than 15% moisture content.
3. Panels shall be laid with maximum lengths applied at right angles to joists.
4. Fasteners shall be galvanized screws, nails or staples that do not exceed the combined thickness of the underlayment and subfloor panel. **DO NOT** fasten underlayment panels to joists.
5. Fastener schedule:
 - ¼" – 6" x 6" irregular grid and 3" along edges.
 - ½" and thicker – 8" x 8" irregular grid and 3" along edges.
6. Completely fasten the first panel in place and apply a bead of EVA type, white, non-staining carpenters glue along the remaining edges. **Do not use any form of adhesive to adhere underlayment panels to the substrate** other than described herein.
 - Lightly butt the next panel and fasten completely. Install subsequent panels one at a time in like fashion.
 - Use a damp rag to wipe away excess adhesive while still

wet.

7. Countersink all fasteners and fill voids with approved filling compound.
8. Sand all panel joints smooth.
9. Prime with latex emulsion and (if necessary) fill using approved type patch.

CONTRACTOR NOTE:

Additional time and tools are required to prime the substrate.

Composite Panels. Increasingly, composite panels are selected as substrate material to encapsulate existing decking or to be installed over plywood because they provide added flame resistance, dimensional stability, moisture resistance, and increased density with related resistance to indentation and puncturing.

The installation contractor is completely responsible for the application. Lonseal does not recommend one material over another, but stresses following the manufacturer's guidelines for acclimation and installation.

Existing Deck (Retrofit). The original wood subfloor shall conform with, or shall be made to new construction standards, as specified in the previous section, *New Construction*.

Do not install to any other surface than explicitly described herein. Do not install Londeck over any form of plank without first applying a suitable underlayment panel. Remove or encapsulate existing covering. Encapsulate with approved underlayment panels.

Application of new underlayment panels may be required to satisfy minimum thickness requirements or to make the surface suitable to install Londeck. Underlayment panels shall be underlayment grade plywood bearing the APA stamp minimum thickness ¼" (6 mm) to 5/8" (16 mm), Weyerhaeuser Multiply or like-dimensioned composite panels.

Acclimate and apply underlayment panels as previously discussed under *New Construction* in this section.

**Pitch to Drain
(Applicable to ANY
type substrate)**

Provide a slope of 1/16" per 12 inches to provide positive drainage away from the building. Water shall flow freely to drains and other outlets. Drains that are not set below deck surface must be repaired to provide adequate drainage. Eliminate areas of standing water by filling with approved type floor patch.

**Approved Type
Smoothing &
Patch Compound**

Use only Lonseal #900, latex reinforced Portland cement-based smoothing and patching compound (Merkrete Underlay M System with 150 Latex Admixture is an equivalent). Prime the surface before applying patch. Refer to the underlayment manufacturer for information about a recommended primer.

When creating a slope, add clean #16 silica sand as necessary, to thicken the patch. When dry, skim coat for smoothness.

**Why Consider
Priming?**

Although priming is not absolutely necessary, Lonseal recommends it for the following reasons:

- Improves adhesive working attributes by making the surface consistent.
- Improves working time.

SPECIFIER NOTE:

When planning, allow for additional cost for priming.

1. With water, dilute latex emulsion at a rate of 2:1.
2. Using a medium-napped paint roller and extension pole, apply to the clean and prepared substrate in overlapping strokes. The finished coat should be uniform without puddles.
3. Allow the primer to thoroughly dry before beginning the installation process.

Other Substrates

SPECIFIER NOTES:

While the substrate of choice for Londeck is **plywood**, you can also successfully install Londeck over **dry concrete** above grade. Refer to the **Appendix** for more information about concrete.

Typically **on- and below-grade concrete** does not have a vapor retarding system and is subject to greater fluctuations in moisture vapor drive, which effects the adhesive bond. Remember that the larger the area, the more moisture emissions are trapped under the Londeck. Therefore, keep on and below grade applications small and note that Lonseal does not guarantee performance over such installations.

Above-grade slabs poured in metal pans take significantly longer to “dry” and have been known to require several months to well over a year to be safe to install upon. These installations may require a moisture remediation system if moisture is unable to be controlled sufficiently in the drying process.

Expansion Joints and Cracks

Maintain substrate temperature at 65° - 85° F (18° - 29° C) for 48 hours prior to, during and 48 hours after installation. Temperatures that drop to freezing immediately after installation can not only damage the adhesive, but compromise the adhesive bond. Likewise, **installing Londeck in excessively hot or cold conditions can result in failure of the adhesive to form an adequate bond.**

Concrete. Experience has shown that installations over concrete are problematic due to the presence of moisture and alkalinity that is hard to detect and quantify.

Notwithstanding, information pertaining to moisture detection methods is available in the **Appendix** of this manual. If it is noted that moisture may be an issue for the concrete substrate than a moisture remediation system should be used. Note that use of the information supplied herein does not guarantee success.

Lightweight Concrete. Lightweight concrete shall have a minimum thickness of 1.5” (4cm) thick and minimum aggregate density of 115 lb/ft³ (1600 kg/in³) with a compressive strength at greater than 3200 psi over concrete or greater than 2000 psi over wood. Prime the entire surface with 1:1 diluted latex emulsion and let dry. Fill all holes, joints, and cracks with approved type latex patch. Prime and coat the entire surface with approved underlayment to a minimum uniform thickness of 3/8” (6 mm). Install Londeck only when no moisture remains in the underlayment.

Existing Elastomeric. This substrate typically requires complete removal and substrate repair. If well bonded, provide a new subfloor by complete encapsulation with plywood and/or an approved type underlayment patch.

Unacceptable Substrates.

- Do not install over wood that is nailed directly to concrete or is in contact with the ground. Do not install over wood substrates that have inadequate clearance above the ground or slab or that lack adequate moisture retardant sheeting as with crawl spaces.
- Do not install over existing Londeck.
- Do not install on tarpaper, asphalt residues, Magnesite substrates or in areas subjected to considerable mechanical abuse.

Any of these joints could telegraph and possibly cause premature wear or damage to Londeck.

Expansion joints are designed to allow slab movement, which could happen at any time. Cleaning and filling with epoxy-based joint filler may forestall slab movement and reduce the potential for moisture intrusion.

Cracks represent breaks through the thickness of the slab and are potential avenues for moisture intrusion. They must be chase-cut and filled with epoxy-based compound.

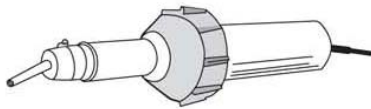
Tools Used for Installation

Basic Tools Required to Overlap Weld Londeck

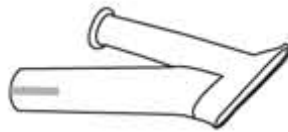
INSTALLER NOTE:

Tools are available for sale or rent from Lonseal.

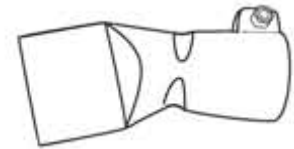
- # **1G** Electric Hot Air Welding Gun
- # **27** Speed Welding Nozzle
- # **30B1** Wide Slot Nozzle
- # **30B2T** Sieve Nozzle
- # **748** Teflon Roller
- # **745H** Exacto Knife
- # **745BL** Exacto Blades
- # **658** Bullet Nozzle



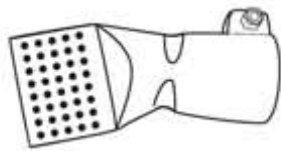
1G



27



30B1



30B2T



748



745H and # 745BL



658

Supplies Used for Installation

LONSEAL #200 Single-ply Bonding Adhesive

LONSEAL #200 is a polymeric waterborne adhesive with high initial tack and bonding strength. Used in the field and applied with 3/8" nap roller, the adhesive achieves a coverage rate of 140-180 sq. ft. per gallon. After a brief open time, lay vinyl into adhesive. Roll immediately with a 100 lb. three-section roller.

How to apply #200 Single-ply Bonding Adhesive

Applicator: 3/8" nap roller (medium)

* Spread / gal: 140 - 180

** Minutes open time: 15 – 25

*** Minutes working time: 15 – 25

* Actual job site coverage may vary according to substrate conditions

** OPEN TIME: Mandatory evaporation time

*** WORKING TIME: Amount of time remaining to install after open time. This depends on temperature and humidity.

Application:

INSTALLER NOTE:

Follow bucket label directions except as noted below. See this section for information regarding adhesives and caulk to be used in the installation process.

WARNING: Use in a well-ventilated area. Create cross-ventilation during use and until adhesive dries. Do not take internally. Avoid contact with eyes.

1. Ensure that the substrate is dry. Installation temperature should be at a minimum 50° F (10° F) and rising. The subfloor, flooring material, and adhesive must be conditioned at temperatures between 65° - 85°F (18° - 29°C) for 48 hours before, during and after installation.
2. Apply in full coverage to the substrate with a 3/8" nap roller and allow the adhesive to become tacky before placing the Londeck.
3. Typical open time at 70°F (21°C) is 15 -25 minutes with a working time of 3 hours. Remove all wrinkles and assure positive contact with the substrate.
4. Immediately roll the material in both directions using a 100 lb. roller to develop maximum adhesion. Start at the center of the deck and roll toward the edges.
5. Minimize foot traffic until adhesive is fully cured after 72 hours.

Limitations: Keep from freezing. Do not store below 40°F (4°C).

Shelf Life: 1 year from date of manufacture when stored unopened at 65° - 85°F (18° - 29°C).

Clean Up: Remove any excess adhesive immediately with soapy water. Clean dried adhesive from the surface and tools with a non-flammable cleaner.

Container Sizes: 3.5 Gallons (13.3 L) or 1 Gallon (3.8 L).

Lonseal #300 Two-Part Epoxy

Lonseal #300 two-part epoxy forms a sheer, resistant, waterproof bond. Apply in a 6" (155 mm) band in the metal drip flashing at the exposed edge of the deck and at all drains, vent stacks, etc.

After mixing, epoxy is exothermic (creates its own heat). If left in the mixing can, it will rapidly reach a high temperature and set very quickly.

If ambient temperature is cold, epoxy will take a very long time to cure. If the deck surface is hot, epoxy will react and cure rapidly.

Monitor the installation and continue to roll periodically until the adhesive has cured sufficiently to form a good bond and is no longer forming bubbles.

INSTALLER NOTES:

To avoid expensive waste, note that #300 can be mixed in equal parts if the entire unit is too much.

To ensure a proper bond, it may be necessary to apply weights until the adhesive sets (24 hours)

Do not leave mixed epoxy adhesive in the original container. The heat generated by this chemical mixture greatly reduces the open time of the adhesive.

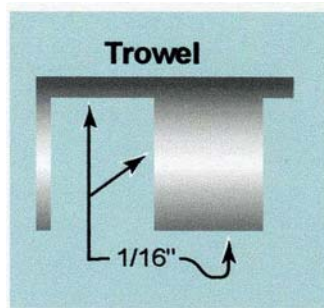


Figure 3 - Notch

Trowel

Notch Size: 1/16" x 1/16" x 1/16"

* Spread / gal: 100 - 120

** Minutes open time: 15 - 40

*** Minutes working time: 15+

* Actual job site coverage may vary according to substrate conditions

** OPEN TIME: Mandatory evaporation time

*** WORKING TIME: Amount of time remaining to install after open time. This depends on temperature and humidity.

Application:

1. Thoroughly mix Part "A" and Part "B" separately and together, making sure all contents of one is removed and mixed completely with contents of the other. After mixing, pour adhesive into an open flat pan or on the substrate.
2. Spread with a 1/16" x 1/16" x 1/16" (1.6 mm) square notched trowel. Coverage should be approximately 120 sq. ft. (11.25 sq. m) per gallon.
3. Install the floor covering into adhesive before it forms a skin. Working time at 70°F (21°C) up to 40 minutes (open time may vary). Always check for proper transfer of adhesive by lifting material and inspecting for full transfer of adhesive to backing.
4. Immediately roll the material in both directions using a 100 lb. three-section roller. Repeat rolling after one hour.
5. Do not allow foot traffic for a period of 24 hours. Do not allow rolling traffic or set heavy furnishings on the floor for 72 hours until adhesive is completely cured.

Clean Up: While still wet, remove residual adhesive from the Londeck surface and tools with denatured alcohol. Denatured Alcohol can mar the surface of the Londeck if used incorrectly. Apply to a clean rag and use upon the Londeck - do not apply directly to the Londeck. CURED ADHESIVE IS IMPOSSIBLE TO REMOVE.

Post Application: Protect from freezing. Adhesive is freeze/thaw stable to 0°F (-18°C). Avoid prolonged exposure to low temperatures and multiple freeze/thaw cycles.

Coverage: Approximately 120 square feet per gallon.

Packaging: One unit consists of two gallon size containers (parts A and B) weighing 15 lbs.

Shelf Life: Six months. For maximum shelf life, store material in a cool, dry area and keep container tightly sealed. Maintain storage temperature at 65°F - 85°F.

Precautions: Ensure that all residue is removed from surfaces before drying. TO AVOID SEVERE BURNS, DO NOT TOUCH THE MIXING CONTAINER.

CAUTION! USE CARE WHEN CLEANING AS DENATURED ALCOHOL IS FLAMMABLE AND TOXIC.

Lonseal #400

Lonseal #400 is a SCAQMD-approved solvent-based, fast-curing, moisture-resistant contact adhesive.

NOTE: Do not use this product directly from the can.

INSTALLER NOTE:

Apply masking tape to protect unfinished seams from overnight moisture penetration.

Application:

1. Apply with a disposable paintbrush or 3/8" medium nap paint roller at a rate of 150-200 square feet per gallon (typically).
2. Coat both surfaces to be bonded. Adhesive must not come off if touched, but should feel tacky to the touch before joining. Working time depends on conditions.
3. Drying time is approximately one hour. However, the bond reaches maximum strength within 48 – 72 hours.

Clean Up: Use acetone to remove residual adhesive from the flooring surface and tools while adhesive is still wet. Acetone can mar the surface of Londeck if used incorrectly. Do not apply directly to the Londeck. Apply to a clean rag and use.

Coverage: Approximately 150 – 200 square feet per gallon.

Packaging: One-gallon metal container weighing 8 lbs.

Shelf Life: Six months. For maximum shelf life, store material in a cool dry area and keep container tightly sealed. Maintain storage temperature at 65°F – 85°F.

Precautions:

EXTREMELY FLAMMABLE! Toxic vapors may ignite explosively. Provide fresh air cross ventilation to prevent build-up of vapors.

Keep away from heat, sparks from open flame. Extinguish all flames and pilot lights and turn off all non-explosion proof electronic equipment and sources of ignition during use.

Until vapors are dissipated, avoid prolonged or repeated breathing of vapors. Close container after use. Contains acetone.

DO NOT INHALE VAPORS

If swallowed do not induce vomiting. Call physician immediately.

KEEP OUT OF REACH OF CHILDREN.

**Geocel 2300[®]
Caulking Sealant**

2300[®] Tripolymer Sealant manufactured by:

Geocel Corporation

Elkhart, IN 48515

Call or email for nearest dealer: 1-800-348-7615

customerservice@geocelworldwide.com.

- Sealant will not crack; exceptional elongation and flexibility properties; excellent adhesion to all building surfaces, including damp surfaces. Life expectancy 50 years.
- Available from Lonseal; building materials wholesale distributors; roofing, siding, insulation wholesale distributors; window and door wholesale distributors.

Estimated Coverage per Cartridge: ¼" = 25.5 lineal feet

Service / Application Temperature: -40° - 180°F

Cure: Tack-free in 72 hours. Fully cured in five days.

Packaging: Individual 10.6 oz. cartridges.

Shelf Life: 12 months unopened.

Clean Up: Place facing paper in trash.

Limitations: Do not apply to dusty or damp surfaces.

7 How To's

Heat Welding Options: Horizontal to Vertical

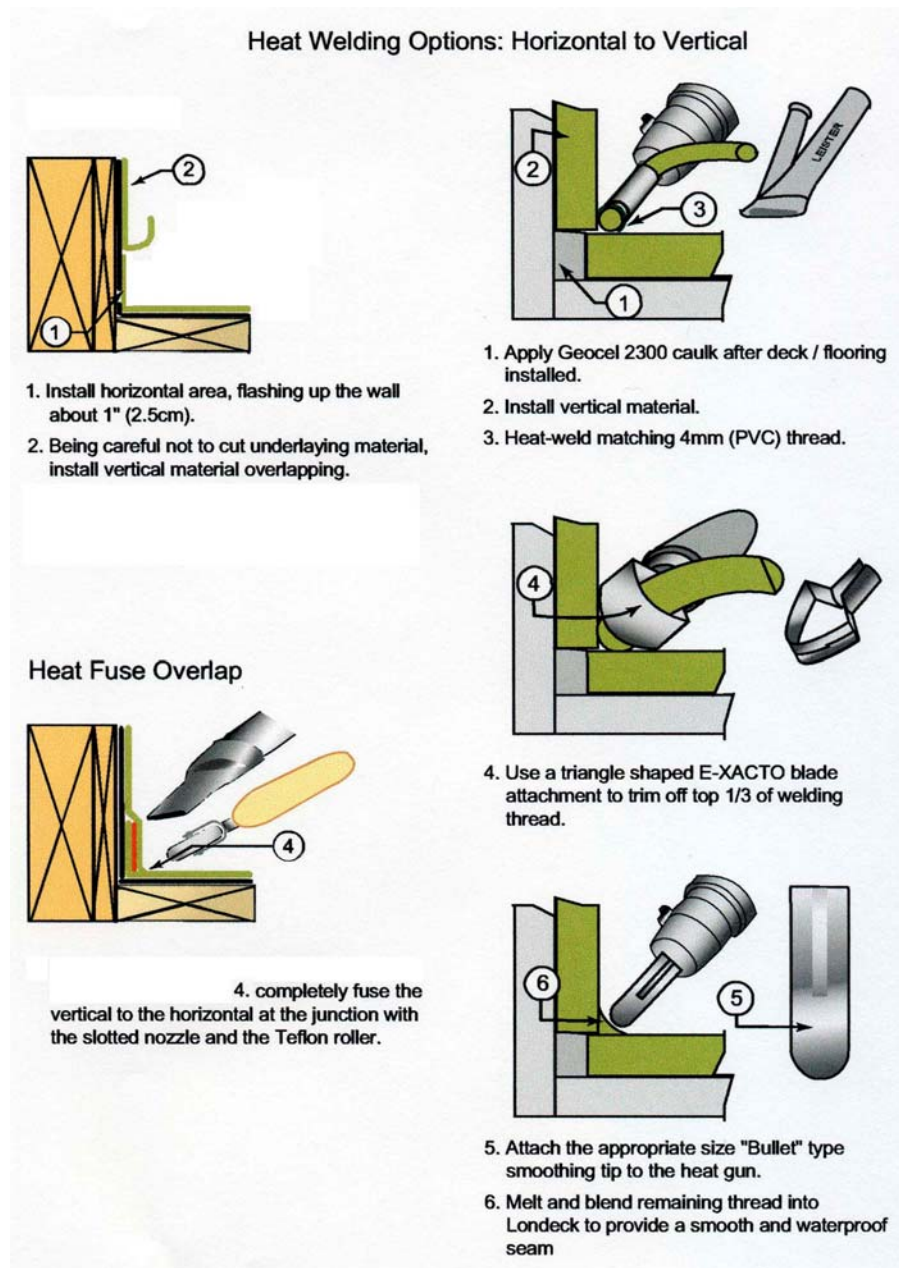


Figure 4 - Chemical and Heat Fuse Techniques

Making Seams

INSTALLER NOTES:

Londeck will appear shiny when heat is applied to the seam.

Allow for shrinkage when making cuts. Make and install cuts in sequence. Do not reverse the sheets. Mark individual cuts and indicate grain direction on the back with a pencil. Position material and apply adhesive(s) as directed in this manual. Unless otherwise indicated, always use a three-section, 100 lb. roller to remove trapped air and force the sheeting into the adhesive. For the purposes of this manual, typical seam layout is perpendicular to the structure as previously discussed.

The fusing process melts the two sheets together at the lap. Set the dial at the back of the heat gun to 5 or 6 and allow a few minutes for the device to reach fusing temperature. Adjust the temperature of the heat gun up or down to allow quick and complete thermal fusion, but do not scorch the material. Practice on scrap material to find the best setting. Insert the nozzle of the heat gun between the top and bottom sheets of the lap. With the No. 22 roller, apply pressure of the same time to fuse the two sheets together.

Inspect seam integrity by probing with a dull straight blade screwdriver and repair any fish-mouths or gaps.

The approved seaming method is the overlap weld which is outlined in this section.

- The **Overlap** weld simply fuses one sheet to the other with a flap.

Overlap Weld

Fuse overlap with sieve nozzle #30B2T, then use wide slot nozzle #30B1 and No. 22 roller or Teflon roller to bevel to completely seal the edge.

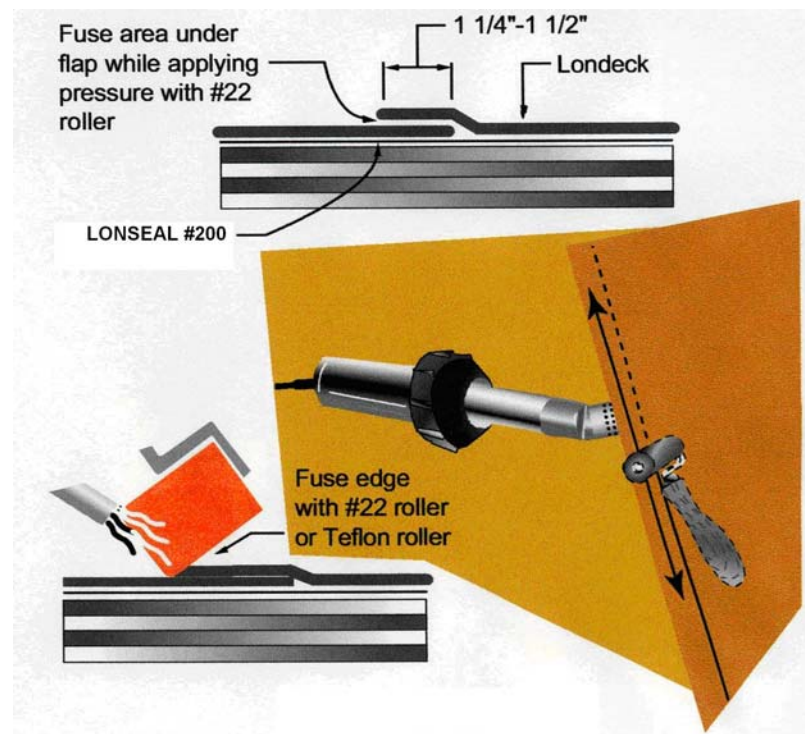


Figure 5 - Overlap Seam

Plan and Make a Overlap Seam

SPECIFIER/INSTALLER NOTE:

Manufacturing methods make a consistent pattern match unlikely. Therefore, variations in pattern alignment can't always be adjusted.

INSTALLER NOTES:

Know what type of edge the job requires (for instance, finish up to the metal drip edge or upholstering down over the edge).

Allow extra length for any flash coving and trimming when making cuts from the roll. Allow the cuts to relax for several hours before installing.

1. When making lap seams, install sheets upslope so that the overlap faces away from the building structure. Lay out all sheets "dry" to assure a proper fit.

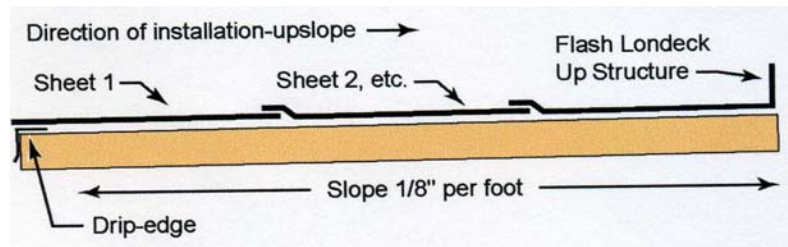


Figure 8 - Plan Execution

2. After all of the sheets are placed in their proper position, turn half of the width (tube) the first sheet to be installed toward the building, away from the outermost edge.
3. Spread the recommended adhesive(s) over the exposed substrate as directed on the bucket label and in the adhesives section of this manual and lay the sheet into the adhesive. Roll immediately with a 100 lb. three-section roller.

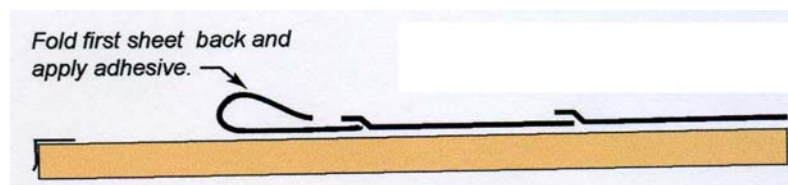


Figure 9 - Plan Execution

4. Proceed with the installation by tubing the remaining sheets back, spreading the adhesive and then laying the sheeting into the adhesive until the entire area has been adhered.

INSTALLER NOTES:

Scrape any remaining adhesive that has not been covered. Use plastic sheeting to protect the area from moisture and contamination.

Using a belt sander to clean and prepare the roller provides certain benefits. Grind the outer edge of the roller to make beveling easy and neat. The roughened texture of the roller will degloss the seams slightly and draw less attention to them.

Fold opposite side of first sheet and half of adjacent sheet back and apply adhesive.

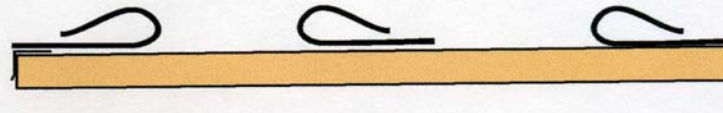


Figure 10 - Plan Execution

5. Make sure the sheets are thoroughly rolled. Do not allow wet adhesive to contaminate the seams. If this occurs, the adhesive must be removed or it will prevent a bond when attempting to fuse the sheets together.
6. Before a skin forms on the adhesive, place sheets and roll with a 100 lb. three-section flooring type roller.
7. Cut vinyl to walls, around drains and vent stacks, etc.
8. Complete seams as previously described.

Miscellaneous Installation Points

Miscellaneous Installation Points

The following guidelines suggest successful methods to handle layout, seams and penetrations. Lonseal does not guarantee the installation to be free of leaks at penetrations, etc. and the ultimate success of the installation depends on the installer's capabilities. The detail drawings provided herein provide general guidelines in terms of adhesive placement, etc., but do not cover all the possible scenarios encountered.

The success of a Lonseal installation rests on many factors, chiefly seams. Regardless of how they are laid out, seams can still leak if not properly made. Common roofing practice has seams laid out perpendicular to the structure in the belief that water will always be running down slope - across and away from the seam.

However, for aesthetic reasons, contractors have occasionally elected to run seams at right angles to the structure to minimize material waste or so that seams don't cross or fall into a doorway path. However, with this layout, water can gain access to the substrate if there is the slightest flaw in the seam. While Lonseal does not advise this practice, it has apparently met with success over the years.

Examples of Recommended Seam Layout

Figure 11 - Seam Diagrams

Termination of Deck Edge

INSTALLER NOTE:

In addition to nailing, it may be necessary to bed the drip-edge into Geocel 2300 to ensure that it doesn't pull away from the substrate.

Londeck must be fully adhered and the termination bar properly fastened in conformance with Lonseal guidelines.

Metal Drip Edge

1. Secure the drip-edge metal with suitable nails at 6" (150 mm) intervals.
2. Apply the #300 Epoxy and Lonseal #200 adhesive(s) as indicated on detail drawings.
3. After allowing the adhesive sufficient open time, replace the sheeting and roll in two directions with a 100 lb. resilient flooring roller. Use a hand roller to secure the sheeting at the outer edge. Trim the Londeck flush with the edge and secure the entire outer edge by applying 2" masking tape. Remove the tape after the epoxy has set.

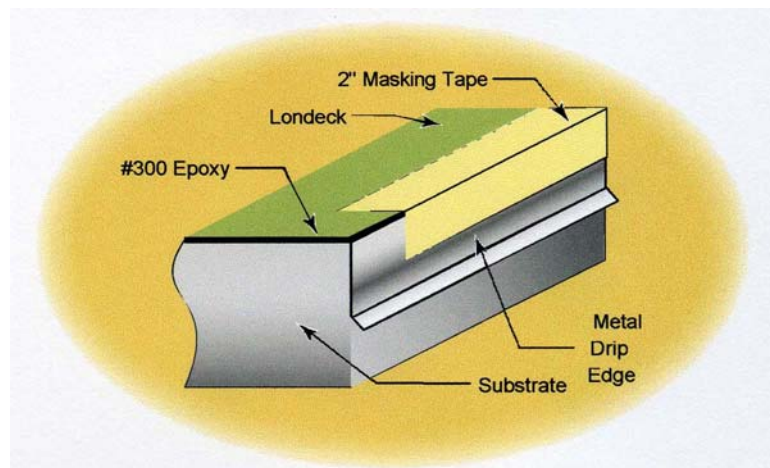


Figure 12 - Drip Edge

Upholstering: New Deck Termination Option

The previously-described method for terminating Londeck can leave an unfinished look along the edge. Upholstering the edge gives a beautifully finished look and permits wrapping Londeck rather than cutting it even with the drip-edge metal. Also, because #300 Epoxy is not used, working time is more flexible. This method provides a beautifully finished look. The following information outlines how to specify and install this system.

Materials and Application

Adhesives and Caulk. Lonseal #200, #400 Contact, Geocel 2300.

Termination Channel. Commonly known as “cove cap”, it is made of aluminum and secured firmly to the wood fascia using nails. It must have Geocel 2300 caulk injected before the Londeck is inserted.

Installation

Upholstered Edge

SPECIFIER NOTE:

Whenever possible, the General Contractor should supply and attach the rounded wood fascia and prepare it as described in Step 1.

1. Make a solid wood fascia with rounded edge and a 5° rake on the bottom. Prime or paint the bottom face. Nail securely in place using galvanized, deformed shank nails and apply a bead of Geocel 2300 along the back side. Recommended dimensions: ¾" (19 mm) thick x 3" – 6" (76 mm – 152 mm) wide.
2. Attach termination channel so that it hangs 1/8" (3 mm) below the lowest edge of the rounded fascia.
3. Plan to take the #400 Contact from ½" (13 mm) above the channel to 3" (76 mm) past the edge onto the deck. Mark the location of the adhesive stop lines on the back of the Londeck surface in pencil.
4. Apply diluted #400 Contact adhesive to both the deck and Londeck.
5. Spread Lonseal #200 on the balance of the field. Just before tucking in the vinyl, apply a small bead of Geocel 2300 into the channel.
6. After allowing the adhesive sufficient open time, replace the sheeting and roll in two directions with a 100 lb. resilient flooring roller. Use a hand roller to secure the sheeting at or over the outer edge.
7. Trim and tuck Londeck into the cove cap. Immediately clean any Geocel 2300 that leaks out.

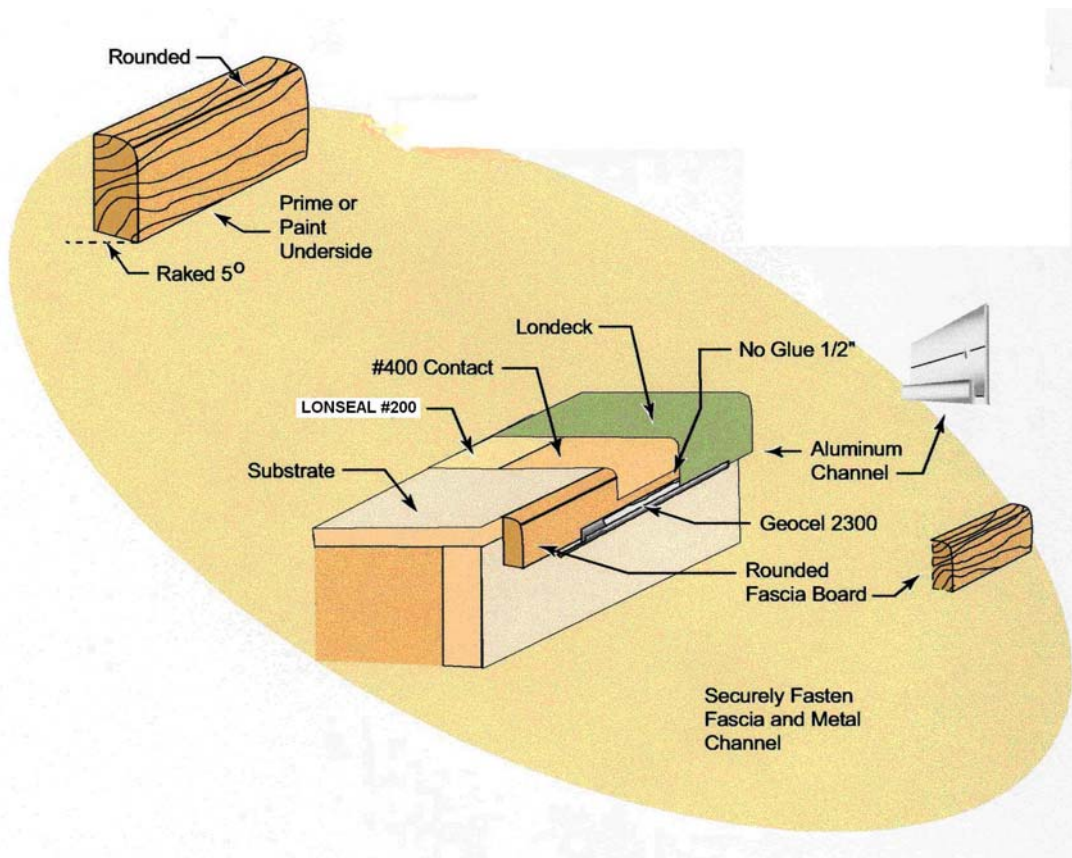


Figure 13 - Upholstered Edge

Coving & Corners Outside Corner

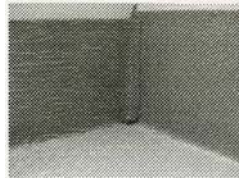
1. Adhere all vertical surfaces with Lonseal #200 or #400 as a contact adhesive. Further waterproof the coving by tucking material under flashing and applying caulk.
2. Trim one side net to wall and trim overlap at least 1/2" (13 mm).
3. Fuse overlapping material with a heat gun.



Flash Londeck



Trim Even



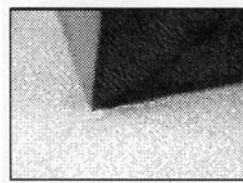
Trim Overlap



Heat Fuse

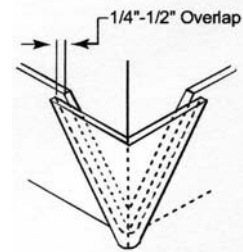
Inside Corner

1. Adhere all vertical surfaces with Lonseal #200 or #400 as a contact adhesive. Further waterproof the coving by tucking material under the flashing and applying caulk.
2. Cut material in a triangular or "V" shape allowing 1/4" – 1/2" (6.5 mm – 13 mm) overlap and wrap over inside corner.
3. Fuse overlapping material with a heat gun.



Completed Corner

Completely heat fuse "butterfly" to underlying vinyl and "heat bevel" the edges



Butterfly Corner

Vertical Surfaces

Pipes. Londeck may be applied in the form of a sleeve 4" (100 mm) high (typical) to all vertical penetrations and adhered with #400 Contact adhesive. **Do not use Lonseal #200 adhesive on these applications.**

- Allow a minimum 3/4" (20 mm) overlap at all vertical seams and fuse with a heat gun.
- Waterproof the uppermost edge with Geocel 2300 caulk.
- Where the sleeve meets the deck, it must be heat welded with color-matched welding thread to form a waterproof joint.

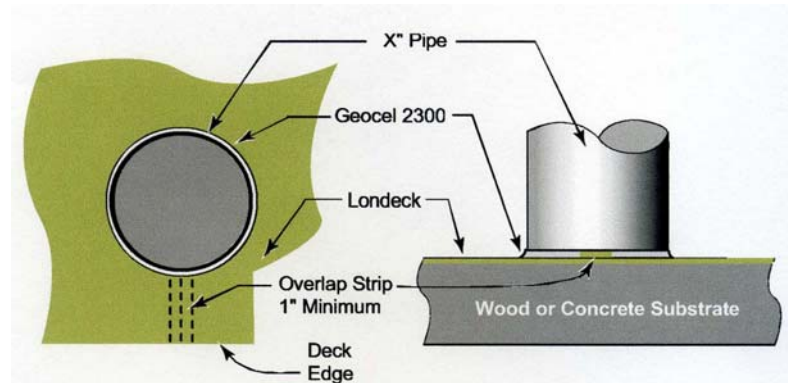


Figure 14 - No Collar

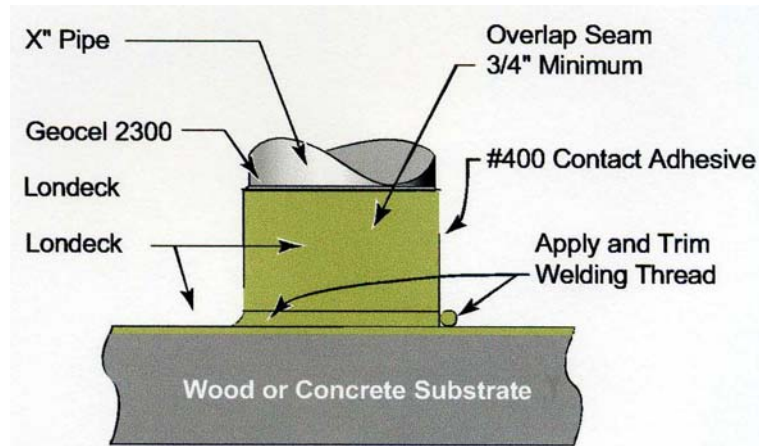


Figure 15 - Collar

Drains & Scuppers

SPECIFIER NOTES:

Waterproof Termination Metals are supplied by others (not Lonseal).

In order to direct water away from any part of the structure, Londeck must always be “flushed” or attached to flashing. On new construction, this means that it is installed before siding.

On retrofits, remove the siding and properly install Diato flashing prior to installation of Londeck.

Drains. New construction drain design must accommodate fully-adhered single-ply membrane systems and shall contain a clamp mechanism designed to firmly hold Londeck. Install Londeck, using Geocel 2300 caulk at all indicated locations.

Existing drains may be retrofitted to accommodate Londeck’s single-ply construction and be constructed as noted above.

Other drain types requiring Londeck to be net cut to fit shall be made true and level with the finished surface to prevent leaks and trip hazards. Use #300 Epoxy adhesive in a 6” wide band and apply weight until cured. Neatly apply Geocel 2300 caulk around the lip of the drain.

Scuppers. Londeck is adhered with #400 Contact in a 6” band on vertical and horizontal surfaces completely surrounding any opening and Geocel 2300 caulk applied at all exposed edges.

Scupper must be constructed of non-rusting material, flashed out onto the structure and made leak proof prior to application of Londeck.

Install and trim Londeck to fit the opening.

Apply Geocel 2300 around exposed edges and tool it smooth.

Parapet Walls

New construction. Builder shall provide appropriate flashing.

Retrofit. Londeck may also be terminated at any height with proper termination metals, or taken to the top where suitable coping (by others) shall provide protection from leakage.

Fully adhere with Lonseal #200 adhesive.

Substrate requirements as detailed earlier in this manual and the substrate shall be free of cracks and clean with no asphalt (or other contaminants).

SPECIFER NOTES:

If removing the siding is prohibited, Londeck may be adhered to the structure, but requires application of suitable termination bar and caulking.

Absorbent siding must be sealed to prevent moisture from wicking behind Londeck.

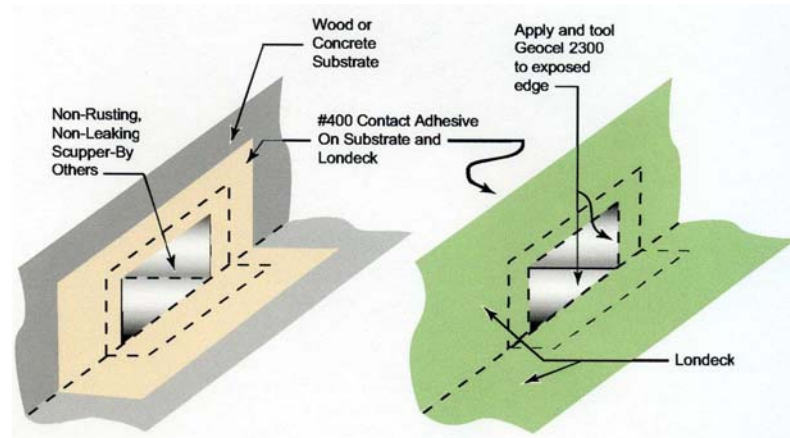


Figure 16 - Scupper Detail

Stair Options

The following guidelines for stair installation provide basic information. You can deviate from this information as long as the installation sheds water as designed.

Seams may be lapped as shown in the illustration below or can be thread or heat welded and trimmed as pictured in the following pages.

SPECIFIER NOTES FOR STAIRS:

Specify a 1% pitch for drainage.

Always embed nosing and fasteners in Geocel 2300 caulk.

Terminate nosing 2" (50 mm) from wall or stringer to facilitate drainage.

Overlap and heat fuse all seams.

Over Concrete (As Decorative Finish Only)

Londeck may be installed covering one by one or many steps at a time as determined by the installer. All contiguous joints must be fused using a variety of heat fusing techniques illustrated in this section.

Adhere Londeck using either #400 Contact or Lonseal #200 adhesive in a manner consistent with Lonseal guidelines as detailed in *Section 6 – Installing Londeck - Supplies Used for Installation*.

Roll thoroughly after placing into the adhesive. Trim Londeck net for a neat appearance and apply Geocel 2300 at all edges to seal out water intrusion.

INSTALLER NOTE:

Seam integrity and aesthetics are critical to the success of a Lonseal installation. Take the time to experiment with heat fusing Londeck to gain confidence and an appreciation of how easily Londeck installs and how beautifully it can be finished.

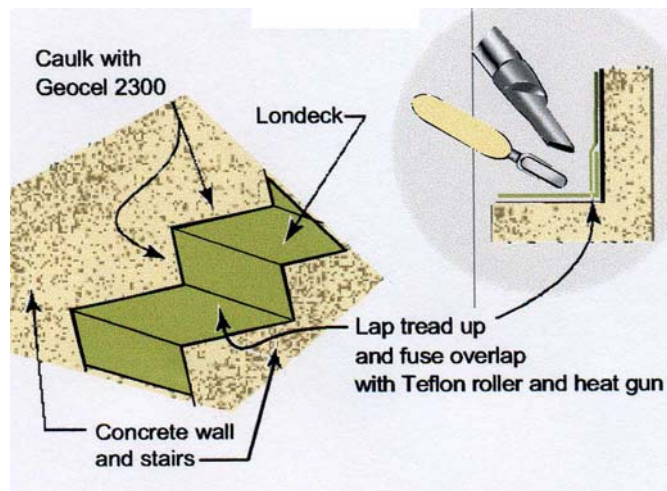


Figure 17 - Decorative Application

Over Wood or Concrete Requiring Waterproofing (NOT Decorative Only)

Wood and concrete stairs over an occupied space require additional steps to ensure that the installation is waterproof. Adhesive requirements are the same as for concrete.

Londeck may be installed covering one or many steps as determined by the installer. However, to maintain waterproof integrity, all joints must be lapped and heat fused.

All trim, stair nosing and fasteners must be embedded in Geocel 2300 caulk.

Use either #400 Contact or Lonseal #200 adhesive in a manner consistent with Lonseal guidelines as detailed in *Section 6 – Installing Londeck - Supplies Used for Installation*.

Roll thoroughly.

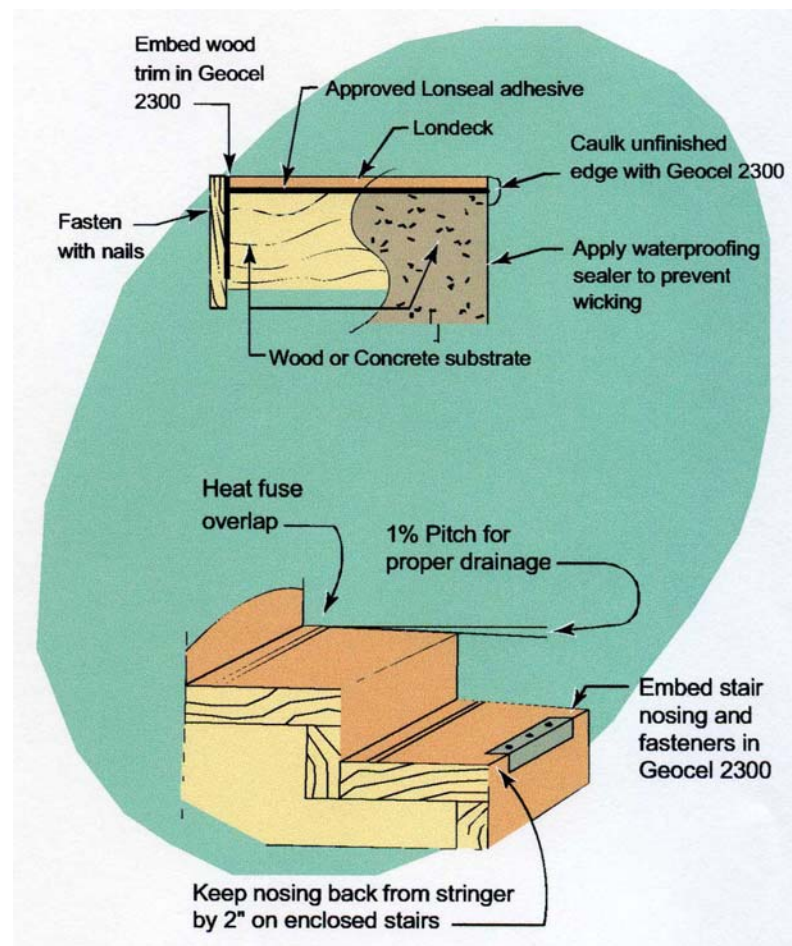


Figure 18- Waterproof Application

Waterproof Stair Installation

Use either Lonseal #200 or #400 Contact adhesive.

IMPORTANT: The working characteristics of these adhesives are very different.

1. Install stairs first. Measure stairway width and add for flashing. Measure and mark flashing on the back of sheet.

With a sharp utility blade, cut through the backing cloth and very lightly into the secondary backing, leaving the wear layer intact. The vinyl should be easy to bend and a clean angle should be present.

Apply adhesive using a medium nap roller to both the substrate and the vinyl and allow sufficient time to develop grab before installing.

2. Butt-weld a corner patch (fill piece) into stair flashing. Butt-weld by heat fusing and blending the vinyl using a narrow Teflon roller.
3. Install the wall. Trim net to stairs, being careful **not to cut into the stairs.**
4. Heat fuse the overlap to the stairs using a heat gun equipped with a wide slot nozzle and a narrow Teflon roller.

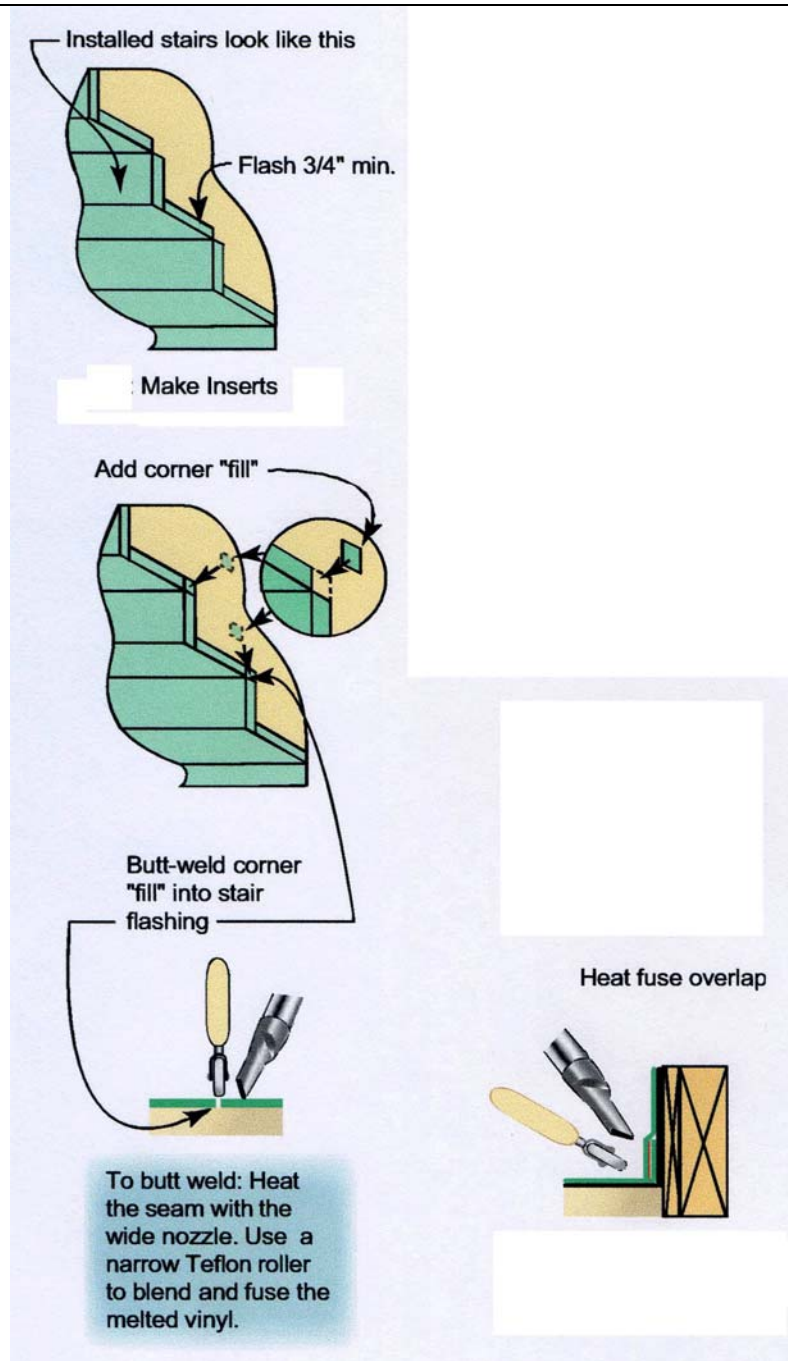


Figure 19 - Waterproof Stair Installation Process

Installation Renderings

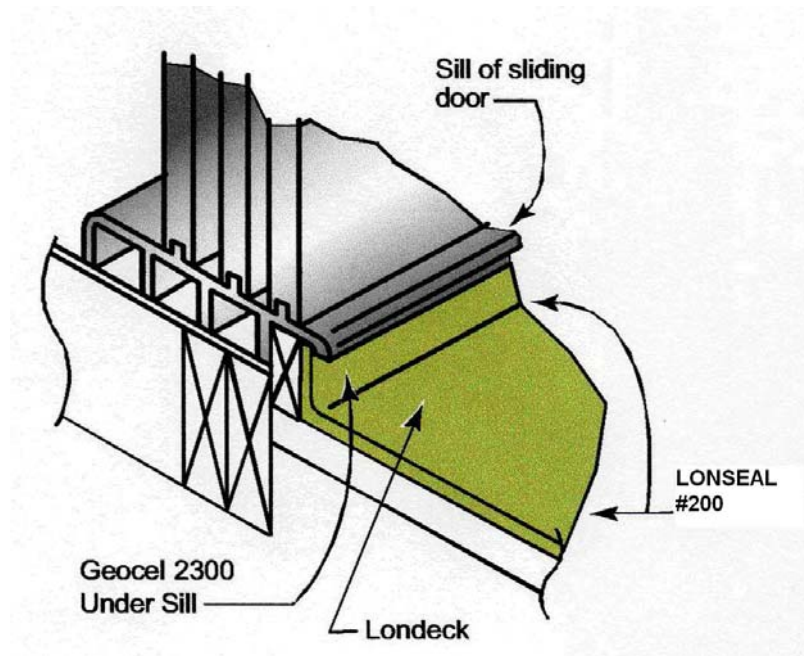


Figure 20 - Sliding Door Detail

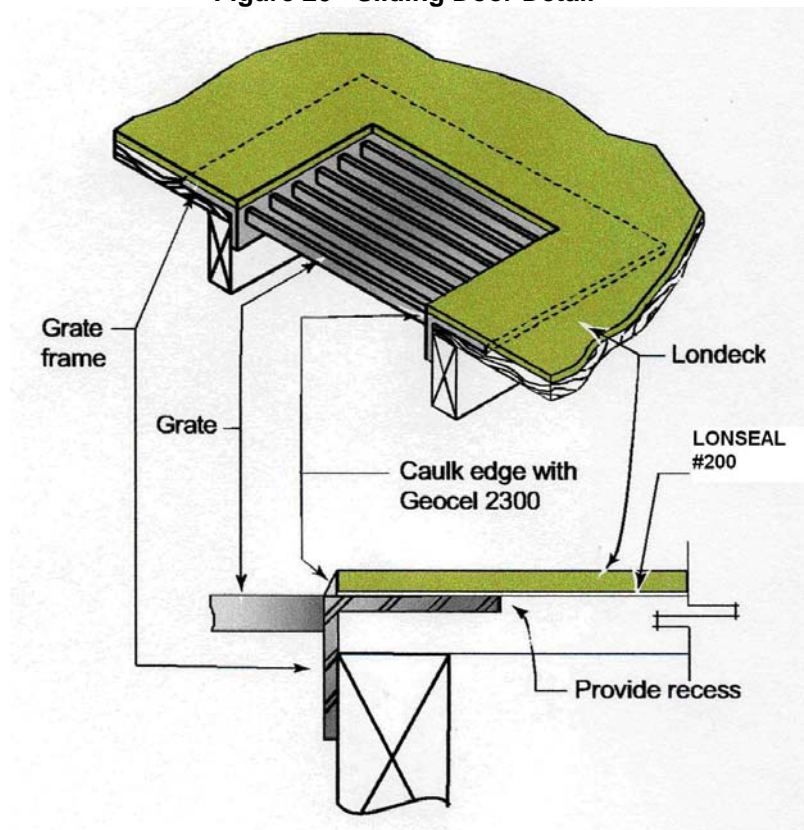


Figure 21 - Installation at Drain

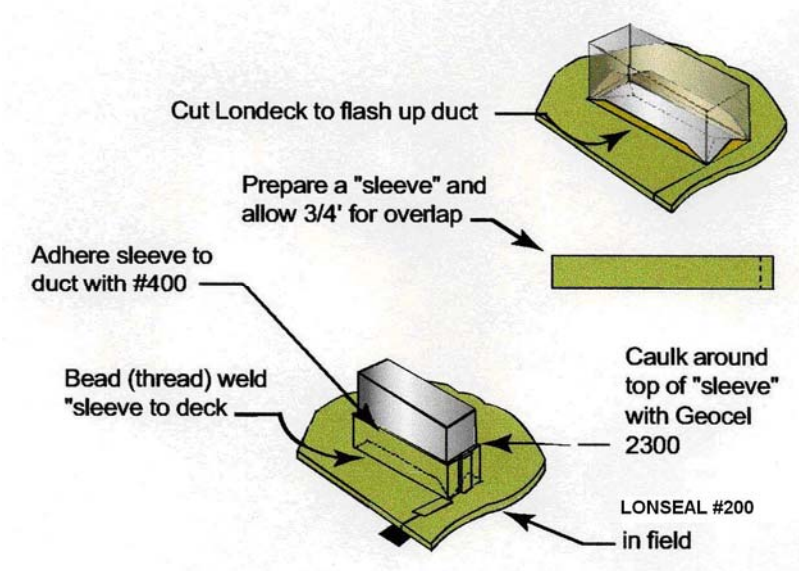


Figure 22 - Duct Penetration

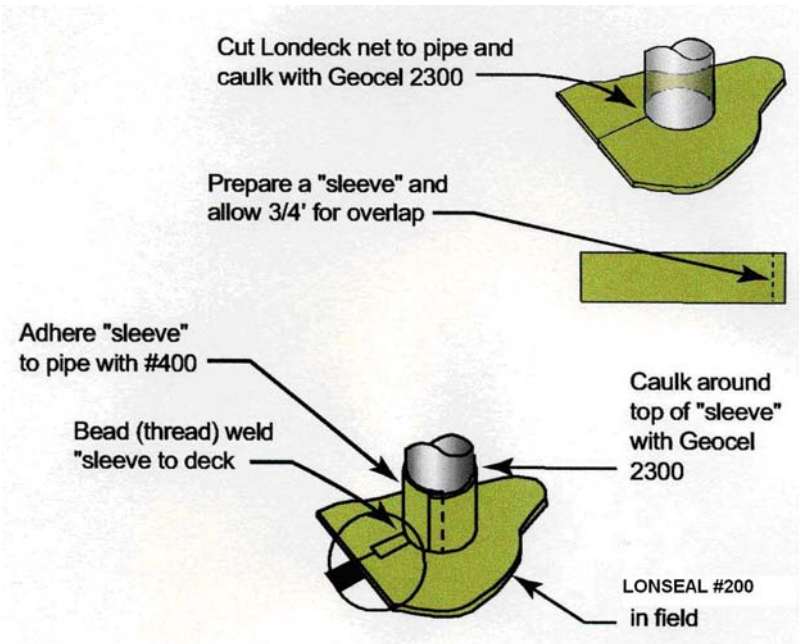


Figure 23 - Pipe Penetration

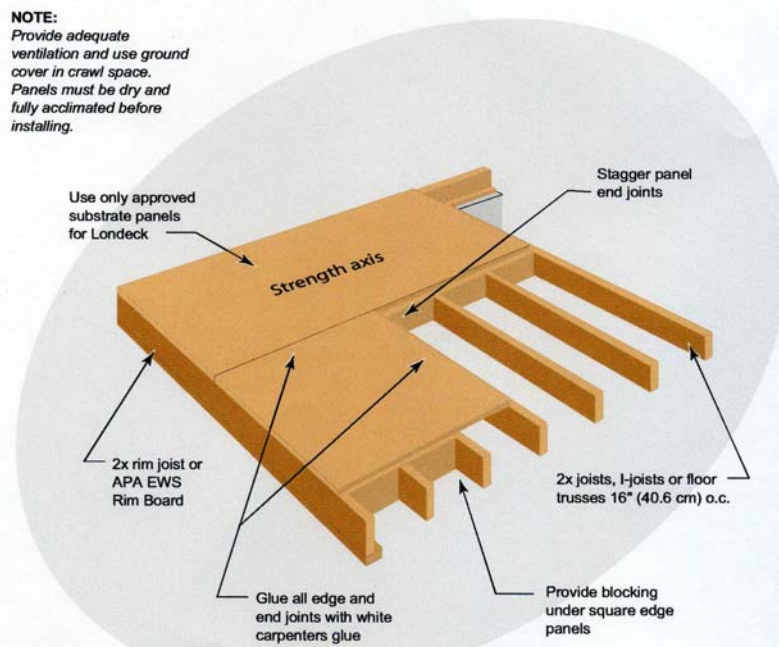


Figure 24 - APA Rated Sturd-I-Floor 16" (406.cm) O.C.

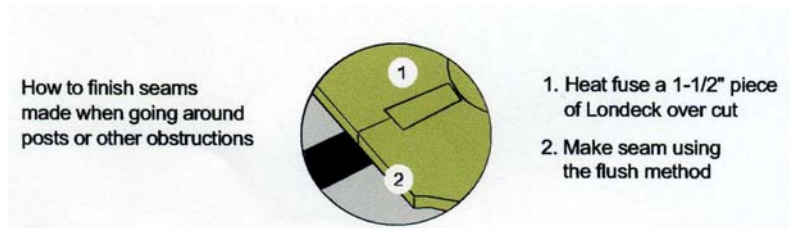


Figure 25 - Seam Finish Options

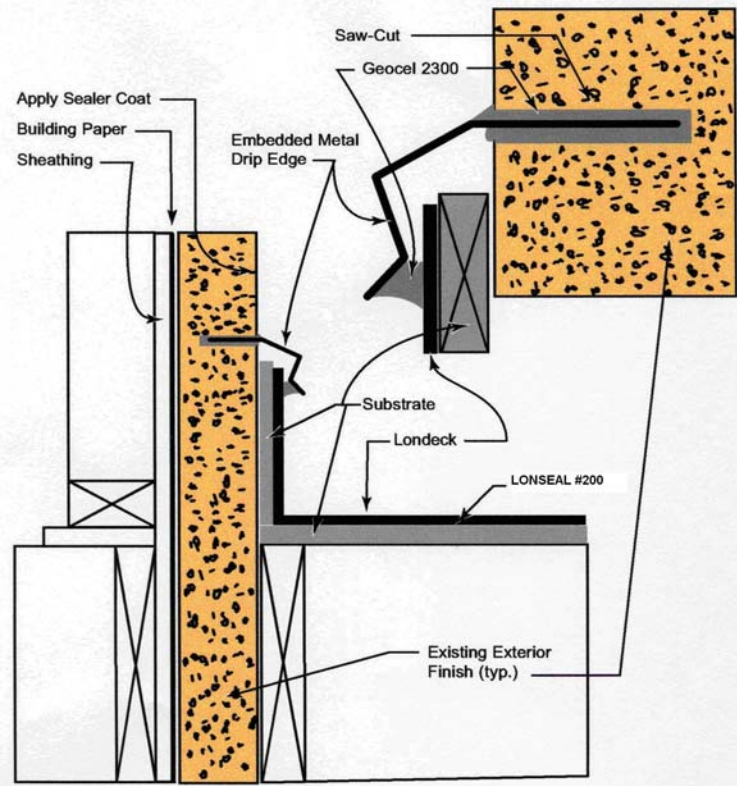


Figure 26 – Londeck to Existing Retrofit

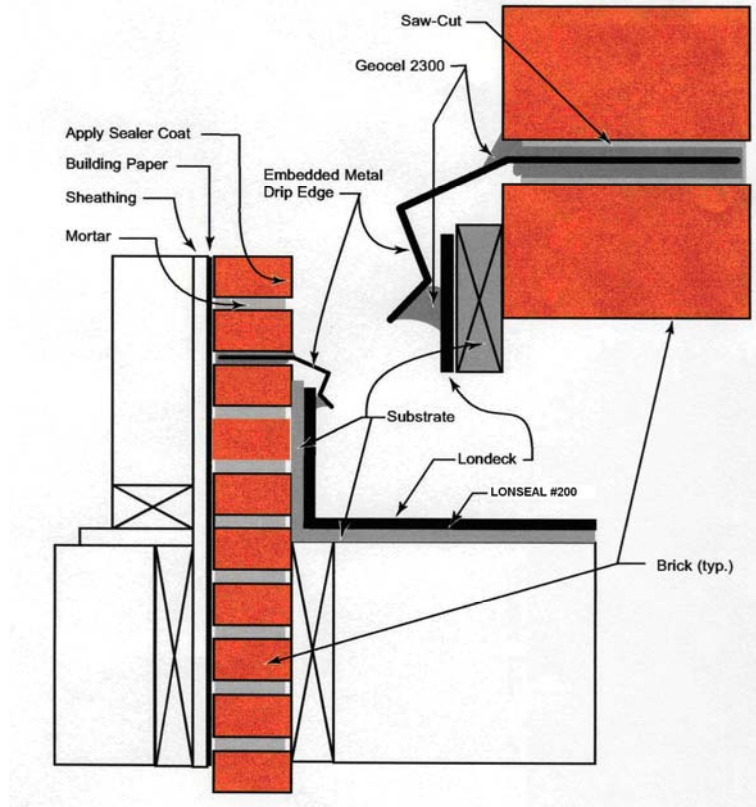


Figure 27 – Londeck to Brick Retrofit

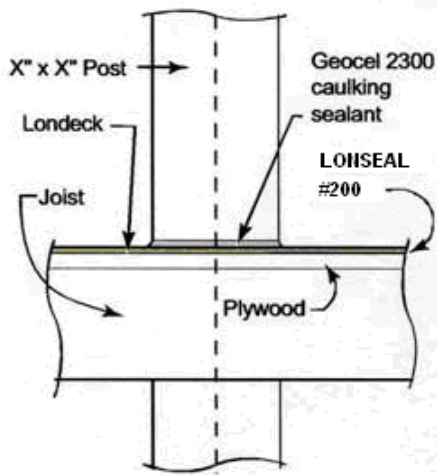


Figure 28 - Post Detail - Caulked

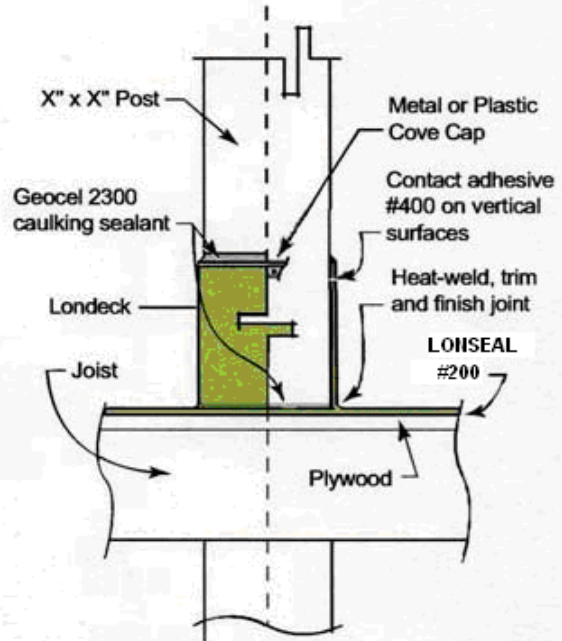


Figure 29 - Post Detail - Wrapped

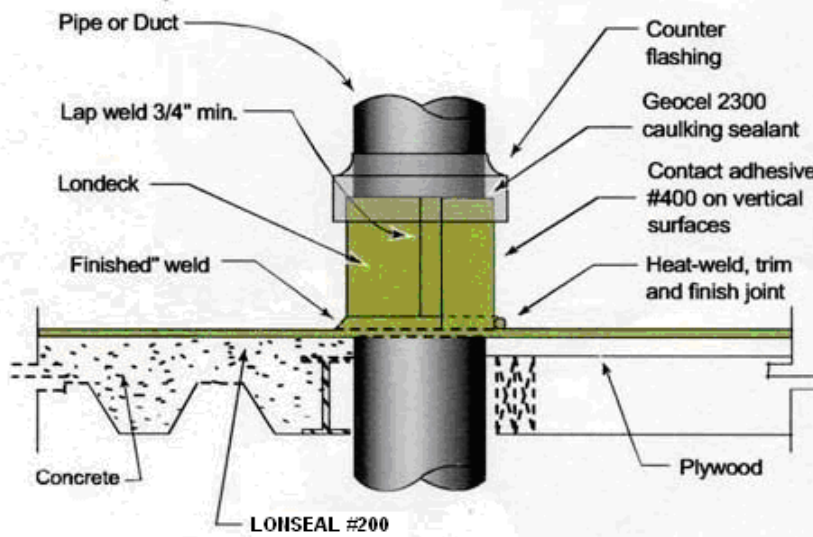


Figure 29 - Pipe or Duct Detail Through Wood or Concrete

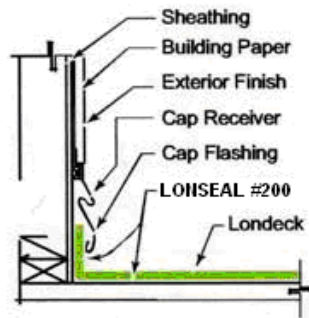


Figure 31 – Flashing Detail at Wall

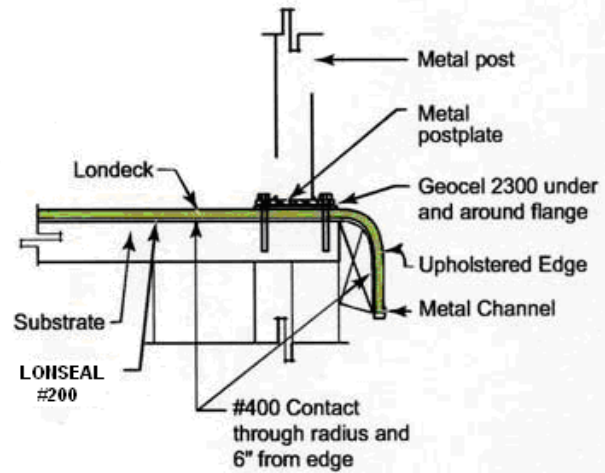


Figure 32 – Metal Handrail and Post Detail Upholstered Edge

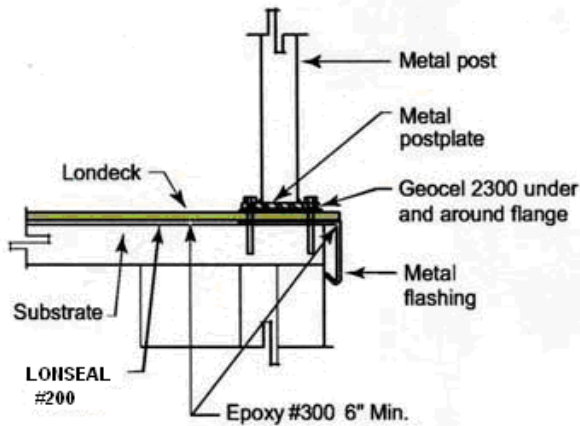


Figure 33 – Metal Handrail and Post Detail Metal Flashing Edge

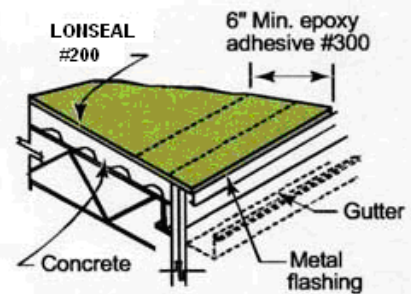


Figure 34 – Concrete with Metal Flashing and Gutter

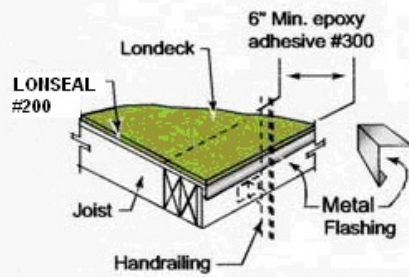


Figure 35 – Outside Edge (Standard Metal) with Attached Railing

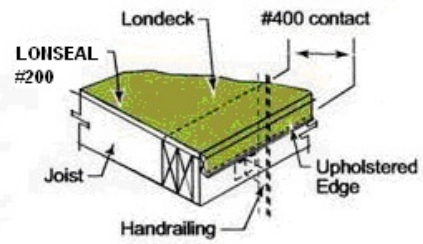


Figure 36 – Outside Edge (Upholstered) with Attached Railing

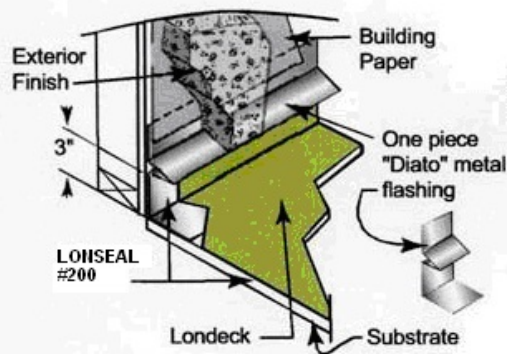


Figure 37 – Flashing Detail with "Diato" Metal

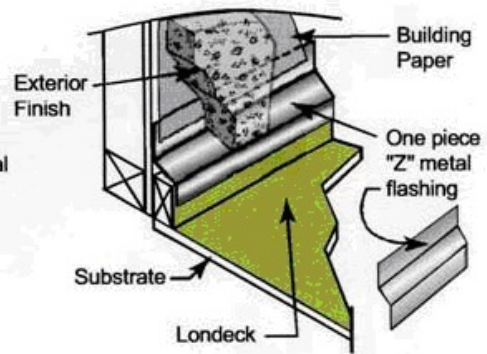


Figure 38 – Flashing Detail with "Z" Metal

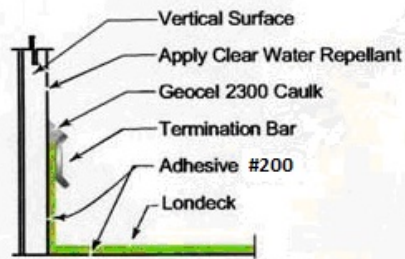


Figure 39 – Uprturned Termination Detail

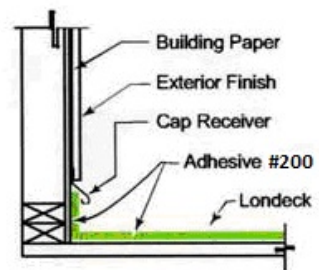


Figure 40 – Alternate Flashing Detail

8

Repairing Londeck

Cuts, Gouges and Burns

Cuts and Gouges. Groove out the cut/gouge and heat weld with matching thread.

Cigarettes. Scrape away any charred material and sand with medium grit paper. If Londeck is not burned through to the backing, nothing more is needed.

Large Burns. Cut away and remove the damaged material. Clean and repair the substrate as necessary.

Prepare a patch from a matching color of material cut $\frac{3}{4}$ " (20 mm) oversize and spread using Lonseal #200 adhesive. Lace the patch into the adhesive and roll with a hand or laminate type roller. Fuse the overlapped material with the heat device and a wide slot nozzle.

9

Maintaining Londeck

Tri Sodium Phosphate (TSP) is a high pH detergent suitable for cleaning Londeck.

Preparation. Cover furniture, glass and aluminum items.

Mix Ratio. For a mild solution, dilute $\frac{1}{4}$ cup TSP into 1 gallon of warm water. For stronger solution, add $\frac{1}{2}$ to $\frac{3}{4}$ cup.

Application. Apply the solution with a mop and scrub vigorously with a deck brush. If the area is large enough, a low-speed rotary machine or auto scrubber equipped with scrubbing brushes can be used. After scrubbing, rinse with clean water. Londeck will vary slightly oxidize over time.

Chemicals found in asphalt, certain types of rubber and food oils can permanently stain Londeck. Although rare, bird droppings containing berries can stain Londeck and should be hosed off immediately.

Do not apply dressing such as Armor All, any kind of wax or interior type dressing that will cause the floor to become very slick and unsafe, add to the maintenance burden and/or attract soil.

Appendix

Concrete Advisory

1. Ensure slab conformance with ASTM F 710-98. Concrete slabs shall be properly cured, permanently dry, clean, smooth, and structurally sound. Industry practice shows that a typical 4-inch thick slab requires an average of **30 – 60 days** to cure. Thicker slabs require **an additional 28 days per inch**.
2. Floors containing lightweight aggregate or excess water and concrete on metal deck (pan) construction may need a much longer drying time than suspended and on-grade slabs. Drying times are greatly variable and ***it should never be assumed that a slab is dry and alkalinity free without testing.***
3. Concrete must be dry, clean, smooth, level and structurally sound, free of dust, laitance, solvent, paint, wax, oil, grease, asphalt, sealing compounds and other extraneous materials.
4. Slabs that have a surface pH not greater than 9 and moisture content must 5lbs or less and RH 75% or below at the time of installation.
5. Slabs shall not be subject to hydrostatic pressure or ingress of moisture from diverse sources like faulty drains, plumbing leakage, or absorption through vertical overlays such as stucco or brick.
6. Mechanically remove curing agents, surface hardeners and similar products that act as bond breakers by shot-blasting the concrete.
7. Concrete with a loose, sandy or scaly surface or a white, powdery surface shall be repaired to a smooth and stable condition.
8. Concrete should have a compressive strength of 3500 psi or greater.
9. Open, clean and fill all cracks with approved type smoothing and patching compound.
10. Prime with latex emulsion diluted 2:1.

Pool Areas

Determine that the substrate is actually concrete and that it is not overlaid with a non-cementitious topping. Demolish any such topping until only clean concrete is exposed.

1. Cease all pool activity and thoroughly ventilate the area by opening doors, etc., using fans, the permanent HVAC or portable dehumidifiers.
2. After 48 hours, test the slab for dryness and alkalinity.
3. Post installation, ensure that all drains, edge trim, pipes and stanchions are fully caulked with Geocel 2300.
4. Resume pool activities after a minimum of 48 hours.

What is Concrete?

Portland cement got its name when it was first used in the early nineteenth century in England, because its product resembled building stone from the Isle of Portland off the British coast. Portland cement is made by grinding a calcareous material, such as limestone or shell, with argillaceous (clayish) material such as clay, shale or blast furnace slag. These two finely ground materials are heated in a giant rotary furnace to the point that they begin to fuse. Known as a clinker, the material is cooled and reground to a fine powder to form Portland cement. When the clinker is being ground, small amounts of additional ingredients are added to produce the various types of cement.

In its simplest form, concrete is a mixture of paste and aggregates. The paste, composed of Portland cement and water, coats the surface of the fine and coarse aggregates. Through a chemical reaction called hydration, the paste hardens and gains strength to form the rock-like mass known as concrete.

Within this process lies the key to a remarkable trait of concrete: it's plastic and malleable when newly mixed, strong and durable when hardened. The key to achieving a strong, durable concrete rests in the careful proportioning and mixing of the ingredients. A concrete mixture that does not have enough paste to fill all the voids between the aggregates will be difficult to place and will produce rough honeycombed surfaces, and porous concrete. A mixture within an excess of cement paste will be easy to place and will produce a smooth surface; however, the resulting concrete is likely to shrink more and be uneconomical. A properly-designed concrete mixture will possess the desired workability for the fresh concrete and the required durability and strength for the hardened concrete. Typically, a mix is about 10% – 15% cement, 60% to 75 % aggregate and 15% to 20% water. Entrained air in many concrete mixes may also take up another 5% to 8 %.

Cement and water form a paste that coats each particle of stone and sand. Through a chemical reaction called hydration, the cement paste hardens and gains strength. The character of the concrete is determined by quality of the paste. The strength of the paste, in turn, depends on the ratio of water to cement. The water-cement ratio is the weight of the mixing water divided by the weight of the cement. High-quality concrete is produced by lowering the water-cement ratio as much as possible without sacrificing the workability of fresh concrete. Generally, using less water produces a higher-quality concrete, provided the concrete is properly placed, consolidated and cured.

SPECIFIER NOTE:

Prior to specifying Londeck over concrete, **the slab must be tested for moisture and alkalinity using the services of an expert or firm in the field of concrete and waterproofing.** Failures are typically attributable to excessive moisture and pH in the slab and/or installing at or below the due point. Take proper steps to prepare the slab for installation of Londeck.

Do not order material and sundries before having moisture and alkalinity tests are performed by quality personnel.

Concrete slabs hold moisture and some may never be sufficiently dry to install Londeck over. Moisture detection methods discussed here provide an indication of moisture content, but don't guarantee that future moisture-related problems, over which neither Lonseal nor the installation contractor has control, might occur. Therefore, neither Lonseal nor the installation contractor shall be responsible for the replacement materials or labor for moisture-related issues on any form of concrete at any grade level.

Testing and preparation methods described herein should be sufficient to ensure a satisfactory and long-term installation provided moisture and alkalinity issues don't become a factor over time.

For more information, go to [http://www/portcement.org](http://www.portcement.org).

Determining the Presence of Slab Moisture

Concrete must be dry enough to safely install over and remain so for the life of the installation. If there is too much moisture in the slab, it will expand with heat from the sun and migrate to the area of weakest bond causing de-lamination, which can be at either the adhesive or patch bond line. If moisture exists within the concrete a moisture remediation system is recommended.

Lonseal strongly recommends to the General Contractor/Architect/Building Owner, that moisture and alkalinity testing be performed and documented by an accredited engineering firm/laboratory/person(s) prior to the installation date so that corrective measures can be performed.

Following are methods that are to be used to determine the presence of slab moisture:

1. **ASTM F1869** - MVER shall not exceed 5.0 lbs/1000 ft²/24h.
2. **ASTM F2170-09** - Maximum relative humidity shall not exceed 75%.
3. **ASTM F710-08** - Alkalinity shall not exceed 9.
 - a. Alkaline salts, if present on or near the surface in too high a quantity, attack the adhesive from the moment of application. Therefore, alkalinity must be determined and controlled prior to installation.

NOTE: Test results can only indicate the slab condition at the time of testing. Moisture vapor emissions are subject to seasonal fluctuations and any subsequent damages are beyond the control of Lonseal.

In all forms of concrete, moisture drive carries alkaline salts to the surface and these chemically react with the adhesive eventually destroying bond. The presence of alkaline concentrations also indicates elevated moisture vapor emission.

Moisture Remediation

To be effective, post construction application of surface treatments must reduce moisture emission to acceptable levels. Commercially available treatments typically require complete shot blasting and application of a liquid moisture/pH alkalinity blocker. Then the slab may require smoothing with acceptable patching compound or underlayment before installation of Londeck.

Adhesive Considerations

The sealed substrate can be considered porous if it is coated with approved underlayment to a thickness of at least 3/16" (5 mm). Conversely, the substrate is considered non-porous if Londeck is installed directly to the sealer. Such installations require careful attention to adhesive open and working times, as bubbling due to adhesive off gassing is common. It is best to consult with the technical team of the moisture remediation system manufacturer for further guidance on adhesive selection as there are porous and non-porous system choices.

Moisture Remediation System Professionals

Lonseal recommends professional application of moisture remediation systems. The following list is provided for informational purposes only and is not to be considered as an endorsement by Lonseal. There are other companies with similar products and/or systems and it is always recommended to contact the technical department for further guidance. Always obtain written performance and warranty guarantees from the manufacturer:

KOSTER American Corporation

2585 Aviator Drive
Virginia Beach, VA 23453
Phone: (757) 425-1206
www.kosterusa.com

Vexcon Chemicals

7240 State Road
Philadelphia, PA 19135
Phone: (888) 839-2661
www.vexcon.com

AQUAFIN, Inc.

505 Blue Ball Road, #160
Elkton, MD 21921
Phone: (866) AQUAFIN
www.aquafin.net

ARDEX Americas

400 Ardex Park Drive
Aliquippa, PA 15001
Phone: (888) 512-7339
www.ardex.com

Concrete Issues

Lonseal, Inc. assumes no responsibility for installations over any form of concrete. Occasional problems with installations over concrete demonstrate that Londeck is not defective only that insufficient care was taken to assure that the slab was suitable to receive a waterproof coating. Tests must be performed to ensure a satisfactory installation. Lonseal, Inc. cannot guarantee the condition of the slab prior to, during or after installation. The installation contractor must follow procedures as detailed in this manual and is advised not to proceed without written authorization from the general contractor or governing authority stipulating that the slab is suitable to install over. Lonseal is limited to supplying information that, to the best of our knowledge, represents current evaluative and suppression techniques.

Warranty

Coverage

Subject to the below exclusions, Lonseal, Inc. warrants that Londeck will be free from manufacturing defects for a period of five (5) years from the date of purchase and that, when properly installed and maintained, shall not wear through as a result of normal foot traffic for a period of fifteen (15) years from the date of installation. This warranty shall become void if the maintenance, subfloor conditions, and/or installation procedures do not conform to those prescribed by Lonseal, Inc. in the Londeck Technical Manual for Exterior Products or other Lonseal Technical documents.

Warranty Exclusions (the above limited warranty does not cover):

1. Dissatisfaction due to improper maintenance, improper installation including insufficient or improper floor preparation or substrate deficiency.
2. Loss due to inconvenience, incidental expenses or consequential damages.
3. Installation errors including, but not limited to:
 - Installation over or touching roofing materials constructed of or containing rubber or petrochemical derivatives or asphalt.
 - Negligence during and after installation.
 - Bubbling and bond failure due to inadequate substrate, moisture or alkalinity; improper flashing.
4. Resultant damage due to:
 - Stains and/or discoloration caused by (but not limited to): dyes or inks, discoloration or fading from sunlight or heat generation sources, contact with rubber products and/or synthetic backings including that which may be attributable to plasticizer migration; excrement; non-approved adhesives or floor care products not recommended by Lonseal; fading or gloss reduction from routine wear.
 - Traffic-borne contaminants from painted or asphalt surfaces and sealers; chemically reactive spillage; cracking.
 - Substrate telegraphing of underlayment fasteners, imperfections and/or joints.
 - Cuts, scratches, gouges, scuffs, punctures, tears, indentations, and/or burns.
 - Damage or indentation caused by excessive loads or resulting from lack of, or improper use, or poorly designed furniture rests, wheels and/or floor protectors.
 - Inadequate protective entrance or landing matting.
 - Failure to protect the material from ongoing work by other trades or individuals.
 - Accidents or any intentional misuse or misapplication of products.
 - Problems due to mold, mildew, the presence of alkaline substances, and/or hydrostatic pressure from the substrate.
 - Bond failure due to the presence of excessive substrate moisture and/or alkaline substances or hydrostatic pressure: problems due to mold and mildew. Failure of any embossed pattern to match at seam(s) due to standard manufacturing variances.
 - Fire, flood or other acts, omissions, causes or events beyond the control of Lonseal.
 - Improper installation and maintenance, including (but not limited to) use of adhesives and/or techniques not recommended by Lonseal in accordance with Lonseal Technical manuals and documents. [NOTE: This warranty shall be VOID if any Lonseal Products are installed with adhesives and/or techniques not specifically recommended by Lonseal in Lonseal's Londeck Technical Manual for Exterior Products and other Technical documents.]

Terms

General Claims Procedure

Claims must be reported to Lonseal, Inc. in writing within fifteen (15) years of purchase, except for claims of product defect as detailed below. Lonseal requires a sample for evaluation, or at its option, may have the installation inspected by a Lonseal representative or agent, or licensed independent inspector; or claimant may hire a licensed independent inspector. If Lonseal determines that the claim is valid, Lonseal will supply new product(s) of the same or similar grade sufficient to repair or replace the affected Lonseal vinyl, but will not pay for labor or related replacement costs.

Defects-Five Year

A covered defect must be reported to Lonseal, Inc. in writing within five (5) year of purchase. Lonseal requires a sample for evaluation, or at its option, may have the installation inspected by a Lonseal representative or agent, or licensed independent inspector. If, after evaluation, the product is determined defective, Lonseal will supply new product(s) of the same or similar grade sufficient to repair or replace the defective material(s). Lonseal will also pay for reasonable labor and materials costs involved in replacing the affected Lonseal vinyl where the combined labor and material costs are not in excess of the total cost of replacement vinyl.

Notwithstanding the foregoing, under no circumstances shall Lonseal Inc. be liable for any ensuing costs, consequential or otherwise, directly or indirectly, due to the replacement of flooring such as, but not limited to, loss of business revenue, productivity, displacement, etc.