

# STAINS and FINISHES APPLICATION GUIDE



## WHY OUR STAINS & FINISHES?

In addition to building a quality home, you want to build a beautiful home, which is why the finished appearance of your logs is so important. By using a high quality stain upfront, you will get a distinguished looking wood finish that will set your home apart from the rest. Available in a wide variety of styles and shades (think warm honey hues to spicy cinnamon and rich walnut), Perma-Chink Systems manufactures superior finishes that protect your logs while showcasing their inherent beauty. They allow the wood grain to emerge so the color complements the wood rather than covering it. Unlike many other tinted stains the color endures, meaning fewer touchups over time.

### LIFELINE™ INTERIOR PRODUCTS

#### LIFELINE INTERIOR™

Our transparent water-based finish will add color and protect your interior wood surfaces from UV exposure. Will not yellow over time.

#### LIFELINE ACCENTS™

These vibrant colors create a wonderful accent for your wood trim, interior walls, millwork, furniture and other wood elements of your home.

#### LIFELINE ACRYLIC™

Attractive and durable protective topcoat that adds depth to the finish. It can be applied over *Lifeline Interior*, *Lifeline Accents*, *Prelude* or directly to bare wood.

#### SURE SHINE™

Most durable interior clear finish for all wood surfaces inside your home. Creates lustrous deep-shine finish. Can be used to coat and re-coat old floor finishes.

### LIFELINE™ EXTERIOR PRODUCTS

#### LIFELINE ULTRA-7™

The highest performance one-coat stain with very low VOC and unsurpassed adhesion to wood.

#### LIFELINE ACCENTS™

The two-coat color finish system developed to make your home look fashionable.

#### LIFELINE ULTRA-2™

Advanced waterborne formula enriches the natural wood grain and protects against damaging UV rays from the sun.

#### LIFELINE EXTERIOR™

Our value priced semi-transparent exterior wall stain.

#### LIFELINE ADVANCE™

Clear topcoat - the second component of our exterior wall finish system can be used with any product listed in this section.

### DEFENSE™ EXTERIOR PRODUCTS

#### LOG & TIMBER DEFENSE™

A unique penetrating exterior stain and sealant in one. Keeps rough wood sealed and enhances its rustic beauty.

#### DECK DEFENSE™

*Deck Defense* is the best semi-transparent penetrating stain for your wood deck, rails and fences.

## PROPER SURFACE PREPARATION

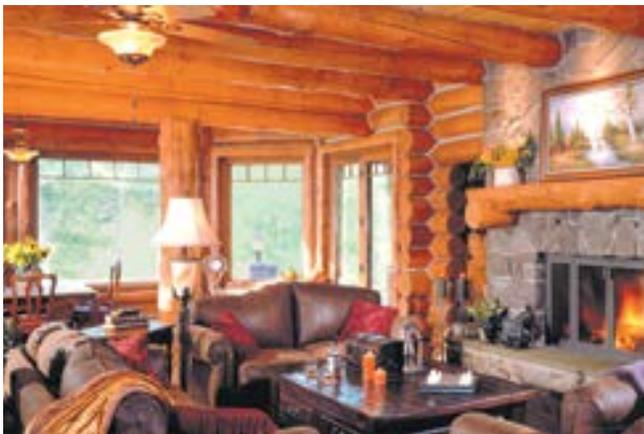
### GENERAL

Nothing determines the quality, appearance and performance of your wood finish as much as proper preparation. Careful attention to tools, chemicals, and cleaners that you use will help you ensure the best performance and lowest maintenance effort for your home.

All surfaces must be washed before application of finishes. We offer several products that are created to work cohesively with our finishes. If there is anything that cleaners will not remove, then sanding is probably your next choice. Be aware that spot sanding can cause surface texture differences that will show up after finish application. It is best to continue sanding the whole log for best appearance. Sanders or *Osborn* brushes work well to smooth wood surfaces and remove most contaminants. Never use steel wool.

#### AVOID THESE MISTAKES:

Use of chlorine based cleaners is the single worst mistake made in preparation. The use of cleaners with unknown ingredients is the second worst mistake. Perma-Chink Systems has formulated wood cleaners that are unique to the industry in their ability to clean and brighten wood surfaces without damaging wood fibers or causing damage to existing finishes (other cleaners soften finishes, making them susceptible to damage during cleaning.)



### INTERIOR

Before you apply coatings to interior surfaces, always thoroughly wash them with a recommended cleaning solution. *Log Wash* is made for this purpose and should be used as follows:

Mix 1/2 cup of *Log Wash* Concentrate with one gallon of warm water in a pail. Apply the *Log Wash* solution to the wall with a rag or sponge. Allow the solution to remain on the wall, keeping it wet for at least 10-15 minutes. Using a clean rag or sponge and a pail of clean water, wipe the *Log Wash* solution off of the surface. Frequently rinse the sponge or rag in the pail of water and frequently exchange the water in the pail with clean water.

#### SURFACE CLEANED WITH LOG WASH™



BEFORE



AFTER

## EXTERIOR - NEW CONSTRUCTION

### LOG WASH™

A liquid concentrate for cleaning and conditioning bare wood surfaces and LIFELINE finishes.

### CEDAR WASH™

A ready-to-use cleaner for wood species that contain high levels of resin oil, including Western Red Cedar, Redwood, Walnut, and Mahogany. Recommended for Southern Yellow Pine, Douglas Fir, Spruce, Cypress, and Northern White Cedar.

### WOOD RENEW™

A cleaning concentrate for use on bare wood. Removes UV damaged gray wood fibers.

Exterior surfaces are prepared using various methods, depending on the condition of the wood:

- ▶▶ If the wood has not weathered and appears generally clean and consistent: wash the surface with two cups per gallon *Log Wash* solution and rinse with a garden hose, within seven days of staining. Follow label instructions.
- ▶▶ If there are signs of gray, weathered wood, restore with *Wood ReNew* and rinse with a pressure washer. Follow label instructions.
- ▶▶ If there are dark streaks or discolorations on the surface such as rust stains from bands, restore wood with a solution of *Oxcon* oxalic acid on the entire wall (avoid spot cleaning) according to label directions. Carefully follow label instructions.

**Note for log siding and milled logs:** Milled logs and log siding may be milled to a very smooth finish. If so, it often has mill glaze at the surface. If mill glaze is not removed, your exterior stain will not adhere properly to the surface. Mill glaze can be removed by using *Wood ReNew* according to the label instructions. Contact Perma-Chink Systems for additional information.

### OXCON™

A liquid concentrate oxalic acid solution for removing dark colored streaks caused by metallic tannates.



Dark colored streaks caused by metallic tannates. *Oxcon* solution will also remove rust stains caused by nails, screws and fasteners.

## EXTERIOR - EXISTING CONSTRUCTION

### LIFELINE RE-COAT:

If the existing LIFELINE finish is in good condition and a re-coat is in order, wash the surface with one cup per gallon *Log Wash* solution and rinse with a garden hose (pressure washing is not recommended) within seven days of staining. Follow label instructions. Allow to dry and you are ready to apply LIFELINE.

### OTHER STAINS RE-COAT:

Application of LIFELINE over another manufacturer's coating may work, however, we just cannot be sure of long term performance. In this situation, we recommend that you remove old finishes as part of your preparation procedure.

# Techniques for Removing Old Finishes

There are numerous methods for removing your old finishes. Each method has its benefits and drawbacks. The most common methods are:

## Pressure Washing

Is familiar to most people. The drawbacks of using a pressure washer involve the integrity of the sealant system in the house (it must be good enough to prevent water intrusion to the interior) and potentially raising surface grain. Water intrusion can be managed by having someone inside the house with enough towels and rags to wipe up water as it comes in.



We recommend that you follow up pressure washing with light sanding or buffing with an *Osborn* brush to remove loose grain ("feathering") caused by pressure washing.

Always use pressure washers at the lowest pressure to reduce the risk of damaging the wood surface. We also recommend that as the final step before *LIFELINE* application you perform a cleaning with *Log Wash*, per label instructions, to remove any debris left from pressure washing.

## Media Blasting

Using sand, recycled glass, walnut shells, corn grit, soda or dry ice. Each of these media types has its pros and cons as compared to the others. Since media blasting opens surface porosity and leaves small particles embedded in wood surfaces, we recommend using non-organic media for blasting. Additional work after blasting process may be needed, this can include buffing out with a sander or an *Osborn* brush. Cleaning with *Log Wash* to remove embedded media is strongly recommended.



BEFORE BUFFING



AFTER BUFFING

Use *Prelude*™ as a primer on media blasted surfaces to even out the color of any *LIFELINE* stain and prevent the color from being considerably darker due to porosity.

## Sanding

Exterior sanding should always be done with sandpaper that is 60-80 grit or coarser to ensure the best performance of your finishes. After sanding is complete wash all dust away with a *Log Wash* solution, following label instructions.



## Chemical Stripping

Involves the use of chemicals and the precautions associated with those chemicals. Strippers do not actually remove finishes, but soften them to allow you to easily remove them, usually with a pressure washer. Strippers have different dwell times, which vary significantly with ambient temperature (they work more slowly in lower temperatures.)



Perma-Chink Systems carries strippers that are as environmentally and user friendly as we can find.

Avoid using finish removers containing potassium hydroxide or sodium hydroxide because they have extremely high pH that disrupts the chemistry of wood and can cause discolorations underneath new finishes, sometimes long after application. Whichever stripper you choose, be sure to have us ship samples to your jobsite to see how effective they are. Always follow label instructions carefully. Contact Perma-Chink Systems for more information.

## CHECKING WITH PH PAPER



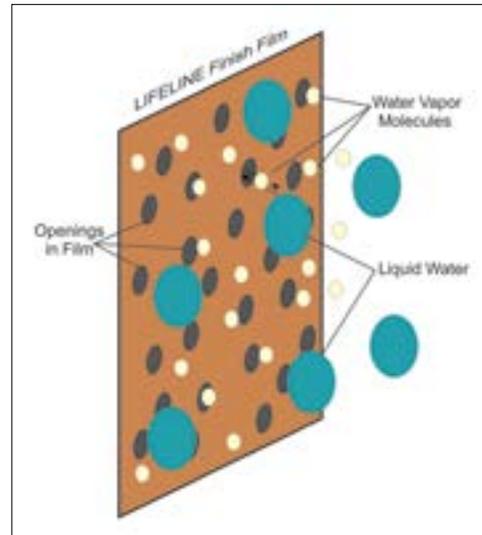
Continue rinsing off any cleaning solution with water until the pH of the run-off water of the wall measures 6.5 - 7.5.

## LIFELINE™ - APPLICATION TIPS

- 1 Stir containers of LIFELINE finishes thoroughly before starting. Remember that even clear-coats require stirring to blend different ingredients within the container. Use a drill powered paint agitator for 5 minutes on a newly opened container to completely mix settled ingredients.

NOTE: *Sure Shine* should be hand-stirred, using a paddle or a paint stick to avoid entraining air in the liquid.

- 2 When using multiple containers of colored finishes, they should be 'boxed'. Do this by thoroughly stirring LIFELINE in its original container and then combining contents of different containers together in a separate container.
- 3 To avoid leaning ladders against freshly applied LIFELINE, it is best to start at the top of the wall. Place ladder end on unfinished logs below your work line.
- 4 Wipe up runs and drips immediately. They will come off best using a wet rag.
- 5 When you take a break, submerge sprayer tip in water to prevent clogging with partially dried LIFELINE.
- 6 Avoid lap marks. Work on one or two courses of logs at a time and never stop in the middle of a log. Work to natural break points such as corners, window edges, butt ends of logs or other natural break points. Continue application by running a wet edge until a break point is reached. As you approach a break point, feather your wet edge and continue working the LIFELINE from your brush until the product runs out. Start spray pattern away from the break point and finish back-brushing to the break.
- 7 Apply LIFELINE in thin coats. If it runs down the wall, you are applying too much. OBSERVE CORRECT COVERAGE RATES as listed on label.



One of the best features of our LIFELINE finish systems is the ability to breathe, or the ability of water vapor to permeate through a film (vapor permeable). We encourage you to apply our finishes in thin layers. When applied too thick, the water vapor channels become covered up or more difficult to navigate.

- 8 When spraying, hold spray tip about 1 foot away from wall, using smooth strokes to apply evenly. Back-brush immediately to even out the application and to work the finish into all wood surfaces including checks and fissures.
- 9 LIFELINE can be applied by brush, but using an airless sprayer followed by brushing the wet application (back-brushing) is much more efficient and produces best results.
- 10 *Lifeline Ultra-7, Lifeline Ultra-2, Lifeline Accents, Lifeline Exterior, Lifeline Interior, Lifeline Advance* clear coat are all applied using the same techniques. *Lifeline Acrylic* and *Sure Shine* are different products and application techniques vary slightly for each product. Read all label instructions fully before beginning.

### Protect exposed end-grain from the elements!

*Log End Seal* provides a durable, water-repellent barrier to prevent water absorption from the end grain. *Log End Seal* must be applied in a thin coat after the basecoat of *Lifeline* wood finish and before the application of *Lifeline Advance* clear topcoat, creating a triple layer of protection.

# LIFELINE™ - GETTING IT ON THE WALL

## General Application

- ▶▶ Allow the surface to dry before applying the first coat of finish.
- ▶▶ Stir LIFELINE thoroughly at the start and periodically during use – every 20 minutes. If your airless sprayer has a re-circulator, run it periodically.
- ▶▶ If you are using an airless sprayer, set it up according to manufacturer's instructions. We recommend tip size .015 or .017.
- ▶▶ Apply LIFELINE with an airless sprayer or brush. NEVER use a roller for application. After spraying, immediately brush wet LIFELINE to even out the application and work fresh LIFELINE into the wood surface and exposed checks.
- ▶▶ During back-brushing, if your brush is building up LIFELINE or there are runs that you cannot brush out, then lower your application rate. OBSERVE PROPER COVERAGE RATES for best performance and appearance. Coverage rates vary with wood species and porosity.
- ▶▶ To avoid lap marks, continue to apply LIFELINE working systematically across 1 or 2 courses of logs so that you are able to always work from wet edges across fresh surfaces to a planned break point. Never stop in the middle of a log or work area.
- ▶▶ Make sure the finish is dry to the touch before application of subsequent coats. In dry conditions, the drying time will be shorter than in cool weather and high humidity.
- ▶▶ In most conditions, LIFELINE dries quickly enough to allow you to apply multiple coats in a single day.
- ▶▶ As you start a subsequent coat, watch to see that as you back-brush the new coat the first coat does not soften and roll up in the brush stroke. If it does, stop immediately and allow more drying time.
- ▶▶ Clean application equipment with fresh water and soap. LIFELINE that has recently dried can usually be removed using alcohol or mineral spirits.



## MAINTENANCE

Periodic cleaning of exterior walls is important to prolong the life of your exterior finish system and to maintain the best appearance. *Lifeline Advance* clear topcoats help reflect sunlight, which reduces the amount of UV that gets through the semi-transparent coating to the wood surface. Keeping the surface free of dust and other contaminants maintains this reflectance.

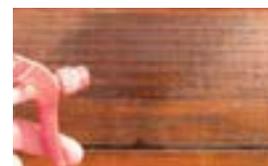
The exterior of your house is easy to wash with *Log Wash* solution. Simply mix according to the label instructions, apply *Log Wash* to the wall with an inexpensive pump up sprayer, brush lightly if needed and rinse with a hose-end mist sprayer. See our *Log Wash* label for complete instructions.

Using a spray bottle, give the wall several squirts of water in various locations of the wall to test the water repellency. If the water sheets off, the *Lifeline Advance* is still performing well. If the wood underneath the finish begins to darken when you test it, it is probably time to refresh your *Lifeline Advance* topcoat.

For more detailed questions about exterior maintenance contact any Perma-Chink Systems branch.



FINISH REPELS WATER



FINISH LOST IT'S WATER REPELLENCY

# LIFELINE™ - STAINS and FINISHES

## Exterior and Interior Coverage Rates

### Lifeline Ultra-7™

Premium exterior one coat stain.

One coat - 250-350 sq.ft. per gallon.



Exterior

### Lifeline Ultra-2™

Premium exterior two coat stain.

1st coat - 350-450 sq.ft. per gallon.

2nd coat - 600-800 sq.ft. per gallon.



Exterior

### Lifeline Accents™

Trim and accent two coat stain.

1st coat - 350-450 sq.ft. per gallon.

2nd coat - 600-800 sq.ft. per gallon.



Exterior  
and  
Interior

### Lifeline Exterior™

Exterior two coat stain.

1st coat - 350-450 sq.ft. per gallon.

2nd coat - 600-800 sq.ft. per gallon.



Exterior

### Lifeline Advance™

Exterior clear topcoat finish.

600-800 sq.ft. per gallon on smooth surface over LIFELINE color stains.



Exterior

### Prelude™

Sealer for porous wood surfaces.

200 to 400 sq.ft. per gallon depending on the porosity of the wood.



Exterior  
and  
Interior

### Lifeline Interior™

Interior stain.

1st coat - 350-450 sq.ft. per gallon.

2nd coat - 600-800 sq.ft. per gallon.



Interior

### Sure Shine™

Clear topcoat for floors and millwork.

600-800 sq.ft. per gallon over Lifeline Interior, Lifeline Accents or Prelude.

700-900 sq.ft. per gallon on subsequent coats.



Interior

### Lifeline Acrylic™

Clear topcoat for walls and millwork.

600-800 sq.ft. per gallon over Lifeline Interior, Lifeline Accents or Prelude.

700-900 sq.ft. per gallon on subsequent coats.



Interior

# DEFENSE™ - For Walls, Trims, Decks and More...



Ideal for sprucing up existing homes with oil finishes or a lasting durable finish for new construction.

Specifically formulated to inhibit the growth of mold and mildew on the penetrating lattice.

Makes the toughest restoration job easy with a simple application.

Perma-Chink Systems developed a new technology semi-transparent wood stain that provides the ease of application and penetration of the older solvent oils combined with the performance and longevity of a penetrating polymer based finish. This combination is truly unique.



DEFENSE™ products penetrate into the wood like an oil coating, but unlike oils, it hardens into a lattice, supporting and strengthening the natural wood fibers to protect the wood from the inside out.

*Easy to apply and maintain.*

**Benefits:**

- Allows texture and grain to show through
- Low odor and VOC
- Outstanding adhesion and durability
- No peeling or flaking
- Not flammable
- Soap and water clean-up
- Environmentally responsible
- User-friendly

**Log & Timber Defense™**  
Exterior log and siding stain.

200 to 300 sq.ft. per gallon depending on the porosity of the wood.



Exterior

**Deck Defense™**  
Exterior deck, railing and fencing stain.

200 to 300 sq.ft. per gallon depending on the porosity of the wood.



Exterior

## EXTERIOR - NEW CONSTRUCTION

### LOG WASH™

A liquid concentrate for cleaning and conditioning bare wood surfaces and DEFENSE finishes.

### CEDAR WASH™

A ready-to-use cleaner for wood species that contain high levels of resin oil, including Western Red Cedar, Redwood, Walnut, and Mahogany. Recommended for Southern Yellow Pine, Douglas Fir, Spruce, Cypress, and Northern White Cedar.

### WOOD RENEW™

A cleaning concentrate for use on bare wood. Removes UV damaged gray wood fibers.

### OXCON™

A liquid concentrate oxalic acid solution for removing dark colored streaks caused by metallic tannates.

The surface of the wood must be clean, DRY and free from dirt, debris, mill glaze and other coatings to ensure the product penetrates into the wood. *Wood ReNew* is the recommended cleaner for preparing wood surfaces prior to DEFENSE product application. DO NOT USE CHLORINE BLEACH AS A CLEANER, this can destroy the integrity of the wood and may lead to premature stain failure. Rinse off any cleaning solution with water until the pH of the run-off water of the wall measures 6.5 - 7.5.

New pressure treated wood should be allowed to season prior to application to allow excessive moisture to work its way out. Seasoning times will vary with temperature and humidity in the area.

## EXTERIOR - EXISTING CONSTRUCTION

### DEFENSE™ RE-COAT:

If the existing DEFENSE finish is in good condition and a recoat is in order, wash the surface with one cup per gallon *Log Wash* solution and rinse with a garden hose (pressure washing is not recommended) within seven days of staining. Follow label instructions. Allow to dry and you are ready to apply DEFENSE.

Make sure to replace or repair any wood that is decaying with new wood and check all fasteners to insure that they have not backed out or need replacing.

In some cases it may be necessary to sand the horizontal surfaces to remove old finishes or stubborn stains. We recommended that 60 grit sandpaper be used as this enhances penetration as well as mechanical adhesion. If sanding is necessary make sure to sand the entire horizontal surface, as spot sanding will result in unevenness of the finish. Once you have finished sanding rinse or clean the surface to remove all sanding residue.

### OTHER STAINS RE-COAT:

Application of DEFENSE over another manufacturer's coating may work, however, we just cannot be sure of long term performance. In this situation, we recommend that you remove old finishes as part of your preparation procedure.

## LOG & TIMBER DEFENSE™ - GETTING IT ON THE WALL

For best results, apply *Log & Timber Defense* liberally to the point of saturation. Application of the second coat should be done in a “wet-on-wet” application. If wet-on-wet application is not possible, allow 24 hours before applying an additional coat. For a consistent appearance, do not alternate between different methods of application. Do not apply if rain is expected within 6 hours. Do not apply any top coating products.

1. Although *Log & Timber Defense* is non-toxic, it is recommended to use gloves when applying this product.
2. Do not apply on wet wood or in direct sunlight.
3. Wet down and cover vegetation and adjacent surfaces.
4. Mix thoroughly; DO NOT USE POWER MIXING EQUIPMENT, use paint sticks or similar stirrers.

5. Product may be applied with a conventional airless sprayer with a .513 tip, or brush and bucket method or other suitable application tools.

6. Make sure to allow the product to soak in. Apply to the point of saturation and back-brush or spread in the direction of the wood grain. Apply at an average coverage rate of 225 sq. ft. per gallon. (Coverage rate will vary with substrate condition). Check surfaces for any runs or drips and brush them out before product dries.

7. Rinse all overspray from plants and surrounding surfaces for which treatment is not desired.

9. *Log & Timber Defense* cleans up easily with soap and water immediately after use.

**Note:** The more stain the wood absorbs, the longer application will last before requiring maintenance coats.

## DECK DEFENSE™ - GETTING IT ON DECKS, RAILS and FENCES

Apply *Deck Defense* liberally to the point of saturation, allowing the product to soak in. Do not allow the product to pool on horizontal surfaces. If you apply more stain than the wood can absorb, then wipe off the excess. Back-brush in the direction of the wood grain. A second coat is not necessary unless you want a darker appearance. If applying a second coat, it should be done in a “wet-on-wet” application. If wet-on-wet application is not possible, allow 24 hours before applying an additional coat. For a consistent appearance, do not alternate between different methods of application. Do not apply if rain is expected within 6 hours.

Apply at an average coverage rate of 225 sq. ft. per gallon. (Coverage rate will vary with substrate condition). Application methods can include a pump up sprayer, rollers, brushes or deck pads, as well as an airless sprayer with a .513 tip. On vertical applications start from the bottom and work your way up with broad even strokes, and back-brushing while still wet.





**Company Stores**

**Washington/Western Division**

Redmond, WA 98052  
1-800-548-1231

**Tennessee/Eastern Division**

Knoxville, TN 37914  
1-800-548-3554

**Tennessee**

Sevierville, TN 37862  
1-865-774-3307

**Minnesota Branch**

Rice, MN 56367  
1-877-244-6548

**Colorado Branch**

Rifle, CO 81650  
1-800-433-8781

**Montana Branch**

Stevensville, MT 59870  
1-800-479-7090

**Pennsylvania Branch**

Petersburg, PA 16669  
1-800-257-4864

**Visit Our Website  
for  
Stocking Distributors  
and Dealers  
Near You**

**Need A PRO?  
Call  
1-800-548-3554**



**or visit us online  
www.permachink.com**



- **APPEARANCE**
- **LONGEVITY**
- **VALUE**
- **ENVIRONMENT**

## How to Calculate the Square Footage of Exterior Log Walls?

It's easier to work up the numbers one wall at a time, then add them together. Start by measuring the length of the wall with a tape measure. Then either measure the height or estimate it by counting the number of log courses and multiplying the number of courses by the diameter of the logs.

Just remember that the diameter is in inches, so you will need to convert the inches into feet.

So if we have a wall that is 25 feet long and has 16 courses of 10 inch diameter logs the calculation is:

$$25 \text{ ft.} \times 16 \text{ courses} \times 0.83 \text{ ft.} = 332 \text{ sq. ft.}$$

Now this assumes the wall is flat but what if the logs are round?

A rule of thumb is to add 25% to the square footage of a wall to compensate for the increased surface area created by the curvature of the logs. So in the above example if the logs are round you would multiply the 332 sq. ft. by 1.25, resulting in 415 sq. ft. of wood surface area.

### Log End Seal™

Clear sealer for exposed log ends.

30-40 sq.ft. per gallon.  
One gallon will coat approximately 180 log ends with 6" diameter.



Exterior Protects exposed log ends

### TOOLS

- Ladders, ladder jacks and other equipment as necessary.
- Electric drill and paint mixer.
- Airless sprayer with .015-.017 spray tip (LIFELINE products) or .513 spray tip (DEFENSE products).
- **High quality** paint brushes.
- Clean rags.
- Water bucket.

