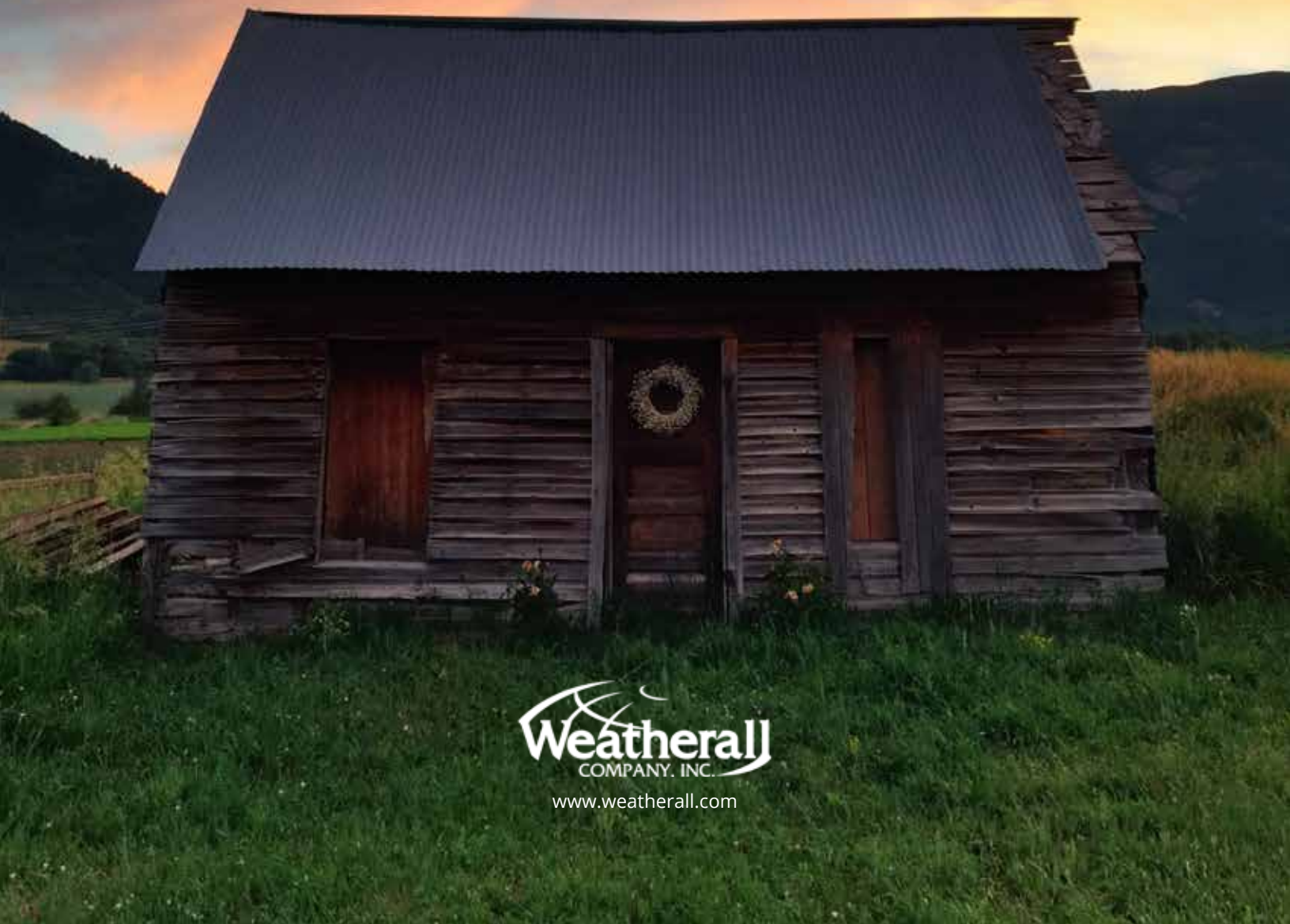


THE DEFINITIVE GUIDE TO LOG HOME STAINING AND CHINKING

FOR PROFESSIONALS AND HOMEOWNERS



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PREFACE

This manual is a compilation of information taken from various sources, ie: lumber trade associations, National Paint and Coatings Association, test laboratory publications, and subject books and is the basic text for teaching the Weatherall Co. Inc. CAPS Training Course.

The main course is divided into two major sub courses:

1. Technical which covers General Log Information, Preparation & Cleaning, Application, Maintenance, FAQ's and specific product information.
2. Business which covers Business Development, Estimating & Bidding, Scheduling, Contracts and Warranties, Company Support Plans and Internet Resources.

In many cases the subject matter presented will have some effect on both of the sub categories and will be covered to some extent in both.

The intent of this manual is not just to provide the "how to" information but also the "reason why".

SECTION I: GENERAL

ORIGINS

Understanding the origin and nature of logs can help us understand the “why” that it is necessary for us to properly design, build and maintain a log home.

In the beginning, logs were harvested from living plants (trees), usually pine, fir, oak, spruce, cedar, cypress, etc. In their natural state, these plants were living biological organisms comprised of 95%-97.5% water, lignin, and cellulose (Polar or water compatible molecular elements) and 2.5%-5% pitches and resins (Non-polar or solvent compatible elements).

Over time, these organisms developed their own physical structure or body containing many of the same functional characteristics as our own bodies. They developed a skeletal framework, the heart wood or dryer, collapsed old sap wood rings. They developed a nutritional delivery system, the sap wood and cambium layers that take water and nutrients from the earth and combine them with sun energy absorbed through the leaves causing the tree to grow. They even developed a way of telling their age, their annual growth rings. Finally, and probably most important to our discussion today, they developed a protective skin, or bark to protect the rest of the tree from the elements such as UV radiation, mold, wind abrasion, large temperature and moisture swings, standing water, dirt, pollen, etc.

When we harvest the tree, we remove this protective skin and, for our purposes, use the exposed wood (Mother Nature never intended the exposed wood fibers to be the first line of defense from the elements) as exterior log walls and/or dimensional lumber for decking. We have virtually taken a living organism that was in perfect harmony with Mother Nature and made them worst enemies and it is now our job to protect the results of our actions.



Unique Characteristics of Logs

Although it is obviously true that logs are wood and “wood is wood is wood”, the physical size and shape of a log give it unique characteristics that are significantly different from normal dimensional lumber.



ROUND CROSS SECTION

The round cross sectional shape of the log (Appalachian style and square log style excluded) present an upward facing curved surface to the sun and elements. Every day, at some point on this surface, the sun's rays are continually impacting the surface at a 90° angle or perpendicular to the log surface.

A. The intense UV effect of this direct impact destroys the surface wood fibers on the upper log surface making it unsuitable for stains or sealants. Depending on the overall intensity of the UV on the upper surface of the logs, it can be sufficient to make them unsuitable for sealing or staining in as little as one month.

B. The thermal affect of this direct sun impact can cause the upper portion of the log to be 30-40° F hotter than the surrounding flat-vertical surfaces or the lower portion of the log. The resulting differential temperatures on the log surfaces can cause significant movement in the horizontal log joints and corresponding stress in the joint sealants. It will also increase the stress on the upper surface fibers causing more cracking or checking and the potential for trapped water and mold. Additionally the increased stress and subsequent surface movement puts abnormal mechanical stress on the finish stain coatings often causing premature failure of the coating. Finally the increased temperature will cause moisture trapped in the cells close to the surface to try to escape faster, thus putting an additional stress on the stain coating and contributing to premature failure.

LOG SIZE AND MASS

Wood moves as it undergoes thermal and moisture content changes (This is handled in more detail in section II under "Moisture Content" and "Shrinkage") and the larger the piece of wood is, the more it will move and the more force it will be capable of exerting as it moves. A 10 in. diameter log is going to move a lot more and exert a lot more force than a 2x4. If the joint sealants are not capable of accommodating the movement, the sealant will fail (adhesively or cohesively) or the log will fail (cohesively). The log is going to move!

LOG STYLES

There are many different styles of log homes and these can generally be categorized by:

1. The log style - round, square, milled, hand peeled, hand-hewn, etc.
2. The wood species - pine, fir, oak, spruce, cedar, cypress, etc.
3. The type of horizontal joinery - chink style, tongue and groove, Swedish Cope, log siding, etc.
4. The corner joinery - saddle notch, dovetail, butt and pass, etc.

Each category and each design approach has its own specific benefits and drawbacks as well as specific staining and sealing requirements. In many cases these affect one or more of the other categories.

The following is a brief discussion of the four categories and their specific and/or general requirements as they affect the staining and sealing of a log home.

LOG STYLE

In many cases the preference for a given log style is the result of historical precedence. The rectangular (Appalachian) and square log profiles are generally more predominant in the southeastern United States. The hand peeled, saddle notched, round profiles are more predominant in the northwestern United States.

At first glance, log style would seem to have the least effect on either the staining or sealing requirements because all logs, regardless of style, need to be stained. The sealing requirements will be determined more by the horizontal and corner joinery than the log shape. This ignores the fact that:

1. All logs are massive, continuously moving building elements.
2. Most logs are round (Appalachian style and square logs excluded) and as such present an upward facing curved surface to the sun. These two unique log characteristics have an overriding effect on log protection and maintenance as was discussed in an earlier part of this section under "Unique Characteristics of Logs".

Wood Species

Wood species will affect the staining because of the coloring affect of the wood and the absorption of the stain due to the different wood densities. It will also affect the sealing requirements due to the different weights, effecting settling and propensity for checking and twisting of the different species. Engleman spruce, for example, has a huge propensity to spiral check and can have a multitude of small surface checks that are almost impossible to seal.

HORIZONTAL JOINERY

Horizontal joinery can probably be divided into three major categories; chink style, chinkless, and log siding. Chink style can be subdivided into round on round, primarily hand peeled and the rectangular (Appalachian style) homes. Chinkless style can be subdivided into Swedish Cope/full scribe and tongue and groove homes and log siding subdivided into half log, slab log, and plank sided homes. Sealing requirements for these styles are handled in more detail in Section 4 General Application Information.

CORNER JOINERY

Corner joinery can be divided into four general categories; saddle notch, dovetail, butt and pass, and post and beam. Sealing requirements for these corner designs are handled in detail in Section 4 General Application Information.



SECTION II: BIDDING, ESTIMATING, AND SCHEDULING FOR LOG HOME CONSTRUCTION

WALK-THROUGH CHECK LIST

The following is a checklist of home design/construction details and issues that should be considered and reviewed with the home owner or GC, where applicable and the information is available, to determine any special needs to be addressed in staining and sealing the home. Many of the topics covered in this section will not only affect the overall success of your work but will have a significant impact on the project cost. This section will only address the technical benefits and requirements of each subject. Impact on project cost will be addressed in the business section.



ROOF OVERHANGS

Many log homes are designed without adequate roof overhangs. The result is that the exterior wall logs and decks are constantly subject to bad weather. Know the direction the wind-driven weather comes from and take special precautions to seal all upward facing checks and corner joinery. If you are dealing with a new home and are involved in the project early enough to influence the design, the inclusion of large overhanging eaves and full deck overhangs is critical. Coupled with sufficiently high foundation walls to protect the logs and keep them well above the ground and out of the weather will significantly reduce future maintenance costs.

GUTTERS AND DOWNSPOUTS

Gutters and downspouts will keep cascading roof water off the bottom courses of logs and decking. KEEPING BACK-SPLASH AT A MINIMUM IS CRUCIAL IN DESIGNING AND MAINTAINING A LOG HOME. Explain to the home owner/customer the importance of cleaning the gutters at least twice a year, especially if located in the woods. Clogged gutters will overflow and damage fascia, decking and log walls creating the potential for basement water problems.

GRADING AND DRAINAGE

Proper grading should have been designed into the lot grading plan to avoid expensive repairs later. Finish grade and projected snow levels should never come in contact with wood. The grade should always slope away from the foundation walls. Check for any logs that might be too close to finish grade (normally 2-4 ft minimum depending on normal regional snow levels) and all logs immediately above a deck. Caulk all checks, upward and downward facing, and seal the logs to sill flashing per Section 6. Explain to the customer that planting shrubs and trees close to the structure, but not in contact with the structure, can help pull water away from the foundation. Contact with the structure conversely will provide a drainage path for water from the vegetation to the logs and a migration path for insects.

LOG PINNING

Log pinning requirements will vary from supplier to supplier and should be defined by the log supplier or architect. This being said, a few log screws are normally not sufficient to keep the logs from racking. The possible log movement due to inadequate pinning can destroy any efforts to seal the log joints. For large round on round logs (8-10 inch diameter and larger), a good approach is to use 3/4 inch rebar driven through at least three log courses per pin in a grid that will put a minimum of two pins per log. Pre-drill all logs for either a snug or an interference fit.

CHECKING

The reasons logs crack or check was discussed in Section 1 General. It is a normal occurrence in logs as they age. They can range from hair line cracks to 1/2 inch and larger. These checks provide a perfect path for moisture seepage and subsequent wood rot, cold air infiltration and insects. The type of corner joinery and the severity of the horizontal checking will determine how much check sealing will be required.

Saddle notch and dovetail corner joinery can allow the corner checks to either pass directly into the house or down a check to a window buck or door jamb and then into the house. Butt and pass corner joinery caps the end of the butting log with a notch in the passing log thus protecting the corners but, this feature does nothing to protect the buck and jamb joints. Additionally, spiral checks can rotate from the outside of the house to the inside in the length of a span.

Generally spiral checks, checks on the upper half of the exterior logs, and checks on the upper half of the interior side of the log extensions of saddle notch and dove tail corner joints will be the main areas that will require sealing.

MOISTURE CONTENT

The moisture content of a log has two significant impacts on protecting a log home.

1) How and how much the log shrinks as it dries (See the next topic)

2) How the wood fibers accept the stain and sealant resins (drier is better).

The amount of moisture in a log is expressed as the percentage of the total log weight that is water and should be 18% or less. For example, if a 40-pound piece of freshly cut (green) wood placed in an oven and baked until all traces of moisture are removed and ends up with an oven-dry weight of 20 pounds, we say that the green log had a moisture content of 50%. If its final weight was 30 pounds, its original moisture content would have been 25%. The moisture content of wood is expressed by the formula $\text{Water Weight} / \text{Starting Weight} \times 100 = \% \text{ moisture content}$ where Water Weight equals Starting Weight minus Oven-Dry Weight.

There are ways to measure the amount of water in wood without baking it. Most log manufacturing and restoration companies use electronic moisture meters called lignometers. There are two types, surface lignometers that primarily read the surface moisture of the log down to a given depth and penetrating lignometers that pass an electric current between metal probes inserted in the log. Either method will read the moisture level down to an inch below the surface but neither will read the total moisture content of the log. This is not as important as it may seem since the outer sap wood rings/fibers generally contain more water than the heart wood layers and are the fibers that will be accepting or rejecting the stain or sealant resins.

SHRINKAGE

When a tree is cut, its intake of water stops and it begins to lose moisture to the atmosphere, or dry. As moisture leaves, wood fibers contract to fill the voids once filled by water. Fibers bind more closely and cell volume decreases. Free water, in the cells, leaves the drying log first. Then when all free water is gone, bound water in the cell walls will start to leave. The moisture content of the log at the point where all free water has been removed and only bound water remains is called the fiber saturation point or FSP (normally 28 +/- % moisture). Once the log reaches FSP, shrinkage begins and will continue until the moisture level of the log is in equilibrium with the environment/local humidity called equilibrium moisture content, or EMC. Shrinkage from FSP to oven dry occurs in all three directions longitudinal, radial and tangential, and at different rates. Tangential shrinkage is the greatest at 8.5%-9%. Radial shrinkage is next at about 4% and longitudinal shrinkage is least at 0.3%-0.5%. Equilibrium moisture content is determined more by the environment than the wood species. This means that all logs in a given environment, regardless of species, will eventually end up with approximately the same EMC. Once at EMC, the log dimensions may vary slightly with changing environmental conditions, but for practical purposes the log is stable and further changes will be minor.

HOME DRIED IN

On new construction, the home should be dried in, (roofed but not chinked or caulked) before staining. A more uniform application and complete seal of the logs from the elements will be achieved. All Weatherall chinking and caulking products can be applied directly over our stain and clear coat. Once the exterior has been stained it can be chinked or caulked leaving the interior for later scheduling after the interior walls, heating, plumbing, and electrical have been installed. This minimizes damage to finished walls and, if properly scheduled, provides a controlled environment for winter work.

INSULATION VALUES

The average cross grain thermal resistance, or "R" value of wood in the pine and fir species is normally around 1.1-1.2/inch. This was recently verified by the Log Homes Council (LHC) in tests run at the Oak Ridge National Laboratories (ORNL) as part of the LHC's ongoing research into log wall energy efficiency. The tests were run on white pine samples and concluded that denser wood species would have even lower thermal resistance values. Pure thermal resistance does not take into account a log's ability to store thermal energy in the mass of the wood. This ability, is called thermal mass effect (TME) and has the same effect that adobe bricks have in the southwest. However, to have TME, the walls must be exposed to thermal input either in the form of direct sunlight or high ambient temperatures. Since many log homes in the northern hemisphere will be exposed to cold winter ambient temperatures and the north facing walls will not be exposed to direct sunlight, these walls will have minimal TME and the thermal resistance will be what ever the R-value of the log is.

With such low cross grain thermal resistance and high energy costs, it is important to place the home on the lot and seal it so as to take advantage of any and all benefits available, To this end, chinking the horizontal joints over an energy efficient closed cell backer rod can greatly increase the overall thermal efficiency of a wall. For example, using the ORNL data, a 10 inch diameter white pine log with a 4 inch Swedish cope joint width would have an R-value of 12 through the center of the log and an R-value of 4.8 through the center of the joint for an average wall value of 9.8.

If the Swedish cope joint is replaced with chinking over 1 inch Foam Backer Rod (FBR) on each side, the center of the joint would increase to 10 making it almost as resistant to thermal flow as the center of the log. This simple change would increase the wall's overall average thermal efficiency by approximately a half of a point to 10.3.



LOG TO SHEETROCK JOINTS

The major issue in dealing with stick Frame/Sheetrock walls butting into log walls is the movement of the log walls due to settling and seasonal expansion and contraction. Joint design in this area depends on the log profile, type of wood, and wood moisture content and varies from manufacturer to manufacturer. Quality log manufacturers will provide for this movement in their design, either through head space allowance, special blocking, pinning, or anchoring provisions where the frame wall meets the log wall. Since wood cells shrink more radially than longitudinally as they lose moisture the horizontal logs will settle more than the vertical wall studs will shrink and this can cause chinking/caulking tears at the Sheetrock/log interface. Depending on the log settling and the manufacturers design requirements, this can be eliminated or minimized by lagging a 4x4 frame wall starter stud into each log in a kerf cut in the logs. Cut the kerf one inch wider than the 4x4 (if 1/2 inch Sheetrock is being used on both sides) and as deep as the planned chink joint, (if chinking is used) and insert the Sheetrock next to the 4x4 to the bottom of the kerf. If head space and log settling provisions are required, the 4x4 holes can be slotted and large flat washers used under the bolt heads. The joint should not be caulked or chinked until the logs have finished settling.

SEALING LOG CORNERS

Saddle notch corners

The Saddle notch corner is an extremely strong corner design utilizing the interlocking feature of the saddle design to lock the logs in place and has extended corners resting on top of each other. With Swedish cope and tongue and groove systems, this eliminates exposure to the top surface area of the log where water can settle and cause wood rot. Saddle notched corners are not designed for the use of a backer rod so either UV Guard® Premium or Textured Caulk, instead of chinking, should be used to wrap the saddles. Additionally, any exterior checks in the top half of the log extensions should be caulked.

Dovetail Corners

The dovetail corner is another strong corner system utilizing the interlocking feature of the double dovetail and is mainly used on Square or Appalachian Style Logs. The dovetail corner on a 6x12 log with either hand or machine hewing is probably the most traditional looking log option in the eastern United States. Wrapping dovetail saddles is the same as wrapping regular saddle notches.

Butt and Pass Corners

Butt and pass corners are often employed on smaller tongue and groove style logs, either "D" or round profile. They can be easily spotted because there is a gap in the log extensions opposite the butt side of the corner joint. A sealant tape or sealant such as Redi-Set® should have been used during the log erection process. Both the exterior and interior joints where the butt meets the pass should be caulked as with regular saddle notch and dovetail corners.

WINDOW BUCK AND DOOR JAMB SEALING

There are numerous styles of window buck and door jamb systems. Mainly they are comprised of 2x6-2x10 finished lumber fastened to the log ends with either recessed lag screws with fender washers or large nails and then capped with another 2x6-2x10 to cover the bolt heads. The main difference in the styles is that some are slotted and provide for log settling and some are firmly fastened to the log ends. The specific design should have been specified by either the log manufacturer or the architect.

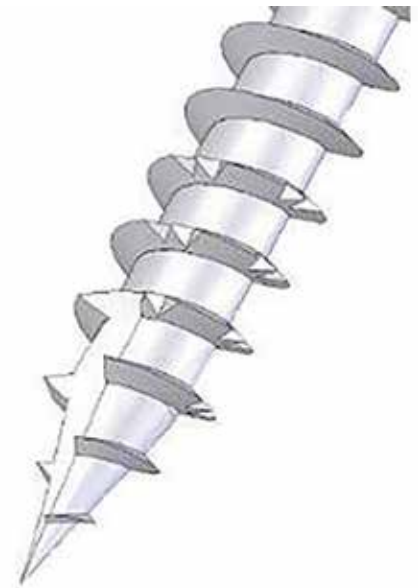
DECK SEALING

Before attempting to seal the deck to the log wall, verify that the bottom log has been properly flashed to the sill plate. Seal the deck to the bottom log by inserting a round backer rod in the joint, sealing the backer rod with a quality urethane caulk to provide an absolute water barrier, and chinking over the urethane to protect it from UV. Take special care not to push the backer rod all the way back to the flashing. This could prevent any water trapped behind the seal that came from leaks in upper logs from draining out over the flashing.

LOG AND SLAB SIDING

In recent years there has been an increased use of partial round and/or square log siding that are manufactured from young trees. The wood from such trees does not have the same dimensional stability as old growth trees; i.e., it shrinks, warps, cups, cracks, and splits. For this reason, both sides of the siding should be sealed and fastened to the wall using high quality fasteners such as GRK RSS™ Rugged Structural Screws instead of nails. Follow the log manufacturers fastening pattern or fasten the siding from the back side through the sheathing. If the siding is not adequately anchored to the sheathing, it will cup and tear the sealant.

Another common problem seen with wood siding is associated with side-wall insulation and vapor barriers. The wood siding should be installed in a way that allows the siding to “breathe”. Improper siding installation over a vapor barrier or over insulation can result in uneven moisture distribution and higher moisture content in the siding causing premature stain and sealant failure. The best method for installing siding is to seal both sides of the siding prior to installation to minimize cupping and fir it away from the insulation/vapor barrier so it can breathe.



GRK RSS™ Rugged Structural Screw



completely sealed from the outside elements. Often this is months after the outside has been dried in and can be scheduled as winter work. Top coating after HVAC is installed will keep the interior of the home warm in winter and help in the correct application of the interior finish.

CHINKING

The formula for calculating the amount of chinking required is as follows:

When planning the job set up and work schedule, make sure to meet with the General Contractor to request the following:

JOB SCHEDULE

1. Get a copy of the GC work schedule.
2. Schedule time to stain before all trim work is applied.
3. Schedule time to caulk windows and joints before all trim work.
4. Keep constant communication in order to have smoother work schedule.
5. Ask for a list of all sub-contractors with contact name and numbers. This will help getting an idea of their work schedule.
6. Develop a good relationship with the GC. This could help land future jobs.

TOOLS AND EQUIPMENT

Make sure all scaffolding, pump jacks and ladders needed for job are available and set up on work site before ordering other material. This stage will also require the delivery of special needs equipment such as boom lifts.

EXTERIOR STAIN

The exterior stain should be ordered and applied after the shell is erected and it is ready to be sealed. Staining before chinking and final grade or landscaping will help in ease of maneuverability of lifts, scaffolds or pumps jacks. It is not recommended that any of the stain or sealant products be stored in unprotected/unheated storage at the job site due to the risk of damage, freezing, or theft. Proper estimation of the amount of products needed is crucial to having them on the job site when needed.

CHINKING, CAULK, AND BACKER ROD

The chinking, caulk, and backer rod should all be ordered and delivered to job site after the shell has been stained and is ready to be completely dried in.

Interior Clear Coat

The interior finish should be ordered and applied after the log home has been

Calculating Material Requirements

Number of pails required = Length of Walls x Number of Log Courses* + Length of Gable Ends x Number of Log Courses/2* - Total Length of Windows and Doors x Number of Log Courses*

Divided by linear feet per container per chart below + Allowance for Window, Door, and Corner Wrapping.

* Multiply by 2 if both interior and exterior are to be done

Example:

12 foot long wall with 9 courses of logs, with a 2" chink joint @ 1/4" Depth = 2.81 gallons of chinking for one side of this wall with no windows, doors, or corners.

BACKER ROD

The formula for calculating the backer rod requirements is as follows:

| ESTIMATING GUIDE FOR CHINKING | | | | |
|--|-----------------|----------------------|------------------------|--------------|
| FINISHED JOINT WIDTH @ 1/4" | PER 5 GAL. PAIL | PER 30 OZ. CARTRIDGE | PER 10.3 OZ. CARTRIDGE | BACKING USED |
| 1" | 385' | 24' | 8' | 3/4" FBR |
| 1 1/4" | 308' | 19' | 6' | 1" FBR |
| 1 1/2" | 257' | 16' | 5' | 1" FBR |
| 1 3/4" | 220' | 14' | 5' | 1 1/4" FBR |
| 2" | 192' | 12' | 4' | 1 1/2" FBR |
| 2 1/2" | 154' | 10' | 3' | 2" FBR |
| NOTE: Thickness of the joint should be 3/16" to 1/4". DO NOT EXCEED THICKNESS OF 1/4". | | | | |

The number of feet of backer rod required = Length of Walls x Number of Log Courses* + Length of Gable Ends x Number of Log Courses/2* - Total Length of Windows and Doors x Number of Log Courses* D

*Multiply by 2 if both interior and exterior are to be done

CAULKING

The formula for calculating the amount of caulking required is as follows:

The number of caulking containers required = Length of Walls x Number of Log Courses* + Length of Gable Ends x Number of Log Courses/2* - Total Length of Windows and Doors x Number of Log Courses* Divided by linear feet per container per chart below + Allowance for Window, Door, and Corner Wrapping.

* Multiply by 2 if both interior and exterior are to be done.

Example:

The above 12 foot long wall with 9 courses of logs and a 1/4" joint would take 2 10.3 oz. tubes of UV Guard® Premium Caulk for one side with no windows, doors, or corners.

| ESTIMATING GUIDE FOR UV GUARD PREMIUM CAULK | | | |
|---|-------------------|----------------------|------------------------|
| Finished Joint Width | Per 5 Gallon Pail | Per 30 oz. Cartridge | Per 10.3 oz. Cartridge |
| 1/4" | 3000' + | 180' | 60' |
| 1/2" | 750' + | 45' | 15' |

STAIN

Rule of Thumb

Because of the convex surface curvature of the logs it is necessary to add 20% to the calculated flat wall area for log siding and "D" logs and 40% to the calculated flat wall area for round logs.

The formula for calculating the stain requirements is as follows:

The number of 5 gal. pails of stain required = The length of the walls x the average height of the walls (not including gable end height) + the length of the gable ends x the height of the gable ends/2 — the area of the windows and doors] x the log radius factor + an allowance for eaves, fascia, and trim all divided by stain coverage factors of 1000- 1500 sq. ft./5 gal. for the first coat, depending on the wood porosity and 2000-2500 sq. ft./5 gal. for subsequent coats.

INTERIOR CLEAR COAT

The interior clear will use the same calculation as the exterior but with the addition of the ceilings, rafters, trusses, and purlins. Depending on the sheen preference, 1-2 coats of Log Guard® Interior Top Coat will be required over any UV Guard® or UV Guard® II color.



WEATHERALL STAIN CALCULATOR

Step 1

Figure the Wall Area by measuring Length and Width to get the Perimeter of the Project: **(Length + Width) x 2**

Length wall one 50 Length wall two 25 Perimeter 150

Step 2

Enter the Average Wall Height of the Log Walls 15

Step 3

Multiply the results of Steps 1&2

Step 4

Enter the Length and Width of All Gabel Ends and divide by 2

| | Width | Height |
|-----------------|-------|--------|
| Gabel End One | 10 | 6 |
| Gabel End Two | 10 | 6 |
| Gabel End Three | 0 | 0 |

Step 5

Add to get Total Exterior Square Foot

2370 sq ft

Weather UV Guard & UV Guard II 1st Coat Covers

176 sq ft/gal

Weather UV Guard & UV Guard II 2cnd Coat/ Top Coat Coverage

450 sq ft/gal

1 Coat Needs 13.47 Gallons Stain

2 Coat Needs 5.27 Gallons Top Coat

SECTION III: LOG CLEANING AND PREPARATION

Before applying any stain, caulk, or chinking, it is imperative that the logs are clean and dry. There should be no marks from construction log identification markings, lifting chains, etc. and free from any surface contamination, dirt, pollen, oils, lumber yard temporary protection finishes, or normal construction debris. The TMC should equal 18% or less. Additionally the log surface must be free from any rotten or dead wood fibers, mill glaze* or pretreatment coated on the logs for temporary protection. There are various methods of accomplishing this and the right choice primarily depends on whether the job is on a new home or the restoration of an existing home. This will normally determine the amount of cleaning/stripping required, the skill level of the people needed to do the work, and the kind of equipment required. The following is a review of the various methods normally employed for cleaning/stripping a log home, their pros and cons, and their primary application:

**Mill Glaze is the stain-repelling film of compressed surface wood fibers left when the logs were shaped in the mill.*



CORN BLASTING

Corn blasting is similar to sand blasting in that a blasting pot is used in conjunction with highly compressed air but ground up corn cobs are used instead of sand.

The advantages are that the corn media is light, dry, biodegradable, and readily available. It provides the most thorough cleaning/stripping action combined with the highest production rate of removal of any of the available methods. Additionally it removes any mill glaze and being dry does not re-wet the wood incurring additional drying time. Being biodegradable, it does not contaminate any surface or subsurface water sources.

The disadvantages are that it is messy, requires a certain amount of skill or experience to keep from raising, "fuzzing", the wood fibers and requires heavy duty, relatively expensive equipment for application.

Also if all of the residual corn media is not removed from the log cracks and checks, it can decay and contribute to log rot. Additionally special care must be taken to protect the inside of the home by removing pictures and covering furniture. It is therefore, something the normal home owner might opt to leave to a professional.

ABRASIVE REMOVAL

Abrasive removal can be accomplished with either 60-80 grit sanding disks on a dual action palm sander or cup "Osborn" brushes in an angle grinder.

The advantages of either method are that they are simple and easy and do not require a lot of set up time or heavy, expensive equipment. Palm sanders and angle grinders are readily available at most hardware stores. Also it is dry, does not re-wet the logs, and it breaks any surface mill glaze.

The disadvantages are that it is not as fast as corn blasting and the round pads or brushes cannot reach into all the nooks and crevices of the logs. However, profile sanders and paint scrapers are available for the detail work. It is messy to a minor degree but not nearly as messy as corn blasting and is probably the only viable alternative for doing interior work, especially on restoration projects.



ATB Cup Brush - Round Trim 6 "

POWER WASHING

Power washing can be accomplished using the normal 1500-3000 psig power washers available at most hardware stores and equipment rental lots. However, a word needs to be mentioned here regarding power washer pressure settings. Much has been published stating that a power washer should not have an output pressure greater than 500-800 psig to keep from "fuzzing" the wood and most, if not all, power washers are not regulated down to 500-800 psig. A simple solution when using a higher output pressure washer is to use a fan tip, keep it 18-24 inches from the wood and hold the nozzle at an angle to the surface of the wood. **In this step it is critically important to watch what you are doing.** Also care needs to be taken not to use "hard" water. In some areas the water contains excessive amounts of minerals such as iron and manganese and can cause severe streaking or discoloration of the wood. In such cases, it may be necessary to truck in "soft" water.

The advantages of power washing are that it is quick, removes any mill glaze, and probably creates the least mess (even the mess it creates can be washed away).

The main disadvantage is that it soaks the wood adding a significant amount of drying time to the schedule and makes it impractical for interior use on anything but new construction. In addition, special care needs to be taken to protect the interior of restoration projects from water seeping through the walls and damaging furniture, carpets, floors, interior wall stain, etc.



CHEMICAL STRIPPING

There are several chemical strippers and brighteners on the market. Most of the strippers are alkaline based using sodium hydroxide, potassium hydroxide, or methylene chloride as the active ingredient for the stripper and either citric or oxalic acid as the ph neutralizer/brightener. Therefore it is imperative to wear eye protection and protective clothing and to follow closely the manufacturer's application in especially when using any brighteners containing oxalic acid. Unlike citric acid, oxalic acid is listed as class 3 toxin for all three forms of human contact, oral ingestion, nasal ingestion and skin contact. The strippers attack the resins in the wood as well as the chemistry of the finish and when rinsed away, leave a fresh layer of bleached wood with an alkaline ph balance. The surface is then acid neutralized to eliminate the alkaline balance, thoroughly water rinsed to get rid of any remaining chemicals, and then checked for a neutral ph balance (6-8) using litmus paper strips. It is critically important that all traces of cleaning solution be removed to prevent any adverse reaction with the stain.

For light duty cleaning, a mixture of chlorine bleach, dish soap, and water is very effective. Many publications recommend Trisodium Phosphate TSP as a surfactant instead of dish soap. The U.S. Forestry Service, however, has issued a notice advising against the use of TSP because of the potential phosphate residue that can be left if not sufficiently rinsed off. Simply mix 1-2 cups of household bleach and 1-2 tablespoons of non-phosphate dish soap in a gallon of water. Spray the solution on the logs and let it set for 5-10 minutes, (do not let it dry on the logs) then brush the logs with a stiff bristle brush and thoroughly rinse the solution off. Acid brightening should not be required unless too much bleach was added to the mixture. Ph balance testing with litmus strips is advised.

The advantage of chemical stripping is the chemicals are very effective and will get into tight spaces.

The disadvantages are that it re-wets the wood, adding additional schedule time and can leave caustic chemicals in log crevices if not thoroughly rinsed. Many of the chemicals used are toxic to humans, animals, plants, lakes and streams. Also, in at least one known case, an over concentration of sodium hydroxide stripper and oxalic acid brightener destroyed the structural integrity of the logs in a large log home.

BIODEGRADABLE STRIPPING GELS

There are environmentally friendly, biodegradable gel strippers, cleaners and brighteners available that work very well in removing a variety of finishes. They are often soy or citrus based and do not contain methylene chloride. As with other chemicals, however, they are generally harmful to humans, not recommended for interior use due to their toxicity and water rinsing requirements and require careful attention to following the manufacturer's recommended protective clothing requirements.

STAIN PRE-TREATMENT

After cleaning, pre-staining preparation is primarily the application of a fungicide or pesticide such as **Timber Guard**, a penetrating borate based product that is mixed with water and brushed on the surface of the logs. An option is to wait and add a fungicide/pesticide booster to the stain.

The advantages of the borate pretreatment are that the borates penetrate deeper into the wood than stain additives because the stain additives stay with the stain coating. Also, the borates are non-toxic to humans and animals while many of the additives are and, therefore should be specifically limited to exterior application. Borates are, however, toxic to plants and vegetation and appropriate precautions need to be taken to protect them.

The main disadvantage of borate treatment is that most borate based products come in powder form and are premixed with water which re-wets the wood and, like the above cleaning processes involving water, adds a significant drying time to the staining schedule. Since the borate salts migrate in the logs with the movement of moisture, it is mandatory to seal out future water and important to do it as soon as possible so careful attention to weather is required. One borate based product, Bora-Care, comes premixed in glycol, a product used in the paint industry to slow down the drying of water born finishes, which makes it dry much slower than the water additive products.

If there is any glycol still in the logs when the stain is applied, it will also slow the drying of the stain coat, making the project subject to rain damage for a substantially longer time. Regardless of the above scheduling problems, borate pretreatment is a widely accepted method to protect logs from bugs and rot and is actually a requirement or some log home manufacturers to qualify for their warranty.

SETUP, TRAVEL AND LABOR

Equipment

When writing a proposal make certain to include the cost of any rental equipment needed for special circumstances, such as steep hill sides, high gable ends etc. Some equipment such as scaffolding or pump jack systems can also take quite a bit of time to erect and dismantle. Do not forget to count this towards the labor time estimate.

Travel

If left out of the equation of figuring the bid, travel, lodging and food can eat up all profits quickly. Be sure to use MAPQUEST. or AAA® to calculate accurate mileage. Figure extra gas costs if the area is mountainous.

Labor

Most applicators are charging between \$2.50 and \$3.00 per linear foot currently. This does not include extra equipment or travel costs required to perform out of state jobs. It's always wise to keep a handle on competitor rates per linear foot. Remember, the right price is "the price the client is willing and happy to pay".

SPECIAL ATTENTION AREAS

Trusses, Purlins & Stairs

Trusses, purlins & stairs can act as collection areas for insects, pollen, dirt and dust. Be sure to include the extra time it will take to clean them properly whether you are cobbing, power-washing or stripping. If surface dust and dirt is not properly removed, it can blow onto freshly stained wet surfaces and ruin the finish.



SECTION IV: GENERAL APPLICATION INFORMATION

Different styles of home

CHINK STYLE

Many of the hand-crafted log homes not built in a scribe-fit style are referred to as “chinkers” or chink style log homes. Several milled log manufacturers also offer log packages that require Chinking. These are homes that are purpose built chink style homes with gaps between the log courses. The gaps are created by the specific corner joinery and the mid-span spacing is maintained by the insertion of small spacer blocks at 2-4 foot intervals. After the log shell is erected and stained, the foam backer Rod (FBR) is installed between the courses of logs and then chinked with 1010 Chinking®, 1010 Lite Chinking™ or 1015 Triple Stretch® on both the interior and exterior. UV Guards® Premium or Textured Caulk should be used to seal the corner joinery.



Thickness of chink joint over Tri-Rod® or any backing material should not exceed ¼”.

CHINKLESS

This method of stacking logs is said to eliminate the need to provide external sealant to the horizontal joints in a log wall. With the tongue and groove style, each log has a groove cut for the length of the log on the bottom and a tongue on the top and should have been sealed, using a product such as REDi-SET, during the log erection process. It is the same with the Swedish cope or hand scribe fit, except the sealant should have been put in the concave cavity of the upper log.

If chinking is to be applied to these homes, the type of sealer and backer rod will be determined by the log profile. Some profiles will be deep enough to use a trimmed Triangular FBR, while others may be so shallow that no backer rod can be installed and the joint needs to be sealed with UV Guards® Premium or Textured Caulk. Round rod is not recommended for this application because of the thin joint center it creates and its tendency to spiral coming off of the roll making it difficult to install in a shallow groove.



Although one or two beads of Weatherall 1023 REDI-SET® have been run in between each course, it may still be necessary to Weatherall 1020 UV GUARD® Premium Caulk inside and out after settling has occurred

LOG AND SLAB SIDING

When at all possible the siding should be stained and sealed on both sides before installation for better protection against water infiltration and to minimize cupping. Make certain any exposed siding ends are heavily saturated with stain. The siding installation will probably be done by others.

Most milled siding has a built in tongue and groove drip edge and sealing can be accomplished with a thin bead of UV Guard® Premium Caulk. This is not normally true of true half logs or planks which can be sealed using UV Guard® Premium or Textured Caulk without a backer rod or with chinking using a backer rod or bond breaker tape. Because of the high probability of some cupping, special care must be taken to insure that the half logs or planks are firmly anchored to the siding as discussed earlier. This requires being especially aware of the siding moisture content.



Staining Equipment

AIRLESS SPRAYER

An airless sprayer can make a project go much faster by covering a large surface area very quickly but over spray can be a serious problem. Make certain all windows, doors, plants, shrubs, patio furniture, roof overhangs, etc. are covered and masked to protect them from over spray. A spray shield can be used, instead of masking, when spraying up against corners. All Weatherall stains and topcoats can be applied with an airless sprayer but must be back-brushed in to prevent drip lines and overlap marks and to ensure proper penetration into the wood fibers.

GARDEN SPRAYER

A hand pump garden sprayer is simply a general purpose garden sprayer that can be purchased at just about any hardware store. They will not apply material as fast as an airless but do not have near the over spray problem. Sizes vary depending on needs of the application. Large, back-pack style units are available for portability. As with airless spray application, make certain all windows, doors, and anything of value is covered and masked to protect from over spray. Also a spray shield can be used when spraying up against corners. All Weatherall stains and topcoats can be applied with a garden sprayer, but must be back-brushed in to prevent drip lines and overlap marks and to ensure proper penetration into the wood fibers.

"APPLICATOR" BUCKET SPRAYER

The Applicator bucket sprayer combines the best of the airless and garden sprayer features. It has a high volume output and minimal over spray. Covering and masking are still required to protect from any over spray. All Weatherall stains and topcoats can be applied with the Applicator. Back brushing is still required.



*Example of Airless Sprayer and aluminum
24" x 9" Spray Shield*



Back-Pak™ Sprayers



Wooster 6" Stain Brush

BRUSH APPLICATION

Brushing the stain and topcoat materials into the wood fibers and wood grain will give the most consistent results. It gives the best possible penetration and protection for the log surfaces but is the slowest method of getting the material on the wood. Everything will still have to be covered and masked, as with spray application, to protect from drips and spills. Always keep a wet edge ensuring that you don't double coat the stain. Double coating will produce blotchiness and overlap marks. Proper scaffolding and ladder set up is critical for uninterrupted work flow.

There are many different and high quality stain brushes on the market today such as the Wooster brand stain brushes. Use a top quality brush specifically designed for latex stains.

Tip: Keep brush saturated (wet edge) with Stain or Top Coat and always keep a gallon of water nearby to put brush in when taking a break or moving equipment.

Staining Techniques

WORK FROM TOP TO BOTTOM, Laterally

Regardless of which application method is chosen, always work from the top to bottom laterally being sure to maintain a wet edge. Always back brush spray applied coats, paying special attention to back brush any drips or drizzle coming out of knots and checks. This will greatly reduce the possibility of lap and drip marks, color variations and uneven coverage or blotchiness.

WORK AWAY FROM THE SUN

All application procedures/scheduling should include a plan to work a wall at a time when it is not in direct sunlight. Start on walls that are shaded and that have not received sunlight the day of application working around to the warmer walls when they are in the shade. It is important to avoid applying on either extremely hot or cold walls. 40-90 degrees Fahrenheit is them recommended application temperature range. Application over 90°F is not recommended because of the difficulty of maintaining a wet edge.

Stain should not be applied to wet or frozen wood, in subfreezing temperatures or when subfreezing temperatures are expected within 24 hours of application. We do not recommend application in temperatures below 40° F. or in continuing wet or humid weather or if rain is imminent. Stain applied under these conditions will take longer to dry.

SATURATION COATS

All coats of either UV Guard® or UV Guard® II should be **heavy, back brushed saturation coats**. Subsequent coats can be applied wet-on-wet or wet-on-dry. However wet-on-wet application will take longer to dry than wet-on-dry due to the extra trapped moisture and may blush in damp weather until it is completely dry.

The old approach of multiple mist coats is not recommended. The first coat partially seals the surface without saturating the wood fibers preventing subsequent mist coats from penetrating the wood, creating uneven penetration and blotchiness.

BACK BRUSH

The requirement to back brush all stain and clear coats cannot be over emphasized. This is not like staining fine furniture. It is taking a 6 in. soft bristle brush, duct taping it to a broom handle if necessary, and working/forcing the finish into the wood cells. The hydraulic pressure of aggressive back brushing forces the finish deeper into the wood fibers through microscopic pores in the cell walls giving a significantly longer lasting and more even finish than light hand brush or spray application alone.



Backer Rod installation

WHEN TO USE BACKER ROD

Backer rod or bond breaker tape must be used in all applications of Weatherall 1010, 1010 Lite, and Triple Stretch chinking. FBR should be used in chink style joints 3/4-2 inches wide and in some D log and Swedish cope joints with the tail of the triangle cut off to fit the shallower joint. Chink style joints greater than 2 inches require custom cut backer rod or expanded polystyrene EPS foam. Do not use extruded polystyrene, such as Dow Blue Board, Amoco Green Board, or UCI Pink Formula, as they can out gas at the cut edges and cause blistering. For joints smaller than 3/4 inch, use a trimmed FBR or no backer and UV Guard® Premium or Textured Caulk.

ROUND ROD

Round rod is extruded, closed-cell polyethylene foam designed as a backing for caulk and chinking. It comes on rolls of various lengths (Depending on size, 1/4 - 1 inch diameter) and has an R value of 4/inch. The closed cell nature of the round rod provides an excellent non-adhesive surface for two point adhesion and it is ideal for use in sealing checks, plate logs, window bucks and door jambs. However, the round profile of the rod will cause a thin center in the chinking that will eventually tear. Also, because it spirals when coming off of the roll, it is difficult to install in shallow joints. **Do not slice round rod in half in an attempt to make "cheap" FBR as the open cell face, created by the cutting, will not allow the chinking to release and the joint will fail at the edges.**

FOAM BACKER ROD (FBR)

Trapezoidal shaped FBR is available from several specialty foam companies such as Better Backer or GripStrip. Please contact Weatherall Customer Service for specific contact information.

CHINKING OVER ROMEX®

Do not chink directly over exposed Romex® wiring. Backer Rod over the Romex® first, then chink over the backer rod.

STAPLES AND NAILS

Do not use staples or nails to fasten the backer rod unless absolutely necessary. These fasteners will corrode and can cause black iron stain bleed through that can be permanent. If the use of nails or staples cannot be avoided, be sure that they are galvanized.

INSTALLING FBR

Place the FBR face down on a flat surface or holding rack. Spray the two exposed sides of the FBR with a high tack spray adhesive such as 3M-77. Allow the adhesive to dry until tacky. Carefully insert the FBR into the log joint with the exposed face parallel to the plane of the wall. Press firmly until it fits snugly between the logs. Continue in this manner until all FBR is installed in log joints. To maintain a neat, uniform appearance and make a smooth transition when changing sizes of FBR in a surface line, bevel cut the back side of the larger FBR where it meets the smaller size. When installing FBR around knots, corners, curves, etc., the back side of the FBR may be cut out as long as the front flat surface is left intact. Where blocking is used between logs, apply FBR over blocks and mark the back of the FBR at the edges of the block. Turn the FBR over and cut long the mark being careful not to cut completely through the front flat surface. Cut horizontally to remove excess FBR.

BOND BREAKER TAPE AND SILL SEAL

Bond breaker tape or sill seal should be used when chinking log or slab siding joints where installation provides a space for a chink line. These items should also be used in some Appalachian style joints where a wooden spline is used instead of foam blocks and the joint is too shallow to use trimmed FBR.

FOAM BRUSHES

Foam brushes are not recommended for normal troweling because they cannot apply enough pressure to properly force the chinking resins into the wood fibers at the contact point. In general, foam brushes cannot give crisp smooth edges and they tend to load up with water contributing to a wet edge bond.

They can, however, be used to remove trowel lines and dress the center of the chink joint after the chinking has been properly applied.

CHINK PUMPS



High Quality Spray adhesive

Note: Never spray the adhesive directly onto the log surface. The adhesive will prevent the chinking from bonding to the wood and the joint will fail.



Albion DL59T13 Deluxe Bulk Gun 18

Chinking Equipment

Chink pumps are purpose built machines specifically designed to apply the chinking at a fast but controllable rate and minimizes troweling, equipment reloading, etc. They are relatively light, portable, and run on 4 pneumatic tires so they can be easily moved around the job site or inside the home. An experienced applicator and crew with a chink pump can significantly out-perform an applicator crew using bulk loading guns or grout bags. One person, or gunner, running the chink lines can typically keep two trowelers so busy that there may be times that he has to stop gunning and help trowel to keep the material from skinning over. **Be sure to use heavy duty (10-12 ga,) extension cords to keep from overheating the pump motor.**

BULK LOADING GUNS

Most bulk loading caulking guns on the market work well with our products. Stainless barrels are definitely preferable over aluminum because of the abrasive nature of the chinking. We have found that many prefer the Albion guns for their stainless barrels and positive actions.

FOLLOWER PLATES

Bulk loading gun follower plates are available for both tapered and straight sided pails and can be ordered with either a threaded or twist-lock center boss. The use of a follower plate will speed up the gun loading and eliminate gummed up threads.

HEAT TAPE

Heat tape on the hose and/or hopper can make a big difference in keeping the chinking warm and pliable when applying in cold weather. If the material is allowed to get too cold, the viscosity will increase, flow rate will slow down, stator wear will increase, and it will ruin the pump. Use heavy duty heat tape not the cheaper gutter tape. The lighter duty tape cannot take the continuous flexing of the chink hose and will break. **Do not share the chink pump motor power line with the heat tape as it can drop the supply voltage to the pump and damage the motor. This is especially true if an undersized extension cord is used for the pump motor supply.**

GUN POSITIONING

Chinking Techniques

Keep the nozzle of the chinking gun perpendicular to the wall with the tip 3/8-1/2 inch from the surface of the backer rod.

Bead Thickness

Keep an even bead 3/16-1/4 inch deep. Let a slight roll of material lead the nozzle periodically checking the depth with a marked trowel.

LENGTH OF CHINK LINE

Don't chink farther than you can trowel before the material skins over or you reach a natural end point. Ambient temperatures, humidity, sun exposure and wind will dictate this more than anything.

TROWELING

Make sure that the chinking has a well bonded footprint on the log surfaces by firmly troweling it first to the upper log and then to the lower log. This presses the chinking resins deeper into the wood than a light steel trowel pass or a foam brush pass. With practice, a final pass down the middle will finish the line.

RELEASE AGENT

Spray the trowel with a 50/50 mix of water and isopropyl alcohol as a release agent. **Do not spray the log surfaces.** Spraying the logs will create a "wet seal" that will prevent the chinking from bonding. Once the chinking is in place and troweled into the upper and lower logs, the surface of the chinking can be lightly misted with the release agent if required. Do not spray too much release agent on the chinking as it can cause pigment to bleed onto the lower logs.

KEEP THE MATERIAL WARM

Using heat tape and tarping are two alternatives to keep the chink pump hopper warm. Heat tape wrapped around the hose and hopper will keep the material warm. An alternative method would be the installation of a tarp or tented "box" around the chink pump and forcing warm air into the "box" from safe heat sources. This will keep the material in the hopper warm but not the hose. During continuous chinking application, the hose can be heated by periodically turning the tape on for 10-15 minute intervals and keeping it in the heated "box" when not in use.

SHORT LINES BETWEEN WINDOWS AND DOORS

In log construction, especially round on round, the logs that butt into a window buck or door jamb are lag screwed or nailed into the buck and cannot settle or move because the buck/jamb does not significantly move longitudinally (with the grain). This is of special concern on short log runs between door and or door/window openings since the logs cannot move with the rest of the house. Several designs allow for this by slotting the bucks/jambs (creating a slip joint) and providing head space above the window or door opening. If some settling provision is not designed into the system and especially if green logs (greater than 18% TMC) are used, UV GUARD® Textured Caulk should be used to handle the additional movement. If settling has been provided for in the building design, do not attempt to chink the joint until the logs have settled and dried.

WINDOW BUCKS

Window bucks should have been caulked with UV GUARD® Premium Caulk when they were installed unless a slip joint is being employed. If a slip joint is designed into the system, seal the bucks to the logs after the logs have settled by wrapping the logs to the bucks with UV Guard® Premium Caulk. The window and door frames can be fastened to the bucks/jambs but should not be fastened or sealed to the logs until they have finished settling. The cavities behind the frames can then be filled with EPS and chinked with Triple Stretch® Chinking after the logs have settled. This will eliminate an attractive area for birds and spiders to nest. It is important, however, not to depend on the cavity filler to be the primary seal since the logs are shrinking and settling circumferentially while the frame is not shrinking longitudinally.

LOG CORNERS

Normally the corners or saddles will be caulked with UV GUARD® Premium Caulk in a color to match the log finish since the visible sealant in this area is not normally desired. If the customer wants a visible sealant, use UV GUARD® Textured Caulk without a backer rod. The center of the joint will tend to sink in as the caulk dries but UV GUARD® Textured Caulk has enough elasticity to stand the normal settling movement and stress.

SEALING PLATE LOGS

Be sure that the foundation or basement wall has been properly flashed with metal flashing to keep any water run off out of the wall cavity or from entering the house. In this case, proper flashing is the main line of defense. Caulk the bottom log to the sill plate. If a gap exists, use a urethane caulk over a round backer rod in the plate log joint to keep the water from getting under the plate log and chink over the urethane caulk. If water gets behind the chinking due to leaks from log checks or other wall penetrations, a drain path may have to be provided in a protected area to drain the plate log cavity.

LOG TO SHEETROCK



Regardless of whether the drywall is scribe cut to match the logs or the logs are cut so that the drywall is inserted into the logs, the logs are going to move/settle with respect to the drywall and cause some debonding from the drywall. This will be especially true if green logs are used (greater than 18% TMC). The log to the drywall joint should not be chinked until the house has had a chance to settle. Once settling has occurred, use UV GUARD® Premium Caulk or UV GUARD® Textured Caulk.

LOG TO STONE OR BRICK

The same settling conditions exist between log to stone or log to brick joints that exist with log to drywall joints unless the logs are structurally attached to the stone, brick or vertical post (ie. post and beam). If the logs are not structurally attached, they should be given a chance to settle before attempting to seal the joint. In either case use a color matching Mortar Match or UV GUARD® Textured Caulk to tie the grout to the logs.

WEATHER CONDITIONS

All Weatherall products are waterborne and as are all waterborne products, subject to some degree of freeze/thaw damage. The amount of damage is strictly dependent in the length, depth, and number of freeze/thaw cycles the material is subjected to. Since there is no verifiable way to measure minor/acceptable damage, the material must be kept from freezing **before being applied and until it has reached full cure**. In the drying process the resins go from a liquid state that flows to a plastic state that stretches. If during the transition phase they are subjected to re-wetting or swelling they will never fully reach the dried plastic state. The applied material must therefore be protected from inclement weather until it is fully cured. This makes it very important not to exceed the maximum material thickness specification which would also increase the drying time.

MILLED LOGS

Caulking

Regardless of whether it is a Swedish Cope, Single or Double Tongue and Groove design, most chinkless style logs eventually move, twist, or crack and end up needing additional sealing. Since the typical log joint generally takes up so much of the log diameter, the resulting profiles are less convex than round on round logs and do not lend themselves to proper backer rod installation and chinking. The exterior and the interior of the home can be caulked with UV GUARD® Premium Caulk which has sufficient elasticity to perform in an unbackerodded joint. This will prevent wind driven rain from getting into the cavity/insulation on a Swedish Cope style home or in the unprotected ledge on a tongue and groove home. Doing both the interior and exterior will create a dead air space and increase the insulation value of the joint. The tongue and groove designs generally employ either a foam tape or sealant such as REDI-SET® Between Log Sealant applied at the top of the tongues when the logs are set as the primary weather barrier. Application of an exterior bead of UV Guard® Premium Caulk to the external horizontal joint will prevent wind driven rain from getting into the first ledge in the joint.

CHECKS

Windows Bucks and Door Jambs

Cracks and checks up to 1/8 inch do not require a backer rod and can be sealed by squeezing a thin bead (1/8 inch max) of UV Guard® Premium Caulk into the check. Do not force the material all of the way to the bottom of the joint. It is an improper joint design and will take forever to dry. Checks 1/8 inch or greater in width require the use of a backer rod. Insert the backer rod approximately 1/4 inch below the check surface. Apply a thin bead (1/8-3/16 inch deep) of UV Guard® Premium Caulk over the backer rod. Simply smooth the caulking into the check with your finger or a metal trowel using a 50/50 water isopropyl alcohol mix as a release agent. Perform this step when the log surface temperatures are between 40F and 90F. **DO NOT apply in direct sunlight and DO NOT apply if rain is expected within 12 hours.**

EQUIPMENT MAINTENANCE AND SITE CLEANUP

Make sure chink machine and nozzle are wrapped tightly and hopper is sealed tight. Chinking material can stay in hopper over night. Bulk loaded guns should be kept clean through-out the day and completely cleaned at the end of the day. Keeping a clean, mold-free pail of water near-by to keep caps and tips clean at all times will make for a much nicer chink job. Clean up all loose tools, trowels, knives etc.

Caulking Guns

Caulking guns should be thoroughly cleaned at the end of each job. Disassemble the gun and, using a brass tube brush, clean the inside of the tube and flush it with water. Lightly coat the tube with WD-40 and replace the cap.

CHINK PUMP AND HOSE

The chink pump and hose should be cleaned at the end of each job or when colors are being changed. This consists of disassembling the machine (removing the rotor and stator tube) and thoroughly cleaning the parts as follows:

1. Before disassembling the machine, clear the hose of material by using the machine to pump slurry (thinned down chinking) through the machine. Place about a 1/2 gallon of chinking in the machine, add water and stir until the material is thinned appropriately. Turn the machine on and pump the slurry through the hose.
2. After this is done you can disassemble the machine and clean. To further clean the hose take off the gun and clean and attach the hose to a garden hose using an adapter. Turn garden hose on full to blast out remaining slurry. Then cut sponges slightly larger than the inside diameter of the hose and pack them inside the hose and use the water pressure to blow the sponges through the hose. Do this several times until the water runs clear through the chinking hose.
3. Clean the rotor, auger, nipple and gun in warm soapy water and thoroughly rinse. Use a garden hose and Scotch-Brite® pad to clean the hopper.
4. Coil hose and store with water inside. Use a hose adapter or pipe nipple to fasten both ends of the hose together.
5. When reassembling the machine, all threaded parts should be sealed with Teflon tape.
6. The stator should be lubricated with a mild dish soap to install the rotor and **not WD40®, petroleum jelly, or motor oil**. Oil lubricants will break down the butyl rubber inside the stator tube. Also periodically check the level of gear oil in the gear box.
7. To store the machine overnight during a job, scrape down the sides of the hopper, lightly spray the material inside the hopper with spray bottle contents and pack plastic over the top of the material. Replace lid. Wrap the gun in a damp rag and tape it in a plastic bag. This will insure that there is enough moisture in the hopper and gun to keep the material from drying.

SECTION V: CHINKING & STAIN APPLICATION GUIDE

Log home chinking should be a one-time job. Here are some important points to consider about the application process.



MOISTURE CONTENT

When preparing for chinking, a moisture content reading of the logs should be taken in several different locations. Use a lignometer and check the depth 1" below the surface. This is particularly important on new construction. A moisture content of 18% or less is recommended for homes that are to be sealed with chinking.

PREPARING THE LOGS

Logs must be free of any oil-based finishes, factory-applied oil-based mildewcides/preservatives, residual cleaners or wood restorers, or any non-penetrating surface finishes, including polyurethanes and polycrylics, etc.

Logs must also be free of any fungus or mildew. To remove fungus or mildew stains, we recommend that the logs be thoroughly cleaned with any commercial, non-acid cleaner being sure to follow all manufacturer's instructions for application and safety. Rinse the surface thoroughly with water to remove all traces of cleaning solution. Test the wood surfaces with Litmus paper to verify pH neutral surface. The range should be slightly acidic to neutral, and in the natural pH range of the wood species (for example, pine is 6-8). Wear protective clothing and eye protection when using caustic solutions. Remove any loose bark, sawdust or construction marks from the logs. A cleaner such as Spic & Span will take care of most soiling, although some areas may need to be lightly sanded. (Try a gum eraser on pencil marks and light scuff marks.) Use a damp, clean lint-free rag to wipe down the log surfaces. Be sure to allow adequate drying time after washing and recheck moisture content before proceeding with chinking or caulking application. Drying may take several days depending upon weather and location.

We recommend applying UV Guard® Exterior Wood Finish, UV Guard® II Exterior Finish, SuSTAIN® or Log Guard® Interior Top Coat prior to application of Triple Stretch® chinking or UV Guard® Caulk. If other products are to be used as the finish, be certain to check with Weatherall Technical Support regarding compatibility and recommendations.

STAIN SELECTION

We recommend and guarantee that all Weatherall stains and finishes are compatible with Triple Stretch® chinking or UV Guard® Caulk. As previously mentioned, it is important to use a finish that does not contain any parafins, waxes or non-drying oils in order to get good adhesion. Incompatible stains can cause chinking materials to lift from the surface.

TEMPERATURE AND HUMIDITY

Best results are achieved with chinking application during temperatures of between 45° and 75° F. Avoid chinking in direct, hot sunlight or on wood surfaces that have been exposed to the hot sunlight for several hours. Do not chink when rain is imminent, or when temperatures are expected to fall below freezing without complete cure time. Do not apply when dew or frost is present and do not apply to frozen surfaces. Special application procedures must be followed for sub-freezing chinking application; contact Weatherall Technical Support for further information.

SCHEDULING

Planning ahead prevents the loss of valuable work time due to lack of materials or preparation. (Refer to Appendix B for chinking coverage guidelines.) Draw up a well-planned schedule that will allow for shipping of materials, custom color matches, seasonal weather conditions, holidays, etc. Items such as the type of equipment used and log preparation may greatly affect scheduling.

On new chink-style construction, the chinking is generally applied after the roof is on, the door and window openings are cut and bucked and the wiring is in between the logs, but usually before the doors, windows, and trim are installed. On scribe-fit or milled log homes, the chinking may be applied anytime after the building is enclosed, but it is best to leave the window and door trim off so that these vulnerable areas can be well sealed with the chinking or caulking material.



EQUIPMENT

A caulking gun is frequently used by homeowners who wish to apply chinking themselves. Both bulk-loading manual and bulk-loading air-powered models are available. Be advised that the use of a caulking gun will require additional time. A caulking gun is ideal for very small jobs, small areas that require special tips, or touch-up. (HINT: Spraying the inside of the gun barrel with the troweling release agent will allow the chinking material to slide and load smoothly without air pockets.)

Renting a commercial pump is initially more expensive, but the amount of time saved is significant. These pumps operate at an efficient rate of speed, have pistol-grip handles and large capacity hoppers. Follow the pump manufacturer's instructions for pump operation. Various tip sizes for the commercial pump can be achieved by cutting different sizes of PVC and chamfering the tip ends. Assemble all of your equipment, tools and materials together at the job site. Know where the electrical and water supplies at the site are located and be prepared with proper hoses, cords, etc. A secure, temperate area should be used for storage of the chinking. DO NOT FREEZE and do not allow materials to become overheated.

If you are using a hand or air-powered caulking gun, check it for proper working condition. If you are using a battery-powered gun, have an extra battery pack available. If you are using a commercial pump, check it for proper working condition. Extra pump parts, such as stator, rotor, nozzles, and hoses and other maintenance parts will help avoid costly delays. Be sure to carry several heavy duty extension cords and follow the manufacturer's recommendations for operation of the pump.

RECOMMENDED TOOLS & SUPPLIES LIST

- Chinking pump and/or bulk-loading caulking gun(s)
- Tool Pouch
- Clean, lint-free rags for wiping down log surfaces, for spills, runs and cleanup
- Sharp knives suitable for trimming backer-rod
- Cardboard box or table for holding backer-rod while adhesive is applied
- Spray adhesive (such as 3M™ 77) for installing backer-rod
- Spray bottle for 'release agent'
- Isopropyl alcohol – combine with 50% water for 'release agent' mixture (label for precaution)
- Masonry margin trowels of appropriate sizes (1/2" to 2" most commonly used)
- Spatula for scraping pails
- Sheets of heavy plastic or canvas to protect job site from spills and inclement weather
- Backer-Rod in appropriate sizes, or other backing materials
- Adequate quantity of chinking/caulking

FOAM BACKER ROD

Select a high-quality flat-sided, FBR Better Backer or GripStrip. Backing is installed in the log joint to provide a flat non-adhesive, insulating surface for the chinking to be applied over. We do not recommend use of either round backer rod or split round rod for chink joints $\frac{3}{4}$ " and wider. Round rod will not give the proper joint design. Split round rod will cause the chinking to stick to the cut open-cell surface reducing the area of elasticity. Split round rod also tends to roll in the joint creating weak spots and unattractive bulges. For joints under $\frac{3}{4}$ ", we recommend that Better Backer or GripStrip be cut to a smaller size and placed in the joint with the cut face facing inward. Alternatively, closed cell round rod may be used in joints of less than $\frac{3}{4}$ ", but care must be taken that the chinking is applied at a uniform thickness on the surface. The joint will have a generally convex shape. Slick-surface bond-breaker tapes may be applied to joint configurations where foam backer-rods cannot be used; for example, the flat joints found in square log construction.

NEVER APPLY CHINKING WITHOUT A BOND BREAKER! A bond breaker is a smooth surface or finish on the chink joint to allow the chinking to pull away, only bonding to the wood, once joint movement begins. Elasticity of the joint will be greatly compromised if chinking is applied directly to an adhesive substrate such as rough surface (open cell) backing, logs, blocking, drywall, etc. The chinking should adhere only to the wood at the edges of the joint. A 'slip-joint' is necessary for proper joint design and performance.

APPLYING BACKER ROD

First determine the correct size of FBR by laying various sizes into the joint. Choose the size that fits well into the joint and keeps the flat surfaces snugly against the logs. Next, place the chosen pieces onto a flat box, table or rack and spray the two upward exposed surfaces lightly with a high tack spray adhesive, such as 3M Super 77.

Let adhesive dry until tacky, then carefully insert the backer-rod into the log joint and press firmly until it fits snugly between the logs. Continue in this manner until the backer-rod is installed in all the log joints. NEVER SPRAY ADHESIVE DIRECTLY ONTO THE LOGS! This will result in an unsightly film on the wood surfaces and will weaken the chinking bond to the wood causing adhesive failure in the joint. For aesthetics, take your time to avoid "steps" in the face of the installed FBR; do not change sizes abruptly. You may trim the adjoining pieces on the top or bottom edges to ease the size transitions. Make certain that the exposed outer face is installed parallel to the wall plane and does not tilt in or out. When installing FBR around knots, corners, curves, over protruding wiring, etc., the back side of the backer-rod may be cut out as long as the (front) flat surface is left intact. Where blocking is used between the logs, apply backer-rod over the blocks as well. To do this, place backer-rod over the block and mark the back of the rod at the edges of the block. Cut along the mark, being careful not to cut through the front face. Cut horizontally to remove excess. Leave enough surface depth to maintain the smooth, flat face of the finished joint. It is best to request samples of the various sizes of the backing and test fit them into the joints before ordering.

Most handcrafted homes will require several different sizes. A smooth surface backing that will not adhere to the chinking or caulking material should be used in ALL applications. If the joint configuration has a flat surface, as with log siding, square hewn logs, etc., bond breaker tape may replace the HBR and/or Better Backer.



WEATHER CONDITIONS

Apply chinking only to dry wood surfaces. Heavy dew or frost will wet the logs and will adversely affect the adhesion of the chinking. Additionally, chinking should not be applied to surfaces that are too cold. If ambient temperatures or sunlight are not warming the surfaces to above 40°, then mechanical heat sources should be available and utilized.

Be sure to keep the chinking in a warm area until immediately before use. Chinking should not be applied when rain is likely and should not be subjected to freezing weather until it has cured. If rain or heavy moisture occurs after chinking, protect the chinking by placing a heavy sheet of plastic or canvas over the chinked area. Pull the covering out and allow air to circulate. Do not allow covering to contact chinked surfaces.

If it is absolutely necessary to chink during freezing temperatures, please contact Weatherall Technical Support for details. It is possible to chink in subfreezing temperatures, but special equipment and procedures are required.

APPLICATION TIPS

Choose an appropriate size nozzle for the width of the chink line. Round nozzles as small as 1/4" diameter and up to about 1" in diameter are commonly used. For narrower chink lines (less than 1½"), hold the nozzle tip close to the joint surface (within 1/8" to 1/4") of the backing material and allow the material to flow smoothly as you move the nozzle along the joint. (HINT: If you have not done this before, it would be a good idea to practice in a location where the chinking will not show, such as the interior of a closet or behind cabinets. Move in a smooth steady motion down the line of the log and do not let the material build up in thickness. In areas where the joint is larger (1½" or more), apply the chinking in a side to side motion, from the top to the bottom of the joint. Blend the overlap lines with a dry trowel, using no release agent, then retrowel as described below. Start slowly and use caution not to apply too much or too little material. Be sure not to cover too much area at one time, thereby allowing the material to 'skin' over before troweling can be completed. Whenever feasible, it is preferable to apply one continuous line of chinking down each log joint from end to end. Stopping in the middle requires more effort to trowel and blend the start-stop lines. With any application motion, the goal is to apply just the right amount of chinking so that the finished troweled thickness will be between 3/16" and 1/4".



Trowels - Stainless steel margin trowels, in varying sizes, like the ones shown above, are recommended when applying Weatherall Triple Stretch® chinking. Using our chinking and the proper tools, they can reduce application significantly. Custom “thumb” trowels for work in corners and other tight spaces can be made from virtually any flat metal stock.

TROWELING

When troweling it is important to see that the material is worked carefully into the joints and that edges are firmly tooled to achieve maximum adhesion to the wood and form a weather-tight seal. To begin troweling the applied material, lightly mist the bottom of the trowel with the release agent, then proceed to trowel the material neatly and firmly into the joint and along the edges. Use a trowel stroke of 6”- 12”. The release agent, when used properly, will allow the trowel to glide smoothly over the chinking without sticking and pulling. Using too much release agent will cause excessive wetting and/or runs, and may prevent the chinking from properly sealing the wood. Although normally you should not spray the release agent directly onto the logs, under some circumstances it may be necessary to lightly spray the applied chinking as you trowel it. Spray only as much release agent as is necessary to give a smooth texture without pulling. Care should be taken to force out any air bubbles/pockets that may have developed. Air bubbles/pockets can be created during the loading of the material into the equipment or by an overlapping application pattern. Check your troweled thickness by inserting the tip of a clean trowel into the freshly tooled chinking material. After examining the depth of the material adhering to the trowel, correct the depth if needed and retool the area to reseal. Finished troweled thickness of the chinking on chink lines 3/4” and wider should be between 3/16” and 1/4”... no more, no less! Properly prepared and applied applications will result in chinking material that is tightly bonded with the wood at the edges of the joint. After fully curing, substantial force will be required to remove the chinking, tearing out wood that has become embedded within the chinking edges. Very specific conditions may cause poor bonding of the chinking to the wood; surface contaminants, failure to use a compatible wood finish, failure to firmly trowel the chinking at the edges, failure to apply the chinking at a minimum thickness, application to wet or frozen wood, or use of too much release agent.

CURE TIME

Chinking will be 'skinned' over on the surface in approximately 30 minutes, under average temperatures and humidity conditions. It will be surface dry in 8-10 hours. However, it will be several days before firmly cured. If weather conditions are humid or cold, curing will take longer.

CLEAN UP

Wipe up all spills, runs, etc. immediately. When chinking is completed for the day, promptly clean up tools and hand guns with warm water. Lubricate all metal parts with a light oil to prevent rust; lubricate gun seals to prevent drying. Follow the commercial pump manufacturer's instructions for maintenance and clean up. NEVER allow material to dry in pump, in hoses, or any place it is not wanted. Once cured, it is very difficult to remove.



SECTION VI: MAINTENANCE OF A LOG HOME

WATER BEAD TEST/SHEEN

A simple way to test the sheen and finish of a log home is to use a spray bottle and do a water bead test ; spraying water directly on to the logs. If the water beads up and does not appear to penetrate the surface, the top coat is still in good condition. If it penetrates into the wood, a re-coat is needed. Be sure to test the tops of the logs and in the most severely exposed areas.

EXPOSURE

South and west facing walls are normally exposed to more UV damaging rays than the north and east walls. Maintenance coats of Weatherall 1045 UV GUARD® or Weatherall 1047 UV GUARD® II may be required depending on the amount of shade on these walls. This maintenance coat should be applied as often as needed; typically every 3-4 years for heavily exposed walls.

CHINKING/CAULKING INSPECTION

New log homes can settle significantly during the first year after completion. Inspect the entire house for possible chink and caulk failures due to excess settling, improper preparation or application. This example of chinking tearing away from the logs can be attributed to several things; Green Logs, poor application, using the wrong product, excessive log twisting and/or movement, poor surface preparation, or a combination of any of these reasons.

To repair the chinking failure, remove any loose or crumbling chinking, and clean the affected area. Trim any thin areas to provide an adequate footprint for the repair material. Be sure that the area has enough backing material. Apply Weatherall 1015 Triple Stretch® and trowel or brush out to blend the repair into existing chink joint.

MASKING

Mask all doors, windows, lighting fixtures and exposed items that may be affected by spraying on Weatherall 1045 UV GUARD® or Weatherall 1047 UV GUARD® II Two-Coat Exterior Wood Finish.

AFFECTED AREAS

Reapplication is only required in areas that really need the maintenance coat. Our integrated system will allow a maintenance top coat even when it is not necessary.

CYCLE

Weatherall 1045 UV GUARD® and Weatherall 1047 UV GUARD® II integrated systems withstand the harshness of the elements and can last for years if the home owner commits to the maintenance schedule required for our products. Weatherall 1045 UV GUARD® and Weatherall 1047 UV GUARD® II systems should not require clear coat maintenance coats more often than every 3-5 years.



Weatherall UV GUARD® and Weatherall 1047 UV GUARD® II

SECTION VII: FREQUENTLY ASKED QUESTIONS

HOW DO I CLEAN MY LOGS?

For new construction, sand, or cup brush the log surfaces. Because unprotected wood can experience sufficient surface degradation to make it unsuitable for stain application in as little as one month, all exterior should be cleaned. This includes lifting chain or cable marks, construction traffic marks, etc. Sand all log ends. Pressure washing or chemical cleaning is not recommended for new construction because the home will probably not be sufficiently dried in to keep the chemicals and rinse water out of places where they can cause later problems or create a mess. Both methods wet the wood adding a significant drying time. For untreated aged wood or wood that has been previously coated or stained with products other than LOG GUARD®, UV GUARD® or UV GUARD® II Exterior Wood Finish, the wood surfaces must be completely cleaned by removing untreated damaged wood fibers and the existing stain coating. This can be accomplished by pressure washing, using chemical strippers/cleaners, corn blasting, or sanding. Be sure to verify the wood dryness and pH. Remember the preparation goal is to provide a sound, clean, warm, dry, lightly textured surface for the application of the stain and the least invasive method that accomplishes this is the one to choose.

AN OIL BASED STAIN WAS PREVIOUSLY APPLIED TO MY HOME. CAN I RE-DO IT WITH YOUR PRODUCTS?

Weatherall offers a premium oil based product called "SuStain" for use either as an original coating or a maintenance coat over an existing oil based finish eliminating the need to remove the original finish.

HOW DO I APPLY YOUR PRODUCTS?

We recommend the use of the Applicator bucket sprayer, a pump style garden sprayer, airless sprayer or brush application to apply LOG GUARD®, UV GUARD® Exterior Wood Finish or UV GUARD® II Exterior Wood Finish. All methods should be followed immediately, while the surface is wet, with back brushing to work the stain into the pores of the wood and remove runs and overlap marks. It is a good idea to have a pail of water handy for the back brush. This keeps the stain from building up on the brush and gumming it up. A gummed up brush will actually lift the stain off the logs. Shake the excess water out of the brush prior to each use.

WHEN WILL I NEED TO REAPPLY A MAINTENANCE COAT?

This will depend on exposure to the elements. South facing and, depending on location, east and west facing walls will require a clear maintenance coat every 3-5 years. Decks will require maintenance every 2-3 years. These maintenance intervals can be significantly increased by incorporating large to full" over the deck" roof overhangs to minimize UV exposure, rain gutters to keep rain splash off of the walls, and shrubs and trees to shade the walls.

WHAT TYPE OF COVERAGE CAN I EXPECT?

Coverage will depend on the type and porosity of the wood. As a general rule, use 200-300 sq. ft./gal. for the first coat and 400-500 sq. ft./gal. for subsequent coats.

CAN I USE CLEAR UV GUARD OR UV GUARD II EXTERIOR WOOD FINISH ON INTERIOR WALLS TO MAKE THEM EASIER TO DUST OR CLEAN?

Yes. UV GUARD or UV GUARD II Exterior Wood Finishes can be used to seal interior walls. However, Weatherall Company, Inc. makes an interior finish called LOG GUARD which is specifically designed for interior use. The first coat of product will raise the grain slightly and a light sanding between coats will provide an easily cleanable surface. Each additional coat will bring out a higher shine and more durable, urethane-like finish.

WHY ARE THERE SO MANY KINDS OF CAULKS AND CHINKING?

Because there are so many different log styles, log profiles, joint designs, and texture preferences there is no "one size fits all" sealant system for all applications. Weatherall Co. Inc. has developed a high quality family of caulk and chinking products focusing on the "total system" approach to meet each of these requirements.

WHAT MAKES YOUR PRODUCTS BETTER THAN YOUR COMPETITORS?

The TRIPLE STRETCH CHINKING and related products, including LOG GUARD®, UV GUARD® Interior/Exterior Wood Finish, UV GUARD® II Exterior Wood Finish, SuSTAIN, UV GUARD® Premium Caulk and UV GUARD® Textured Caulk, have been engineered and formulated on a "total systems" approach using the finest raw materials available. Our chinking products have a higher viscosity making them easier to tool for a clean, crisp edge, faster drying, and more penetration resistant while still providing the necessary adhesion and elasticity for a specific application.

HOW DO I APPLY THE CHINKING?

Chinking is normally applied to the log joint using a commercial chink pump. It can also be applied using a bulk loading gun, manual, electric, or air operated or with factory loaded caulk tubes, either manually or electrically operated. Once it has been applied to the joint, it should be tooled into the joint using a margin trowel or regular spatula with a 50/50 water/isopropyl alcohol mix sprayed on the trowels/spatulas as a release agent.

ARE THERE TEMPERATURE RESTRICTIONS FOR APPLYING THE PRODUCT?

All Weatherall Company, Inc. products should not be applied during freezing temperatures or when freezing temperatures are expected before the material has completely cured. If application during freezing temperatures is unavoidable, the structure must be tented and heated until the material is completely dry. It is also recommended that the material not be applied when temperatures exceed 90° F. Additionally, the material should be kept warm and the pump hopper and hose may have to be heated.

WILL RAIN, SNOW, OR OTHER INCLEMENT WEATHER AFFECT THE PRODUCT APPLICATION?

Yes. The wood surfaces must be completely dry (18% surface moisture content). Do not attempt to apply the products if rain or other inclement weather is imminent unless tenting and heating is provided as specified in the question above. If the logs are exposed to moisture, allow several days to dry. Check the moisture content a minimum of one inch into the wood with a lignometer (moisture meter). This is especially important in areas with high humidity. Check the product specification sheets for appropriate cure times.

HOW DO I PROTECT THE JOINTS BETWEEN THE LOGS OR WOOD SIDING AND THE MASONRY ACCENTS OR FIREPLACES?

UV GUARD® Mortar Match is the best choice for a non-structural finish over new or existing mortar joints. It is an excellent restoration/repair product for previously applied mortar. Its elasticity is ideal for sealing over cracked and deteriorated mortar joints, eliminating air and water infiltration.

HOW LONG WILL THE CHINKING OR CAULK LAST?

When properly applied they should last indefinitely. They all come with a lifetime limited warranty.




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