



Workshop

Topics and Instructions

March 2006

73 Aurora Drive, Ponce Inlet, FL 32127, USA
(386) 756-9804 – Fax: (386) 756-1513
www.grailcoat.com
www.flexibleconcrete.com



WORKSHOP TOPICS

- Introduction and History of **GrailCoat**
- Storage of Material and Temperature Requirements
- Tools and Materials needed for Mixing and Applying

WALL APPLICATION

- Wall Preparation and Types of Wall Substrates
- **GrailCoat** Mixing Instructions
- Application of **GrailCoat** on Wall
- Base Coat - Embedding Mesh
- Second Coat - Covering Mesh
- Texture Coat and Types of Finishes
- Hands on Application

DECK and ROOF APPLICATION

- Surface Preparation
- Flashing and Caulking
- Concrete Substrate Application
- Wood Substrate Application
- Texture Coat and Sealing



MATERIAL AND TOOLS

Material Storage

1. Store powder and liquid out of sun. Powder requires protection from humidity and moisture.
2. Do not store the polymer at temperatures below freezing.

Temperature for Mixing and Application

1. **GrailCoat** SuperFlex should not be applied at temperatures below 40 degrees Fahrenheit.
2. **GrailCoat** DuraFlex should not be applied at temperatures below 50 degrees Fahrenheit.
3. **GrailCoat** DuraSurf should not be applied at temperatures below 50 degrees Fahrenheit.
4. A special low temperature additive can be added to all products to allow mixing and application in slightly lower temperatures if requested ahead by customer.
5. Cement products are effected by temperature, the hotter the day the less fluidity and pot life.
6. In extremely hot climates the **GrailCoat** will begin to set up quickly. Adding 2-3 small ice cubes to a bucket of mixed product will help to make the product more fluid and workable. Adding ice can only be done on the first coat, NOT on the second or third coat.

Materials Checklist

1. The reinforcing mesh is Alkali resistant.
2. Several 5-gallon mixing buckets. (for mixing materials & cleaning tools)
3. ½ inch drill with Jiffy (Drywall) Mixer (blade is a rectangular) or Paddle-type mortar mixer for larger jobs (Drum type Cement Mixer will not work)
4. Trowels and other standard plastering/stucco tools.



WALL PREPARATION

Preparation of Building

1. Parts of the building (windows, doors, railings, hose bibs, etc.) not to be coated with **GrailCoat** need to be masked off and protected.
2. **GrailCoat** that gets on surfaces not intended to be coated needs to be removed immediately while the product is still wet.
3. Large gaps or cracks should be pre-filled with suitable filler material prior to beginning the **GrailCoat** application.
4. Galvanized corner bead can be used on outside or inside corners for a sharper edge.

Preparation of OSB

1. Make sure surface is free of any loose particles, such as dust, chips, and dirt.
2. Cut mesh to proper size using scissors or utility knife. Scissors are the best method for cutting the mesh.
3. Attach the mesh to the top of the wall by embedding mesh into **GrailCoat** at top of wall and working your way down. This will hold the mesh in place as you go down.
4. Then proceed to directions for application of Base Coat.

Preparation of ICF

1. Remove surface oxidizing that might occur using a rasp or any type of tool that can create a rough surface. Make sure that the entire area is textured to facilitate better bonding of the **GrailCoat** to the surface. Chalk-line all corners, doors and windows, rasping corners back to chalk-line.
2. Clean surface of all loose particles, using best method available.
3. Cut mesh to proper size.
4. Pin mesh with 6p nails, remove nails after applying **GrailCoat**.

GrailCoat is a thin coating and will not hide inconsistencies in the substrate.



MIXING DIRECTIONS

Mixing GrailCoat – Using the ½”, 7.0 amp drill with drywall mixing blade

1. Add color container to 5-gallon pail of liquid polymer. Blend the color well with mixer. Then divide the 5-gallon bucket as described below.
2. **GrailCoat SuperFlex**, divide five gallons of liquid evenly into **three** clean 5-gallon pails.
3. **GrailCoat DuraFlex**, divide five gallons of liquid evenly into **four** clean 5-gallon pails.
4. **GrailCoat DuraSurf**, divide five gallons of liquid evenly into **five** clean 5-gallon pails.
5. **IF COLOR IS NOT RIGHT CONTACT US IMMEDIATELY.**
6. Mix one pail at a time by adding one bag of powder per pail of liquid, divided as instructed above.
7. **Slowly** add powder to the center (vortex) of the spinning mixer, stop adding powder, continue mixing then stop and check. The desired consistency is when you stop the mixer, wait 3 seconds and large air bubbles will appear (burping). Judge consistency, some powder may be left over due to environmental conditions. **ONLY USE THE AMOUNT OF POWDER NEEDED. YOU MAY NOT USE THE WHOLE BAG.**
8. Be sure to mix long enough and if in doubt mix a bit longer. Wait 5 or 10 minutes then mix again for two to three minutes.
9. Humidity and the heat will make for less fluidity and pot life.
10. Never leave material in sun.
11. Between batches if there is a time lapse put your mixer in a bucket of water to help keep blades clean.



APPLICATION

BASE COAT

1. This is the first coat over the mesh. Start at the top of the wall with the **GrailCoat** by troweling it on over the mesh. Make sure that the **GrailCoat** is pushed through the mesh to the substrate. Do not try to conceal mesh, just fill in all the mesh squares with **GrailCoat**, insuring the substrate is full coated.
2. **CAUTION:** Make at least two passes with the trowel in both directions. Do not re-work or over-work the material, as it will ball-up, become sticky and hard to spread.
3. Do not over work the base coat; it doesn't need to be perfectly smooth. Some texture is fine and will help give depth and fusion when the topcoat is applied.
4. Cover entire wall with uniform thickness. As the product is toweled on always make sure the mesh does not wrinkle or roll up. The mesh needs to stay flat against the wall.
5. Be sure to allow the base coat to dry (24 hours) before proceeding to the second coat.
6. The base coat will generally use approximately 50% of the product and take the longest to apply.

SECOND COAT

1. Apply second coat of GrailCoat over the entire structure. The second coat should completely cover the mesh so it is not visible.
2. Both applications, base and second coat, should be firmly troweled into and on top of the mesh ensuring no air bubbles or air pockets. The second coat should be applied the same way as the base coat.
3. Be sure to allow the second coat to dry (24 hours) before applying the texture coat.



TEXTURE COAT

KNOCK DOWN

1. Mix the **GrailCoat** as instructed in Mixing Directions. The mix needs to be mixed a little looser - WITH LESS POWDER - to enable a good flow through the hopper.
2. Every hopper/compressor set up is different. Start with about 30 p.s.i. and the largest tip opening available as a starting point. Particle size should be between $\frac{1}{2}$ " to $\frac{3}{4}$ " across, depending on desired look.
3. Cover the desired area uniformly making sure the area has plenty of material coverage. There should not be more that $\frac{1}{4}$ " space without material.
4. Do not cover any area larger than an area you will be able to get back to within 15 minutes so that it can be knocked down. The material will start to set up and will become very difficult to work with.
5. Using a plastic trowel, knock down the covered area. Use an "X" or figure "8" pattern to give a nice non-directional finish.
6. Hold trowel at a 45-degree angle from the wall, paying attention not to flatten out the material into large smooth areas. Apply only enough pressure to allow for a good knock down finish.
7. Make sure you have a clean damp towel on hand to clean the blade periodically as build up occurs.

SPATTER FINISH

1. Mix the **GrailCoat** the same as for the knock down finish application.
2. Apply over the second coat, using a pressure setting between 35-40 p.s.i. as a starting point. The particle size should be between $\frac{1}{8}$ " to $\frac{3}{16}$ ". Apply liberally over desired area to be covered, with no more that $\frac{1}{4}$ " space being uncovered.

UPON APPLYING ALL THREE COATS OF **GrailCoat IT SHOULD BE APPROXIMATELY 3 MM ($\frac{1}{8}$ ") THICK. **GrailCoat** IS A THIN COAT SYSTEM THAT DOES NOT HIDE INCONSISTANCY IN A SUBSTRATE. MAKE SURE ALL SUBSTRATE INCONSISTENCIES ARE TAKEN CARE OF BEFORE APPLYING **GrailCoat**.**



CURE TIME

1. **GrailCoat** cures quickly. Mix in batches that can be applied within 30-60 minutes of mixing. Cure time varies based on temperature. Dry time needs to be 24 hours before applying next coat.

CLEAN UP

1. Make sure all tools, pumps, and hoppers are cleaned thoroughly with water removing all **GrailCoat**. The **GrailCoat** needs to be removed before it sets up to assure easy clean up.
2. A good tip when using a hopper is to always have a 5-gallon pail of water to set the hopper gun into when you have down time to keep the material from setting up in the tip.



INSTALLATION INSTRUCTIONS FOR DECKS

SURFACE PREPARATION

1. Make sure surface is free of any loose particles, such as, sawdust, dirt, etc.
2. **WOOD SUBSTRATE** - Check for damage as a result of exposure to the elements. OSB will swell and CDX will de-laminate when exposed to moisture. Check to insure that any wood that has gotten wet is completely dry and no moisture is trapped inside. Any trapped moisture may eventually heat up and start the wood swelling or de-laminating after the deck product has been installed. This movement of the substrate will transfer to the surface of the deck, or worse, will crack the deck product from underneath.
3. **CONCRETE SUBSTRATE** - A slightly damp surface will actually help the **GrailCoat** adhere to the concrete substrate.
4. After you have determined you have a stable substrate, fill any large gaps or cracks with **GrailCoat**. Filling will prevent the area from showing through on the finished deck.
5. Slope – All decks need slope away from the house at least ¼” for every 1’. This insures proper water run off. Standing water is not a problem for **GrailCoat** but homeowners don’t like it.
6. Doors – All access from interior spaces to the deck should be no less than 4” above the deck. This helps insure blowing water will not go in the building. If blowing water enters the building and leaks down, the deck may be accused of leaking.



FLASHING

1. All flashings will be set in a bed of **GrailCoat**. This helps insure the flashing will not leak as well as securing the flashing.
2. Galvanized wall flashing (6" x 6", 90 degree) is set in a bed of **GrailCoat**. The **GrailCoat** is to be applied at least 2" up the wall and 8" on the deck from the edge of the flashing.
3. Nail the top of the flashing every 2' and nail the base of the flashing on the deck every 6". Use a quality caulk to seal any joints in the flashing, i.e. at corners and where two pieces of flashing overlap. Caulk liberally and press firmly until the caulk squeezes out at the top, bottom and lap joint.
4. Edge metals are used to provide a finished look for the outer edge of the deck. Colored metals may be used or unfinished galvanized or paint grip is acceptable. A 90 degree metal with a ¼" "kicker" on the bottom is standard. At least 3" on the deck and bent down no less than 2 ½" on the face is suggested. Set the bed of **GrailCoat** on the deck only and to extend out 2" past the edge metal on the deck. Nail edge metals every 6".

Note: Edge metals are used to trim out the deck and to seal off the outer face of the deck. This may be stucco, brick, or siding and each must be in place or the measurement to the outside edge need be known in order to install the edge metal. Consider all of this when determining the size of the edge metal to be installed.

5. "KICK-OUTS" Many times flashings are installed yet not finished correctly. One of the most common mistakes is not installing a "Kick-Out". A Kick-Out is simply a small 4", 45 to 90 degree turn in the metal located at the end of the wall flashing where the deck ends. This keeps the water from entering behind the wall and turns the flow of water towards the outer edge of the deck.
6. Doorframes should have "Door Pans" installed before the actual door is set. This is the same 6" x 6" 90 degree galvanized metal flashing. The pan is installed 6" up each doorjamb and across the bottom. The 90-degree will sit across the doorframe and bend around the outer wall. The door pan will sit over the wall flashing to properly shed water. Caulk the cut corners and nail on the upper sides of the door pan only, left and right jamb. Do not nail through the wall metal.
7. Instruct all trades that will be installing the finished exterior over the flashings to not nail below 4" above the deck. Siding can be nailed at the top and stucco paper, mesh or channel can lap over yet be nailed above the 4" line.



WOOD SUBSTRATE

FIRST LAYER

1. Wood decks are covered with galvanized diamond metal lath (2.50) the sheets are stapled or nailed to the substrate. Be sure to butt the sheets of lath together, leaving no gaps between sheets. Make sure all joints in the substrate are covered with lath. Do not allow a joint in the lath to be directly above a joint in the substrate. The metal lath needs to cover the flashing at least an inch.
2. After the lath is attached embed with a first coat of **GrailCoat** DuraFlex. There is no color needed for this coat. Trowel the material to be sure the lath is filled and the **GrailCoat** makes contact with the substrate. The metal lath is a good thickness gauge, do not allow any material to be above the metal lath. Allow the first layer to dry (dry to the touch is sufficient) before proceeding to second layer.

SECOND LAYER

1. The second layer must be installed using color. Begin at the same point you previously began but this time install the **GrailCoat** in the opposite direction across the mesh lines. This will help to insure a more even application and help to eliminate patterns at lath joints.

There is a minimal amount of shrinkage as the first and second coats dry. If the diamond pattern of the lath is visible after the second coat has dried follow the directions below for a third coat. The third coat is a skim coat to hide the diamond pattern. The texture coat will not hide the ghosting diamond pattern. If no diamond pattern is visible proceed to the texture coat and sealing step on the next page.

THIRD LAYER

1. The third layer, if necessary, must be installed with the color. Inspect the second layer surface for slight trowel imperfections. These may be scraped off with the edge of the trowel. The smoother the previous surface, the smoother the final surface will be. Install the third layer in the opposite direction from the second.

Texture Coat and Sealing is the final step. Proceed page 12 for Texture Coat and Sealing instructions.



CONCRETE SUBSTRATE

FIRST LAYER

1. Roll out mesh beginning on the outer edge and determine where you should begin and end. Leave the mesh about 1" from the wall or edge. This insures that no mesh will stick out of the **GrailCoat** creating a potential breach in the seal.
2. The first layer of **GrailCoat** may be installed without color. Properly mix the **GrailCoat** and begin by pouring a small amount onto the mesh, press firmly into the mesh with a trowel. The mesh is a very good guide to determine the thickness of the first coat and will show through the first layer of **GrailCoat**. Continue pouring and troweling the **GrailCoat** into the exposed mesh. When applying **GrailCoat** to the mesh be sure to leave about 2" of the mesh exposed where there will be a mesh overlap. This is your lap line for the next course. Your second course of mesh will lap over to the **GrailCoat** already installed. Allow the first layer to dry (dry to the touch is sufficient) before proceeding to second layer.

Note: Leaving approximately 2" of mesh exposed will allow the abutting course of mesh to blend in. Installing mesh over a previously coated mesh area will cause a slight hump at the mesh overlap. The resulting hump will become more pronounced as the application continues.

SECOND LAYER

1. The second layer must be installed using color. Begin at the same point you previously began. This time install the **GrailCoat** in the opposite direction across the mesh lines. This will help to insure a more even application and help to eliminate patterns at lap joints.

Texture Coat and Sealing is the final step, follow the instructions on page 12 for Texture Coat and Sealing.



TEXTURE COAT and SEALING

TEXTURE

1. The Knock Down texture is most popular. This texture is achieved by applying the **GrailCoat** using a spray hopper. Mix the **GrailCoat** a bit more liquid, using less powder, for this step.
2. Using the largest fitting, apply a generous amount in area about 4' by 6' (the area should be no larger than you can reach across). Using your trowel, knock the texture down across the entire area. Wipe the trowel clean using water, leaving it wet. Again trowel across the texture to further smooth out the texture surface. Repeat, applying the spray over the previous texture edge. The wet step will blend the two areas together. Continue until entire deck is textured.
3. Once texture is dry, any railings to be installed should be secured. The screw holes for the feet should be caulked liberally as they are secured to the deck.

POLYMER SEALER COAT

1. DuraFlex polymer is used to help insure a uniform color across the entire deck surface and to seal in any salts that may leach to the surface and alter the color of the deck. Mix the polymer as follows:

5 Gallon of DuraFlex Polymer
1 Color Pack
Thoroughly mix color into DuraFlex Polymer

2. Use a roller to apply the sealer. Use roller mats with a plastic tube, the paper tube may fail.
3. Use a small brush or roller to detail around the walls and feet of railings. Roll out the coating consistently until entire deck is covered. Note that most roller lines will disappear when the coating dries, the color may darken as it dries.

CLEAR SEALER COAT

1. A clear sealer is the last coat to be applied. The clear sealer goes over the polymer sealer coat. Apply the clear sealer with a roller directly from the can.

The deck must be viewed as a whole. As you begin each step, look at the deck in its entirety, not just the area directly in front of you. The deck is not a series of steps but the total of all of them.