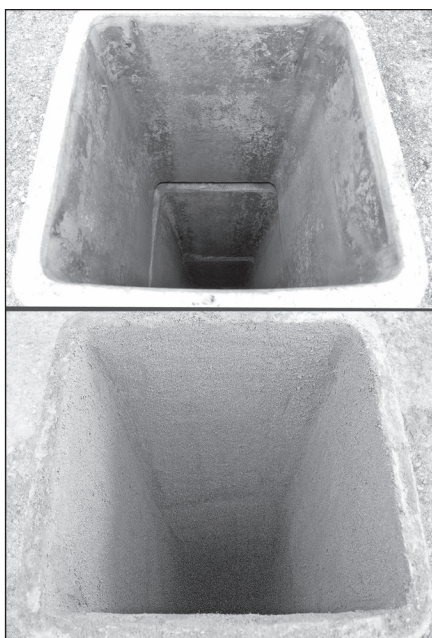


# Installation And Maintenance Instructions For

# ***Heat* Shield<sup>®</sup>** **Cerfractory<sup>®</sup> Flue Sealant**

## Chimney Repair And Resurfacing System



LISTED UL SUBJECT 1777  
with CeCure Sleeve Liner System

**20 YEAR  
WARRANTY**

Manufactured exclusively for:  
SaverSystems • 800 South 7th Street • Richmond, IN 47374  
800.860.6327

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# INTRODUCTION

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The HeatShield Flue Sealant & Repair System was developed to restore flue tile and masonry chimney interiors to their original integrity. In suitable chimneys, HeatShield can provide a very effective and durable repair system. It offers chimney professionals a versatile alternative to stainless steel and other repair methods. Repairs can be performed in 1-4 hours with minimal investment in specialty equipment. It can be applied solely to open mortar joints, or a thin coating can be applied to the entire flue to fill joints, seal cracks and structurally reinforce chimney interiors.

Invented in Europe, HeatShield's hybrid "cerfractory" technology contains no cement or lime. It combines the strength of a high fired ceramic with the heat resistance of high temperature refractory cement. HeatShield Cerfractory Flue Sealant is supplied as a dry powder that is mixed with tap water on the job site, immediately before use. It air cures in about 48 hours and is ready for use. Restored flues are gas tight, moisture & acid resistant, with little to no effect on the functional cross sectional area of the flue.

HeatShield was tested by Wernok Hersey as a Chimney Repair and Resurfacing System for use on existing masonry chimneys with or without clay flue tile. This rigorous testing included Flue Gas Temperature (1000°F, 1400°F, and 2100°F), Sweep test (100 strokes with steel brush), Smoke leakage, Strength, Thermal Resistance, Acid/Moisture Resistance and Freeze/Thaw Resistance tests.

In addition, HeatShield was tested as a refractory mortar to ASTM C199 (Standard Pier Test for Refractory Mortars) by Orton Materials Testing & Research Center. Under this standard, HeatShield was rated "Super Duty"; able to perform at temperatures in excess of 2900° F. for 5 hours.

# SECTION 1

## APPLICATION AND LISTING

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*HeatShield* Cerfractory Flue Sealant & Repair System is manufactured exclusively for SaverSystems under licenses from CeCure Chimney Systems, LLC., and is considered an "all fuel" chimney repair and resurfacing system. It is intended for field installation into existing masonry chimneys (with or without a liner of fire-clay tile) that are used for the natural draft venting of Category I gas fired (Natural or LP), Type-L vented oil-fired, and solid fuel-fired residential-type appliances in which the maximum continuous flue gas outlet temperatures do not exceed 1000°F./538°C. *HeatShield* Cerfractory Flue Sealant's intended use is to restore the integrity of the chimney's ability to contain and convey the products of combustion to the outside.

*HeatShield* Cerfractory Flue Sealant does not provide the thermal protection of a chimney liner and is not intended to be installed as a chimney liner. *HeatShield* Flue Sealant is not intended for use to repair chimneys that vent unlisted wood, gas, oil, or coal burning appliances, Category II, III, and IV gas burning appliances or appliances listed for use only with Type BW vent.

*HeatShield* Cerfractory Flue Sealant is to be applied at an average thickness of  $\frac{3}{16}$ " and a minimum thickness of no less than  $\frac{1}{8}$ ". There is no maximum thickness, however curing times increase significantly when the material is applied thicker than  $\frac{1}{2}$ ". *HeatShield* Cerfractory Flue Sealant is compatible with all structurally sound, clean, dry, masonry chimney interiors and clay flue tile liners.

*HeatShield* Cerfractory Flue Sealant is intended to be installed in accordance with NFPA 211, Standard for Chimneys, Fireplaces, Vents, and Solid Fuel-Burning Appliances or other applicable recognized major and local building code requirements.

## **SECTION 2**

### **HOW TO DETERMINE IF THE CHIMNEY IS APPROPRIATE FOR REPAIR WITH THE HEATSHIELD CERFRFACTORY FLUE SEALANT & REPAIR SYSTEM**

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#### **HeatShield Cerfractory Flue Sealant & Repair System is advisable when:**

- A chimney lined with clay flue tile is missing mortar joints between the tiles.
- Cracks in clay flue tile do not occur in a manner or pattern that will cause the tile to become loose or dislodged during the repair process.
- Excessive mortar protrusions or "snots" between tiles have been removed.
- The net cross sectional area of the flue will not be less than the cross-sectional area of the connecting appliance flue collar or less than specified in the appliance manufacturer's instructions after repair is performed.
- The net cross sectional area of the flue will not be less than the recommended ratio to fireplace opening, per NFPA 211 or other approved method after repair is performed.

## **SECTION 3**

### **INSTALLATION REQUIREMENTS**

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- Every HeatShield Cerfractory Flue Sealant & Repair System installation/application must be properly planned and installed for optimum performance and safety.
- Refer to the appliance manufacturer's instructions to determine venting requirements and limitations with respect to the existing chimney and use of the appliance.
- It is the responsibility of the installer to contact local building and fire officials concerning any installation restrictions and/or inspection requirements that may apply in your area.
- Permits may be required before beginning the installation. This product must be installed within local building code requirements.
- Airspace clearances must be checked between the chimney exterior and combustible materials should be checked to verify whether the chimney is in accordance with the clearance specifications contained in:
  1. NFPA 211
  2. Other recognized major building codes
  3. The listed appliance manufacturer's installation instructions

## SECTION 4

### MATERIALS, TOOLS & SUPPLIES

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**Do not use any materials that are not specified by these instructions.**

**CeCure Chimney Systems Supplied Materials:**

- HeatShield Cerfractory Flue Sealant (50 lb Pails)
- Tie Coat Accelerator (4 lb Pails)
- HeatShield Adhesion Promoter (1gl and 5gl Pails)
- No-Rinse Concrete Etch (1 gl Container)
- Pulling Head (Size of Pulling Head is determined by the flue ID, nine stock sizes available. Custom Pulling Heads available, see Installer Price List for details).
- Resurfacing Foam Set (Foam sets for Resurfacing are custom cut at our factory, per the exact flue ID. Each set contains 4" Resurfacing Blade, 2" Hard Foam Backer Plate and .25" Rigid Plastic Plate, see Installer Price List for details).\*
- Pulling Head Connector Kit (locking quick link, Retainer Nuts and 2- 25' Guide Lines).
- Guide Line Extension Set (2- 25' Guide Lines for flue heights over 25').
- CeCure Rods 1¼" x 48"
- CeCure Starter Rod (Includes plunger heads for square/round & rectangle/oval flues, mounting hardware and bottom plates).
- 1" x 30" x 36" Hard Foam
- 2" x 30" x 36" Hard Foam
- Urbanator (Set of 2, attach to CeCure Rods for removal of protruding mortar joints and obstructions).
- 30" Chamber Rod
- Bull Float Adapter
- Offset Wheel
- CeCure Vision System

\* Experienced Installers may wish to cut Resurfacing Foam Sets in-field. See Installer Price List for bulk foams and Foam Cutting Accessories. A foam cutting tutorial is available on the HeatShield Installers Resource web site, [www.heatshieldpro.com](http://www.heatshieldpro.com).

## **Tools & Supplies:**

The following are basic tools and supplies needed to resurface a chimneys' interior with the HeatShield Cerfractory Flue Sealant and Repair System:

- Heavy duty ½" drill
- ¾" Drill
- Jig or reciprocating saw
- Fine tooth blade for jig/ reciprocating saw
- ¾" drill bit
- 1¼" hole saw
- 1½" hole saw
- 4" masonry chisel
- Bull float or stiff chimney sweep rods
- Extension cords ( misc.)
- Mixing paddle- "dry wall mud type"
- 15 gallon plastic mixing bowl or vat
- 4 - 6 empty 5-gallon buckets
- Lid with slit in center for 5 gallon bucket
- One liter measuring cup
- 8 ounce measuring cup
- Bucket trowel or large scoop
- Duckbill trowel
- Trowels (misc)
- Synthetic sponge
- CeCure winch or other chimney winch
- Cable connector – ¾" locking
- 9" foam cutting saw
- Drop light
- Garden hose with nozzle
- Propane or electric heater
- 1" x 4-5' wooden dowel
- 100' of ¼" nylon line
- Black permanent marker
- White or grey permanent marker for marking black surfaces
- Duct tape
- Measuring tape
- Framing square
- Rags
- Clear vinyl sheet (6-guage)
- Heat gun
- Nylon scrub brush
- 8 x 10 poly-tarp
- Drop clothes
- Dust mask
- Eye protection
- Gloves
- Safety harness
- Chimney cap

**Caution must be used when working on roofs. Proper and safe scaffolding should be used for safe installation. All ladders should be secured to the building. Check overhead for antennas, power lines, or other obstacles before erecting ladders and installing this product.**

## SECTION 5

### DETERMINING THE AMOUNT OF HEATSHIELD NEEDED

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#### Determining Material Needed For Resurfacing

- Add the tile width (W) and the tile length (L) in inches and multiply by 2 to determine the perimeter of the interior of the flue tile
- $(\text{width} + \text{length}) \times 2 = \text{Perimeter}$   $P = \underline{\hspace{2cm}}$
- Once the perimeter (P) is determined, multiply it by the height (H) of the flue in inches to determine the area (A) of the flue to be resurfaced  $H = \underline{\hspace{2cm}}$   
 $(P \times H = A)$   $A = \underline{\hspace{2cm}}$
- Once the area (A) has been determined, divide it by 4100 to determine the number of buckets (B) needed for resurfacing
- $(A / 4100 = B)$   $B = \underline{\hspace{2cm}}$
- Once the number of buckets (B) has been determined, round up to the next full bucket

\* A Materials Calculator which will determine HeatShield Cerfractory required for Joint Repair, Resurfacing and cost of Foam Set is available on the HeatShield Installers Resource web site, [www.heatshieldpro.com](http://www.heatshieldpro.com).



## SECTION 6

### **PERFORMING A HEATSHIELD FLUE RESURFACING**

The HeatShield Cerfractory Flue Sealant & Repair System requires specialized equipment and training for proper installation. Installation must be accomplished by a qualified trained person only. Check chimney for obstructions, loose or missing clay tile, cracked, loose or missing bricks, mortar, or other materials that could inhibit the correct installation of the chimney repair system. Make necessary repairs as needed before installation of the HeatShield Cerfractory Flue Sealant.

#### **Step 1: Cleaning the Flue**

Prior to installing the HeatShield Cerfractory Flue Sealant and Repair System the chimney must be thoroughly cleaned to remove all tar-glazed creosote and soot from the internal chimney walls. If this cannot be accomplished by conventional sweeping, the use of rotary chimney cleaning equipment is recommended. Use the least aggressive rotary brush that will remove flue deposits.

#### **Step 2: Remove Protruding Mortar Joints**

It's best to remove any mortar between flue tiles that is protruding into the flue. This helps prevent tearing of foam applicators and improves flow dynamics of rising flue gases.

##### **Removal Methods:**

Removal can best be accomplished by using either the flat or round Urbanator chisels, (depending on the nature of the obstruction), attached to CeCure Rods or standard Bull Float rods.

The chisel is simply lowered down the chimney. The protruding joint is struck with the chisel until it has been removed.

#### **Step 3: Assemble the Resurfacing Foam Set onto the Pulling Head. See Section 7- Assembly of Resurfacing Applicator (Page 13)**

#### **Step 4: Mount Winch Onto Chimney Crown**

Place winch on top of chimney crown and center winch cable over the flue opening. Shim or use leveling bolts on winch so winch does not wobble

and rests solidly on the chimney crown.

## **Step 5: Attach Resurfacing Applicator To Winch And Raise/Lower Into Starting Position**

After placing winch securely on the chimney crown, insert and position Resurfacing Applicator at the base of the flue or bottom flue tile to be resurfaced. Determine the best method of inserting the Resurfacing Applicator into position. Often it can either be inserted into the bottom of the flue and raised into position or it can be inserted into the top of the flue and lowered into position.

### **Raising Resurfacing Applicator Into Position**

If the damper opening, flue thimble or clean out door permit, lower the winch cable (with locking type connector attached) to the opening and attach it to the eye on the top of the Pulling Head. Crank winch upward while feeding Resurfacing Applicator through the lower opening, being careful not to tear 4" Flex Resurfacing Foam. Next, position Resurfacing Applicator at the base of the flue or bottom of the lowest flue tile that is to be resurfaced. If the Resurfacing Applicator will not fit through the damper opening, the Head may be lowered into the Smoke Chamber, foams inserted through the damper and assembled in the Smoke Chamber.

### **Lowering Resurfacing Applicator Into Position**

The Resurfacing Applicator may also be lowered into position from the top. Using the locking type connector, attach winch cable to the eye connector on the Pulling Head of the Resurfacing Applicator. Attach Guide Lines with carabineers to the pre-drilled holes in each of the Retainer Nuts. Drop each line down the flue, fish lines through the lower flue opening. Insert Resurfacing Applicator into flue opening. Pull downward on Guide Lines while cranking winch downward to guide Resurfacing Applicator into position at the base of the bottom flue tile that is to be resurfaced (See Figure 1).

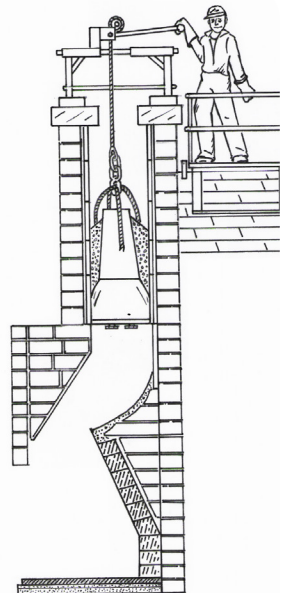


Figure 1

## Correct Starting Position of Resurfacing Applicator

Before adding either the Tie Coat Mix or Resurfacing Mix, make sure the Applicator (**Figure 2**) is:

1. Centered into flue opening.
2. The bottom of the Resurfacing Applicator is perpendicular to all vertical flue walls. (**Figure 3**)
3. The Flexible Resurfacing Foam fits snug to all vertical flue walls and there are no gaps between the flue walls and the 4" Flexible Resurfacing Foam, as shown in **Figure 3** looking up from the lower flue opening.
4. All slack has been removed from the winch cable to prevent blow-by when the material is dropped on the resurfacing Applicator.
5. For Tie Coating, assemble applicator with the bevel side of the 2" Hard Foam down (**Figure 2a**).
6. For Resurfacing, assemble applicator with the bevel side of the 2" Hard Foam up (**Figure 2b**).

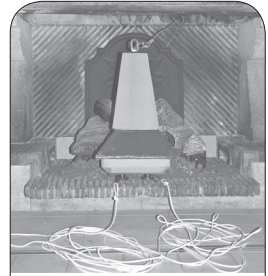


Figure 2



Figure 3

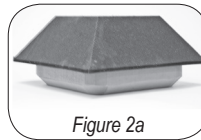


Figure 2a

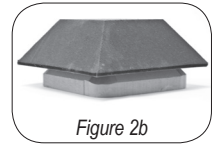


Figure 2b

## Tie Coating

With the Resurfacing Applicator in the correct starting position at the base of the bottom flue tile, the flue is ready for Tie Coating. This is accomplished by “floating” the HeatShield Cerfractory material (with an added chemical accelerator) across the surface and force drying it with heated air. Tie Coating removes and encapsulates remaining fine dust and soot particles. When dry, it provides a gripping surface for the HeatShield Cerfractory material to adhere to. Other flue interiors, such as brick or concrete, will generally provide enough “grip” and likely will not require Tie Coating.

## **Step 6: Mix and Apply Tie Coat See Section 10 – HeatShield Cerfractory Flue Sealant Mixing Instructions**

To protect interior finishes, cover the fireplace or thimble opening with a drop cloth to contain any material that may “blow-by” the applicator when mix is dropped in from the top of the chimney during application. Cover roof area surrounding the chimney to protect roof from inadvertent spills. Using a large scoop or trowel, drop Tie Coat mix on to the Resurfacing Applicator at the base of the bottom flue tile. Add enough Tie Coat mix to cover approximately half of the Pulling Head.

- A. Slowly crank the Resurfacing Applicator upwards, using winch. Add Tie Coat Mix at the rate of about one large scoop per every one or two complete turns of the winch handle, while lightly tapping the Winch Cable. Check the level of Tie Coat mix frequently with a drop light. Ensure the level of Tie Coat mix is maintained to cover about one half of the Pulling Head throughout the Tie Coat process.
- B. When the Resurfacing Applicator has reached the top of the flue, return remaining Tie Coat mix to bucket, using a scoop or trowel. Remaining Tie Coat mix can be incorporated into the mixture used for resurfacing.
- C. Remove the Resurfacing Applicator from flue opening. Visually inspect to ensure all flue tile liners are wet and coated with a thin or slurry layer of Tie Coat Mix. Liners should appear to have been lightly coated or smeared with a grey, sandy grit. Repeat application if necessary to ensure each flue liner is thoroughly coated.

### **Clean-Up**

Remove applicator from winch cable. Using a nylon scrub brush, garden hose and spray nozzle, thoroughly rinse clean the Resurfacing Applicator and all connectors. Do not allow Tie Coat mix to dry on applicator parts.

## **Step 7: Dry Tie Coat**

After the flue has been coated with the Tie Coat mixture it must dry before it can be resurfaced. Place a propane or electric heater in front of flue opening or in firebox and direct air from the heater up the flue for 15 - 20

minutes or until dry, inspect top flue tile to ensure Tie Coat is dry. After Tie Coat has thoroughly dried, the flue is ready to be resurfaced.

**Step 8: Reattach the cleaned Resurfacing Applicator (used for Tie Coating) To Winch And Raise/Lower Into Starting Position As Described Previously (Bevel side of 2" Hard Foam Up)**

**Step 9: Mix HeatShield for Resurfacing See Section 10– HeatShield Cerfractory Flue Sealant Mixing Instructions**

After correctly positioning the Resurfacing Applicator at the base of the flue, mix the HeatShield Cerfractory Flue Sealant for resurfacing as per mixing instructions in Section 10.

**Note:** Leftover Tie Coat mix can be incorporated into the resurfacing mixture as per mixing instructions.

Fill clean 5-gallon pails approximately ½ full with mixed HeatShield Cerfractory Flue Sealant. Each pail should weigh no more than 30 lbs. Carry to rooftop and place securely near chimney.

**Step 10: HeatShield Resurfacing Mix Placement And Winching**

**Initial Mix Placement**

With the Resurfacing Applicator in the correct starting position, scoop mixture from 5 gallon pail, using a bucket trowel or large scoop. Drop enough mixture down the flue to completely cover the top Pulling Head to within 2" of the top of the Resurfacing Applicator.

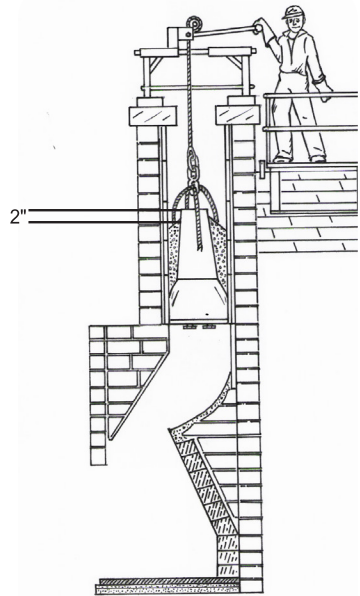


Figure 4

## **Mix Placement And Winching**

- A. Slowly crank winch upward while adding enough material to each side of the Resurfacing Applicator to maintain the level of HeatShield evenly around the entire perimeter and no less than approximately 2" below the top of the Pulling Head as shown in **Figure 4**. For most flues this will require approximately one large scoop with a bucket trowel per complete revelation of winch handle.
- B. Follow this procedure until the applicator is approximately 4-5 feet from the top of the flue opening. Do not add additional material, use 1" wooden dowel to lightly tap the HeatShield material around the perimeter as the applicator is slowly cranked upwards to the top of the flue. Once the applicator reaches the top of the flue, scrape off all excess material with bucket trowel and remove to bucket. Disconnect applicator from winch cable and remove applicator. Remove winch from chimney crown.
- C. Any irregularities in the HeatShield coating near the top that were caused by the removal of the applicator can be corrected by hand parging, using excess HeatShield material, a trowel and/or synthetic sponge.

## **Step 11: Final Inspection**

After removing the winch, inspect the flue visually or with a chimney camera, to ensure the entire flue interior has been thoroughly coated with the HeatShield Cerfractory Flue Sealant.

## **Step 12: Clean-Up**

Disassemble and thoroughly rinse all parts of the Resurfacing Applicator with water using a hose and spray nozzle. Use a soft bristle brush if necessary to further remove HeatShield material. Squeeze excess water from Flex Foam Resurfacing Blade and allow to dry before reuse. Thoroughly rinse, clean and dry all tools.

## **Step 13: Install Rain Cap**

A rain cap per NFPA 211(Standard for Chimneys, Fireplaces, Vents, Solid Fuel-Burning Appliances), is required on all HeatShield repaired chimneys.

## **Step 14: Curing**

Finished repairs should be allowed to stand for 48 hours before use with natural air flow. For faster curing, use a fan or small electric heater for 18-24 hours. For fireplaces/solid fuel applications: after initial 48 hour drying time, the chimney should be "conditioned" by burning a small, open fire using a "Duraflame" type log, or 3 to 4 small, (2"-3" diameter) wood logs. After "conditioning fire", chimney is ready for normal use.

## SECTION 7

### PERFORMING A HEATSHIELD JOINT REPAIR

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The HeatShield Cerfractory Flue Sealant & repair System was developed to resurface flue tile and masonry chimney interiors. However, it can also be used to perform spot repairs on missing, defective or deteriorated mortar joints between flue tiles. For flues that only require joint repair, the HeatShield material can be applied using a Joint Repair Applicator to seal gaps between flue tiles.

#### **Step 1: Cleaning the Flue**

Prior to installing the HeatShield Cerfractory Flue Sealant and Repair System the chimney must be thoroughly cleaned to remove all tar-glazed creosote and soot from the internal chimney walls. If this cannot be accomplished by conventional sweeping, the use of rotary cleaning is recommended. Use the least aggressive rotary brush that will remove flue deposits.

#### **Step 2:**

Its best to remove any mortar betwen flue tiles that is protruding into the flue. This helps prevent tearing of foam applicators and improves flow dynamics of rising flue gasses.

#### Removal Methods:

Removal can best be accomplished by either the flat or round Urbanator Chisels, (depending on the nature of the obstruction), attached to CeCure Rods or standard Bull Float Rods.

The Chisel is simply lowered down the chimney and the protruding joint is struck with the chisel until it has been removed.

#### **Step 3: Assemble the Joint Repair Foam Set onto the Pulling head. See Section 8 - Assembly of Joint Repair Applicator**



### **Step 4: Mount Winch on Chimney Crown**

Place winch on top of chimney crown and center winch cable over the flue opening. Shim or use leveling bolts on winch so winch does not wobble and rests solidly on chimney crown.

### **Step 5: Attach Joint Repair Applicator to Winch and Raise/Lower into Starting Position**

After placing winch securely on the chimney crown, insert and reposition the Joint repair Applicator at the base of the flue or directly below the first (lowest) joint to be repaired.

Determine the best method of inserting the Joint Repair Applicator into position. Often it can either be inserted into the top of the flue or lowered into position.

#### **Raising Joint Repair Applicator into Position**

If the damper opening, flue thimble or clean out door permit, lower the winch cable (with locking type connector attached) into the opening and attach it to the eye on top of the pulling head. Crank winch upward while feeding Joint Repair Applicator through the lower opening, being careful not to tear 4" Flex Joint Repair Foam. Next, position Joint Repair Applicator at the base of the flue or bottom of the lowest flue tile that is to be repaired. If the Resurfacing Applicator will not fit through the damper opening, the Head may be lowered into the Smoke Chamber, foams inserted through the damper and assembled in the Smoke Chamber.

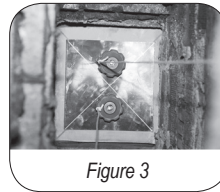
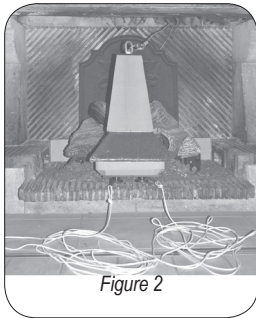
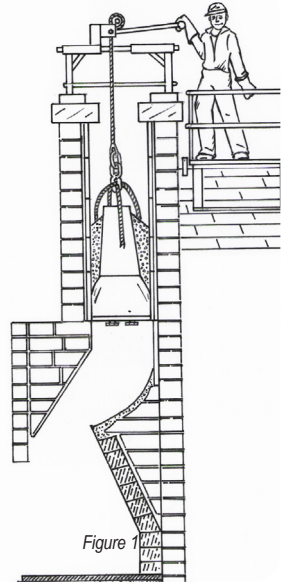
#### **Lowering Joint Repair Applicator into Position**

The Joint Repair Applicator may also be lowered into position from the top. Using the locking type connector, attach winch cable to the eye connector on the Pulling Head of the Resurfacing Applicator. Attach Guide Lines with carabineers to the pre-drilled holes in each of the retainer Nuts. Drop each line down the flue, fish lines through the lower opening. Insert Joint Repair Applicator into flue opening. Pull downward on Guide Lines with cranking winch downward to guide Joint Repair Applicator into position just below the first mortar joint to be repaired. (See Figure 1)

## Correct Starting Position of Joint Repair Applicator

Before adding Joint repair Mix, Make sure the applicator (Figure 2 ) is:

- Centered in the flue opening
- The bottom of the Joint Repair Applicator is perpendicular to all vertical flue walls (Figure 3)
- The Flexible Joint Repair Foam fits snug to all vertical flue walls and there are no gaps between the flue walls and the 4" Flexible Joint Repair Foam, as shown in Figure 3 looking up from the lower flue opening.



## **Step 6: Mix HeatShield for Joint Repair. See Section 10 - HeatShield Cerfractory Flue Sealant Mixing Instructions**

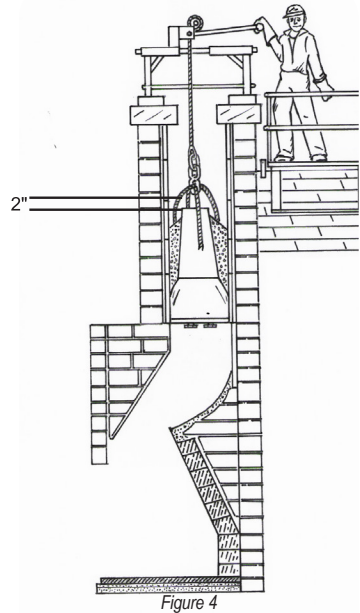
After correctly positioning the Joint Repair Applicator below the first joint to be repaired, mix the HeatShield Cerfractory Flue Sealant for Joint repair as per mixing instructions in Section 10.

Fill clean 5 gallon pails approximately 1/2 full with mixed HeatShield Cerfractory Flue Sealant. Each pail should weigh no more than 30 pounds. Carry to rooftop and place securely near chimney.

## **Step 7: HeatShield Joint Repair Mix Placement and Winching**

With the Joint Repair Applicator in the correct starting position, scoop mixture from 5 gallon pail using a bucket trowel or large scoop. Drop enough mixture down the flue to cover the Pulling Head to within two inches of the top of the Joint Repair Applicator. Note: If total amount of HeatShield Cerfractory Flue Sealant required to accomplish repair does not cover Pulling Head to within two inches of the top, then trowel mixed HeatShield cerfractory onto Pulling Head and continue repair.

- Slowly crank winch upward while adding enough material to each side of the Joint repair Applicator to maintain the level of HeatShield evenly around the entire perimeter and within 2" of the top of the Pulling Head as shown in Figure 4. For most flues this will require approximately one large scoop with a bucket trowel per complete revolution of the winch handle.
- Follow this procedure until you run out of HeatShield Cerfractory. As you approach each joint to repair, lightly shake the winch cable to help material 'flow' from the center of the flue to the perimeter of the flue.



## **Step 8: Final Inspection**

After removing the Joint Repair Applicator and Winch, inspect the flue visually or with a chimney camera to ensure the joints have been thoroughly coated with HeatShield Cerfractory Flue Sealant.

### **Step 9: Clean-Up**

Dissassemble and thoroughly rinse all parts of the Joint Repair Applicator with water using a hose and spray nozzle. Use a soft bristle brush if necessary to further remove HeatShield material. Squeeze excess water from Flex Foam Joint Repair Blade and allow to dry before reuse. Thoroughly rinse, clean and dry all tools..

### **Step 10: Install Rain Cap**

A rain cap per NFPA 211 (Standard for Chimneys, Fireplaces, Vents, and Solid Fuel-Burning Appliances), is required on all HeatShield repaired chimneys.

### **Step 12: Curing**

Finished repairs should be allowed to stand for 48 hours before use with natural air flow. For faster curing, use a fan or small electric heater for 18-24 hours.

For fireplaces/solid fuel applications: after initial 48 hour drying time, the chimney should be “conditioned” by burning a small, open fire using a “Duraflame” type log or 3 - 4 small, (2"- 3" diameter) wood logs. After “conditioning fire”, chimney is ready for normal use.

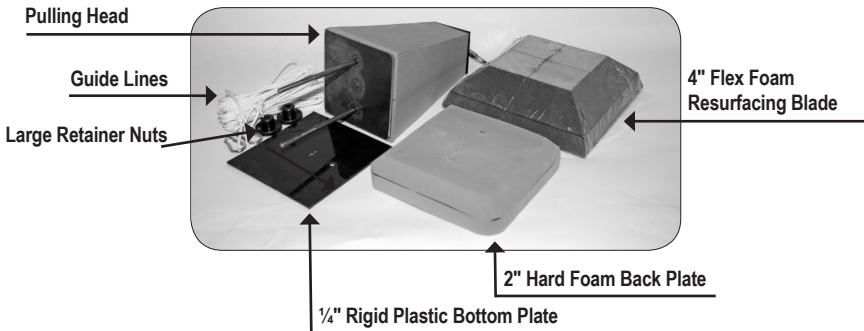
## SECTION 8

### ASSEMBLY OF RESURFACING APPLICATOR

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Pulling Heads and foams for Resurfacing are available from CeCure Chimney Systems see (Price List for details). When ordering, specify the exact inside dimension (ID) of the flue.

**Resurfacing Applicator Components**  
**Figure 5**



#### **Step 1:**

Slide the 4" Flex Foam Resurfacing Blade onto the threaded rods located on the bottom of the Pulling Head, wide end of Resurfacing Blade down.

#### **Step 2:**

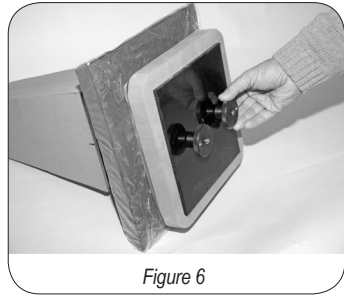
Slide the 2" Hard Foam backer plate onto the threaded rods located on the bottom of the Pulling Head (Bevel side down for Tie Coating, bevel side up for Resurfacing).

#### **Step 3:**

Slide the 1/4" Rigid Plastic Plate onto the threaded rods located on the bottom of the Pulling Head.

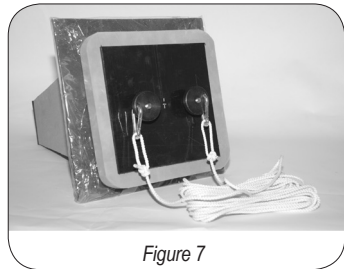
**Step 4:**

Attach the 2 large steel Retainer Nuts onto threaded rods located on the bottom of the Pulling Head and tighten until the 4" Flex Foam Resurfacing Blade, the 2" Hard Foam backer plate and the ¼" rigid plastic plate are nested snugly against the bottom of the Pulling Head as shown in **Figure 6**.



**Step 5:**

Using the carabineers, attach the Guide Lines to the pre-drilled holes in each of the Retainer Nuts as shown in **Figure 7**. This completes assembly of the Resurfacing Applicator.



## SECTION 9

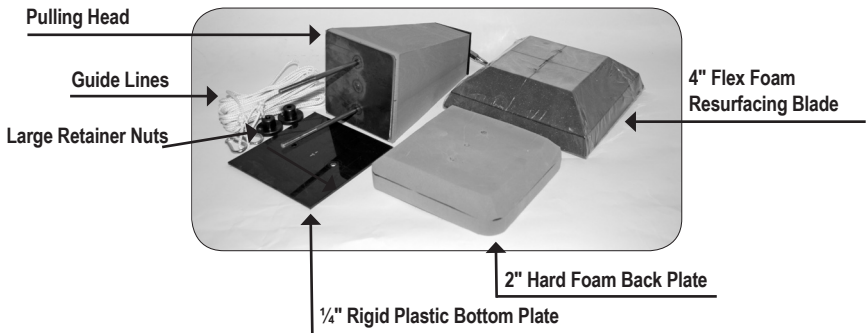
### ASSEMBLY OF JOINT REPAIR APPLICATOR

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Pulling Heads and foams for Joint Repair are available from CeCure Chimney Systems see (Price List for details). When ordering, specify the exact inside dimension (ID) of the flue.

#### Joint Repair Applicator Components

Figure 5



#### **Step 1:**

Slide the 4" Flex Foam Resurfacing Blade onto the threaded rods located on the bottom of the Pulling Head, wide end of Resurfacing Blade down.

#### **Step 2:**

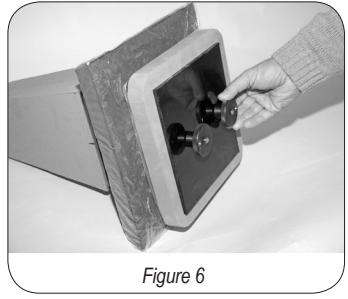
Slide the 2" Hard Foam backer plate onto the threaded rods located on the bottom of the Pulling Head (If beveled, bevel side down).

#### **Step 3:**

Slide the 1/4" Rigid Plastic Plate onto the threaded rods located on the bottom of the Pulling Head.

**Step 4:**

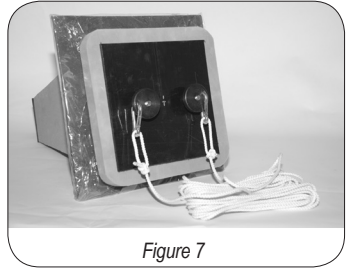
Attach the 2 large steel Retainer Nuts onto threaded rods located on the bottom of the Pulling Head and tighten until the 4" Flex Foam Resurfacing Blade, the 2" Hard Foam backer plate and the 1/4" rigid plastic plate are nested snugly against the bottom of the Pulling Head as shown in **Figure 6**.



*Figure 6*

**Step 5:**

Using the carabineers, attach the Guide Lines to the pre-drilled holes in each of the Retainer Nuts as shown in **Figure 7**. This completes assembly of the Resurfacing Applicator.



*Figure 7*



# SECTION 10

## HEATSHIELD CERFRFACTORY FLUE SEALANT MIXING INSTRUCTIONS

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The HeatShield Cerfractory Flue Sealant powder is a blend of dry ingredients of various particle sizes, packaged in 50 lb containers.

Because settling occurs during shipment, it is important to mix full containers only or “pre blend” dry ingredients before partial use of a container.

To “pre blend” dry ingredients when using only a portion of a container, remove the lid of the container and replace with lid that has a slit cut in the center.

Cut slit or small opening just large enough to insert Heavy Duty ½" drill with “drywall mud” type mixing paddle into the dry ingredients.

Mix slowly while “pumping mixing paddle up and down through the dry ingredients for 2 - 3 minutes, until all powders are thoroughly blended.

### **Step 1:**

To protect surrounding area from mixing splatter, stretch out poly tarp over mixing area. Using a one liter measuring cup, add 4½ lit. of clean, potable water to mixing bowl.

### **Step 2:**

Add one 50 lb container of dry HeatShield Cerfractory Flue Sealant and Repair material to water and mixing bowl. (**Note:** For best mixing always add HeatShield powder to water, not water to powder).

### **Step 3:**

Mix at low speed with Heavy Duty ½" drill and “drywall mud type” mixing paddle for about two minutes until all powder is wet and yet still grainy. At this point, let material stand for approximately 7-10 minutes. (Additional time may be needed when mixing outside on colder temperatures.) During this time a chemical reaction takes place that will allow it to reach a mortar-like consistency when remixed. **Note:** Any leftover Tie Coat mix can be incorporated into the next full 50 lb container of mix with little to no effect on set time. After the 7-10 minute standing period, mix for an additional few minutes until mixture has reached a smoother mortar-like consistency. If mixture is still grainy, add small amounts of water (¼ lit.) at a time and re-mix; repeat until mixture

## Step 4:

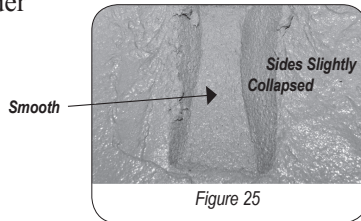
“Trowel Test” mix after each  $\frac{1}{4}$  lit. water addition to determine readiness for application. Using a Bucket trowel, held perpendicular ( $90^\circ$ ) to the mix, make a 2"- 3" deep trough, approximately 6" in length.

### Mixture is ready when:

1. It appears smooth at the bottom of the trough (see **Figure 25**) formed by the trowel and does not show “tear” marks.
2. The trough “collapses in” on itself, slightly to form an hour glass shape as shown in **Figure 25**.

If mixture exhibits “tear” marks, or does not “collapse in” following the “Trowel Test”, add about  $\frac{1}{4}$  lit. additional water at a time, re-mix and retest after each addition of water. Add up to an additional  $1\frac{1}{2}$  lit. of water if needed, after the initial  $4\frac{1}{2}$  lit. that was added in Step 1.

Mixture is too wet for application if the trough completely collapses or fills in on itself, immediately following the “Trowel Test”. To correct this condition, add additional (pre-blended) dry HeatShield Cerfractory powder



## Tie Coat Mixing

1. For Tie Coating, split the above mixture equally into 2 clean 5-gallon buckets or start with  $\frac{1}{2}$  bucket of (pre-blended) dry HeatShield Powder.
2. Add one  $\frac{1}{2}$  cup (4 oz.) of HeatShield Tie Coat Accelerator powder per 50 lb. bucket of HeatShield for Tie Coating or  $\frac{1}{4}$  cup (2 oz.) per half bucket of HeatShield.
3. Mix with paddle mixer until accelerator powder has been thoroughly blended into mixture.
4. Next, add approximately  $\frac{1}{4}$  lit. of additional water and mix to make a “soupy” mixture. Tie Coat mix should not leave a trough when trowel tested. **Note:** Any leftover Tie Coat mix can be incorporated into the next full 50 lb container of mix with little to no effect on set time.



## SECTION 11

### **MAINTENANCE INSTRUCTIONS – READ AND SAVE**

The HeatShield Cerfractory Flue Sealant & Repair System must be correctly installed with no materials used, other than those specified in these instructions. It must also be properly maintained in order to get the most benefit from this product. Therefore, the following maintenance and usage instructions must be followed.

#### **Curing And Initial Use**

Finished repairs should be allowed to stand for 48 hours before use with natural air flow. For faster curing, use a fan or small electric heater for 18 - 24 hours. For fireplaces/solid fuel applications: after initial 48 hour drying time, the chimney should be "conditioned" by burning a small, open fire using a "Duraflame" type log or 3 - 4 small, (2"- 3" diameter) wood logs. After "conditioning fire", chimney is ready for normal use. **Note:** For flues with top mounted cap/dampers, leave damper open for 30 days or until after initial curing, conditioning fire and first use.

#### **Maintenance**

1. The HeatShield Cerfractory Flue Sealant repaired/resurfaced chimney and any connector pipe, connected to the repaired/resurfaced chimney, must be cleaned annually and the entire installation inspected by a certified chimney sweep or other qualified person.
2. Clean with polypropylene flue brush, having the same dimension as the cross-sectional area of the flue. For stubborn deposits, a plastic rotary type brush may be used. Use the least aggressive brush that will remove flue deposits. To aid in mechanical cleaning, the following chemical creosote modifiers have been approved for use with HeatShield repaired/resurfaced flues: Anti-Creo-Soot (liquid or powder), Cre-Away and Cre-Away Pro.

The chimney may be accessed for cleaning through the top, by removing the chimney cap. If inaccessible from the top, the chimney may be accessed through the thimble (by removing connector pipe), clean-out opening, or through damper (for a fireplace). Debris from cleaning should be removed from below.

## **USAGE**

- When wood is burned slowly, it produces tar and other organic vapors which combine with expelled moisture to form creosote. These vapors may condense on the inside of the chimney liner during slow-burning firing periods. As a result, creosote residue accumulates on the HeatShield Cerfractory Flue Sealant & Repair System. When ignited, this creosote makes an extremely hot fire, which may damage your HeatShield chimney repair system.
- During the heating season, the chimney liner and HeatShield repair system should be inspected at least once every two months to determine if a creosote or soot buildup has occurred. If creosote or soot has accumulated, it should be removed to reduce the risk of a chimney fire.
- Should a fire occur, notify the fire department immediately. Before using the chimney after a chimney fire, it must be inspected by a qualified person and cleaned or repaired as necessary.
- Practice safe burning procedures to help prevent creosote build up and chimney fires - burn fires hot, not smoldering with a lot of smoke. In fireplaces, keep the top of flames visible below the fireplace damper opening; in a wood stove keep flames confined to the stove itself. Never burn trash, papers, garbage, etc. in a fireplace or wood stove. This could cause a fire hazard and damage to your HeatShield Chimney Repair System.
- Be sure to check rain cap for icing during periods of low temperatures.

**LEAVE A COPY OF THESE INSTRUCTIONS AND THE HEATSHIELD CERFRACTORY FLUE SEALANT 20 YEAR LIMITED WARRANTY CARD WITH THE HOMEOWNER**

HeatShield <sup>CO</sup>SaverSystems  
800 South 7th Street  
Richmond, In 47374