

INSTALLATION AND
MAINTENANCE INSTRUCTIONS
FOR



HOMESAVER[®]

**ROUND FLEX[™], OVAL FLEX[™],
RECTANGLE FLEX[™]**

FLEXIBLE STAINLESS STEEL RELINING PIPES



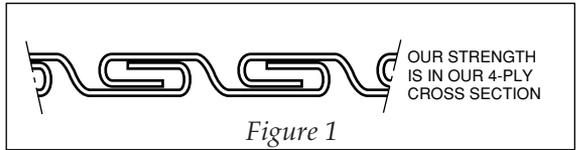
**UL Listed Sizes: 3", 4", 5", 6", 7", 8", 9", 10", 11" and 12" diameters
of RoundFlex, small and large OvalFlex, and RectangleFlex**
(Even though Dial-A-Flex, FireplaceFlex, and other sizes of
HomeSaver Flex are not UL Listed, use these instructions
for installation guidelines.)

Manufactured Exclusively for: Copperfield Chimney Supply, Inc.,
304 South 20th Street, Fairfield, IA 52556

INTRODUCTION

The HomeSaver® family of flexible stainless steel relining pipes are intended for use in conjunction with any residential building heating appliance. Use 304 type stainless for pellet burning appliances, woodburning appliances, fireplace inserts, and fireplaces. Type 316 stainless may be used for the above appliances, as well as coal-burning appliances, oil-burning appliances, and Category I gas appliances. See page 23 for warranty information for different fuels.

HomeSaver Flex is a high quality, UL Listed, 4-ply flexible stainless steel lining system designed for relining existing masonry chimneys.



Copperfield recommends that the installation of HomeSaver Flex be performed by an experienced professional who works with chimneys on a regular basis. This product should *not* be installed by the homeowner. HomeSaver® RoundFlex™, OvalFlex™, and RectangleFlex™ are tested and Listed to UL Standard 1777 (UL File #MH13768), in conjunction with ¼" and 1" HomeSaver® Foil-Face FlexWrap™ insulations and TherMix™ insulation, as explained in the following procedure. HomeSaver's commitment to providing a product of superior quality is reflected in obtaining this UL Listing. The testing is very stringent, and UL ensures consistency of the product by regularly inspecting the manufacturing facility and materials. This commitment is also reflected in HomeSaver's excellent warranties.

SECTION 1

How to Determine if a Reline is Needed

A reline is advisable when:

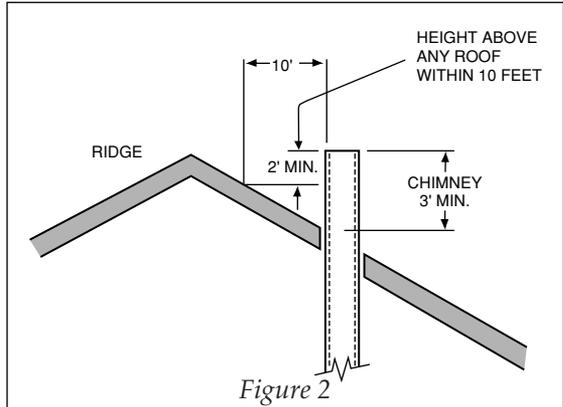
- The chimney has missing or damaged flue tiles
- The cross-sectional area of the flue is more than three times greater than the cross-sectional area of the appliance outlet
- There are hairline cracks in flue tiles or mortar missing between flue tiles
- The system has a history of repeated excessive creosote buildup

SECTION 2

Important Code and Safety Considerations

CHIMNEY HEIGHT

The National Fire Protection Association Standard 211 requires that the chimney extend at least 3 feet above the highest point where it passes through the roof and at least 2 feet higher than any portion of any structure within 10 feet (fig. 2).



CLEARANCES

Airspace clearances between the masonry 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. These instructions

NFPA 211 states that the minimum airspace clearance between exterior

masonry chimneys (which have the chimney completely outside the exterior wall of the building, excluding the soffit or cornice area) and combustible material shall be at least 1".

NFPA 211 states that the minimum airspace clearance between interior masonry chimneys (which have any portion of the chimney located within the exterior wall of the building) and combustible materials shall be at least 2". Waiving this 2" clearance to 1" can only be done by the local building official issuing the building permit. In either case, the airspace shall not be filled.

FLEX EXTENSION FROM CHIMNEY

The HomeSaver Flex should not extend more than 3" above the masonry chimney. Additional liner height above the masonry chimney may create condensation resulting in the formation of excessive creosote buildup.

CONNECTING OTHER APPLIANCES

Do not connect gas or oil appliances to chimneys serving solid fuel burning equipment.

Do not connect more than one solid fuel burning appliance to a single chimney flue.

SECTION 3

How to Determine What Materials You Will Need

1. WHAT SIZE OF HOMESAVER FLEX TO USE

HomeSaver Flex must be properly sized to the appliance for solid fuel appliances. This means it must be sized as specified in the appliance manufacturer's instructions and its cross-sectional area shall be not less than the area of the appliance flue collar. Please refer to the chart in figure 4, which gives the cross-sectional areas for 3" through 16" HomeSaver RoundFlex, as well as for large and small OvalFlex and RectangleFlex.

For oil liners, consult NFPA 31.

For gas appliances, consult the National Fuel Gas Code (NFPA 54).

Sizing fireplace liners (figure 3): If the chimney is straight, the cross-sectional opening of the flue liner (Area A) for a round liner shall be no less than $\frac{1}{12}$ th of the fireplace opening (Area B). If the chimney is offset, or if RectangleFlex or OvalFlex is being

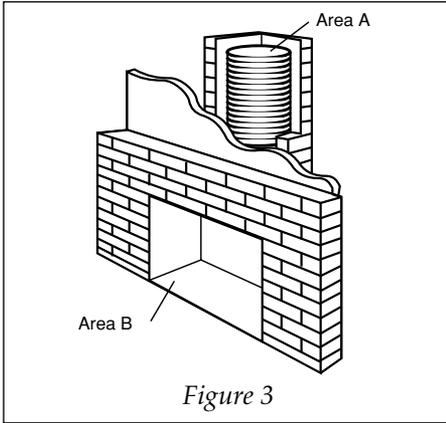


Figure 3

used, the flue liner shall not be less than $\frac{1}{10}$ th of the fireplace opening.

2. WHAT ALLOY OF HOMESAVER FLEX TO USE

Use 304-alloy Flex for wood and pellets; 316-alloy for wood, pellets, coal, oil, and Category I gas.

3. DETERMINING WHAT LENGTH OF HOMESAVER FLEX IS NEEDED

The maximum recommended height is 65'. Minimum height is 10'. Determine the length of Flex needed by lowering a weighted rope down the chimney to the position at which you wish your relining pipe to terminate. Remove and measure the rope. HomeSaver Flex will compress during the installation, therefore an additional 10% must be added to the overall length. Add another 3" of length for the installation of the top clamp, storm collar, and Guardian Cap™ or rain cap. Subtract this length from the height of the tee(s), if required.

HomeSaver Flex is made from one continuous strip and is not under any tension, making it easy to cut. We recommend cutting HomeSaver Flex

CROSS-SECTIONAL AREA FOR EACH SIZE AND SHAPE OF PIPE:

3" Round.....	7.06 sq. in.
4" Round.....	12.56 sq. in.
5" Round.....	19.64 sq. in.
6" Round.....	28.27 sq. in.
7" Round.....	38.48 sq. in.
8" Round.....	50.27 sq. in.
9" Round.....	63.62 sq. in.
10" Round.....	78.54 sq. in.
11" Round.....	95.03 sq. in.
12" Round.....	113.10 sq. in.
13" Round.....	132.73 sq. in.
14" Round.....	153.94 sq. in.
15" Round.....	176.72 sq. in.
16" Round.....	201.06 sq. in.
RectangleFlex.....	54.63 sq. in.
Small OvalFlex.....	40.22 sq. in.
Large OvalFlex.....	52.97 sq. in.

All other square and rectangular sizes can be calculated by multiplying inside length by inside width.

Figure 4

with a circular or reciprocating saw with a metal-cutting blade. You will notice that there are grooves running around the pipe, formed by the interlocking process. Simply begin cutting in one of these grooves. Continue cutting until you come around through the groove to a spot right next to where you began your cut. Then simply cut across to meet your original beginning spot, and your cut is complete. File or grind any rough edges.

4. DETERMINING WHAT INSULATION TO USE

First, determine if the chimney you are relining has at least 1" of clearance between its exterior masonry surfaces and combustibles. If it does, you may insulate per the chart in figure 5a. If it does not, or if you are unable to determine the clearance, you must insulate per the chart in figure 5b.

MINIMUM INSULATION REQUIREMENTS WHERE AT LEAST 1" OF EXTERIOR CLEARANCE TO COMBUSTIBLES IS PRESENT				
APPLIANCE TYPE	FLEX CONFIGURATION			
	ROUNDFLEX	LARGE OVALFLEX	SMALL OVALFLEX	RECTANGLEFLEX
Coal appliance, insert, wood-burning appliance, or fireplace (UL 1777 Listing)	1 wrap ¼" Foil-Face FlexWrap* or 1" of TherMix* on all sides of the liner	1 wrap ¼" Foil-Face FlexWrap* or 1" of TherMix* on all sides of the liner	1 wrap ¼" Foil-Face FlexWrap* or 1" of TherMix* on all sides of the liner	1 wrap ¼" Foil-Face FlexWrap* or 1" of TherMix* on all sides of the liner
Pellet, oil, or Category I gas appliances	Insulation recommended, but not required			
*These are minimums — more insulation is always acceptable.				
<i>Figure 5a</i>				

Note: When using FlexWrap for insulation, there is no airspace required between the insulation and the inside of the masonry chimney (or flue tile liner).

MINIMUM INSULATION REQUIREMENTS WHERE LESS THAN 1" OF EXTERIOR CLEARANCE TO COMBUSTIBLES IS PRESENT				
APPLIANCE TYPE	FLEX CONFIGURATION			
	ROUND FLEX	LARGE OVAL FLEX	SMALL OVAL FLEX	RECTANGLE FLEX
Coal appliance, insert, wood-burning appliance, or fireplace (UL 1777 Listing)	1 wrap of 1" Foil-Face FlexWrap* or 2 wraps ¼" Foil-Face FlexWrap* or 1" of TherMix* on all sides of the liner	1 wrap of 1" Foil-Face FlexWrap* or 2 wraps ¼" Foil-Face FlexWrap* or 1" of TherMix* on all sides of the liner	1 wrap of 1" Foil-Face FlexWrap* or 2 wraps ¼" Foil-Face FlexWrap* or 1" of TherMix* on all sides of the liner	1 wrap of 1" Foil-Face FlexWrap* or 2 wraps ¼" Foil-Face FlexWrap* or 1" of TherMix* on all sides of the liner
Pellet, oil, or Category I gas appliances	Insulation recommended, but not required			
*These are minimums — more insulation is always acceptable.				
<i>Figure 5b</i>				

5. WILL IT FIT?

Double check before you proceed. Once you've gone through points 1 through 4, you must be sure your Flex and the required insulation will all fit into the chimney. There are three steps in doing this:

- A. Determine the inside dimensions of the flue you wish to reline.
- B. Determine the "fully insulated" size of your Flex.
- C. Compare the sizes you determined in steps A and B. If the dimensions found in step A exceed those of step B, then obviously you have proper fit and you may proceed. Let's look at steps A through C in more detail.
 - (a.) Measure the inside dimension of the flue. Be sure that these dimensions are the same all the way down with no tapering or obstructions. The dimensions you ultimately use must be the smallest dimensions present inside the chimney.

- (b.) Determine the “fully insulated” size.
1. For Foil-Face FlexWrap applications, just add 1" to the outside dimensions of your Flex for each wrap of ¼" FlexWrap (it lofts to ½"); or add 2½" to the outside dimensions of your Flex when using 1" FlexWrap (it lofts to 1¼").
 2. For TherMix installations using RoundFlex, small and large OvalFlex, and RectangleFlex, just add 2" to your outside Flex dimensions. This is the minimum cavity size you need to install RoundFlex or RectangleFlex and have the required 1" minimum of TherMix on all sides.
- (c.) Now simply compare the inside flue dimensions with “fully insulated” size dimensions. As long as the “fully insulated” size is smaller than the inside chimney dimensions, you know your installation will fit and you can proceed.

6. MORE ON INSULATION

The use of insulation around HomeSaver Flex will keep the liner temperature warmer, helping to reduce creosote buildup as well as reducing cold spots which will affect chimney performance. Insulation is required for a woodstove, woodburning insert, coal appliance, or fireplace reline (UL 1777 Standard). Although not required, it is recommended for pellet, oil, and Category I gas appliances.

Using HomeSaver Foil-Face FlexWrap

HomeSaver Foil-Face FlexWrap is an insulating blanket of special ceramic fibers mated to a heavy reflective foil. The use of FlexWrap around HomeSaver Flex will help to center the liner in the chimney, in addition to the general benefits mentioned above.

Remember, you have a choice when using HomeSaver Foil-Face FlexWrap that is dictated by the airspace clearances to combustibles from the chimney system being relined. This was explained in Part 4 of Section 3 and in figures 5a and 5b. If 1" of airspace is present, then you may use one wrap of ¼" HomeSaver Foil-Face FlexWrap. If less than 1" or even zero airspace clearance to exterior combustibles is present, then you must use either one wrap of 1" HomeSaver Foil-Face FlexWrap, or two wraps of ¼" HomeSaver Foil-Face FlexWrap. Please understand that since the working loft of ¼" FlexWrap is really ½" and the working loft of 1" FlexWrap is 1¼", the insu-

lation thickness is almost the same for each of these choices, so the most convenient choice will usually be a single wrap of 1" FlexWrap.

To determine the width of FlexWrap needed, see Trim Chart, figure 6. Adhesive and foil tape will also be needed to adhere the FlexWrap to the Flex. FlexWrap must be covered with ArmorMesh™ to protect the

TRIM CHART — HOMESAVER® FLEX AND FLEXWRAP™ INSULATION			
HomeSaver® Flex Size to be used	Cut this Width for First ¼" Wrap	Cut this Width for Second (outer) ¼" Wrap	Cut this Width for 1" Wrap
3" dia.	11¼"	12½"*	16"
4" dia.	14½"	16"*	19"
5" dia.	18"	19½"*	22"
6" dia.	21½"	23½"*	25½"
7" dia.	24¼"	26¼"*	28¼"
8" dia.	27½"	29½"*	31½"
9" dia.	30½"	32½"*	35½"
10" dia.	34"	36"*	37¾"
11" dia.	37½"	39½"*	41"
12" dia.	40½"	42½"*	44"
13" dia.	43½"	45¾"*	47½"
14" dia.	46½"	49"***	50¼"***
15" dia.	49½"***	52"***	53½"***
16" dia.	53"***	55¼"***	56½"***
Small OvalFlex	27½"	29½"*	34¼"
Large OvalFlex	34"	36"*	37¾"
RectangleFlex	29"	31"*	35"

Other square and rectangular sizes should be measured and trimmed individually.

* Because you can cut both wraps from one width of 48" FlexWrap, you will only need one 25 ft. roll of FlexWrap for every 25 ft. of these diameter pipes when double-wrapping.

** You will need two 25 ft. rolls of FlexWrap for every 25 ft. of these diameter pipes when double-wrapping.

*** These diameters must be wrapped widthwise. The number of rolls you will need depends on your overall liner length.

Figure 6

FlexWrap from tearing during installation — see the chart, Figure 7, to determine what size is needed. Clamps for fastening the ArmorMesh at the top and bottom will also be needed — they can be created from a Make-A-Clamp brand clamping kit, or large radiator-type clamps which can be purchased at automotive supply stores.

Using TherMix

Remember, TherMix insulation is only to be used when there is at least 1" of space between the

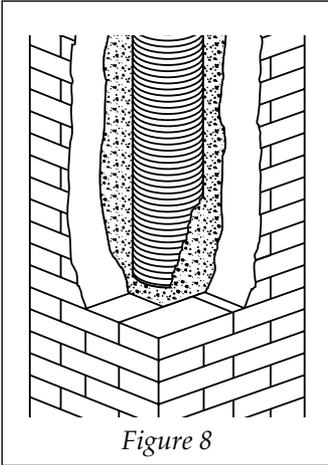


Figure 8

Flex and the interior of the chimney to be relined (because a minimum of 1" of TherMix is required around the Flex, see figure 8).

WHICH SIZE ARMORMESH™ TO USE WITH DIFFERENT SIZES OF HOMESAVER® FLEX	
HomeSaver® Flex size to be used	Use this size ArmorMesh™ with all insulation combinations
3" dia.	Small
4" dia.	Small
5" dia.	Small
6" dia.	Small
7" dia.	Large
8" dia.	Large
9" dia.	Large
10" dia.	Extra-Large
11" dia.	Extra-Large
12" dia.	Extra-Large
13" dia.	Extra-Large
14" dia.	Extra-Large
15" dia.	Extra-Large
16" dia.	Extra-Large
Sm. OvalFlex	Large
Lg. OvalFlex	Extra-Large
RectangleFlex	Large

Figure 7

HomeSaver Flex in conjunction with TherMix insulation makes an efficient and safe relining system. TherMix is a specially formulated, dirt-like consistency chimney fill insulation that is UL tested and Listed.

The formula for determining the volume of insulation needed in cubic feet is:

RoundFlex
$$\frac{(W'' \times D'' \times H'') - (\pi \times R^2 \times H'')}{1728}$$

Small OvalFlex
$$\frac{(W'' \times D'' \times H'') - (40.2'' \times H'')}{1728}$$

Large OvalFlex
$$\frac{(W'' \times D'' \times H'') - (53'' \times H'')}{1728}$$

$$\text{RectangleFlex} \quad \frac{(W'' \times D'' \times H'') - (54.6'' \times H'')}{1728}$$

W = width of flue in inches

D = depth of flue in inches

H = height of flue in inches (note: convert from feet to inches)

$\pi = 3.1416$

R^2 = radius of pipe multiplied by radius of pipe

Dividing by 1728 converts the answer to the number of cubic feet of space you need to fill with TherMix. Each bag of TherMix holds 3.25 cubic feet, so divide the final figure by 3.25 to determine the number of bags of TherMix you need.

The following are typical examples:

1. 8" = diameter of HomeSaver RoundFlex
10" = width of flue
12" = depth of flue
(35 ft.) 420" = height of flue

$$\frac{(10 \times 12 \times 420) - (3.1416 \times 16 \times 420)}{1728} = \frac{29,288.45}{1728} = 16.95 \text{ cubic feet}$$

$$16.95 \text{ cubic feet} \div 3.25 \text{ cubic feet/bag} = 5.21 \text{ bags}$$

2. 6" = diameter of HomeSaver RoundFlex
8" = width of flue
8" = depth of flue
(16 ft.) 192" = height of flue

$$\frac{(8 \times 8 \times 192) - (3.1416 \times 9 \times 192)}{1728} = \frac{6859.32}{1728} = 3.97 \text{ cubic feet}$$

$$3.97 \text{ cubic feet} \div 3.25 \text{ cubic feet/bag} = 1.22 \text{ bags}$$

7. COMPONENTS

Flex installations should be finished at the top with a top plate, top clamp or support brackets, storm collar, and either a Guardian Cap or regular Rain Cap.

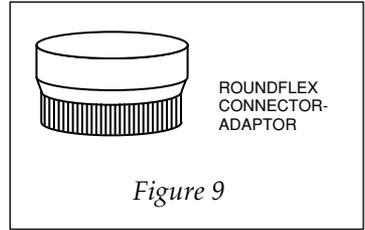
A Flex connector-adaptor (figure 9) is needed when connecting two pieces of HomeSaver Flex or as an optional method of terminating into a Heat-Fab Tee (figure 14, page 17).

The adaptor allows a drip-free connection so that any condensation within

the pipe runs down into the appliance. It is required that four stainless pop rivets be used at every connection.

Flex installations should be finished at the bottom with a tee (woodstoves and pellet stoves); an insert boot (woodstove inserts); a plate, brackets, and support rods at the smoke chamber (fireplaces), or bottom insulation plug (fireplace) — see installation procedures for details (pages 14 – 21).

Important Note: Do not use any liner parts other than those specified in these installation and maintenance instructions.



HomeSaver Reline Job Shopping Lists and Work Proposal Forms are available to help in figuring the cost of materials.

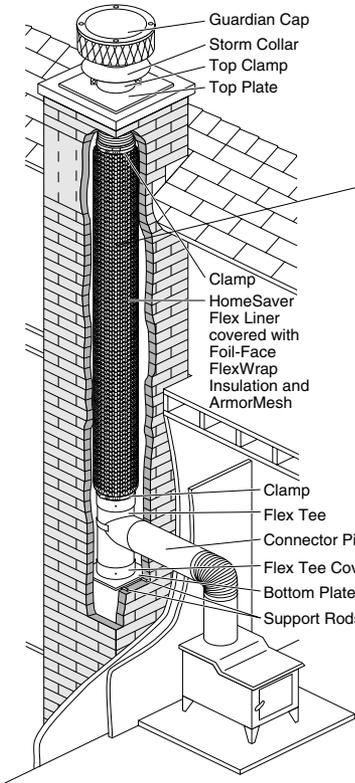
SECTION 4 Before You Begin

The following tools and supplies are basic ones needed for your HomeSaver Flex installation:

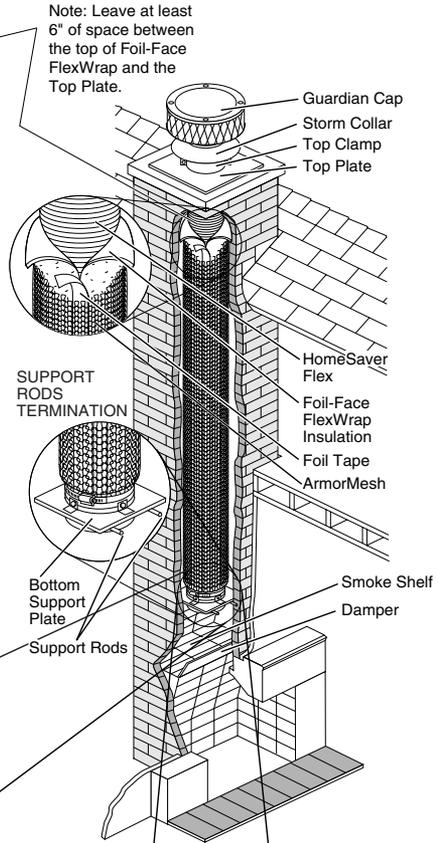
Trowel	Mortar	Mortar pan
Steel snips	Silicone sealant	File
Ladder	Pop rivet gun	Utility knife
Electric drill	$\frac{3}{64}$ " high speed drill bit	Measuring tape
Masonry drill bit	Hammer	Refractory Cement
Cold chisel	Gloves	
Eye protection	Rope	
Screwdriver	Respirator (MSA Comfo II or equivalent)	
Pliers	Circular saw with metal-cutting blade (or similar tool)	

Wear eye protection, gloves, and respirator whenever you're in contact with creosote, soot, mortar, or insulation as these may be harmful to your health. Caution must be used when working on a roof. Proper and safe scaffolding should be used for a safe installation. All ladders should be secured to the building. Check overhead for antennas, power lines, or other obstacles before erecting the ladder and installing the liner.

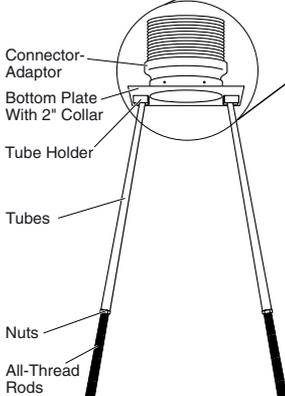
**HOMESAVER ROUNDFLEX
WITH FOIL-FACE FLEXWRAP
AND ARMORMESH**



**HOMESAVER FIREPLACEFLEX
WITH FOIL-FACE FLEXWRAP
AND ARMORMESH**



**ALTERNATIVE A:
BOTTOM PLATE
LEG SUPPORT**



**ALTERNATIVE B:
INSULATION PLUG**

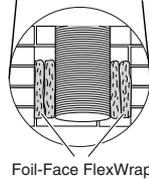


Figure 10

SECTION 5

Doing The Installation

1. The following instructions are intended as a guide to assist a qualified professional installer. Check your local building codes and contact local building or fire officials to obtain any required permits. *WARNING: Incorporation of parts or materials not manufactured or supplied by HomeSaver will not provide a UL Listed system.*

2. Inspect the chimney for structural integrity before it is lined. HomeSaver liner shall be installed in a chimney with a minimum 4" of solid brick as specified in NFPA 211. Inspect the chimney for loose or eroded mortar, cracks in the masonry, missing bricks, internal obstructions, abandoned flue holes, and excessive creosote accumulation. Make necessary masonry repairs prior to relining the chimney.

3. Clean and remove all tar-glazed creosote and soot found on internal chimney walls and fireplace smoke chamber before the chimney is relined. This is important — if not removed, creosote is a fire hazard. It will also cause an unpleasant smell.

4. Test your fit. On any installation where minimum or near-minimum inside chimney dimensions are present (as explained in section 3, point 5), always test your fit before proceeding. Chimneys are irregular and hard to “sight” accurately. Take a small scrap section of Flex, say 2' in length, and then wrap it with FlexWrap (either one wrap or two wraps depending on factors already outlined). Be sure this “test section” fits easily, without binding, through the entire length of the chimney to be lined.

5. If you are relining a fireplace, go to point 9, page 16.

If you are relining a woodstove insert, the Flex will terminate either in a connector-adaptor or straight into a boot installed directly on the insert. If you are relining a woodstove, pellet stove, oil or gas appliance, and if the chimney to be relined has no existing opening for stovepipe, you now need to make one. If there is an opening, it may need to be expanded in order to assemble the take-off to the Flex tee.

To make an initial opening in the chimney, choose a brick that is at the level you want the stovepipe to enter (at least 18" from unprotected combustibles unless a UL Listed wall penetration assembly or other approved method is used). The wall penetration assembly must be above the appliance.

Drill a series of holes in the mortar around the perimeter of the brick with a masonry drill bit. Knock remaining mortar free with a hammer and cold chisel. Remove the brick. Additional bricks are usually easier to remove than the first one. Remove only enough bricks so you can assemble the tee take-off to the Flex tee.

Figure 11 shows a typical framing which would have to be done in a combustible wall next to the chimney. For solid fuel devices the NFPA “minimum clearance to combustibles” is 18” for single-wall connectors. Consult NFPA 211 for clearances concerning gas and oil connectors.

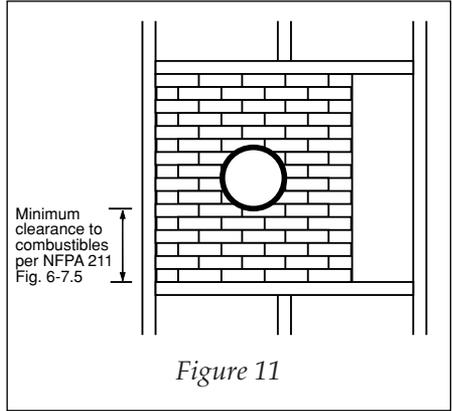


Figure 11

If a UL Listed wall penetration assembly is used (as an alternative to figure 11), it must be located above the heating appliance and may not be located directly behind the heating appliance.

Clearances from solid fuel burning appliances to combustible materials must be strictly adhered to. Follow all local codes and manufacturers’ instructions.

6. The tee will need a cover. Place the cover over the outside of the bottom end of the tee. Use the four stainless rivets supplied with the cover and fasten the two parts together (figure 12, below).

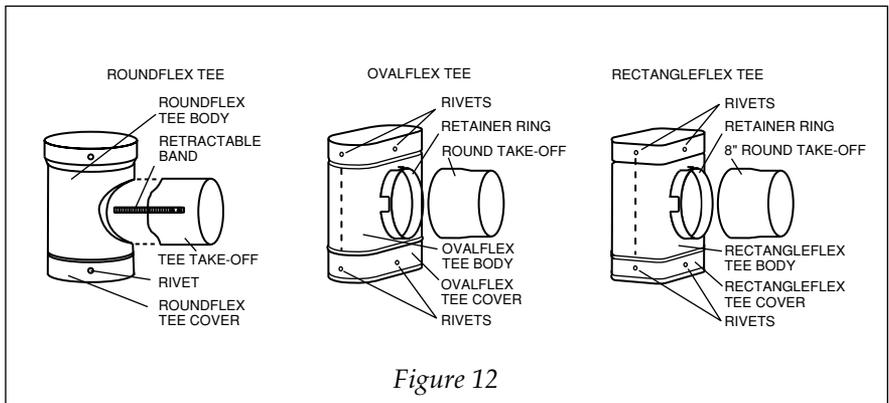


Figure 12

7. Place the Flex tee and cover assembly into the opened flue hole and determine the location of the support rods. The support rods should be positioned slightly narrower (about one inch on each side) than the diameter of the liner for proper support, so the tee cover can rest on them. Remove the Flex tee and cover assembly. Drill the two holes through the mortar joints in front of you and proceed to drill holes from inside of the chimney about one inch deep into the bricks on the opposite side. Mortar the rods in place (figure 13).

If you will be insulating with TherMix, you will need to install a bottom plate to isolate and hold your TherMix insulation from entering below the liner installation. The use of this plate even when Foil-Face FlexWrap is used is still recommended. Measure the inside of your flue and cut a stainless steel bottom plate. This will rest on the support rods.

8. Take your length of HomeSaver Flex liner and install the Flex tee to it by fastening in four places (figure 14).

Note: In a RoundFlex application, an alternative to using a HomeSaver Flex tee is to use a Heat-Fab Tee (with or without a removable take-off) in conjunction with a Flex connector-adaptor (figure 14). On 9" – 12" diameter HomeSaver RoundFlex the only tee available is a Heat-Fab Tee without a removable take-off. Thus you'll always need a connector-adaptor when joining 9" – 12" Flex to a tee.

9. When using HomeSaver Flex to reline a fireplace, the Flex is to be terminated at the bottom of the chimney flue just above the smoke chamber. Termination is illustrated in figure 15. Support rods are installed as explained above, point number 7, with the added instruction to be sure that the rods are spaced widely enough to not block the hole in your stainless steel bottom plate. Install your four support brackets by bolting to the Flex in a position that will have them resting on the bottom plate, and so no more than 2" of Flex is below the plate (figure 15). As an alternative method of support, a HomeSaver Bottom Plate Leg Support System can be

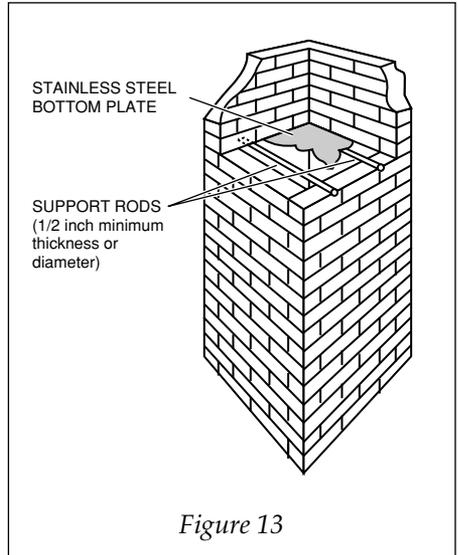


Figure 13

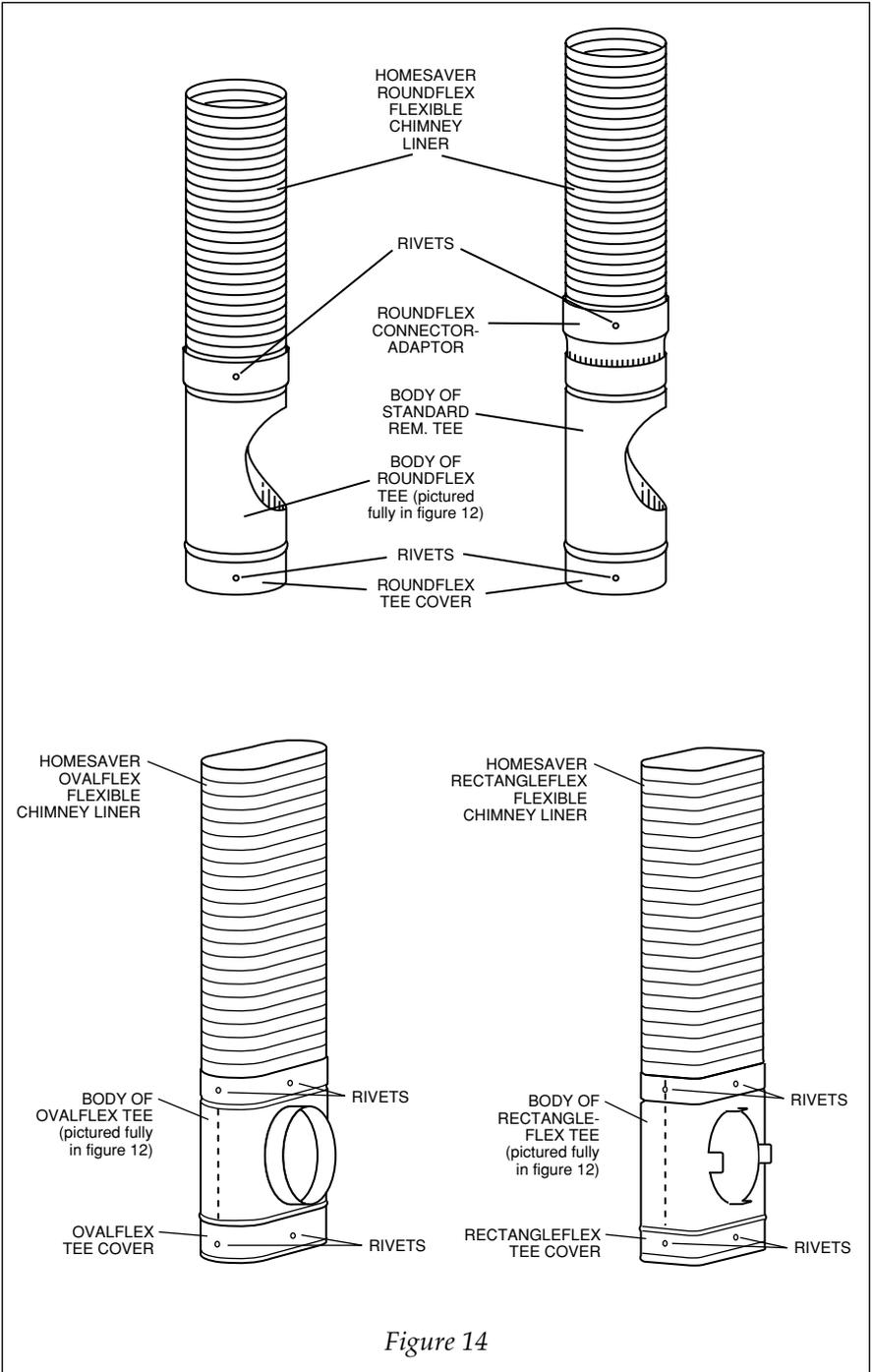


Figure 14

used instead of support rods. Full instructions come with each system. (See figure 15a).

A second alternative is an insulation plug used to form a bottom plug (figure 15b). It must be tightly packed with HomeSaver Foil-Faced Flex-Wrap to a depth of 6". Refractory cement may be used in between the layers of ceramic blanket to create the seal. Make sure there is adequate support at the top of the chimney. If the liner, including insulation weighs more than 150 lbs., double up on top plates and top/bottom support brackets.

10. Each Flex component (Flex tee, connector-adaptor, tee cover, and rain cap) comes

equipped with four pilot holes and properly sized stainless steel rivets or, in the case of the rain cap, Phillips-head screws. To fasten, simply install the component on the Flex, drill through the Flex (using the pilot holes) with a $\frac{1}{64}$ " drill, insert rivets (Phillips-head screws on the rain cap), and fasten.

11. If insulating with TherMix, go to point 13, page 20.

a.) If insulating with FlexWrap, wrap lengthwise, creating one long verti-

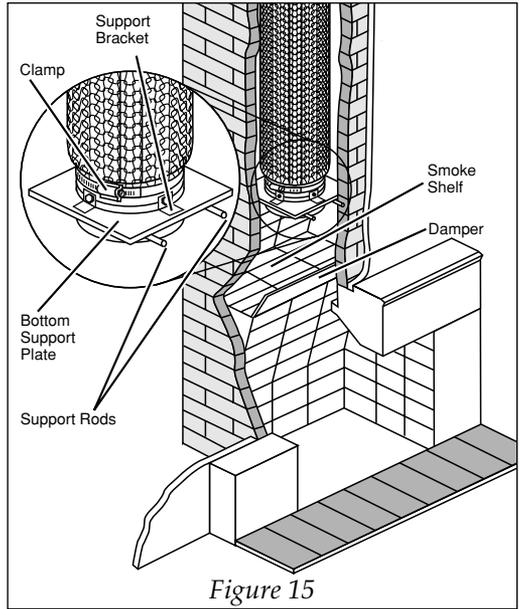


Figure 15

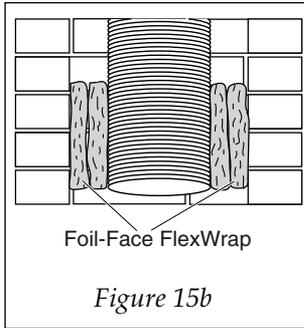


Figure 15b

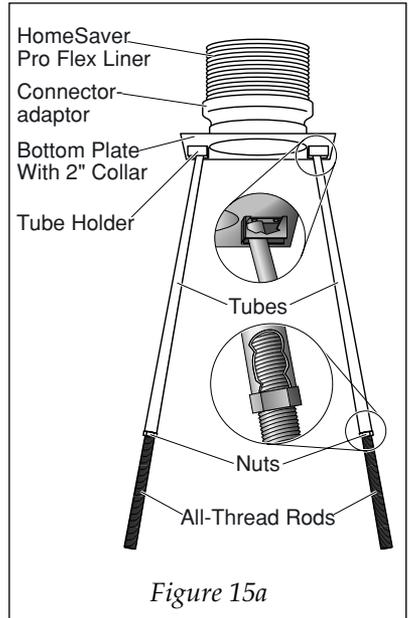


Figure 15a

cal seam down the length of the Flex. The foil side should face away from the pipe.

b.) Begin by rolling out a length of FlexWrap equal to 9" less than the length of the HomeSaver Flex to be used in the installation. Do this on a clean, dry surface suitable for working.

c.) Trim the FlexWrap lengthwise with a sharp utility knife so that when wrapped around the Flex, a tight butt joint, the length of the Flex, is achieved. You want no gaps where the insulation butts together. Accuracy in cutting is important.

d.) Apply 3M Spray Adhesive or Rutland Water Glass to the HomeSaver Flex.

e.) Carefully wrap the FlexWrap around the Flex. The adhesive will hold the FlexWrap in place.

f.) Thoroughly tape your butt end insulation seam with foil tape.

g.) If using ¼" FlexWrap where less than required clearances exist, repeat the above steps on a second wrap.

h.) Measure, cut, and install a length of HomeSaver ArmorMesh Insulation Cover over your FlexWrap insulation.

i.) Clamp the bottom end of the ArmorMesh at the bottom of the liner, just before it enters the tee.

j.) Grasp the unclamped end of the ArmorMesh and pull, working it tight from one end to the other. This will draw the ArmorMesh snug around the FlexWrap.

k.) Trim any excess FlexWrap and ArmorMesh from the top of your installation back to within 6" of where the Flex will stick through the top plate termination (see figure 10, page 13). Clamp the ArmorMesh to the Flex at this point.

Explanation: Due to normal thermal expansion, HomeSaver Flex may "grow" lengthwise in the chimney during use. Leaving 6" of uninsulated Flex just below the top plate termination will allow this thermal expansion to take place without interference from the insulation.

l.) Leave no more than 3" of Flex protruding above the Flex top plate.

m.) Figure 16, next page, shows the FlexWrap after it has been wrapped on the pipe and a clamp applied to the bottom of the insulation. You'll notice

that the FlexWrap butt seam has been covered with foil tape. For illustration purposes, we have drawn the insulation in a “peeled away from the pipe” fashion to illustrate how the insulation is applied. Naturally, there would normally be a clamp at the top too.

12. In installations using a tee, position the tee take-off with retractable band into the chimney opening. The retractable band should be opened fully so that when the HomeSaver Flex and assembled components are lowered down the chimney, it can go through the retractable band. As you are lowering the HomeSaver Flex assembly from the roof into the chimney, someone should position himself at the chimney opening to secure the tee body to the take-off by tightening the retractable band. Go to point 14 if FlexWrap is used.

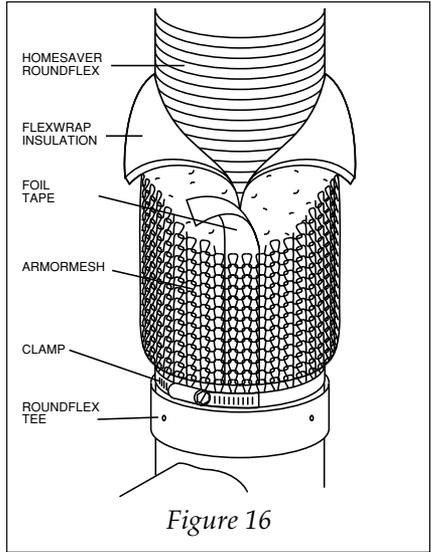


Figure 16

In fireplace installations, lower directly down the chimney until the brackets rest on the stainless bottom plate. Go to point 15 if FlexWrap is used.

In woodstove insert installations, lower directly into the stove or insert boot. Go to point 15 if FlexWrap is used.

13. a.) When using TherMix, follow the manufacturer’s instructions very carefully and *do not use the chimney system until the TherMix is totally dry and cured (see instructions on TherMix bag). Use of the chimney while there is still excess water present will generate steam whenever flue gases exceed 212°F. This steam may cause severe damage to the chimney structure.*

b.) When installing TherMix, best results are obtained by taking care not to add too much water. When properly prepared, this mix should be the consistency of damp garden soil. Make sure to maintain proper clearances between the liner and the inside of the masonry chimney by keeping the liner centrally located in the chimney. Leave at least 6" of space between the top of the TherMix and the top plate for expansion of pipe. TherMix should be poured into the chimney, a small section at a time, and the liner gently rocked to verify that there are no large voids left uninsulated. The TherMix *must not be packed* into the chimney.

14. a.) In installations with tees, rebuild the chimney, using bricks that are as square as possible. Fill mortar in tightly around the take-off to the tee, flush with the outside of the chimney.

b.) Make sure the connector pipe slides easily into the take-off before the mortar cures. Single-wall metal connectors must maintain a minimum of 18" clearance to combustibles. Connectors should have a rise of at least ¼" per foot (horizontal length of pipe) from the appliance to the chimney. Connectors shall be securely supported and joints fastened with sheet metal screws or stovepipe screws. The connector shall be readily accessible for inspection, cleaning, and replacement.

c.) The initial pipe connector will either be a direct connection to the take-off of the Flex tee in a HomeSaver Flex installation, or a connector through a UL Listed wall penetration assembly. Any pipe connector used which is not in plain view from the room must be made of stainless steel or equivalent materials.

15. a.) Apply an exterior-rated silicone sealant to the perimeter of the top plate. Slide the top plate over the HomeSaver Flex until it rests squarely on the chimney top. Next, slide the top clamp over the HomeSaver Flex so that it rests on the top plate. Secure and tighten the top clamp to the HomeSaver Flex. The top clamp will ride up and down with the HomeSaver Flex installation during thermal expansion. Alternatively, a set of support brackets may be bolted to the Flex and used instead of a top clamp.

b.) Do not allow the top clamp to be the installation's sole means of support. ALWAYS support your installation solidly at the bottom.

c.) Position the storm collar so that it is above the top clamp. Securely tighten the storm collar. A bead of silicone sealant between the storm collar and the pipe will prevent water entering the chimney through this joint.

d.) Attach the rain cap to the HomeSaver Flex with the supplied stainless steel screws. It is recommended that the rain cap be installed about 3" above the top of the chimney. Or...

e.) Insert a friction-fit Guardian Cap (figure 10), page 13.

16. After completing the installation where a new appliance is being installed, the initial firing precautions of the appliance manufacturer's instructions must be strictly followed.

SECTION 6 — PLEASE READ AND SAVE Maintenance Instructions for Installer and Homeowner

HomeSaver's commitment to providing a product of superior quality is reflected in its excellent warranty and UL Listing. HomeSaver thinks its product is the best available for chimney relining. But starting with an excellent product is only the beginning. The installer then has to install it correctly, and the homeowner has to use it correctly in order to get the most safety and best usage out of it. For this reason, the following maintenance and usage instructions must be followed.

MAINTENANCE

- 1.** The chimney connector pipe and HomeSaver Flex installation must be cleaned and the entire installation inspected annually by a professional chimney sweep. During the heating season, the chimney liner 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.
- 2.** A round wire steel chimney cleaning brush is recommended to clean HomeSaver Flex. Some chemical chimney cleaners may be harmful to HomeSaver Flex, so use only brands approved by HomeSaver.

The chimney may be accessed for cleaning through the top by removing the rain cap. If unaccessible from the top, the cleaning may be done through the appliance tee, clean-out opening, or through the damper (for a fireplace). Debris should then 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 condense in the relatively cool flue during slow-burning periods. This results in creosote accumulation on the chimney liner, which is dangerous. If this creosote should ignite, it makes an extremely hot chimney fire which may destroy the corrosion resistance of the stainless steel, and may cause a house fire if flames ignite the roof or nearby combustibles.

Therefore, we advise homeowners to prevent creosote buildup with safe burning procedures — burn fires hot with flames, not smoldering with a

lot of smoke. And keep the fire small — in a fireplace, keep the top of the flames visible below the fireplace opening; in a woodstove, keep the flames confined to the woodstove itself. Never burn trash, papers, garbage, etc. in a fireplace or woodstove. This could cause a fire hazard and damage the liner.

WARRANTY CHART*		
APPLICATION	304-ALLOY	316-ALLOY
Wood	Lifetime of owner as long as he owns home, 10 years of this transferrable to new owner	Lifetime of owner as long as he owns home, 10 years of this transferrable to new owner
Coal	Not warrantied	10 years
Pellets	Lifetime of owner as long as he owns home, 10 years of this transferrable to new owner	Lifetime of owner as long as he owns home, 10 years of this transferrable to new owner
Gas**	Not warrantied	Not warrantied
Oil**	Not warrantied	Not warrantied
<p>* This chart is intended as a quick reference on the warranties — please read the actual written warranty cards for specific details.</p> <p>** For gas and oil applications, use UL Listed HomeSaver® GasFlex™.</p> <p style="text-align: center;"><i>Figure 17</i></p>		

This Product is Listed by
UNDERWRITERS LABORATORIES INC.
and Bears the Mark: 

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