



Installation & Maintenance Instructions

MODEL "ZR" RIGID Liner System:

U.S.A. Installations UL 1777 Listed

The Z-Flex "ZR" RIGID Liner is intended for use as a chimney liner in masonry chimneys for oil, gas or wood fired residential heating appliances with maximum running temperature of 1000° F (538° C) and occasional 1400° F (760° C) temperatures.

Canada Installations ULC S635 Class 3 Listed

The Z-Flex "ZR" RIGID Liner is intended for use as a chimney liner in masonry and factory built chimneys for oil, gas or wood fired residential heating appliances with maximum running temperature of 1200° F (650° C) and occasional 1700° F (930° C) temperatures. UL tested up to 2100° F (1150° C).

- See page 11 for list of available parts.

For Safety's Sake

Chimney relining and chimney repairs must be done with the utmost of care. Please ensure before starting that the safety aspect of the installation has been looked after. Secure your ladders and scaffold, wear protective gear and the appropriate footwear and gloves before starting. Avoid problems through proper safety measures ensuring every installation is an accident free installation.

The information provided within is for informational purposes only. We have made every effort to ensure the accuracy of the provided information and assume no responsibility for any loss or damage due to errors or omissions or to the use or misuse of any information supplied. It is impossible to test all products under all conditions to which they might be subjected in the field. It is therefore the buyer and/or end users' responsibility to test all products under the conditions that duplicate the service conditions prior to installation. All improvements, all specifications are subject to change without prior notice. It is the buyer and/or end users' responsibility to review our complete Terms and Conditions of Sale located on our web sites at: www.novaflex.com | www.z-flex.com | www.flexmaster.com.

Z-FLEX U.S. INC.

BEDFORD, NH



UP/HAUT



LISTED

Type HT 16S5

LINER FOR EXISTING CHIMNEY

COMPONENT FOR CHIMNEY LINERS

Model ZR

Part #

UL 1777

For Use Only With Appliances That Burn Solid Fuel, Oil, or Category 1 Appliances which burn Natural Gas or Propane.

This Liner is to be Installed in a Masonry Chimney where there is a Minimum Clearance of 1 Inch Air Space Between Combustible Materials and the Chimney Exterior.

Install and Use Only in Accordance With Z-Flex Model ZR Installation and Maintenance Instructions

Shipped with Liner Kit or Available at www.z-flex.com.

CAN/ULC-S635 CLASS 3

WARNING

Install only in existing masonry chimneys or in chimneys approved by the authority having jurisdiction for use with solid fuel burning appliances. For use only with appliances which burn oil, gas or solid fuel only. Lining systems must be installed in accordance with Manufacturer's Installation Instructions

AVERTISSEMENT

Installer uniquement dans une cheminée en maçonnerie existante ou une cheminée approuvée par l'autorité compétente aux fins d'utilisation avec des appareils à combustibles solides. Aux fins d'utilisation avec des appareils alimentés au gaz, au mazout ou aux combustibles solides seulement. Les systèmes de chemisage doivent être installés conformément aux directives d'installation du fabricant

For venting of oil, gas, and solid fuel fired appliances where the temperature of the flue gas products does not normally exceed 650°C
Évacuation pour les appareils alimentés au gaz, au mazout ou aux combustibles solides don't la température des produits de combustion n'exède normalement pas 650 °C

INSTALLER

DATE

INSTALLER ADDRESS

Installer's Name:

Installer's Address:

Installation Date:

GENERAL INSTRUCTIONS

- A. To avoid rapid accumulation of creosote, do not use single wall liner above a chimney.
- B. The use of rain cap and flashing are required to prevent moisture from entering the liner and the space between the liner and chimney.
- C. Listed rain caps incorporating bird screens are necessary and/or required in some areas but may be susceptible to blockage through freezing moisture in areas of low ambient temperature. Consult authority having jurisdiction
- D. Liner must not be field ovalized.
- E. The safe operation of a lining system is based on the use of parts supplied by the manufacturer and its performance may be affected if the combination of these parts is not used in actual building construction.
- F. The lining system safety, code compliancy, warranty and performance may be compromised if the installation instructions are not followed.
- G. Prior to installation of the lining system into a masonry chimney, the chimney must be thoroughly cleaned especially of any tar glazed creosote and checked for cracked, loose, or missing bricks, mortar, or other materials that could inhibit correct installation of the lining system, and that the air space clearances between the masonry chimney exterior and combustible materials be checked to verify that the chimney is in accordance with applicable building code requirements; NFPA 211, other recognized major building codes or appliance manufacturer's installation instructions.
- H. If the existing system is found not to be in compliance with applicable building code and / or these installation instructions, the liner shall not be installed until appropriate steps have been taken in order to bring the chimney or vent into compliance with the applicable code and / or these instructions.
- I. Installation of the lining system into an existing chimney or vent does not, in any way, upgrade the resulting relined system and make it suitable for any applications that require a vent or chimney of a higher temperature handling capability, an alternative fuel, or any other, more severe service than the original chimney or vent in which it is installed.
- J. The authority having jurisdiction (such as Gas Inspection Authority, Municipal Building Department, Fire Department, Fire Prevention Bureau, etc.) should be consulted before installation to determine the need to obtain a permit.

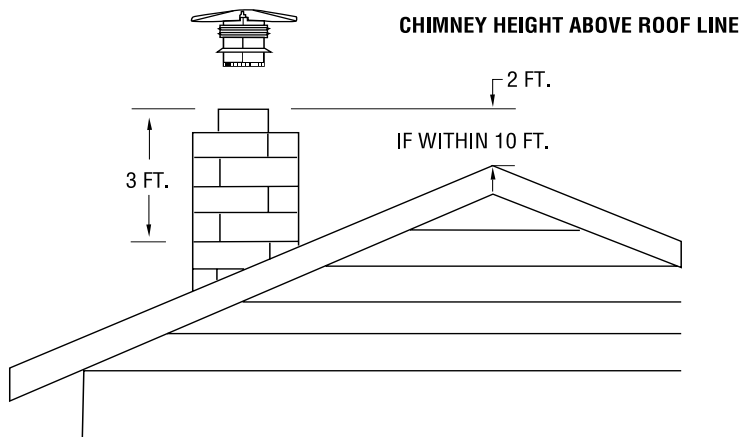
WARNING

Failure to inspect and clean lining system as outlined in maintenance instructions may result in fire, health or other safety hazards. Use these and appliance manufacturer's instructions during the examination and tests of lining system.

WARNING

Do not use any materials other than those specified in these instructions.

1. Read the installation instructions carefully prior to installing the chimney liner. If doubts exist, contact your local distributor or in U.S.A. Z-Flex U.S. Inc. at 1-800-654- 5600 (in NH 603-669-5136) or in Canada Flexmaster Canda Limited at 416-679-0045.
2. Clean and repair chimney as required.
NOTE: Removal of all tar glazed creosote is a must prior to installation of chimney liner. Also, cracked, loose or missing bricks, mortar or other materials that could inhibit correct installation of the chimney lining system, should be removed/repaired.
3. Contact your local building or fire officials about any restrictions and inspections required.
4. The wall penetration assemblies must not be located directly behind a heating appliance.
5. The chimney liner must not be sized less than that specified in the appliance manufacturer's instructions.
6. The liner may be purchased in various lengths to suite chimney height.
7. Insulation kits (2INSKIT_) (with stainless steel mesh or woven fiberglass cloth cover) are optional items. (**NOTE: U.S.A. only Model "ZR" UL Listing requires insulated Liner when used with wood burning appliance.**)
8. Be sure to extend the chimney liner to conform to applicable building codes (local & national). That is, chimneys are required to extend at least 3 feet (1 m) above the highest point where they pass through the roof of building, and at least 2 feet (61 cm) higher than any portion of the building within 10 feet (3 m).



9. The air space clearance between the masonry chimney exterior and combustible materials should be checked to verify that the chimney is in accordance with the clearance specifications contained in the NFPA 211 Standard for U.S.A. installations or CAN/CSA-B365 Standard for Canada installations or other recognized major building codes, i.e., on an **exterior chimney clearance is 1" (25 mm) while on an interior chimney clearance is 2" (51 mm).**

10. The "ZR" Liner is intended for installation into masonry (and in Canada factory built) chimneys that are used for the natural draft venting of gas-liquid and solid-fuel-fired residential-type appliances in which the maximum continuous flue-gas outlet temperatures do not exceed in USA 1000° F (538° C) or in Canada 1200° F (650° C)

The following list details only some intended uses of "ZR" chimney liner. If your appliance is not on this list and you are not sure if it is appropriate to use with "ZR" liner, contact the appliance manufacturer prior to installation.

- Furnace
- Burner
- Fireplace or Fireplace Inserts
- Water Heater
- Range
- Wood or Pellet Stoves
- Boiler
- Clothes Dryer

In U.S.A. the "ZR" Liner recommended minimum air space clearance between the liner and the chimney wall is 1" (25 mm) (in accordance with major recognized standards).

"ZR" Liner minimum and maximum clearances in inches:

Liner Dia.	Min. Chimney Flue Opening U.S.A*	Min. Chimney Flue Opening Canada
3	5.5 X 5.5	3.13 X 3.13
4	6.5 X 6.5	4.13 X 4.13
5	7.5 X 7.5	5.13 X 5.13
5.5	8 X 8	5.63 X 5.63
6	8.5 X 8.5	6.13 X 6.13
7	9.5 X 9.5	7.13 X 7.13
8	10.5 X 10.5	8.13 X 8.13
9	11.5 X 11.5	9.13 X 9.13
10	12.5 X 12.5	10.13 X 10.13

Maximum chimney height = 65 feet (20 m) high

Minimum chimney height = 10 feet (3 m) high

Minimum brick thickness = 3.5 (9 cm) inches thick

*For liner with 1/4" thick insulation - required on wood burning appliances

11. In U.S.A. clearance from connectors to unprotected combustible material shall be in accordance with the table below (ref: NPFA 211).

Description of Appliance	Minimum Clearance inch (mm)
Gas appliances without draft hoods	18 (457)
Oil appliances and for "ZR" Liners solid-fuel appliances Unlisted	18 (457)
gas appliances with draft hoods	9 (229)
Boilers and furnaces equipped with listed gas burners and with draft hoods	9 (229)
Listed gas appliances with draft hoods	6 (152)

Note 1: These clearances apply except if the listing of an appliance specifies different clearance, in which case the listed clearance takes precedence.

Note 2: These clearances apply except if a listed wall penetration assembly is used.

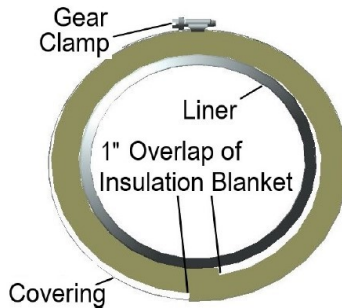
12. Ensure access to clean out Tee are in accordance with the enforcing authorities and clearances are maintained to your local building codes.

INSTALLATION INSTRUCTIONS

1. **NOTE:** U.S.A. only Model "ZR" UL Listing requires insulated Liner when used with wood burning appliance.

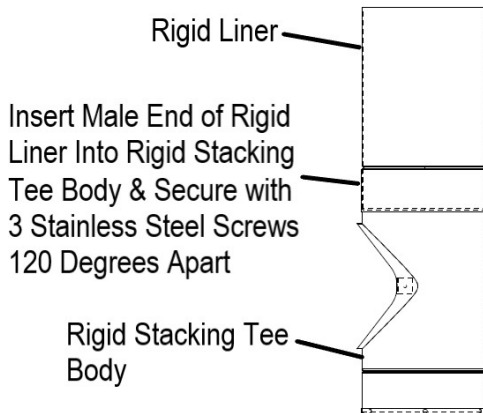
BEST PRACTICE use an insulated liner in exterior chimney or brick chimney without any clay liner. An insulated liner will keep the flue gases warm, improve draft and minimize condensation. Refer to the equipment manufacturer's instructions for their recommendations.

If insulating the liner with optional insulation kit with insulation blanket and protective cover (stainless steel mesh or woven fiberglass cloth), snugly wrap outside/circumference of entire length of liner with a minimum of 1" (25 mm) overlap of insulation blanket (foil on outside when installing mesh covering). Apply aluminum foil tape along all overlapping seam(s). Do NOT stretch insulation. Install insulated liner inside protective cover **allowing space at end of liner to attach tee or connector** and with protective cover pulled tight around liner secure cover to liner with clamps at each end of liner. The outer woven fiberglass cloth has a 538°C (1000°F) recommended continuous use limit.

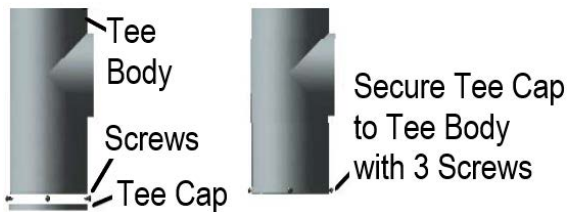


- 2a. If TEE is used, it's recommend to secure a tee body (without branch attached) to liner by:

For Rigid Stacking Tee (2ZRBTXX_) Insert male end of liner into top of rigid stacking tee and secure with three stainless steel screws spaced 120° apart.



Secure tee cap to bottom of tee body with three stainless steel screws.



If liner is insulated loosen cover clamp and slide insulation & cover over liner/tee joint than secure cover with clamp.

Gently guide liner down chimney, with TEE BODY (without branch attached) first, until tee is present at bottom opening. To avoid damaging the liner, **DO NOT FORCE LINER down chimney**.

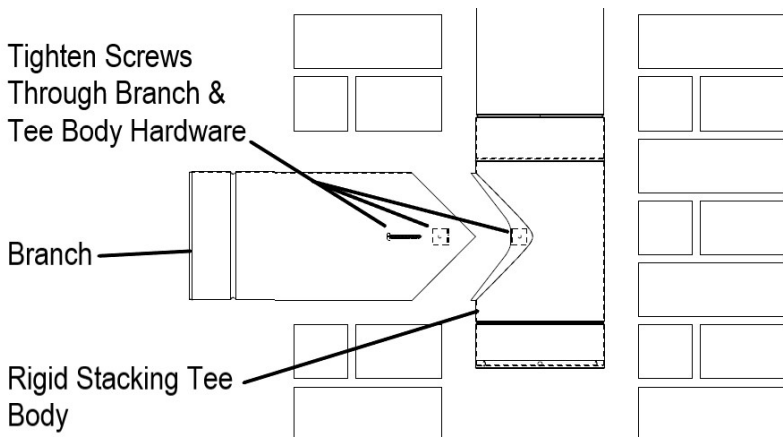
- 2b. If TEE is NOT used, Gently guide liner down chimney. To avoid damaging the liner, **DO NOT FORCE LINER down chimney**.

ZR Liner can be installed directly on appliance or use connectors, install male end of liner into female end of appliance or connector [90 Degree Elbow (2RE90XX_) or 45 Degree Elbow (2RE45XX_) or In increaser (2IN_I_X) or Reducer (2RD_R_X)] and secure with three stainless steel screws spaced 120° apart - follow appliance instructions for flue connection.

If liner is insulated loosen cover clamp and slide insulation & cover over liner/appliance/connector joint than secure cover with clamp.

3. If tee is used align branch opening with bottom chimney opening and:

For Rigid Stacking Tee (2ZRBXXX_) secure branch to tee body by snugly tightening two screws inserted through branch brackets and tee body hardware.

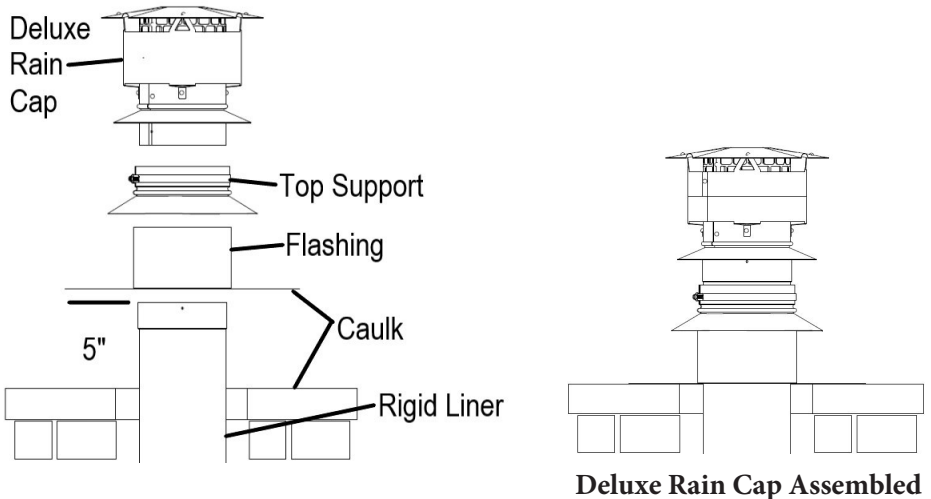


- If two tees are used (preferred - See Page 9 Installation 4), the lower tee branch is for a clean out. It's recommended to install the lower tee at the bottom chimney opening. Remove tee cap from upper tee.

If using Rigid Stacking Tee (2ZRB_{TXX}__), secure Rigid Stacking Tee (2ZRB_{TXX}__) (with tee cap fastened to bottom of tee with stainless steel screws and without branch attached) with three stainless steel screws under tee. Secure branch to Rigid Stacking Tee body by snugly tightening two screws inserted through branch brackets and tee body hardware. Secure tee cap to lower tee branch/clean out with stainless steel screws. If necessary to extend spacing between branch connections a Rigid Liner (2ZR321F__) can be installed between the tees and secured with three stainless steel screws per joint.

- If tee(s) are used cement around tee branch(es) at chimney opening(s) with standard mortar mix.
- Allow at least 5" (13cm) of liner above the top of the chimney.
If insulation is present, allow 0" of insulation or outer insulation cover above the top of the chimney. Place liner through flashing and secure flashing to top of chimney using suitable anchors. Seal all joints with high temperature sealant and paint as necessary.

If Chimney Flashing (2ZSCS__ excluding 2ZSCS13__) is used, place liner through Top Support (2ZTS_{XXX}__) and slide support over flashing collar allowing 1" (25 mm) of overlap. Liner should be flush with top support, if necessary male end of liner can be cut with hacksaw. Insert Rain Cap (2RNCAPS__) into female end of liner and tighten top support gear clamp securing liner and rain cap. Install three stainless steel screws 120° apart, 3/8" (10 mm) down from upper end of top support through top support/liner/ rain cap (not through flashing collar as this allows for thermal expansion) and snugly tighten screws.

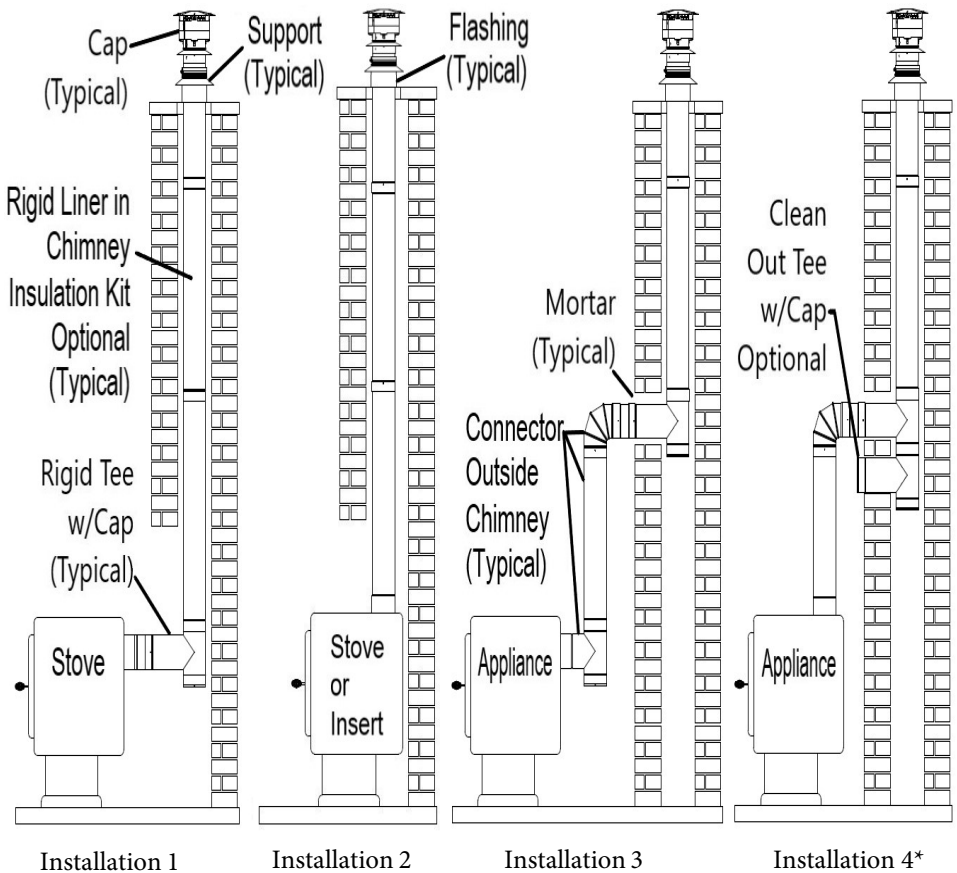


7. If a connector is necessary to join rigid chimney liner to appliance (see installations 3 and 4 below), follow appliance installation instructions and appropriate code requirements; in U.S.A. refer to N.F.P.A. 54 for gas or N.F.P.A. 31 for oil or N.F.P.A. 211 for solid fuel installations, in Canada refer to CAN/CSA-B149 for gas or CAN/CSA-B139 for oil or CAN/CSA-B365 for solid fuel installations for proper connector material, sizing and clearance requirements.

NOTE single wall uninsulated connector clearance to combustible material is a minimum of 18" (457mm) - follow listed connector certified clearance and code requirements.

If connector must pass through a combustible wall in front of brick chimney to liner, a listed wall pass-through system or other approved method must be installed - see in U.S.A. N.F.P.A. 211 or in Canada CAN/CSA-B365.

8. Typical Installations



* If two tees are used (preferred); the lower tee branch is for a clean out (see step 4 above).

MAINTENANCE INSTRUCTIONS

Manufacturer's address:

In U.S.A.:
Z-Flex U.S. Inc.
20 Commerce Park North
Bedford, NH 03110-6911
Tel: 1-800-654-5600 or
in NH 603-669-5136

In Canada:
Flexmaster Canada Limited
452 Attwell Drive
Etobicoke, ON M9W 5C3
Tel 416-679-0045

- A. The replacement parts/components for the “ZR” chimney liner system are available from Z-Flex U.S. Inc. or Flexmaster Canda Limited.

WARNING

DO NOT USE ANY MATERIAL/PARTS OTHER THAN THOSE SPECIFIED IN THE INSTALLATION INSTRUCTIONS.

- B. “Creosote or Soot Formation and Need for Removal”.

For "ZR" Liner System:

When wood is burned slowly, it produces tar and other organic vapors, which combined with expelled moisture, forms creosote. The creosote vapors condense, in the relatively cool chimney flue of a slow-burning fire. As a result, creosote residue accumulates on the flue lining. When ignited this makes an extremely hot fire.

When fuel (oil or gas) is burned it produces soot.

The chimney should be inspected every two (2) months during the heating season 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 chimney fire.

- C. The recommended method of cleaning your Z-Flex Liner is with a poly chimney brush approximately 1/8” (3 mm) larger than the inside diameter of your liner. The liner should be brushed until all creosote or soot has been removed.
- D. It is recommended to have the chimney lining system checked by a qualified chimney inspector, such as a certified chimney sweep, at least once annually following the initial installation of the lining system.
- E. Any heating appliance connected to the chimney liner must not have a flue outlet size larger than the chimney liner area at its smallest point.

LINER SYSTEM PARTS - OPTIONS

"ZR" Liner Systems:

- Deluxe Rain Cap (2RNCAPS_ _)
- Aerocowl Cap (2ARCOWL_ _)
- Aerocowl Round Base (2ARCORB_ _)
- Top Support/Storm Collar (2ZTSXXX_ _)
- Chimney Flashing w/16" (41 cm) Square Base (2ZSCSXX_ _)
- Chimney Flashing w/18" (46 cm) Square Base (2ZSCS18_ _)
- Rigid Liner (2ZR321X_ _0_)
- Rigid Stacking Tee (2ZRBTTX_ _)
- 90 Degree Adjustable Elbow (2RE90XX_ _)
- 45 Degree Adjustable Elbow (2RE45XX_ _)
- Increaser (2IN_ I_ _X)
- Reducer (2RD_ _R_X)
- Stainless Steel Screws (2SSSCREW)
- Liner Insulation Kit (2INSKIT_ _)



Z-FLEX®

10 Year Liner Warranty

Z-Flex, Inc. warrants its **ZR Stainless Steel Chimney Liners** to the original purchaser or if purchased by a contractor, to the end user. The warranty is valid for 10 years as the original purchaser owns the property in which the liner is installed, provided it is installed according to U.L. installation instructions. Deviating from the installation and use instructions included with the liner will void the warranty.

Z-Flex warrants that at the time of shipping the **ZR Stainless Steel Chimney Liner** will be free of manufacturer's defects in material and/or workmanship.

Liability under the warranty shall be limited to the replacement of the liner and accessories found to be defective according to the terms of the warranty, and shall not include replacement installation or other costs.

IMPORTANT: Z-Flex Chimney Liners are designed to be used with these fuels only: natural gas, propane gas, oil, and seasoned hardwood. The following fuels are not recommended for use in Z-Flex chimney liners: coal, ocean driftwood or garbage. Excessive condensation with high chlorine content will corrode some stainless steel. Where these conditions prevail, we recommend AL29-4C™ Stainless Steel Liners. Refer to equipment manufacturer's installation instructions for proper liner material for appliances which produce condensation.

Excessive creosote accumulation, sulphur residue from burning coal or the use of unapproved chemical cleaners may cause chimney fires that could warp the liner or may corrode the liner. Such misuse will void the warranty.

To activate the warranty, the purchaser or end user must complete and return the Z-Flex warranty registration card within ninety (90) days of installation. Upon receipt of written notice of any defect, Z-Flex reserves the right to examine or engage others to examine the liner. Such examination must establish reasonable proof of defective material or workmanship justifying replacement.

The sole remedy for breach of any and all warranties and the sole remedies for Z-Flex's liability of any kind shall be limited to the remedies provided herein. Z-Flex shall not be liable for any special, incidental, indirect or consequential damages, or for any claim against the purchaser or end user by any other party. EXCEPT AS SPECIFICALLY PROVIDED HEREIN, Z-FLEX DOES NOT MAKE ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR USE. Some states do not allow the exclusion of implied warranties or the limitation or exclusion of liability for incidental or consequential damages, so the above limitations may not apply to you. You may also have other rights which vary from state to state.

For further information, call or write to:

In U.S.A.
Z-Flex U.S. Inc.
20 Commerce Park North
Bedford, NH 03110-6911
Toll Free: 1-800-654-5600 or
in NH: (603) 669-5136

In Canada
Flexmaster Canada Limited
20 East Pearce Street
Richmond Hill, Ontario L4B 1B7
Tel: (905) 731-9411

Z-FLEX® Warranty Registration Card

For this warranty to be effective this card must be completed upon purchase of the covered liner and returned to Z-Flex, Inc.

NAME: _____

ADDRESS: _____

LINER PURCHASED FROM: _____

DATE OF INSTALLATION: _____

MODEL OF VENTED APPLIANCE(S): _____

I understand and agree to the warrant as stated: _____

(signature)