

**Z-FLEX**<sup>®</sup>  
CHIMNEY & VENTING SOLUTIONS



# Z-VENT<sup>®</sup> Special Gas Vent System



## Advanced Engineering for High Efficiency Gas Boilers and Heaters



### **Z-VENT**® Special Gas Vent

A revolutionary self sealing Special Gas Vent System that dramatically reduces the total installed vent system cost.

### Double Fail Safe Connections

**Z-VENT**® Special Gas Vent components are

supplied with self sealing gasket connections that install in half the time of field sealed systems.

The special design of the gaskets, along with precision engineered close tolerance

construction components, ensure an air and

water-tight fit. This air and water-tight connection

ensures optimum vent performance and reliability. With fusion

welded pipe seams no sealant is necessary, cure time or call

backs. Single Wall metallic special gas vent is cut to length on

site. Singlewall and Doublewall is manufactured in diameters from 3" to 24".

## UL Tested and Listed

**Z-VENT**® Special Gas Vent Model SVE IV Special Gas Vent System listed by Underwriters Laboratories to UL 1738 ULC S636, File MH 18505, Venting Systems for Gas-Burning Appliances, Category II,III and IV. Conforming to Underwriters Laboratories pressure specifications, ensures reliability and optimum vent performance. Leakage tested to 2½ times the UL pressure rating of 8" W.C.



## Single Wall AL 29-4C® Stainless Steel 3" Through 24" Diameters

Complete Systems – from starter to termination  
Cut-to-Length – **OR** - Adjustable Lengths available  
Up to 10' lengths available in 3" & 4" diameters

### Gasket Joint Connections - All Diameters

- Double Fail-Safe™ self sealing gaskets
- Factory installed Air-tight & Water-tight seals
- **NO** sealant required – saves installation time and money
- 2" overlapping secure joint 3" through 12" diameters
- 3" overlapping secure joint 14" through 24" diameters

### Gear Clamp Closure System

- Field tested and time proven for more than 10 years
- Easy to install - using standard tools
- On exterior of female joint
- Easy to replace if damaged during installation
- **NO** screws – **NO** tabs to bend
- **NO** joint bands or coupling to install

### Fusion Welded Pipe Seams

- High tech welding – no filler material used
- Air and Water tight seams

### Equipment Starter Adapters Available

- For all Category II, III, & IV Gas Fired Appliances
- Boilers – Water Heaters
- Unit Heaters – Tankless Water Heaters

## Double Wall AL 29-4C® Stainless Steel 3" Through 24" Diameters

- 1" airspace insulated Double Wall Vent System
- AL 29-4C® Stainless Steel (SS) inner gas vent conduit
- 304 (or 316L) Stainless Steel (SS) outer jackets
- Complete Systems – from starter to termination
- 4' lengths available 3"-8" diameters
- Elbows, Tee's, Supports, Flashings, etc
- Adjustable lengths – All diameters

### Gasket Joint Connection - All Diameters

- Double Fail-Safe™ Self Sealing Gaskets
- Air-tight and Water-tight joint seal
- Factory installed
- **NO** sealant required – saves installation time
- Insures proper seal every time

### Snap-Secure Joining System

- Fast – Simple –Secure
- **NO** tools required
- 2" overlapping secure-joint 3" through 12" diameters
- 3" overlapping secure-joint 14" through 24" diameters

### Fusion Welded Pipe Seams

- High tech welding – no filler material used
- Ensures the materials anti-corrosive properties
- Air & Water tight seams

## Application

**Z-VENT**® is a factory built, engineered **AL 29-4C**® **Special Gas Vent System** suitable for venting positive or negative pressure, residential and commercial gas fired heating equipment. The maximum allowable continuous flue gas temperature for Model SVE is 550° F (288°C).

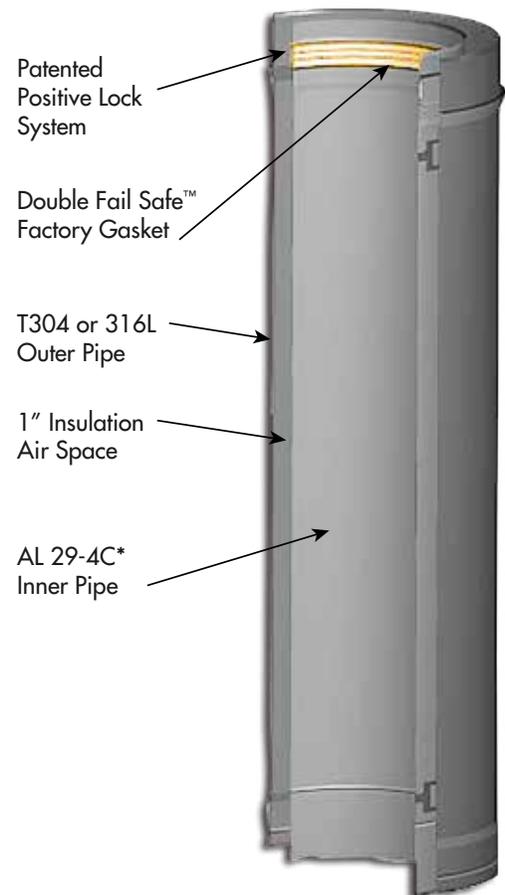
## Construction

The inner flue is manufactured from superferritic **AL 29-4C**® stainless steel. **AL 29-4C**® alloy shows excellent resistance to chloride ion pitting, crevice corrosion and stress corrosion cracking, making it the ideal choice for battling the effects of high temperature flue gases and corrosive condensate from high efficiency gas heating equipment.

A unique built-in **Double Fail Safe**™ **Gasket System** provides air and water tight connections, with no sealant required.

**Z-VENT**® is Leakage tested to 2½ times the UL listed pressure rating of 8 inches water column which significantly exceeds industry pressure standards and offers superior system service life.

## Z-VENT® Double Wall Construction



## Z-VENT® Double Wall System

Incorporates a one inch air space between the vent walls, providing an insulation factor. The insulated double wall construction reduces clearance to combustibles and helps to maintain stack temperature; an important feature in the safe venting of modern high efficiency heating equipment. The outer wall is fabricated from Type 304 Stainless Steel, providing long lasting performance and superior structural integrity. Where the vent is installed in potentially corrosive environments such as rooms with chemicals present, the option of 316L Stainless Steel is available, providing increased corrosion resistance.

Fusion welded components provide superior fit, reduced turbulence and flow resistance. Also eliminated are crevices and other spots where condensation can collect and corrode the vent.

Pipe and fittings ends are precision formed and calibrated using specially designed high tolerance tooling. All seams are continuously welded using proprietary Z-Weld technology providing indefinite service life and a virtual air and water tight construction.

## Patented Sealing System

**Z-VENT®** components are supplied with factory installed, patented (US Patent 6-523-865), self-sealing gaskets. The special gasket design with precision engineered close tolerance construction ensure an air and water tight fit leakage tested to 2½ times the UL pressure rating of 8 inches W.C.

## Model SVE Single Wall

Available in diameter sizes ranging from 3" to 24". Engineered for use with Category II, III and IV gas-burning appliances only, where the maximum vent gas temperature at the appliance outlet does not exceed 550°F (288°C).

**Z-VENT®** can be installed in practically any configuration through the use of a wide range of pipe, fittings, terminations and appliance specific adaptors.

See **Z-VENT®** installation instructions and appliance manufacturer's instructions for recommended clearances at other vent temperatures.



## Model SVE Double Wall

Available in diameter sizes ranging from 3" to 24". Engineered for use with Category II, III and IV gas-burning appliances only, where the maximum vent gas temperature at the appliance outlet does not exceed 550°F (288°C).

**Z-VENT®** Double Wall's one inch air space between the inner and outer wall provides an insulation factor and is therefore recommended for installations where reduced surface temperatures are needed and where stack temperatures need to be maintained.

**Z-VENT®** Double Wall is also recommended for exterior runs and installations where greater structural durability is needed.

**Z-VENT®** can be installed in practically any configuration through the use of a wide range of pipe lengths, fittings, terminations and appliance specific adaptors.



Please see **Z-VENT®** installation instructions and appliance manufacturer's instructions at [www.z-flex.com](http://www.z-flex.com) for recommended clearances at other vent temperatures.

## OEM Design Services

**Z-FLEX**<sup>®</sup> has been a market leader for over 30 years in the design of special venting systems and related products. Our strength lies in our extensive knowledge of specialized manufacturing techniques and product development with OEM manufacturers.

## Technical and CAD Services

**Z-FLEX**<sup>®</sup> provides full technical support for all its products through literature, training and our in-house technical staff.

**Z-FLEX**<sup>®</sup> offers submittal drawings and bill's of material within 48 hours providing all the design check list information is available.

*For more information, contact our technical department at [sales@z-flex.com](mailto:sales@z-flex.com) (1-800-654-5600)*



## Suggested Specification

Venting shall be **Z-VENT**<sup>®</sup> Model SVE IV as manufactured by **Z-FLEX**<sup>®</sup> (1-800-654-5600).

The vent system shall consist of factory welded pipe and fittings incorporating a factory fitted sealing gasket which, when installed in accordance with the manufacturer's installation instructions, will seal the pipe joints without the use of field applied sealant.

The vent system shall be leakage tested to 8" W.C. positive pressure. The vent system will be tested and listed by Underwriters Laboratories to UL 1738/ULC S636 with a maximum allowable continuous flue gas temperature of 550°F (288°C).

## Clearance to Combustibles

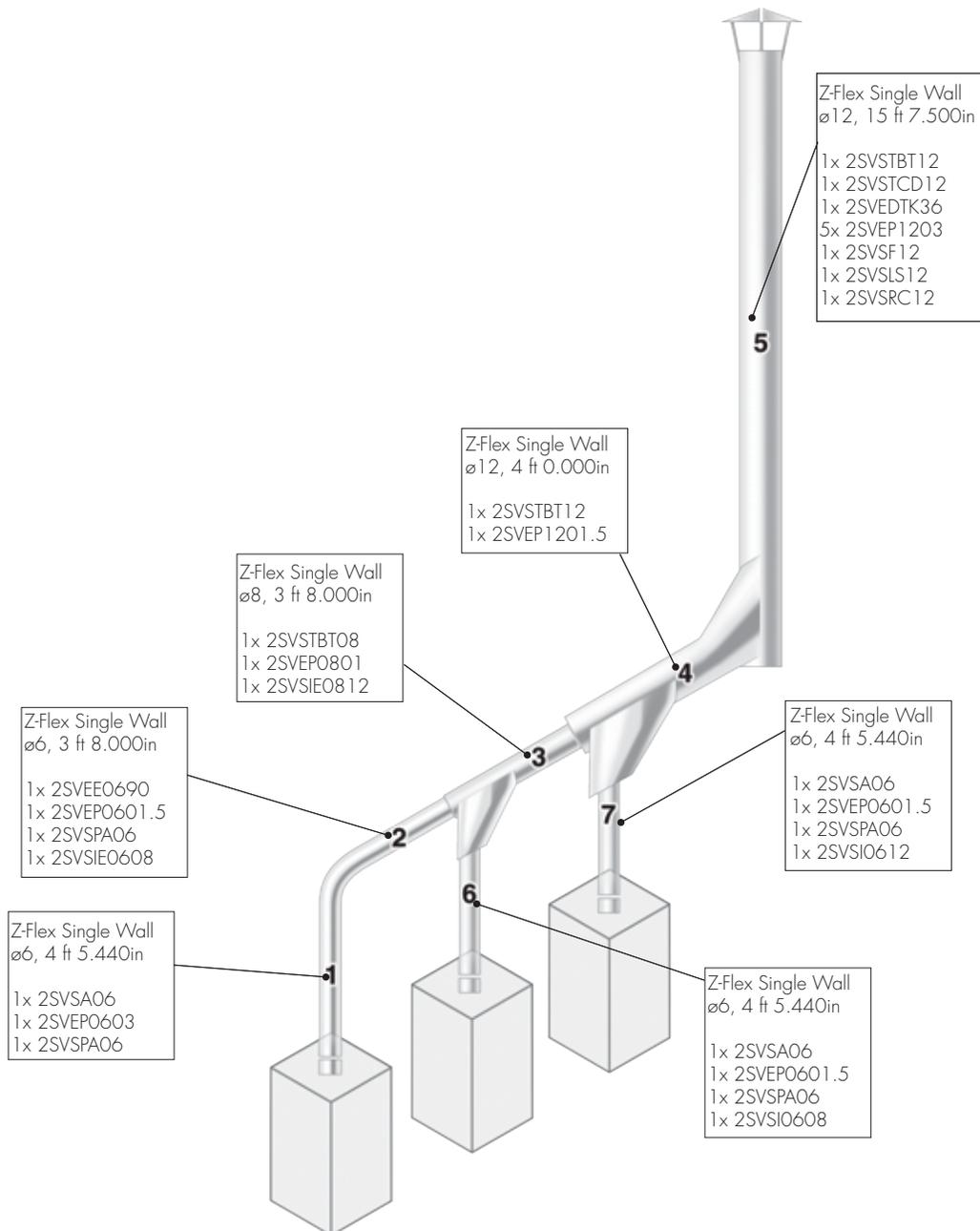
System	System Operating Temperature	Clearance Enclosed Vertical	Clearance Unenclosed	
			HORIZONTAL	VERTICAL
Single Wall	550°F (288°C)	6" (150 mm)	Pipe 3" (75 mm)	3" (75 mm)
	Up to 480°F (249°C)	4" (100 mm)	1" (25 mm)	1" (25 mm)
Double Wall	550°F (288°C)	6" (150 mm)	Pipe 2" (50 mm)	2" (50 mm)
	Up to 480°F (249°C)	4" (100 mm)	1" (25 mm)	1" (25 mm)

# Z-VENT<sup>®</sup> Special Gas Vent



**Z-Quote™** is a revolutionary software solution that creates a detailed, dimensional, **Z-VENT<sup>®</sup>** system layout, accurate bill of material and quote proposal in minutes.

Simply submit a completed design check list and our technical staff will provide you with a quote, detailed drawing with part call outs, and material list.



Example of

## Design Checklist

A Z-Quote drawing will be provided complete with the design checklist. In order to receive an accurate and timely response, please complete the checklist with as much detail as possible. The information is critical and allows the engineering department to produce an accurate design layout. Please note that missing information will cause delays. Please do not submit mechanical drawings.

**Please filter out and submit only the relevant data that applies.**

Detail Information											
<b>Company Name:</b>					<b>Job Name:</b>						
<b>Contact:</b>					<b>Location:</b>						
<b>Telephone:</b>					<b>Date Required:</b>	(DD/MM/YY)					
<b>Fax:</b>					<b>Email Address:</b>						
Appliance data											
<b>Please check appropriate boxes</b>			<b>Make/Model:</b> _____ <small>(Please list separately if models are of different sizes)</small>				<b>Number of Units:</b> _____				
<b>Appliance Category:</b>	I	II	III	IV	<b>Vent Outlet Ø: (OD)"</b>			<b>Appliance Pad:</b>	Y	N	Inches thick:
<b>Individual Vents:</b>	<b>Common Vent:</b>				<b>Indicate Common Vent Diameter "</b>	<b>External power Venter used?</b>			Y	N	
<b>Are Barometric Dampers to be used?</b>	Y	N									
<b>Select Venting Material:</b>	Z-Vent (AL 29-4C®)				<b>Building Structure:</b>	Ceiling Combustible	Y	N	Ceiling Thickness"		
	Double Wall					Wall Combustible	Y	N	Wall Thickness"		
	Single Wall										
	ZS (316L)										
	Rigid Stainless										
	Chimney Liner										
Vertical			Horizontal				Roof Top				
<b>Mechanical Supports</b>	Firestop Support at ceiling				<b>Vent Support</b>				Tall Cone/Adjustable Flashing (circle one)		
	Guy Band (cable by others)				Supplied by Contractor every 4-6 ft or less at every elbow				Firestop Support		
	Vent/Base Support								Guy Band		

# Z-VENT<sup>®</sup> Special Gas Vent

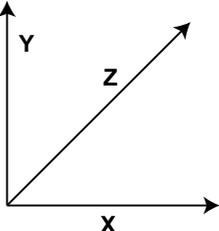
## Center line Dimensional Data

*(Please do not submit mechanical drawings)*

1. Between <b>each</b> appliance exhaust outlet	6. From floor to ceiling
2. Between each appliance side by side	7. From breaching to top of stack
3. From appliance(s) to breaching wall	8. From appliance to breaching wall
4. From the floor to the appliance exhaust outlet	9. From appliance outlet to vertical stack <i>(for stacks terminating through roof)</i>
5. From floor to breaching	

On a separate sheet please provide a desired layout drawing/sketch showing the dimensions on elevation and plan views as per this example

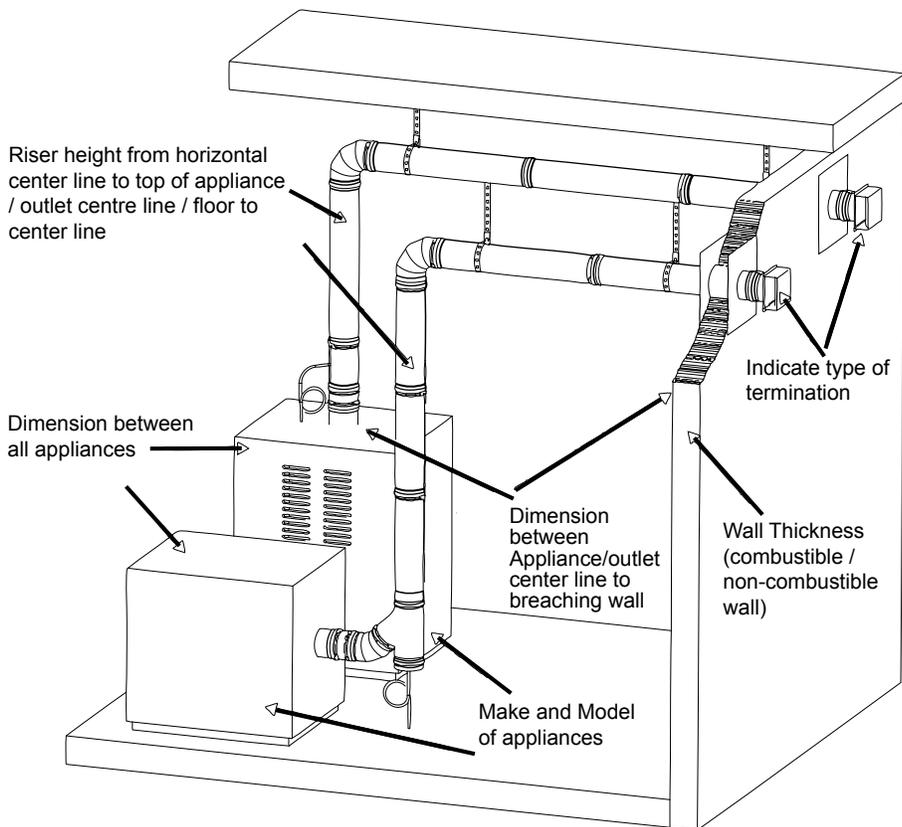
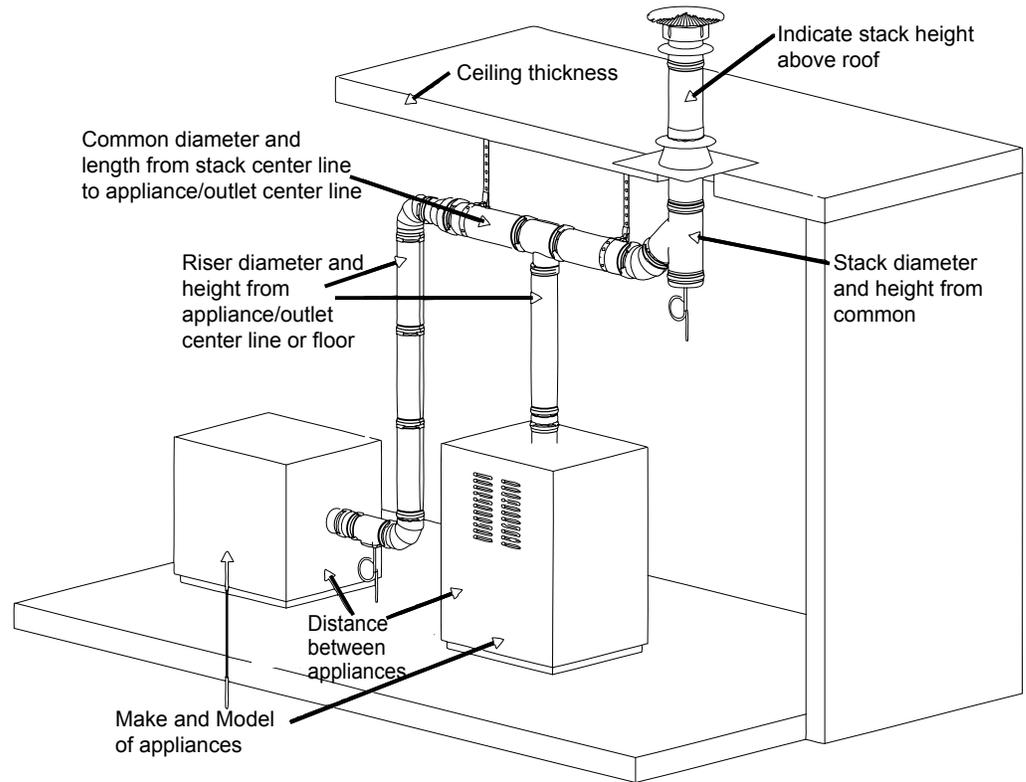
**LAYOUT SKETCH / DRAWING**



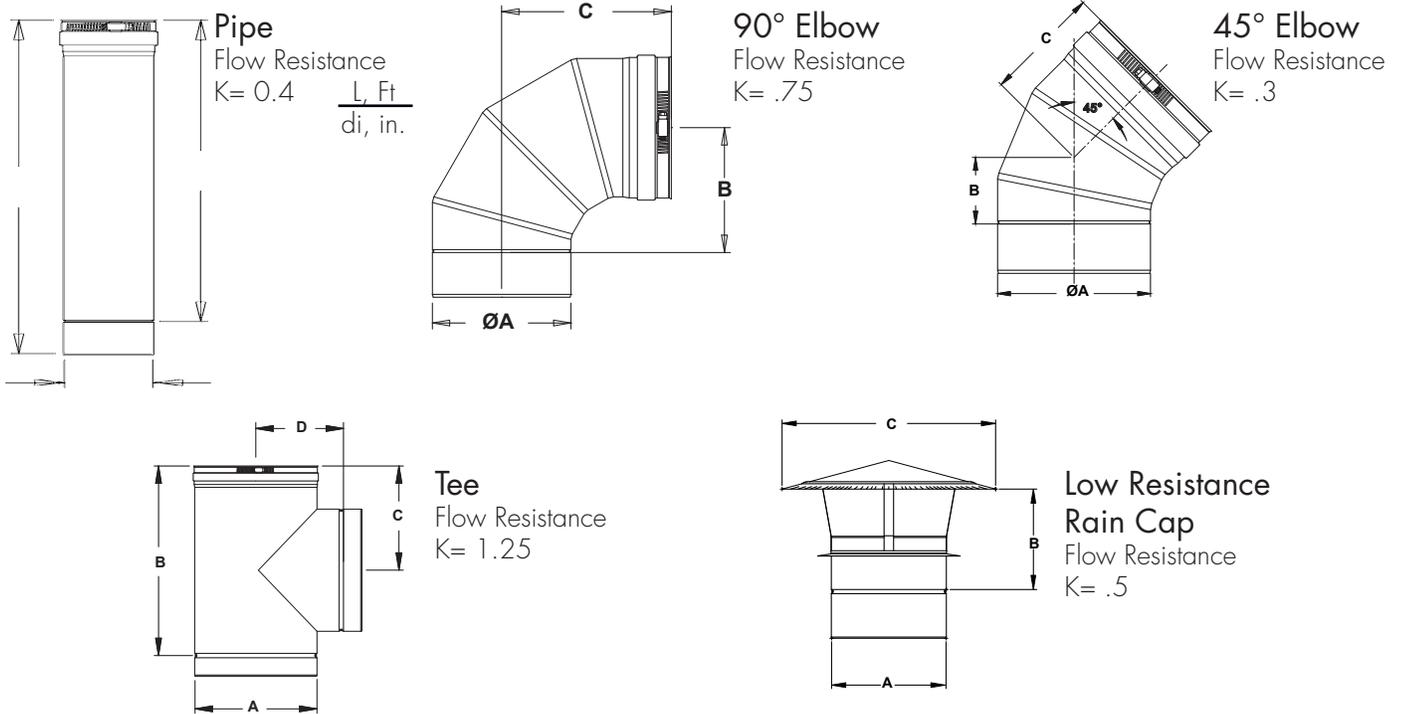
**Plan View (Top)**

**Elevation View (Front)**

## Examples of required information



## System Resistance Coefficients\*



\*Based on ASHRAE Handbook, Chimney Vent, and Fireplace Systems

### Capacity of Round Pipes

Dia in.	Dia mm	Circumference in.	Area, sq in.
2	50.8	06.28	03.14
3	76.2	09.42	07.07
4	101.6	12.57	12.57
5	127.0	15.71	19.63
6	152.4	18.85	28.27
7	177.8	21.99	38.48
8	203.2	25.13	50.27
9	228.6	28.27	63.62
10	254.0	31.42	78.54
12	304.8	37.70	113.10
14	355.6	43.98	153.94
16	406.4	50.27	201.06
18	457.2	56.55	254.47
20	508.0	62.83	314.16
22	558.8	69.12	380.13
24	609.6	75.40	452.39

### Stainless Steel Weights

Gauge	Stainless Steel in (mm)
10	0.1406 (3.57)
11	0.1250 (3.18)
12	0.1094 (2.78)
13	0.0940 (2.40)
14	0.0781 (1.98)
15	0.0700 (1.80)
16	0.0625 (1.59)
17	0.0560 (1.40)
18	0.0500 (1.27)
19	0.0440 (1.10)
20	0.0375 (0.95)
21	0.0340 (0.86)
22	0.0310 (0.79)
23	0.0280 (0.71)
24	0.0250 (0.64)
25	0.0220 (0.56)
26	0.0190 (0.48)
27	0.017 (0.43)
28	0.016 (0.41)
29	0.014 (0.36)
30	0.013 (0.33)

# Z-FLEX®

## The Flexible Venting Solutions Specialist

Z-FLEX®, part of the Novaflex Group of companies, is the leading manufacturer of specialty venting systems for furnaces, boilers, water heaters, oil heaters, fireplaces, and more.

Z-FLEX® has been providing flexible answers to gas oil, pellet and wood venting applications since 1979. We have pioneered flexible chimney liner solutions and special gas vent (AL 29-4C®).\* A variety of innovations in materials and construction have led to products that deliver:

- Superior performance and increased efficiency
- Easier handling and faster, simpler installation
- Greater reliability, safety and increased service life

To that, we add responsive customer service and expert technical support.

*The NovaFlex Group® is a privately held company committed to continuous advancement in venting, HVAC, hose and connector solutions. NovaFlex® has one of the broadest product ranges available in the hose and ducting marketplace as well as in the HVAC, Industrial Venting and Hose Industries and in Commercial Exhaust Venting Systems.*

\*AL 29-4C® is a registered trademark of Allegheny Ludlum Corp.

All products are warranted to be free from all defects in material and workmanship. 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](http://www.novaflex.com) / [www.z-flex.com](http://www.z-flex.com) / [www.flexmaster.com](http://www.flexmaster.com).



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