

Z-FLEX®
Advanced Venting Solutions



Z-DENS

Polypropylene Vent Systems

for High Efficiency Condensing Appliances

Single Wall Rigid • Flexible Liner

Cascade • Concentric



Intertek Tested,
Approved &
Listed to ULC
S636 as a Type
BH Gas Vent
System



PP

Z-Flex® Joins Forces with Cox Geelen®

Z-Flex® North America's leading independent manufacturer of specialty venting systems for over 35 years; has joined forces with Cox Geelen®, one of Europe's leading innovators and manufacturers of polypropylene venting systems.

Cox Geelen's manufacturing roots date back over a century and are recognized today worldwide for their technical knowledge, OEM experience and environmentally responsible business philosophy in the polypropylene venting industry.

Z-Flex® is proud to offer this polypropylene venting system, branded Z-DENS, to our highly acclaimed product line-up which includes Z-VENT® and NovaVENT®.

Recent developments in flue systems for use with high efficiency heating appliances, combined with the increased familiarity of use and installer confidence in polypropylene venting systems, has led to the development and continuous improvement of the polypropylene Z-DENS system.

Designed and Tested Safe

Unlike most PVC and CPVC pipe:

- Z-DENS is specifically designed, tested and listed as a vent system.
- Z-DENS is manufactured from environmentally safe and sustainable fire retardant polypropylene, offering superior performance.
- Z-DENS does not require explosive or toxic cleaners, primers or cements; eliminating the safety and health concerns associated with these products.
- Z-DENS Self-Sealing design does not require any curing time, significantly reducing installation times and allows immediate system start up.
- Z-DENS can be used to vent appliances in New York City where PVC is **NOT PERMITTED**.

Z-DENS is available in diameters 2" (60 mm), 3" (80 mm), 4" (110 mm), 5" (125 mm), 6" (160 mm) and 8" (200 mm). Z-DENS is also fully compatible with Z-DENS FLEXIBLE and Z-DENS CONCENTRIC making for a complete and safe flue gas system.

Approvals

- Tested and Listed to ULC S636
- Conforms to the UL1738 requirements for category IV condensing appliances
- CE marked according to the European standard EN 14471
- Conforms to Gastec Qa 83-1

Recyclable

At the end of its life cycle, Z-DENS can be completely recycled.



Z-DENS
SINGLE WALL

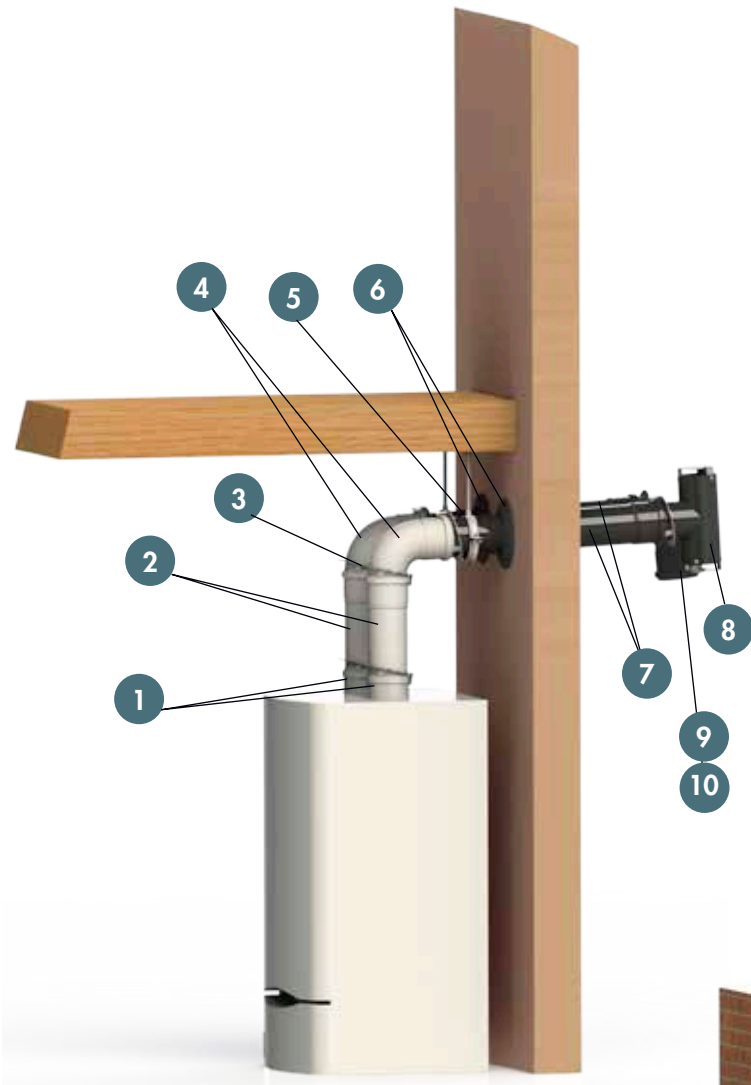


Z-DENS
CONCENTRIC

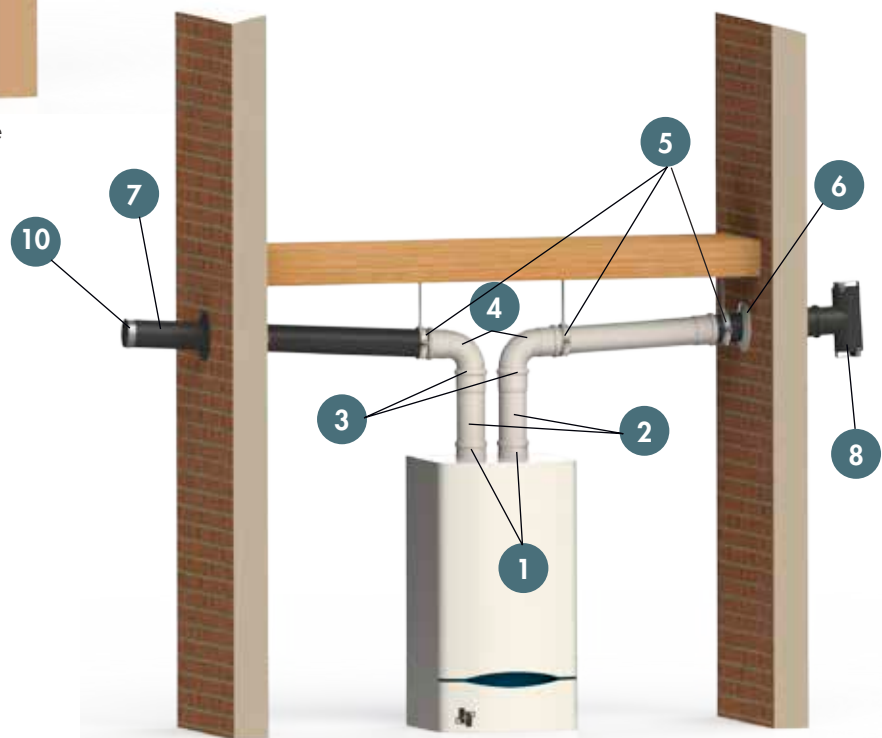


Z-DENS FLEXIBLE

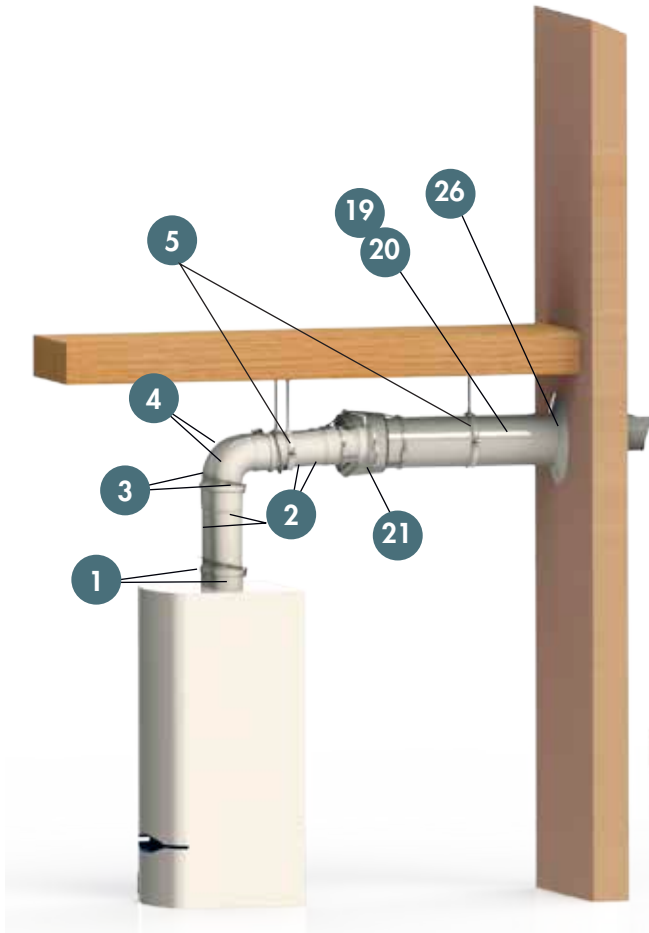
Z-DENS Direct Vent Applications*



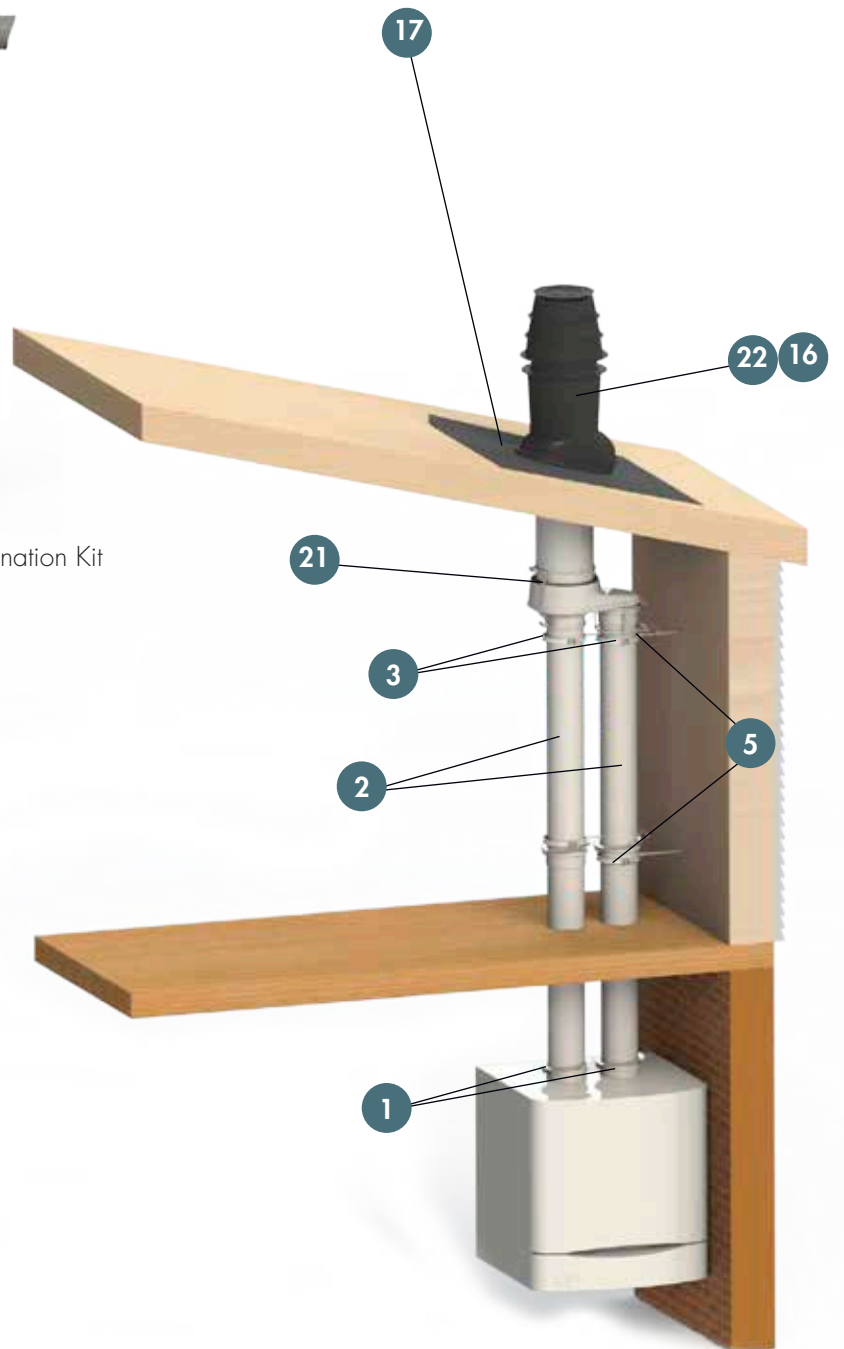
Horizontal Vent and Air - Same Pressure Zone



Horizontal Vent and Air - Different Pressure Zones

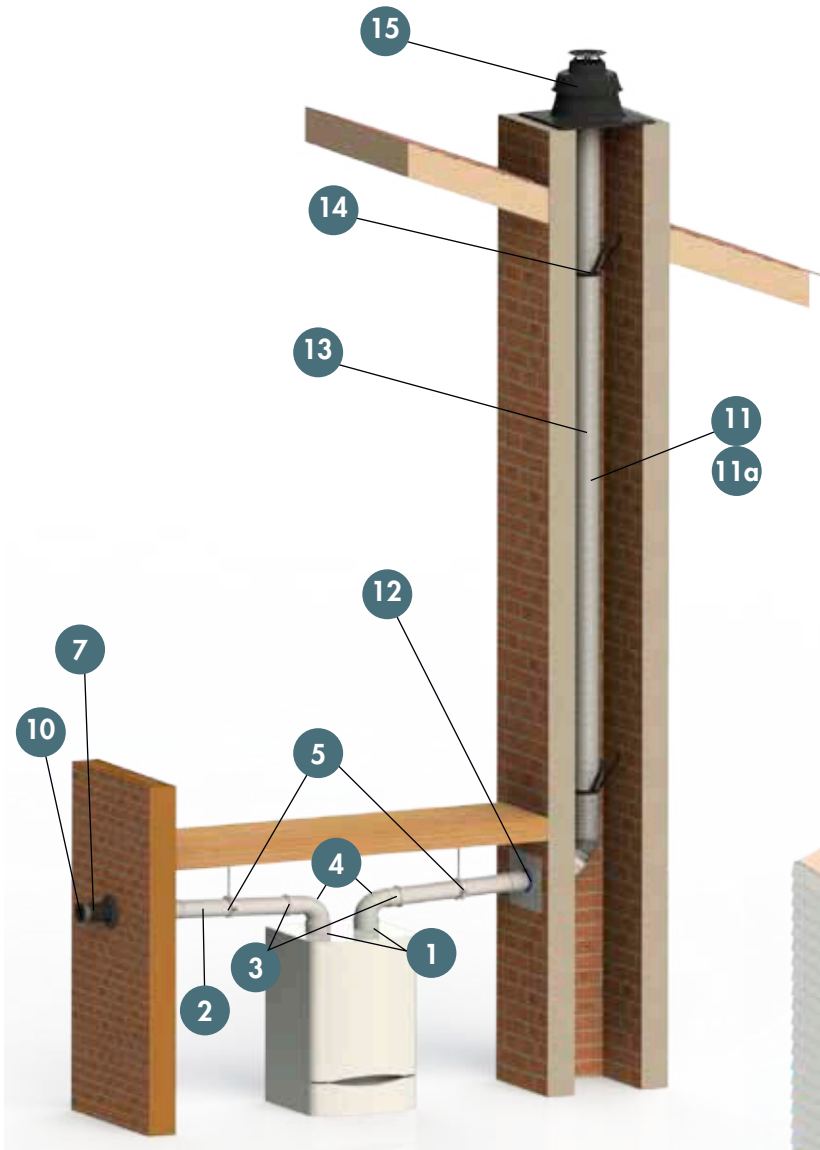


Horizontal Vent and Air with Horizontal Concentric Termination Kit

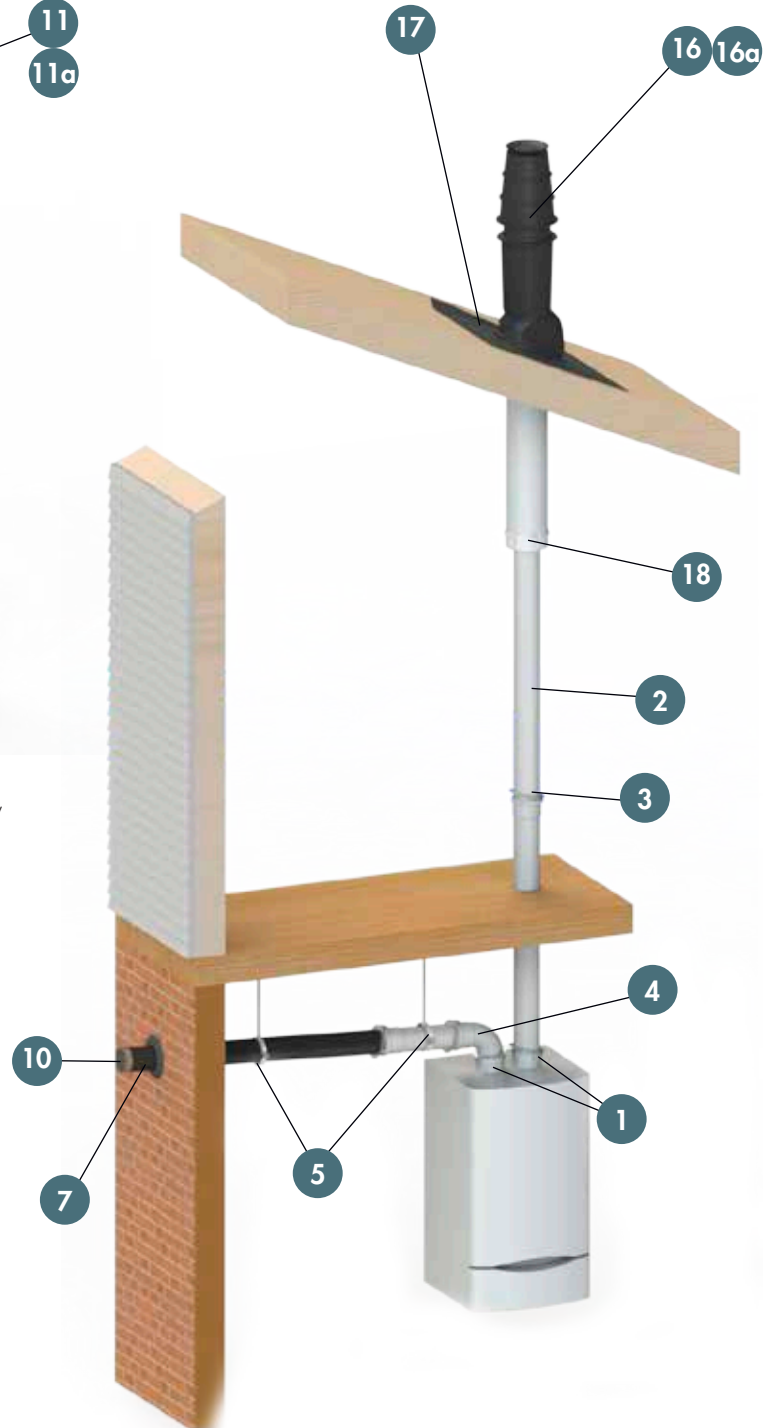


Vertical Vent and Air with Vertical Concentric Termination Kit

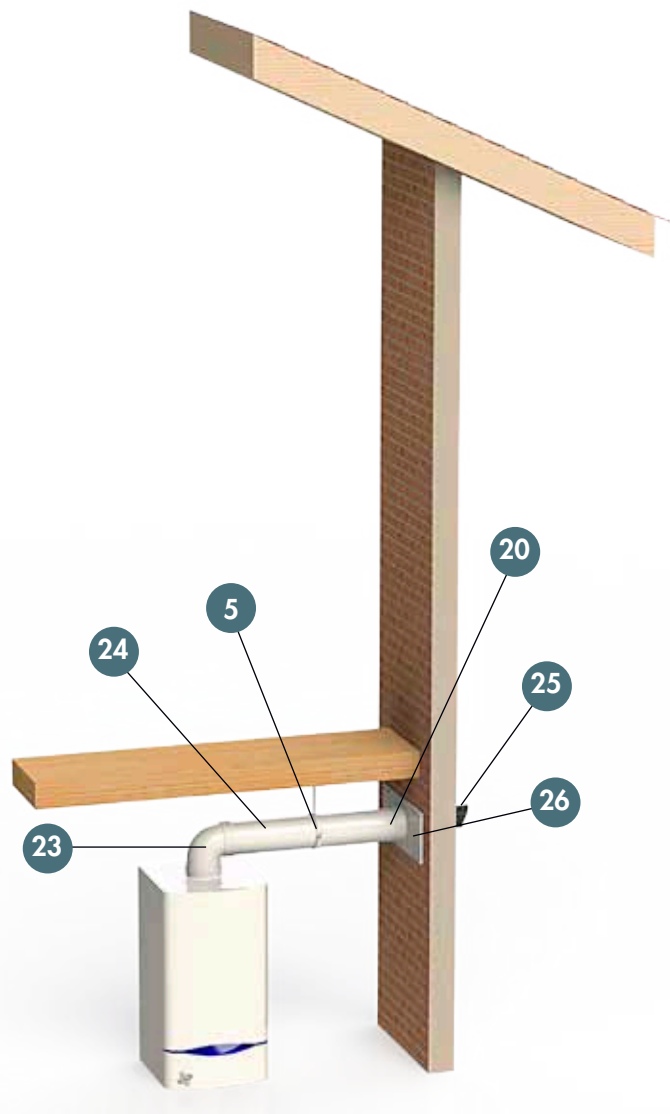
Z-DENS Direct Vent Applications*



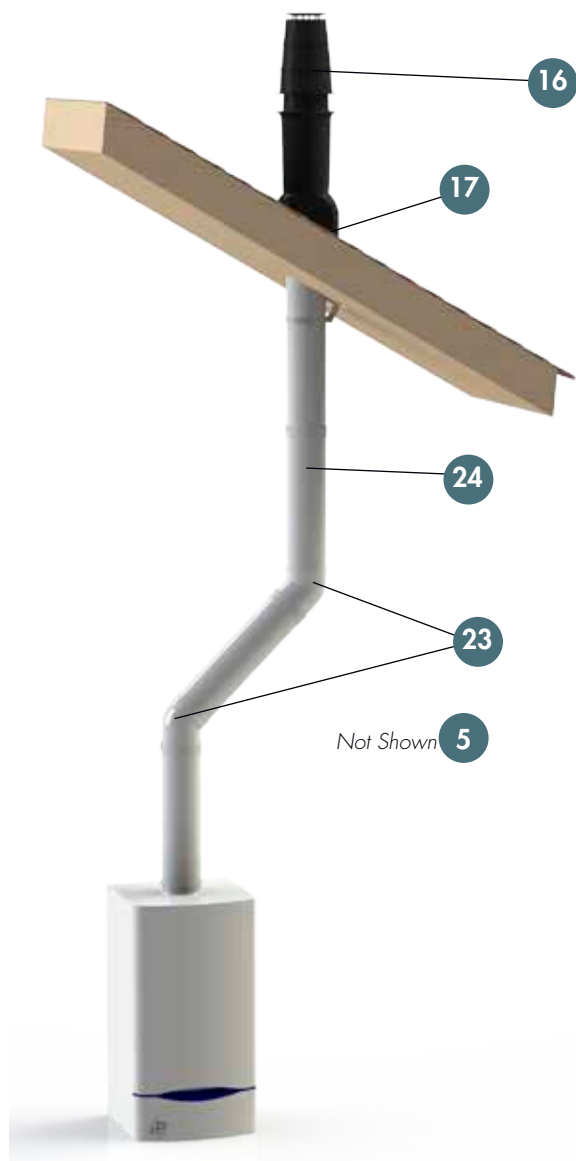
Vertical Flexible Vent in Clean Unused Chimney with Chimney Cover and Horizontal Air



Vertical Vent and Horizontal Air with Vertical Termination



Concentric Horizontal



Concentric Vertical

Z-DENS Direct Vent Applications*

Item #	Part ID	Description
1	2ZDCPVC(2,3,4,6)	Adaptor CPVC/PVC Coupling
	2ZDCPVC(3,4,6)	Adaptor CPVC/PVC Pipe
	2ZDCPVC(2,3,4,6)	Adaptor - Appliance with Gasket & Clamp CPVC/PVC
	2ZDCPVC3L	Adaptor - Appliance with Gasket & Clamp CPVC/PVC - US Boiler Alpine Wall Mount
	2ZDIBC4	Adaptor IBC SL 4"
	2ZDCPVCS(3,4)	Adaptor - Appliance with Seal CPVC/PVC - Bosch Greenstar
	2ZDZV(3,4,6,8)	Adaptor Z-Vent
	2ZDTA(42,43,4)	Adaptor Takagi TH3-DV/140-540
	2ZDIAMT0(6,8)	Adaptor - Laars MagnaTherm MGT/H/V
	2ZDAEDR(6,8)	Adaptor Fulton Endura
2	2DAABM(06,08)	Adaptor Aerco Benchmark
	2ZDWASF10(06,08)	Adaptor Weil McLain Slimfit
	2ZDP(2,3,4) (12,24,36,72) or 2ZDP(5,6,8) (24,36,72)	Pipe
	2ZDAP(2,3,4)	Adjustable Pipe
3	2ZDLC(2,3,4,5,6,8)	Locking Clamp - 1 /Joint Required
4	2ZDE(2,3,5,6,8) (45,87) or 2ZDE4(45,87)UV	Elbow 45° or 87°
5	2ZDFB(2,3,4,5,6,8)	Fixing Bracket/Support Clamp. All Thread Field Supplied. See Note 3
6	2ZDWPB(2,3) or 2ZDWP(5,6)	Wall Plate
7	2ZDP(2,3)(12,24,36) UV	Pipe UV-Black
8	2ZDTT(2,3,4,5,6,8)	Termination Tee with Screens
9	2ZDE(2,3,4)(45,87)UV	Elbow UV-Black (2" & 3") Grey (4")

Item #	Part ID	Description
10	2ZDES(2,3,4,5,6,8)	End Screen
11	2ZDFK(2,3,4)(25,35)	Flexible Kit - Chimney - 25' or 35' (Includes Items 12 13 14 15)
11a	2ZDFKX(2,3,4)	Flexible Kit Extension - 10' (Includes Items 13 14 & Flexible Coupling 2ZDFC(2,3,4))
12	2ZDFBK(2,3,4)	Flexible Base Kit
13	2ZDFL(41,82)(2,3) or 2ZDFL(494,824)	Flexible Liner (41' or 49' or 82')
14	2ZDFS(2,3,4)	Flexible Spacer /Bracing Bracket (2 pieces)
15	2ZD2FLK(2,3,4)	Flexible Liner Kit (Includes Item 14 (5 pieces) & Chimney Cap with Flexible Connection)
16	2ZDCTV(24,35,46)	Concentric Termination Vertical
16a	2ZDRT(5,6,8)	Roof Termination
	2ZDAF(2,4)	Adjustable Flashing 5°-25°
17	2ZDAFM(2,4,8)	Adjustable Flashing 25°-45°
	2ZDFF(2,4,5,8)	Flat Flashing
18	2ZDCTAC(4,5,6)	Concentric Termination Air Cap
19	2ZDHK(2,3,4)	Horizontal Kit [Includes Items 1 (2ZDCPVC(2,3,4)), 3 20 21 2/ea of Items 1 3]
20	2ZDCTH(24,35,46)	Concentric Termination Horizontal
21	2ZDACLC(2224, 3335,4446)	Adaptor Collinear to Concentric
22	2ZDVK(2,3,4)	Vertical Kit [Includes Items 1 (2ZDCPVC(2,3,4)), 3 16 21; 2/ea of Items 1 3]
23	2ZDCE(24,35,46) (45,87)	Concentric Elbow 45° or 87°
24	2ZDCP(24,35,46) (12,24,36)	Concentric Pipe
	2ZDCAP(24,35,46)	Concentric Adjustable Pipe
25	2ZDTG(4,5,6)	Termination Guard
26	2ZDWPT(24,35,46) or 2ZDWP(4,5,6)	Wall Plate
27	2ZDGL	Gasket Lubricant - See Note 4

Notes:

1. Z-DENS is Intertek listed to ULC S636 for zero clearance to combustibles & maximum flue gas temperature of 230°F.
2. Z-DENS conforms to UL1738.
3. Support Z-DENS at: appliance adaptor, elbows, vertically every 78" & horizontally every: 39" (3" to 8") & 19" (2") along the length.
4. Use only Z-DENS Gasket Lubricant: 2ZDGL to ease assembly of joints, apply sparingly on leading edge of gasket.
5. Z-DENS is recyclable and environmentally friendly.
6. Z-DENS is warranted as a vent system unlike most PVC & CPVC.

*Consult appliance manufacturer's instructions for approved vent applications



Z-DENS Single Wall

Z-DENS is certified for use with condensing gas and oil fired heating appliances having flue gas temperatures up to 230°F (110°C).

Specifications

- Specially developed, fire retardant polypropylene
- ULC S636 certified for flue temperatures up to 230°F (110°C)
- Resistant up to a max flue temperature of 248°F (120°C)
- Cat II, IV Special Gas Vent
- Gas Vent BH, Class IIc
- Suitable for use with negative and positive pressure appliances
- Pressure tested to 20 inches W.C. (5000 pa, level H1)
- Available in appliance white finish in diameters 2" and 3"*
*UV stabilized parts available
- Available in UV stabilized grey finish in diameters 4", 5", 6" and 8"

Significant Advantages

- Vent system made from fire retardant polypropylene
- Long lasting and easy to install as no cure time is required
- Greater resistance to acidic flue gas condensate
- No leaching of chloride, as found in PVC and CPVC reducing boiler contaminates
- No primer or glue containing VOC's
- Environmentally friendly
- Recyclable and LEED compliant
- Non-toxic smoke or fumes if burned, compared to PVC and CPVC

Safety

All polypropylene material expands and contracts with temperature change. To ensure that the installation initially is and remains completely flue gas tight, it is necessary that the Z-DENS locking clamps and brackets are used. For the correct installation of the locking clamp and bracket, follow the instructions in the installation manual (download at www.z-flex.com). Only by following these instructions can Z-DENS guarantee a safe and flue gas tight installation. Use only Z-DENS lubricant when installing Z-DENS polypropylene to ensure a quick, reliable and safe connection.

Environment

During the production of polypropylene flue gas systems less CO₂ is produced than with the production of traditional metal flue gas systems.

Design Considerations

Greater system efficiencies and a more aesthetically pleasing installation can also be achieved by using Z-DENS Concentric.

Specification

Approved polypropylene vent manufacturers

Supplier	Model
Z-Flex U.S. Inc. 20 Commerce Park N, Bedford, NH, 03110 Ph. 800-654-5600	Z-DENS Single Wall, Flexible, Concentric



Z-DENS Flexible

The flexible polypropylene vent system is specifically designed for connection to condensing gas or oil fired heating appliances with a maximum flue temperature of 230°F (110°C)

Specifications:

- Made from fire retardant polypropylene
- Resistant up to max flue temperature of 248°F (120° C)
- Operates in negative and positive pressure modes
- Pressure tested to 20" WC (5000 pa, level H1)
- Chimney termination is UV resistant, flexible is not UV resistant
- Designed as a vertical flue system installation but is safe to run at angles up to 45° from vertical
- Available in white

Simple installation is ensured because:

- Flexible pipe can be cut to length on site
- Coupling connectors allow easy joining of shorter lengths which can virtually eliminate waste
- Lightweight flue system for ease of installation
- Compact packaging due to its great flexibility
- Wide range of accessories

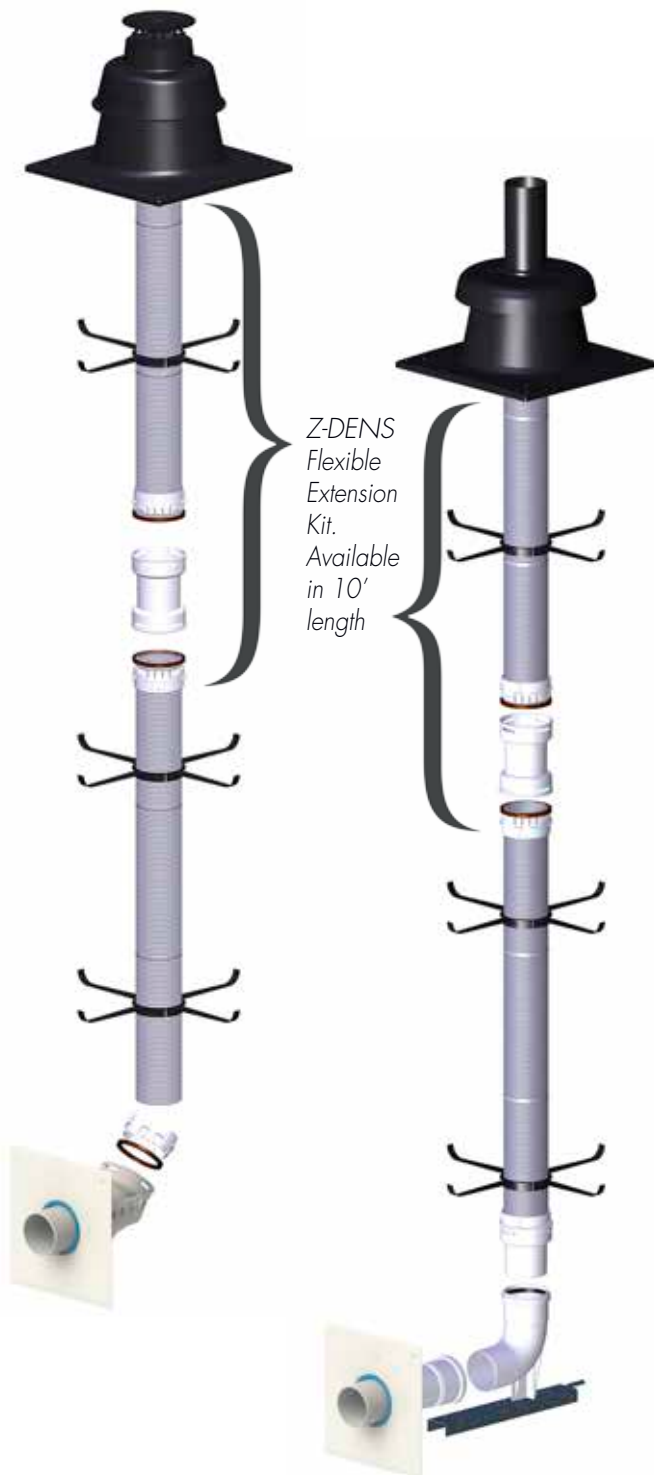
Installation

The installation manual of Z-DENS Flexible shows just how simple it is to assemble and install.

Z-DENS Flexible installation instructions are available in the download section of our website at www.z-flex.com.

This flexible flue system is available in 3 diameters:

Nominal diameter	2" (Ø 60)	3" (Ø 80)	4" (Ø 110)
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2" (60 mm)
3" (80 mm)

4" (110 mm)

Z-DENS Flexible Chimney Kits

- Available in 25' & 35' lengths

Z-DENS Concentric

Z-DENS CONCENTRIC is precisely designed for use with condensing gas and oil heating appliances.

Certified to ULC S636 and CE Marked to European standards EN 1856-1 and EN 14471.

Z-DENS CONCENTRIC, through continuous improvement, is engineered for optimum performance.

The outer pipe is aluminum and the inner flue pipe is manufactured with fire retardant polypropylene.

(Please Note: Z-DENS CONCENTRIC can only be selected for use with high efficiency/condensing appliances.)

The inner pipe is centred in the outer pipe by the patented connection (Patent number: NL C 1022411). This system is available in concentric diameter sizes 2"/4" (60/100 mm), 3"/5" (80/125 mm) and 4"/6" (110/160 mm). Colour of outer pipe is white (RAL9016).

Significant Advantages

- The system is easy to assemble
- The system is particularly rigid
- It is modern in appearance
- The same system can be used indoors as well as outdoors
- Patent number: NL C 1022411
- Certified to ULC S636 Gas Vent-BH Class II C - 110°C/ 230°F
- CE Marked according the European standards EN 1856-1 and EN 14471



Z-DENS CONCENTRIC The Next Generation in Flue Systems

2"/4" | 3"/5" | 4"/6" (60/100 | 80/125 | 110/160 mm)

Z-DENS CONCENTRIC designed for use with condensing heating appliances. The system has an inner polypropylene flue outlet pipe which is centered in the outer aluminum air intake pipe by the patented CONNEX_T®-connection. The system is available in the nominal concentric measurements 2"/4", 3"/5" and 4"/6" (60/100, 80/125 and 110/160 mm), in the colour white (RAL 9016).

Vertical



Vertical Kit



Horizontal



Horizontal Kit



Additional Terminations



Z-DENS Concentric Terminations

Z-DENS CONCENTRIC TERMINATIONS are suitable for any condensing appliance.

Designed with exceptional features including; modern appearance, outstanding aerodynamics, rain water management, cleaning and concentric or collinear (horizontal & vertical kit) options.

Vertical Design Features:

- Upper roof part is made of black RAL9005; UV resistant polypropylene for 2"/4" (60/100 mm) and 3"/5" (80/125 mm) or aluminum cap and galvanized outer air intake pipe for 4"/6" (110/160 mm)
- Outer air intake pipe below roof is made of white RAL 9016 galvanized steel
- Flue pipe is made of fire retardant polypropylene
- **Icicle-Free** - The cap allows some rain water to enter vent reducing icicle formation and aids in diluting PH of condensate
- **Aerodynamics** - Outstanding aerodynamic behaviour, with very low influence of wind

Horizontal Design Features:

- Outer wall part is made of grey RAL7001 UV resistant polypropylene for 2"/4" (60/100 mm) and 3"/5" (80/125 mm) or white RAL 9016 aluminum end and galvanized outer air intake pipe for 4"/6" (110/160 mm)
- Flue pipe is made of fire retardant polypropylene
- **Nozzle/Water Outlet** - The specially designed nozzle end prevents ingress of rain water. A collector with drip edge makes sure rain water and condensation are drained directly to the ground and not down the wall.
- **Aerodynamics** - Outstanding aerodynamic behaviour, with very low influence of wind
- **Removing/Cleaning** - The removal to clean nozzle end is simple, only a screw driver is needed

Z-DENS ADDITIONAL TERMINATIONS

- Z-DENS has additional UV resistant polypropylene terminations including; pipes, 45° and 90° elbows all for use with stainless steel end screens.
- Z-DENS has additional stainless steel terminations including; tees with built in screens and horizontal low profile kits.

Z-FLEX®

The Engineered Venting Systems Specialists

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Recent developments in flue systems for use with high efficiency heating appliances, combined with the increased familiarity of use and installer confidence in polypropylene venting systems, has led to the development and continuous improvement of the polypropylene Z-DENS™ system.

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.

It is impossible to test all NovaFlex® and Z-Flex® products under all of the 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 conditions that duplicate service conditions prior to installation. Due to continuous improvements, technical data in this brochure is subject to change without notice. It is incumbent on installer to determine suitability of product for application and adhere to all local building codes that may or are applicable. Please defer to Novaflex & Z-Flex terms and conditions of sale located at: www.novaflex.com/TermsConditions/



U.S.A.

20 Commerce Park North
Bedford, New Hampshire 03110-6911
tel: 603.669.5136 fax: 603.669.0309
www.z-flex.com email sales@z-flex.com

CANADA

452 Attwell Drive
Etobicoke, ON M9W 5C3
tel: 416.679.0045 fax: 416.679.0051

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