



Commercial/Industrial Venting For High Efficiency Equipment

VENTOR

Boilers and Water Heaters Focus

“Special Gas Vent” / “Type BH Gas Vent” (CAN)
(UL1738) / (ULC-S636)

Models:

EZ Seal (3” – 16” single wall)

GC (18” – 32” single wall)

CI Plus (4” – 32” double wall)

SC (3x5 & 4x7 concentric / direct vent system)

ALL fabricated with AL29-4C – the industry’s BEST!

15 year warranty

GAS APPLIANCE / VENT CATEGORIZATION

NEGATIVE PRESSURE IN VENT	POSITIVE PRESSURE IN VENT
<p>CAT I</p> <p><u>Acceptable types of venting materials:</u> Type B Gas Vent Properly lined masonry chimneys Type L Vent UL 103 Factory-Built chimneys</p>	<p>CAT III</p> <p><u>Acceptable types of venting materials:</u> UL1738 Listed system [AL29-4C systems with sealed joints] UL 103 Positive Pressure chimneys (V-banded flange-flange design)</p>
NON-CONTINUOUS CONDENSATION IN VENT (DRIES)	
CONTINUOUS CONDENSATION IN VENT (STAYS WET)	
<p>CAT II</p> <p><u>Acceptable types of venting materials:</u> UL1738 Listed system [AL29-4C systems & drains required] Some plastics approved but be careful!</p>	<p>CAT IV</p> <p><u>Acceptable types of venting materials:</u> UL1738 / CAN S-636 Listed system [AL29-4C systems with sealed joints & drains required] Some plastics approved but be careful!</p>
NEGATIVE PRESSURE IN VENT	POSITIVE PRESSURE IN VENT

Saf-T Vent Advantages

- Directional Pipe (male/female).
- No exposed joints.
- Factory gaskets through 16" diameter.
- Stronger Pipe joints than most competitive systems.
- UL Listed for Positive, Negative, and Neutral pressures.
- 550-degree max temperature.
- Wide radius elbows, as well as Boot tees versus 90 tees, serve to reduce pressure drop.

Saf-T Vent EZ Seal

- UL Listed
- Single-wall pipe
- 3"-16" diameter
- Factory silicone gasket
- AL29-4C stainless material
- No pipe joint assembly tools required
- Ring & Tab lock ensures vent won't pull apart



Saf-T Vent CI Plus

- UL Listed
- Double wall pipe
- 1" air space
- (1" fiber insulation available)
 - Primarily for use on building exteriors and keeping flue gases as warm as possible



- 4"-32" diameter
- 4"-16" factory silicone gasket
- AL29-4C stainless inner wall
- 430 stainless outer wall
- EZ SEAL & CI PLUS are COMPATIBLE with use of adapter straps

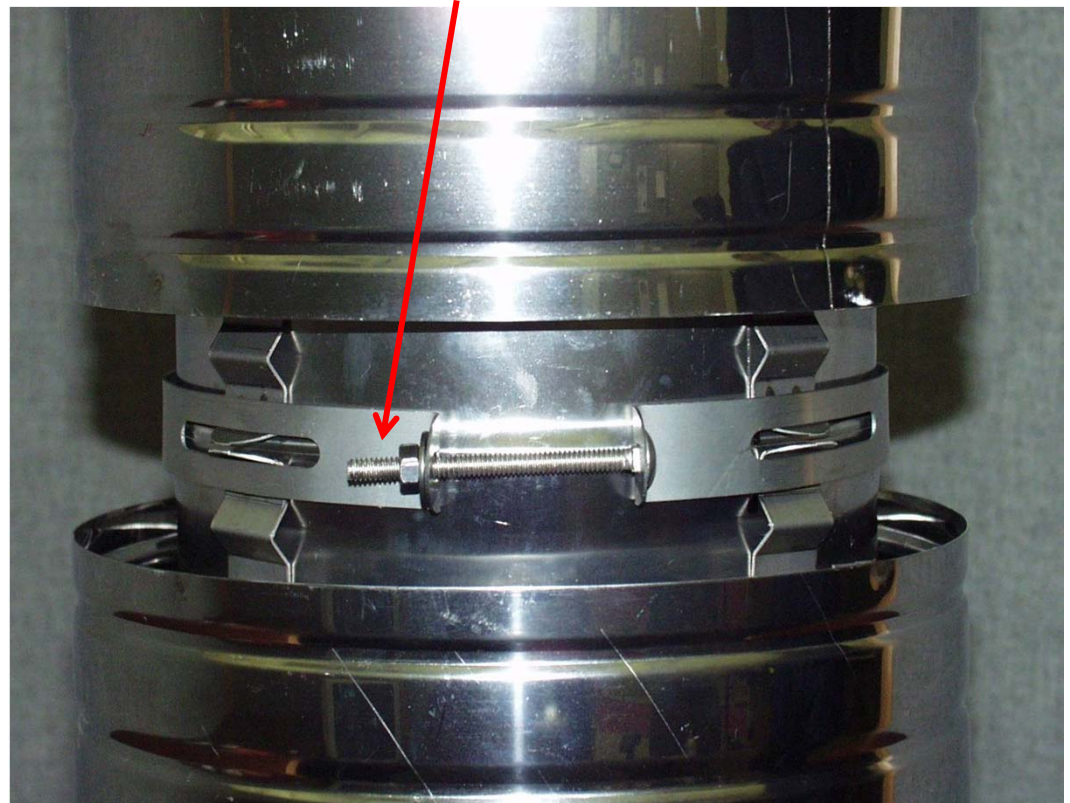
Saf-T Vent Connections

Saf-T Vent EZ Seal



Saf-T Vent CI Plus

Strong locking strap connection at inner wall

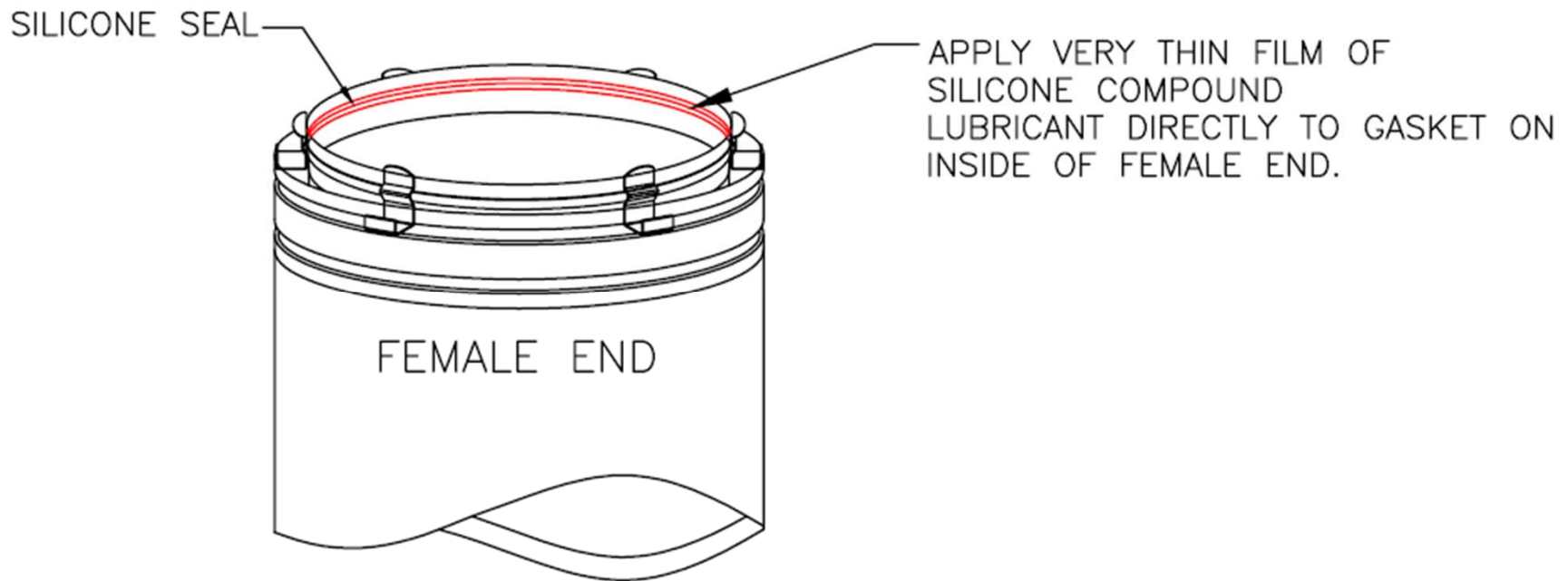




Install CI+ outer closure band over the outside diameter of the pipe, completing joint assembly.

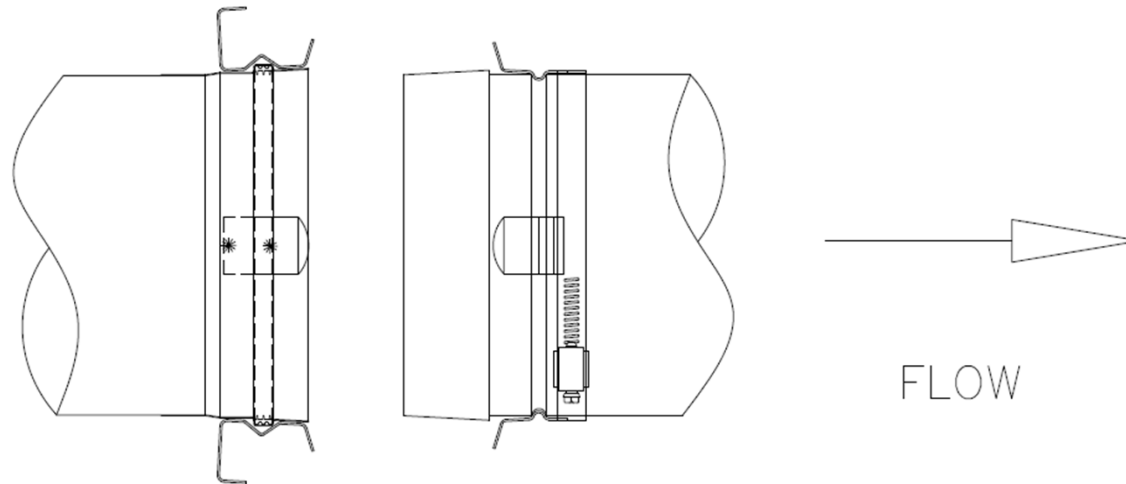
Saf-T Vent parts with factory gasket Order the lubricant (p/n 7001SIL-5)

Applies to EZ Seal as well as CI Plus
Di-electric grease aids in installation
and extends life of gasket



CI Plus Connection

- Factory gaskets on pipe eliminate the need for sealant (4"-16")
- Minimum 1.5" pipe overlap
- Pipe overlap protects the joint & gasket against acidic condensate
- Provides easier installation

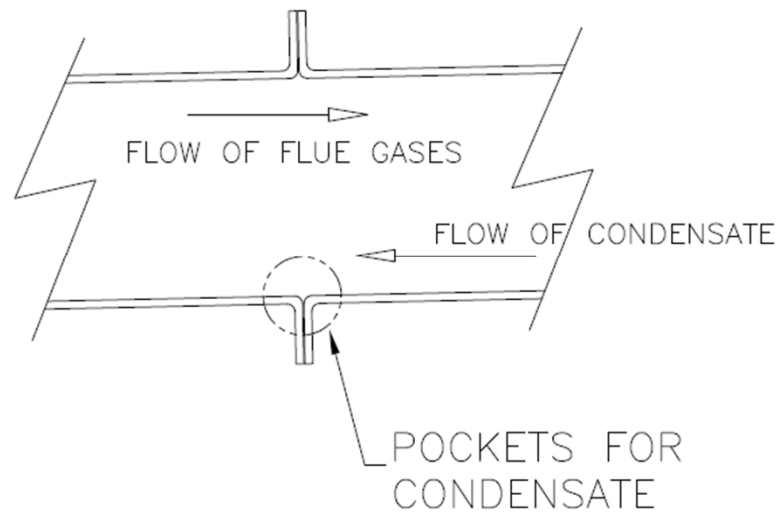


Common Double Wall Vent Connections

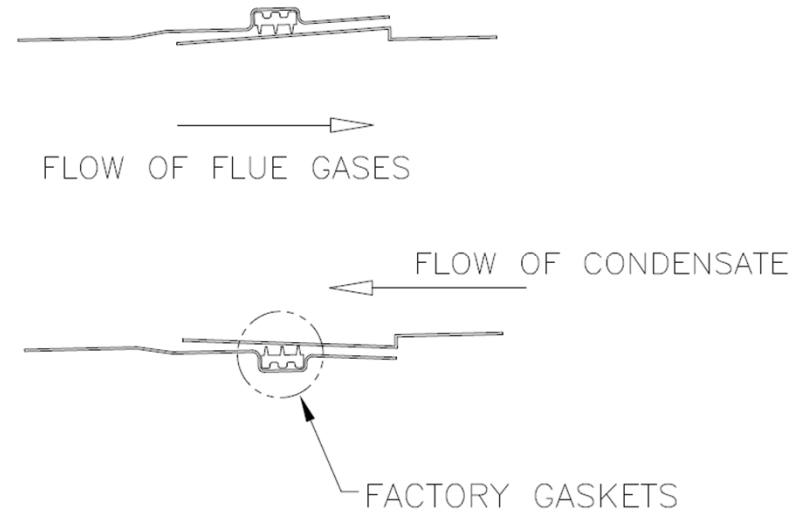
- Heatfab CI Plus offers the convenience of pre-gasketed slip fit with the benefit of a **strong** mechanical connection at the inner wall
- Flanged ends brought together by inner wall V-band
 - The same as pressure stack for mid-efficiency boilers, engine exhaust, grease duct, etc, but not ideal for acidic condensate on high efficiency appliances
 - Players: Schebler, Van Packer, Metal-Fab
- Pre-gasketed connection clamped together only at outer wall
 - External hose clamp, snap fit, locking clasp
 - Does not have the same integrity on the seal as an inner wall connection
 - Players: Protech/Duravent, Security, Z-Flex/Z-Vent

Flanged vs. Tapered Overlap Joint (Heatfab)

Competitors



Heatfab



RTV silicone sealant is required for every pipe joint, but becomes exposed to acidic condensate as it flows into the mating flanged area, therefore beginning the erosion of sealant.

Material Thickness

Inner Vent Diameter	Wall Thickness – Inner Vent	Wall Thickness – Outer Jacket
4 – 8”	0.015” (28 ga)	0.024” (24 ga)
9 – 16”	0.020” (26 ga)	
18 – 24”	0.025” (24 ga)	
24 – 32”	0.035” (20 ga)	0.030” (22 ga)

Aesthetically pleasing



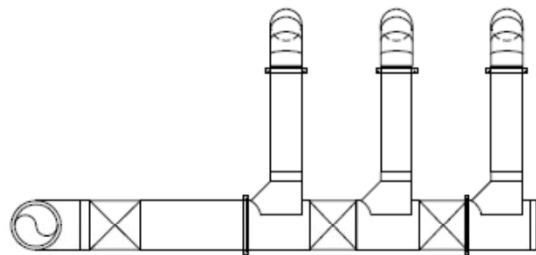
Effective Condensate Drainage

- Lower flue gas temperatures mean excessive condensate.
- Proper drainage is crucial.
- Always follow the installation instructions to ensure proper drainage takes place.
- Make sure to pitch properly back towards the appliance. Minimum of ¼” per foot.

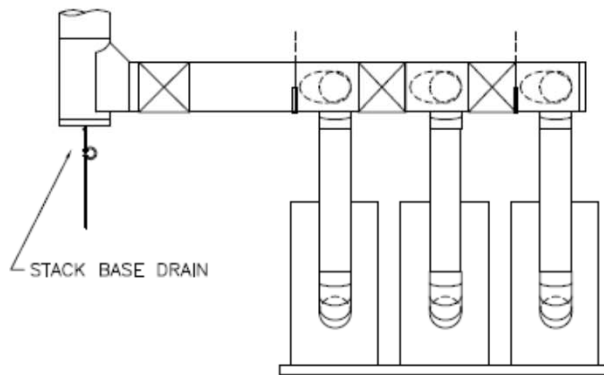
WISDOM

Drain Locations

INCORRECT

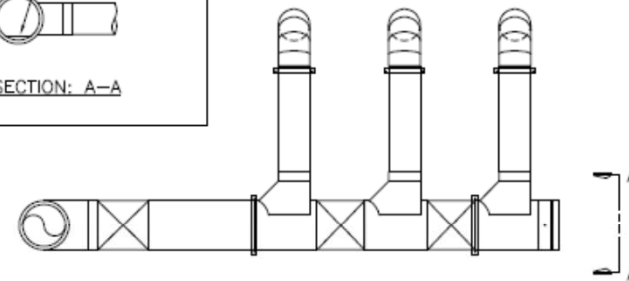
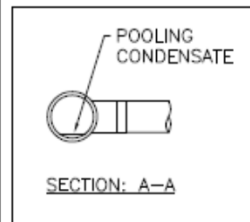


PLAN VIEW

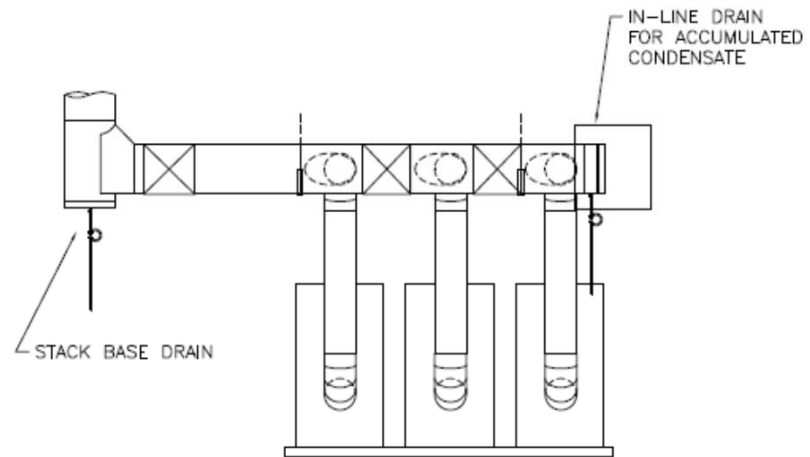


ELEVATION VIEW

CORRECT



PLAN VIEW

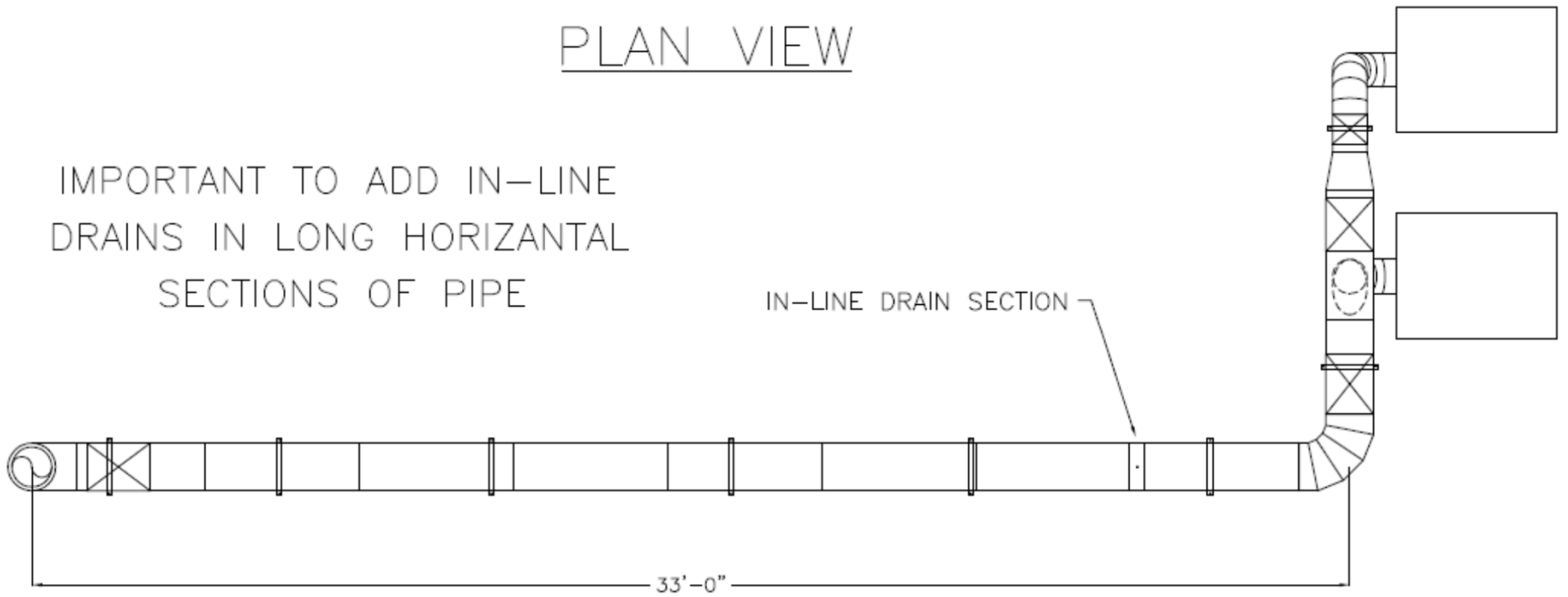


ELEVATION VIEW

PLAN VIEW

IMPORTANT TO ADD IN-LINE
DRAINS IN LONG HORIZONTAL
SECTIONS OF PIPE

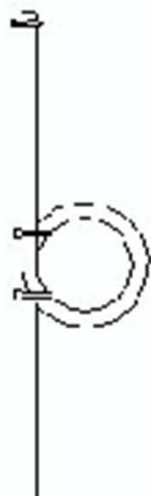
IN-LINE DRAIN SECTION



Condensate Drains:

When An Internal Condensate Drain Is NOT Part of the Appliance:

- A Saf-T Vent CI Plus In-Line Drain Section or Boot Tee with a separate Drain Tee Cover is strongly recommended. Install this drain fitting as close to the appliance flue collar as possible.
- A condensate drain is required for every 30 feet of horizontal vent and at/near the bottom of a vertical stack.
- Use the In-Line Drain Section for a straight horizontal run. Rotate the fitting so that the drain tube is as vertical as possible.
- Use the Boot Tee at a transition from horizontal to vertical, and attach the Drain Tee Cover to the appropriate leg of the tee.
- A Condensate Drain Tube Kit is available to direct the condensate to an appropriate location, i.e. floor drain or vented sanitary sewer connection. A trap loop must be formed into the drain hose and must be a diameter that is at least four times the appliance's rated stack pressure in inches of water column or 3 inches, whichever is greater. Secure the loop with a cable tie. Prior to final assembly the trap loop must be 'primed' by pouring a small quantity of water into the drain hose.
- Follow all local and national codes and regulations for the draining of acidic condensate.
- In cold climates do not install a condensate drain on the exterior of the building. Doing so may result in dangerous icy conditions on surfaces near the drain and may cause damage to the vent system and/ or the building exterior. Selkirk Corporation will **NOT** be held liable for any injury or property damage due to formation of ice.



Appliance Friendly

- A wide range of appliance adapters.
- Adapters have been specifically designed to transition from the appliance to our Saf-T vent pipe.
- Heatfab offers a 40-page appliance adapter book to help you find the right pipe connection to suit your needs.
- Constant work in progress:
 - We continually develop appliance adapters to meet the needs that new appliances create.

Keys For Success

- Become familiar with the installation instructions. This document will answer many of your questions.
- Follow factory schematic/dwg provided by engineering
- Use the Heatfab website www.heatfab.com which has many breakout installation instructions for specific components.
- Ensure you have the appliance adapter chart. Heatfab is very adapter specific.
- Follow the flow direction arrows on the pipe when installing.
- Ensure project allows for clean combustion air thru appliance

Stainless Steel VS. PVC/CPVC

Topic	UL 1738 Stainless Steel	PVC/CPVC
Performance and Safety	<ul style="list-style-type: none"> • Large overall Factor of Safety • No thermal expansion issues • Not susceptible to environmental stress cracking • Long history of proven reliable performance • Superior strength, no loss of structural integrity • Designed for positive pressure 	<ul style="list-style-type: none"> • Minimal overall Factor of Safety • No provision for thermal expansion (2-3 times greater expansion rate than stainless steel) • Susceptible to environmental stress cracking (aging and embrittlement process results in leakage potential) • Cracking and/or failure of solvent welds may cause leakage • Possible degradation from UV light exposure • Toxic odors if severely overheated
Temperature Limitations and Concerns	<ul style="list-style-type: none"> • Maximum normal use temperature of 600°F but can withstand much higher temperatures 	<ul style="list-style-type: none"> • Flue gas temperatures may cause PVC & CPVC to reach their "Heat Deflection Temperature" (HDT) limits: approximately 149°F (PVC) and 194°F (CPVC) • Plastics begin to soften/lose strength when HDT is exceeded. Some boilers/water heaters barely qualify to use PVC/CPVC, yet are known to produce higher flue temperatures as they age, resulting in HDT's being exceeded & possible product failure, including stress cracking.
Available Technical Support	<ul style="list-style-type: none"> • Extensive technical support available from the manufacturer 	<ul style="list-style-type: none"> • Little or no technical support available (for use as a vent system)
Installation	<ul style="list-style-type: none"> • Fast, safe and easy product installation • Complete instructions provided • Laser welded seams and factory installed gaskets 	<ul style="list-style-type: none"> • Field preparation required (cutting, cleaning, priming, solvent welds and curing) • PVC/CPVC manufacturers do not provide installation instructions for flue gas venting applications
Codes /Test/Standards	<ul style="list-style-type: none"> • UL 1738 tested, listed and labeled for the application • Meets all code requirements (including fire codes) 	<ul style="list-style-type: none"> • Not listed to UL 1738 for gas appliance venting • Performance concerns with through penetrations (firestop locations) • Defined as a combustible and has no flame/smoke rating • Must be fire wrapped within a plenum space (adds material/labor costs)
Application Versatility	<ul style="list-style-type: none"> • Wide range of applications • Long term proven performance with Cat II, III, & IV appliances 	<ul style="list-style-type: none"> • Limited applications due to temperature limitations • No double wall option • Not designed or endorsed by PVC/CPVC pipe manufacturers for venting flue gases
"Green" Contributions	<ul style="list-style-type: none"> • Recycleable and made from recycled steel 	<ul style="list-style-type: none"> • Possibility of chloride leaching and long term leakage • PVC, when utilized in inappropriate applications, can be very damaging to the environment and human health
Warranty	<ul style="list-style-type: none"> • Factory Warranty 	<ul style="list-style-type: none"> • No Warranty

Plus 2 independent articles (Plumbing Engineer) expressing concern about PVC located in our Saf-T Vent website. www.heatfab.com

Mitsubishi

Thank You For Your Time

heatfab®