

InnoFlue®

... The *Intelligent* Alternative

Polypropylene Vent Systems



**UL-1738
Listed!**

InnoFlue® is the **FIRST**
ULC-S636 & UL-1738
listed polymeric vent
system in North
America!

FLUE GAS VENTING SYSTEMS

Single Wall Residential & Commercial, Flexible,
and Concentric Polypropylene

Category II & IV Special Gas Vent • Gas Vent BH, Class IIC

Single Wall (SW) Residential

Applications: InnoFlue® Single Wall Residential is for use with ANSI Category II and IV gas burning appliances, including tankless and direct vent water heaters, high-efficiency water heaters, condensing boilers and 90+ furnaces. InnoFlue® Single Wall Residential vent systems can be used with natural gas, propane and oil fueled appliances with maximum flue gas temperatures of 230°F / 110°C.

Materials and Construction: InnoFlue® Single Wall Residential is constructed with flame resistant polypropylene. Gasketed sockets are integrated into each fitting and vent length, eliminating the need for primers, glues and couplers. Gasketed connections allow for rapid installation and adjustability. Industry leading corrosion resistant Peroxide Cross Linked EPDM Gaskets comes standard in every vent length and fitting. Viton Gaskets are available upon request.

Diameters: 2" (60mm), 3" (80mm), 4" (110mm) & 5" (125mm)



Single Wall (SW) Commercial

Applications: InnoFlue® Single Wall Commercial a vent system for use with ANSI Category II and IV gas burning appliances, including tankless and direct vent water heaters, high-efficiency water heaters, condensing boilers and 90+ furnaces. InnoFlue® Single Wall Commercial vent systems can be used with natural gas, propane and oil fueled appliances with maximum flue gas temperatures of 230°F / 110°C.

Materials and Construction: InnoFlue® Single Wall Commercial is constructed with flame resistant polypropylene. Gasketed sockets are integrated into each fitting and vent length, eliminating the need for primers, glues and couplers. Gasketed connections allow for rapid installation and adjustability. Industry leading corrosion resistant Peroxide Cross Linked EPDM Gaskets come standard in every vent length and fitting. Viton Gaskets are available upon request.

Diameters: 6" (160mm), 8" (200mm), 10" (250mm) & 12" (315mm)

Flex

Applications: InnoFlue® Flex is for use with ANSI Category II and IV gas burning appliances, including tankless and direct vent water heaters, high-efficiency water heaters, condensing boilers and 90+ furnaces. InnoFlue® Flex vent systems can be used with natural gas, propane and oil fueled appliances with maximum flue gas temperatures of 230°F / 110°C.

InnoFlue® Flex is designed for use in a vertical orientation inside a chase. Acceptable chase construction includes masonry chimney, B-Vent and gypsum. InnoFlue® Flex is engineered to navigate offsets up to 45 degrees. Multiple offsets and liners are supported within a single chase.

Materials and Construction: InnoFlue® Flex is constructed of flexible corrugated flame resistant polypropylene.

2" diameter Flex uses snap fit couplers to transition from InnoFlue® Single Wall Residential at the base of a chase. 3" and 4" diameters have integrated InnoFlue® Single Wall sections spaced every 2 to 3 feet allowing the InnoFlue® Flex to plug directly into an InnoFlue® Base Support.

Diameters: 2" (60mm), 3" (80mm), 4" (110mm)



Concentric



Applications: InnoFlue® Concentric is a highly engineered vent system allowing for the movement of combustion air and combustion exhaust through a single vent system. InnoFlue® Concentric is engineered for use with ANSI Category II and IV gas burning appliances, including tankless and direct vent water heaters, high-efficiency water heaters, condensing boilers and 90+ furnaces. InnoFlue® Concentric vent systems can be used with natural gas, propane and oil fueled appliances with maximum flue gas temperatures of 230°F / 110°C. The vent system can be integrated with InnoFlue® Single Wall and Flex where applicable.

Materials and Construction: InnoFlue® Concentric inner is constructed of Centrotherm's industry leading flame resistant polypropylene. Our InnoFlue® Concentric outer is constructed of best in class laser welded metal outers with cast fittings. All metal components receive our proprietary self sealing coating that provides a durable finish providing best in class quality and aesthetics.

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

FEATURES & BENEFITS

Made of Polypropylene

- Higher operating temperature than CPVC
- 100% recyclable LEED compliant material
- Superior performance in cold weather conditions
- Zero clearance to combustibles reduces foot print
- Improved resistance to caustic condensates making it suitable for gas, propane and oil fired appliances
- Eliminates leaching of chlorides
- Environmentally friendly manufacturing processes
- Non-toxic smoke/fumes when burned

Internal Directional Gasket

- EPDM gaskets have superior resistance to condensates over silicone gaskets
- Eliminates V.O.C. containing primers & glues
- Faster installation
- System adjustability
- Tighter seal rated at 20" water column

Thin Wall

- Light weight eliminates installation fatigue
- Easier to cut and handle

Quality Workmanship

- Tighter male to female relationship for consistently tight fit up
- Smoother inner wall for better draft characteristics
- UL-1738 and ULC-S636 listed
- Comprehensive list of approved appliance manufacturers
- Warranty - InnoFlue® comes with an unprecedented 10 year limited manufacturer's warranty.

Snap on Connector Ring

- Rapid installation
- Allows for post installation adjustability
- Patented design reduces complexity and cost

Terminations



Low Profile Termination



Sidewall Twin Pipe/ Roof Twin Pipe with UV Stabilizing Fittings



Universal B-Vent Cap



Concentric Wall Termination



Concentric Roof Termination



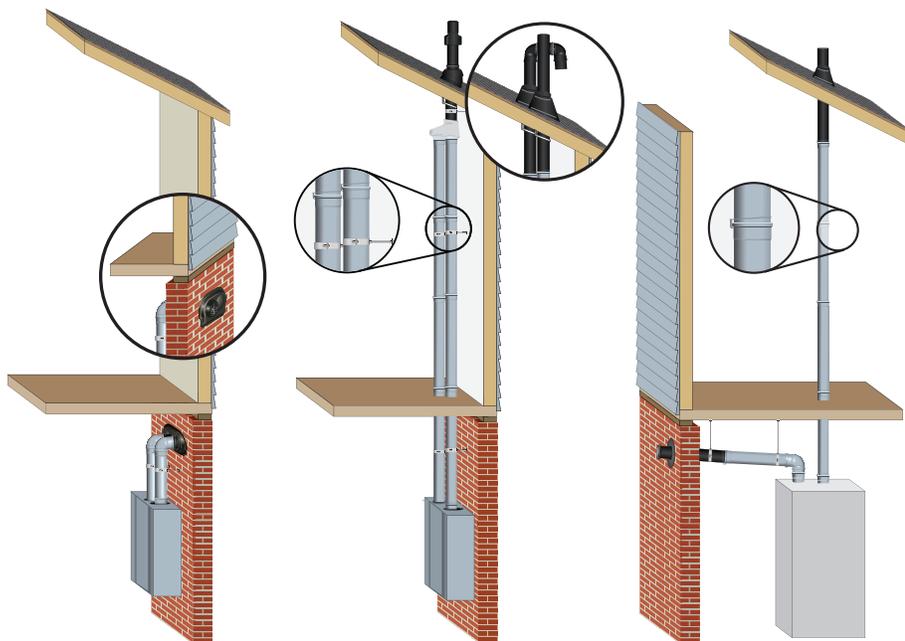
Chimney Covers, PPs-UV Black & Stainless Steel

SOLUTIONS

Direct Vent Systems

The most common method of venting, Direct Vent Systems utilize fresh air drawn from outside of the structure to support combustion.

Single Wall Direct Vent Systems can exit through the roof or a wall and is available with numerous termination options.



FEATURES & BENEFITS

Made of Polypropylene

- Higher operating temperature than CPVC
- Extruded 6' effective lengths reduce the number of joints
- 100% recyclable LEED compliant material
- Superior performance in cold weather conditions
- Zero clearance to combustibles reduces required foot print of vent system
- Improved resistance to caustic condensates
- Eliminates leaching of chlorides
- Environmentally friendly manufacturing processes
- Non-toxic smoke/fumes when burned

Internal Directional Gaskets

- EPDM gaskets have superior resistance to condensates over silicone gaskets
- Eliminates V.O.C. containing primers & glues
- Faster installation
- System adjustability
- Tighter seal rated at 20" water column
- Gaskets hold over 100 pound-force (.45kN)

Thin Wall

- Light weight eliminates installation fatigue
- Easier to cut and handle

Quality Workmanship

- Tighter male to female relationship for consistently tight fit up
- Smoother inner wall for better draft characteristics
- UL-1738 and ULC-S636 listed
- Comprehensive list of approved appliance manufacturers
- Warranty - InnoFlue® comes with an unprecedented 10 year limited manufacturer's warranty

Engineered for Venting

- Technical support on system layouts and sizing
- OEM support for cascade and common vent systems
- Drip free appliance adaptors manufactured to OEM specifications
- Custom parts are efficiently made to order
- Single wall and cascade vent systems supported up to 12" (315mm) diameters

SOLUTIONS

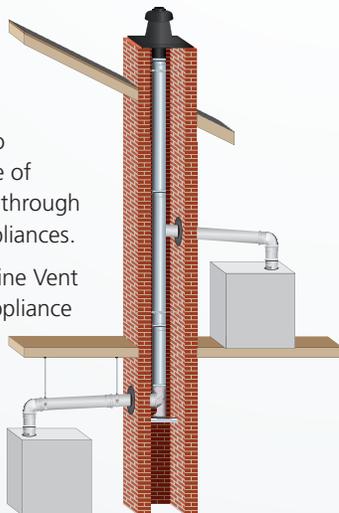
Centrotherm's InnoFlue® is proud to offer the largest selection of polypropylene based Single Wall, Common Line and Cascade Vent System components in North America. With diameters up to 12" (315mm), InnoFlue® can support heating appliances up to 5 million BTUs.

Common Line Vent Systems

Utilized in multi-unit residential and commercial buildings, Common Line Vent Systems have multiple appliances sharing a single vent. In addition to the benefits of decreased labor and increased usable space, Common Venting reduces the number of wall and roof penetrations required.

Non-Return Valves may be required to prevent the escape of combustion gases through non-operating appliances.

Use of Common Line Vent Systems require appliance manufacturer approval.

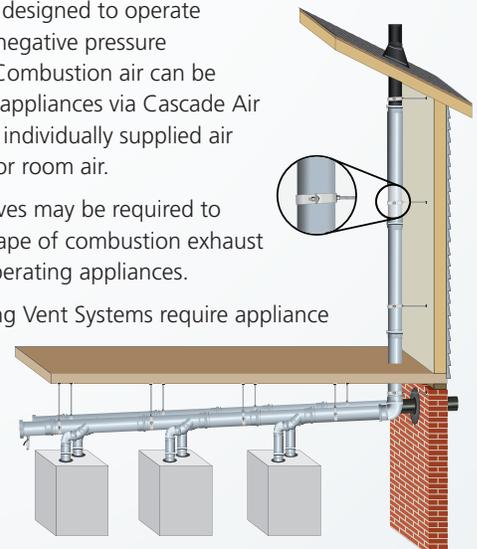


Cascading Vent Systems

Designed for use in large residences, multi-unit residential and commercial applications, Cascading Vent Systems allow 2 or more appliances to operate in parallel. Reducing overall energy usage by modulating with demand, Cascading Vent Systems can be designed to operate in positive and negative pressure environments. Combustion air can be supplied to the appliances via Cascade Air Intake Systems, individually supplied air intake systems or room air.

Non-Return Valves may be required to prevent the escape of combustion exhaust through non-operating appliances.

Use of Cascading Vent Systems require appliance manufacturer approval.



... FEATURES & BENEFITS

Made of corrugated polypropylene

- Higher operating temperatures than CPVC
- 100% recyclable LEED compliant material
- Zero clearance to combustibles reduces required chase size
- Improved resistance to caustic condensates
- Eliminates leaching of chlorides
- Environmentally friendly manufacturing processes
- Non-toxic smoke/fumes when burned

Flexible

- Navigates offsets up to 45° eliminating the need to break open chases
- Continuous lengths up to 150'

Thin Wall

- Light weight allows for easy handling and transportation
- Easier to navigate offsets
- Allows for the fastest possible installation

Quality Workmanship

- Single wall constructions allows for the most flexible vent line on the market
- Comprehensive list of approved appliance manufacturers
- Warranty - InnoFlue® comes with an unprecedented 10 year limited manufacturer's warranty

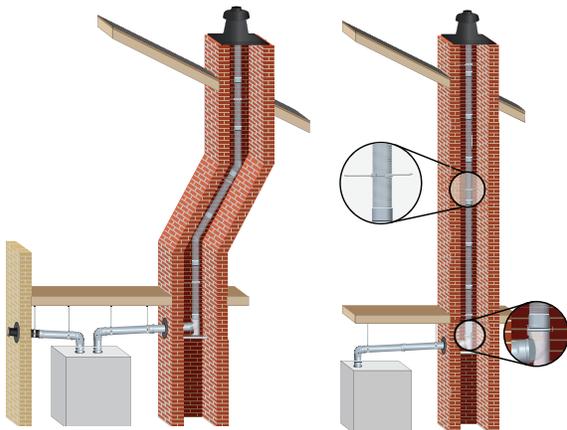
Engineered for Venting

- Engineered for efficient installation within:
 - Masonry chimneys*
 - Gypsum chases*
 - B-Vent or L-Vent*
- Can be installed from bottom or top of chase
- Advanced technology allows for easy transitioning between single wall and flex
- Custom caps available for single and multiple exhausts within any style chase

... SOLUTIONS

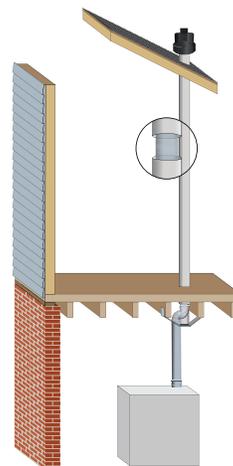
Masonry Chimney

When changing a low efficiency heating appliance to a high efficiency unit, InnoFlue® Flex can be used to re-line an existing masonry chimney. Use a Base Support at the bottom of the chase where it exits the masonry chimney and transition to InnoFlue® Single Wall Residential.



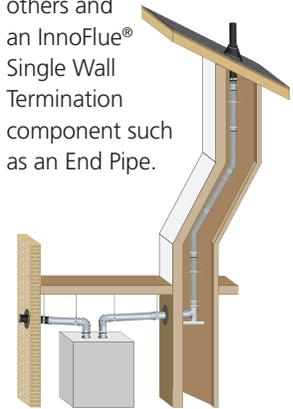
B-Vent or L-Vent

When changing a low efficiency heating appliance to a high efficiency unit, InnoFlue® Flex can be used to re-line an existing B-Vent. Support InnoFlue® Flex at the floor joists where it exits the B-Vent and transition to InnoFlue® Single Wall Residential.



Gypsum Chase

Use a new or existing gypsum chase in conjunction with InnoFlue® Flex. Install a Base Support at the bottom and transition to InnoFlue® Single Wall. At the top, use a Flex to Single Wall Coupler to transition to InnoFlue® Single Wall. Terminate with a roof flashing by others and an InnoFlue® Single Wall Termination component such as an End Pipe.



Terminations



FEATURES & BENEFITS

Polypropylene & Metal Construction

- Laser welded vent lengths and fittings are airtight eliminating leakage experienced by inferior crimped construction
- Casted elbows and adaptors provide increased impact resistance
- Powder coated exterior creates a beautiful aesthetic, making it suitable for installation in high traffic areas
- Polypropylene interior is highly corrosion resistant, making it suitable for gas, propane and oil fired appliances
- UL-1738 and ULC-S636 certified for sustained flue gases up to 230°F (110°C)
- 100% recyclable LEED compliant material
- Zero clearance to combustibles

Internal Gaskets

- Eliminate V.O.C. containing primers & glues
- Faster installation
- System adjustability
- Immediate use of appliance upon installation
- Industry leading gaskets rated at 20" water column

Concentric Design

- Single component provides air intake and exhaust reducing installation time
- Single penetration through roof or wall

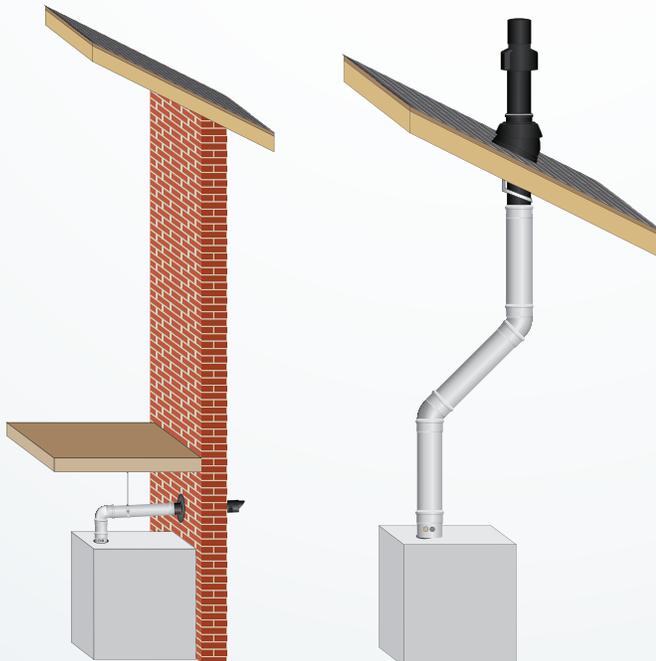
Quality Workmanship

- Smoother inner wall for better draft characteristics
- Comprehensive list of approved appliance manufacturers
- Warranty - InnoFlue® comes with an unprecedented 10 year limited manufacturer's warranty

SOLUTIONS

Side Wall & Vertical

Concentric design for use in areas where the venting is visible, powder coated welded outers create a durable aesthetically pleasing installation on direct vented appliances.



Terminations



Concentric Wall Termination



Concentric Roof Termination

				Single Wall (SW) Residential		
PROPERTY	STANDARD	RESULTS		PROPERTY	STANDARD	RESULTS
Materials & Construction				Performance		
Low Temperature Handling	UL-1738	Pass at -4°F (-20°C)		Maximum Flue Gas Temp.	UL-1738 & ULC-S636 CE EN-14471	230°F (110°C) 248°F (120°C)
U.V. Stability	ASTM G23-81	Pass		Clearance to Combustibles	UL-1738 & ULC-S636	0 at 230°F (110°C)
Water Absorption	UL-1738	.22%		Leakage	UL-1738	Pass
Diameters	CE EN-14471	2" (60mm), 3" (80mm), 4" (110mm), 5" (125mm)		Pressure	UL-1738	12.5 kPa
Wall Thickness	Internal	Min Thickness	Max Thickness	Pull	UL-1738 & ULC-S636	Min. 101 lb force (.45kn) with Connector Rings
2" (60mm)		.0591" (1.5mm)	.1063" (2.7mm)	Flame & Smoke with recommended wrap	UL-723, ASTM E-84 and ULC-S102	<25 / <50 with recommended wrap
3" (80mm)		.0591" (1.5mm)	.1063" (2.7mm)			
4" (110mm)		.0787" (2.0mm)	.1299" (3.3mm)			
5" (125mm)		.0984" (2.5mm)	.1457" (3.7mm)	Fire Rating w/ recommended passive fire protection system	ASTM E-814, UL 1479 or ULC S115	2hr with recommended passive fire protection system
Deflection Temperature Under Load	ASTM D648-86	302°F (150°C)				
Flammability	UL-94	V-0				

				Single Wall (SW) Commercial		
PROPERTY	STANDARD	RESULTS		PROPERTY	STANDARD	RESULTS
Materials & Construction				Performance		
Low Temperature Handling	UL-1738	Pass at -4°F (-20°C)		Maximum Flue Gas Temp.	UL-1738 & ULC-S636 CE EN-14471	230°F (110°C) 248°F (120°C)
U.V. Stability	ASTM G23-81	Pass		Clearance to Combustibles	UL-1738 & ULC-S636	0 at 230°F (110°C)
Water Absorption	UL-1738	.22%		Leakage	UL-1738	Pass
Diameters	CE EN-14471	6" (160mm), 8" (200mm), 10" (250mm), 12" (315mm)		Pressure	UL-1738	12.5 kPa
Wall Thickness	Internal	Min Thickness	Max Thickness	Pull	UL-1738 & ULC-S636	Min. 101 lb force (.45kn)
6" (160mm)		.1024" (2.6mm)	.1772" (4.5mm)	Flame & Smoke with recommended wrap	UL-723, ASTM E-84 and ULC-S102	<25 / <50 with recommended wrap
8" (200mm)		.1024" (2.6mm)	.1969" (5.0mm)			
10" (250mm)		.1024" (2.6mm)	.1969" (5.0mm)			
12" (315mm)		.1181" (3.0mm)	.2362" (6.0mm)	Fire Rating w/ recommended passive fire protection system	ASTM E-814, UL 1479 or ULC S115	2hr with recommended passive fire protection system
Deflection Temperature Under Load	ASTM D648-86	302°F (150°C)				
Flammability	UL-94	V-0				

				Flex		
PROPERTY	STANDARD	RESULTS		PROPERTY	STANDARD	RESULTS
Materials & Construction				Performance		
U.V. Stability	ASTM G23-81	Pass		Maximum Flue Gas Temp.	UL-1738 & ULC-S636 CE EN-14471	230°F (110°C) 248°F (120°C)
Water Absorption	UL-1738	.22%		Clearance to Combustibles	UL-1738 & ULC-S636	0 at 230°F (110°C)
Diameters	CE EN-14471	2" (60mm), 3" (80mm), 4" (110mm)		Leakage	UL-1738	Pass
Deflection Temperature Under Load	ASTM D648-86	302°F (150°C)		Pressure	UL-1738	12.5 kPa
Flammability	UL-94	V-0		Pull	UL-1738 & ULC-S636	Min. 101 lb force (.45kn)

				Concentric		
PROPERTY	STANDARD	RESULTS		PROPERTY	STANDARD	RESULTS
Materials & Construction				Materials & Construction		
Low Temperature Handling	UL-1738	Pass at -4°F (-20°C)		Water Absorption	UL-1738	.22%
U.V. Stability	ASTM G23-81	Pass		Deflection Temperature Under Load	ASTM D648-86	302°F (150°C)
Diameters	CE EN-14471	2" / 4" (60/100mm), 3" / 5" (80/125mm), 4" / 6" (110/160mm)		Flammability	UL-94	V-0
PP Wall Thickness	Internal	Min Thickness	Max Thickness	Performance		
2" (60mm)		.0591" (1.5mm)	.1063" (2.7mm)	Maximum Flue Gas Temp.	UL-1738 & ULC-S636 CE EN-14471	230°F (110°C) 248°F (120°C)
3" (80mm)		.0591" (1.5mm)	.1063" (2.7mm)	Clearance to Combustibles	UL-1738 & ULC-S636	0 at 230°F (110°C)
4" (110mm)		.0787" (2.0mm)	.1299" (3.3mm)	Leakage	UL-1738	Pass
Metal Wall Thickness	Internal	Min Thickness		Pressure	UL-1738	12.5 kPa
4" (100mm)		.075" (1.9mm)		Pull	UL-1738 & ULC-S636	Min. 101 lb force (.45kn) with included screws
5" (125mm)		.075" (1.9mm)				
6" (160mm)		.075" (1.9mm)				

LISTINGS:

- UL-1738 - InnoFlue® is the only polymeric vent system listed to UL-1738, the safety standard for category II, & IV, flue gas venting. Listed for use with sustained flue gas temperatures to 230°F (110°C).
- UL-S636 - InnoFlue® is listed to ULC-S636 Type BH Class II C, making it suitable for use where Type BH Class II A, B or C venting is specified in Canada. Listed for use with sustained flue gas temperatures to 230°F (110°C)
- Massachusetts Plumbers Board - Approval code C1-0710-415





Centrotherm Eco Systems
Albany, New York



Centrotherm Systemtechnik GmbH
Brilon, Germany

... About Centrotherm

For nearly twenty years, the Centrotherm group of companies has manufactured the most comprehensive line of polypropylene flue gas systems in the industry including single wall, flexible and concentric vent solutions. In addition to our extensive range of standard vent products, Centrotherm is a full service manufacturer of appliance components for original equipment manufacturers. As the industry leader, Centrotherm is experienced in providing design services, prototyping, testing, and logistics management to its diverse sales channels.

Team up any high efficiency gas or oil fired appliance with InnoFlue,[®] the superior performing, environmentally sustainable vent system that has established a solid track record of nearly two decades of field service.

Centrotherm is a Centrotec Sustainable AG Company, a publicly traded diversified manufacturer of sustainable industrial products.

For more information on Centrotec, visit www.centrotec.com



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