# Flue Gas Venting Systems



System 636®

#### **SYSTEM 636®**

- Fully Certified to ULC S636
- System 636® PVC is rated for flue gas temperatures up to and including 65°C

FLUE GAS VENTING SYSTEMS

• System 636® CPVC is rated for flue gas temperatures up to and including 90°C

IPEX

We build tough products for tough environments®

# The Certified System for FLUE GAS VENTING



#### TWO CERTIFIED SOLUTIONS

We offer System 636® in two distinct materials, each with a unique temperature rating. These venting systems are approved as Type BH vents and are designed for negative or positive pressure venting of gas-fired appliances.

#### SYSTEM 636 PVC

System 636 PVC is classified as Type BH Class IIA vent, suitable for use on appliances with flue gas temperatures up to and including 65°C (149°F). Sizes include 1-1/2", 2", 2-1/2", 3" and 4". Coloured white with unique blue certification markings, System 636 PVC pipe is made to sturdy Sch. 40 dimensions to provide a strong, rigid pipe for the application. A full range of System 636 PVC vent fittings and accessories are also offered.

#### SYSTEM 636 CPVC

1/2", 3", 4", 6" and 8". Coloured grey, System 636 CPVC pipe is also made to Sch. 40 dimensions to be tough enough for the application's demands.

#### SYSTEM 636 CEMENTS & PRIMERS

System 636 PVC & CPVC solvent cements are specifically formulated and certified for flue gas venting applications. We also offer a PVC & CPVC Primer for applications where the gas venting system is to be installed in temperatures below 0°C (32°F). A certified Transition Cement is available for connections to ABS appliance connectors.



Only IPEX offers System 636, a complete, fully certified, system of pipe, fittings, termination kits, and cements engineered and manufactured to IPEX's strict quality, performance and dimensional standards.

System 636 PVC and CPVC includes a full range of fitting configurations commonly found in gas venting application for appliances having exhaust temperatures up to and including 90°C (CPVC). IPEX publishes a certifier-approved System 636 Installation Guide to assist installers on critical aspects of installation such as

hanger spacing, expansion/contraction, termination options and solvent cement assembly. The booklet may be obtained from IPEX or may be viewed online at www.ipexamerica.com/system636.



Unparalleled sales support, technical assistance and field training are all readily available from IPEX Sales
Professionals across North America.

System 636 is backed by IPEX – Canada's leading plastic pipe system supplier.

Visit www.ipexamerica.com/system636 for further details.





#### MATERIAL DESCRIPTION

#### PVC (POLYVINYL CHLORIDE)

System 636 PVC carries a ULC S636 Class IIA certification and is certified for use up to and including 65°C (149°F).

Ensure the proper System 636 PVC Cement and Primer is to be used for installation.

#### CPVC (CHLORINATED POLYVINYL CHLORIDE)

System 636 CPVC carries a ULC S636 Class IIB certification and is certified for use up to and including 90°C (194°F).

Ensure the proper System 636 CPVC Cement and Primer is to be used for installation.

#### MATERIAL IDENTIFICATION

Material type and/or temperature rating is included in the pipe print line as well as on the mandatory orange and black warning label applied to each fitting. All certified IPEX System 636 products carry a Warnock Hersey mark.

Warning labels on pipe and fittings are required by ULC S636 and clearly distinguish a certified gas venting system from every day, non-certified plumbing pipe. Look for the orange and black label and the mark of a recognized certification agency as assurance the system being used is certified.

#### SPECIAL NOTES

System 636 Pipe, Fittings and Cements are certified as a system and must be installed as such. Different manufacturers have different materials, joining systems and adhesives. Do NOT mix pipe, fittings, solvents, or joining methods from different BH Vent manufacturers, this can result in unsafe conditions.

Exchanging components from various manufacturers violates the conditions of certification in the ULC S636 standard and would void the IPEX product warranty.

IPEX ABS plumbing pipe and fittings do not meet ULC S636 requirements and must not be installed for flue gas venting.

When retrofitting existing water heaters, furnaces or boilers, do not connect System 636 certified vent systems to existing, non-certified appliance vent materials. Replace the entire venting system with listed product to ensure compliance.

Before connecting any piping system to an appliance, ensure the manufacturers' installation instructions are followed, especially with respect to vent material selection.

# **MARNING**



NEVER use compressed air or gas in PVC/CPVC pipe and fittings. NEVER test PVC/CPVC pipe and fittings with compressed air or gas, or air-over-water boosters.

Use of compressed air or gas in PVC/CPVC pipe and fittings can result in explosive failures and cause severe injury or death.

#### TERMINATION KITS

#### CONCENTRIC VENT KITS

System 636 Concentric Vent Kits (CVK), are available in a variety of lengths and come in 2", 3" and 4" diameters. These "pipe-in-pipe" kits allow for both exhaust and intake pipes to penetrate the roof or side wall through only one hole. The concentric vent kits are now certified with mechanically fastened rain caps. When installed with the included stainless steel screw/nut, the rain cap can be easily removed for cleaning or maintenance. Vent screens and



round face plates for side wall terminations are also available.

- Screw/bolt assembly for mechanically fastening the cap yet allowing future removal for cleaning or maintenance
- Socket end to the vent pipe portion of the cap which allows attachment of additional pipe and fittings to extend the vent pipe further away from the CVK if required
- The 45° wye component of our CVK is more compact than other available models and thus structurally stronger and more resistant to cracking due to bending stresses during installation
- Allows complete system installation with components from a single manufacturer
- Concentric Vent Kits can be field modified, providing compliance with BOTH the appliance manufacturers' and IPEX's guidelines

#### WALL TERMINATION KITS

For a traditional vent style, IPEX's PVC Wall Termination Vent Kits are available in convenient 2", 2-1/2" and 3" sizes. These PVC kits require only two small wall penetrations for intake and exhaust. Kits include a white finishing plate with a self sealing foam back that can be screwed to the exterior wall. Vent screens not included.



#### LOW PROFILE TERMINATION KITS (PVC)

These kits offer a lower profile alternative to the typical two pipe side wall termination kit. They include integrally molded vent screens, and the design neatly disguises both the intake and exhaust. Each kit is molded with a ULC S636 certified beige PVC compound.



#### **ACCESSORIES**

#### **VENT SCREENS**

IPEX also offers 2", 3", 4", 6" and 8" vent screens (plastic or stainless steel) to prevent debris and rodents from entering and plugging the venting system. These non-certified vent screens can be friction fit into any IPEX termination kit.



#### **ACCESS TEES**

The Access Tee allows an inline point for flue monitoring using fully certified System 636 components. The tee is available in PVC and CPVC.



- May be installed in new installations or added to existing lines when monitoring is required
- May be used on vent lines in diameters (1-1/2" 4")
- Certified for use only on IPEX System 636 flue gas vent lines
- Molded tee design with IPEX System 636 removable 1/2" MPT plug
- More compact and robust design

#### **ROUND FACE PLATES**

These round face plates are the perfect accessory for single wall penetrations like the Concentric Vent



Kits (note the face plate must be one nominal size larger than the nominal size of the CV Kit). The plates may also be helpful in instances where two pipes are too far apart to use a two hole termination kit. The face plates help cover unsightly bore holes created during the pipe installation.

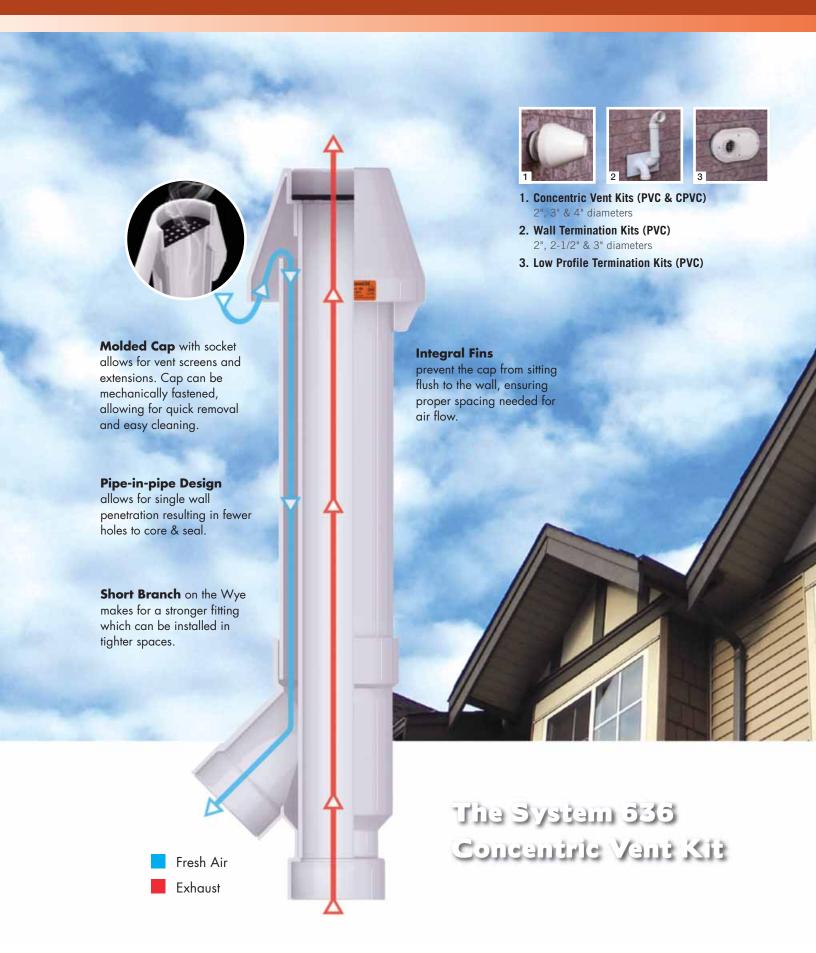
They are available in both white and gray to match the certified vent pipe, and each plate includes a self sealing foam back.

#### **RECTANGULAR 2 HOLE FACE PLATES**

These white PVC finishing plates are available in 3 sizes and include a self sealing foam back. They are perfect for side wall applications that require terminations that the Side Wall Kits cannot accommodate. The face



plates can be used with PVC or CPVC venting as they do not contact the flue gas, and can be painted to suit the application.



#### PRODUCT SELECTION CHART

		Dime	nsion	Produc	st.	<u> </u>	Dime	Dimension
		inches	mm	Code			inches	
GAS VENT PIPE Pla	in end (10 ft le	engths)			•	FGV 45° LONG ELBOW H x SP	FGV 45° LONG ELBOW H x SP	FGV 45° LONG ELBOW H x SP
	,	1-1/2	40	194003		- Dua	2	2 50
		2	50	194000		PVC	PVC 3	PVC 3 75
00	PVC	2-1/2	65	194004				
		3	75	194001				
		4	100	194002		FGV 90° ELBOW H x H	FGV 90° ELBOW H x H	FGV 90° ELBOW H x H
		1-1/2	40	198003			2	2 50
		2	50	198001		PVC	PVC 2-1/2	PVC 2-1/2 65
	CPVC	2-1/2	65	198004			3	3 75
-00		3	75	198000			2	
		4	100	198002		CPVC	CPVC 3	CPVC 3 75
	CPVC	6	150	198005			4	
	LG DIA.	8	200	198006		CPVC	CPVC 6	
						LG DIA.	0. 10	
FGV 22-1/2° ELBO	WHxH					50V 00° LONG 51B0VVII . II	FOU OOS LONIO FIRONALI. III	FOV 00% LONG FINOWALL
	PVC	2	50	196252		FGV 90° LONG ELBOW H x H		
							1-1/2	
						PVC	PVC 2	PVC
							3	
FGV 45° ELBOW H	хH						4	
		1-1/2	40	196241		OPM	2	
		2	50	196242		CPVC		
	PVC	2-1/2	65	196487			4	
		3	75	196243		CPVC LG DIA.	10 014	10.714
_		4	100	196244		EG 511.1.	LG DIA. 8	LG DIA. 8 200
		2	50	197169				
	CPVC	3	75	197171		FGV 90° EXTRA LONG ELBOW	FGV 90° EXTRA LONG ELBOW H x H	FGV 90° EXTRA LONG ELBOW H x H
		4	100	197172			2	2 50
	CPVC	6	150	197173		PVC	PVC 3	PVC
	LG DIA.	8	200	197174				
FGV 45° LONG ELE	BOW H x H					FGV 90° STREET ELBOW SP x F	FGV 90° STREET ELBOW SP x H	FGV 90° STREET ELBOW SP x H
		2	50	196010			2	2 50
	DVC					// // DVC	PVC	PVC
	PVC	3	75	196011		/ ( ( ( ) )	3	<b>/</b> ( <b>( ( )</b> ) 3 75

PVC Note: For use with gas fired appliances producing flue gases  $65^{\circ}$ C (149°F) or less. CPVC Note: For use with gas fired appliances producing flue gases  $90^{\circ}$ C (194°F) or less.



		Dime	ension	Product
		inches	mm	Code
FGV TEE H x H x H				
		2	50	197486
d h	CPVC	3	75	197488
		4	100	197489
	CPVC	6	150	197490
	LG DIA.	8	200	197491
FGV SANITARY TEE I	H x H x H			
		1-1/2	40	196081
		2	50	196082
	PVC	2-1/2	65	196781
		3	75	196083
		4	100	196084
FGV REDUCER TEE H	H x H x H	2 x 1-1/2	50 x 40	196056
	PVC	2 x 1-1/2 3 x 1-1/2	75 x 40	196056
		3 x 2	75 x 50	196822
		4 x 2	100 x 50	196828
		3 x 2	75 x 50	197502
	CPVC	4 x 2	100 x 50	197504
	CPVC	6 x 6 x 4	150x150x100	197506
	LG DIA.	8 x 8 x 6	200x200x150	197567
FGV ACCESS TEE H	x H x FPT			
		1-1/2	40	196510
	PVC	2	50	196511
	1 10	3	75	196512
		4	100	196513
		1-1/2	40	197510
	CPVC	2	50	197511
	01 10	3	75	197512
		4	100	197513

		Dimension		Product
		inches	mm	Code
FGV COUPLING H x	Н			
		1-1/2	40	196452
		2	50	196352
	PVC	2-1/2	65	196454
		3	75	196353
		4	100	196354
		2	50	197026
	CPVC	3	75	197027
		4	100	197023
	CPVC	6	150	197141
	LG DIA.	8	200	197142

#### FGV DEEP SOCKET COUPLING $H \times H$ PVC 2-1/2 CPVC

FGV INCREASER COUPLING H x H					
		2 x 1-1/2	50 x 40	196362	
	PVC	3 x 2	75 x 50	196364	
	rvc	4 x 2	100 x 50	196365	
		4 x 3	100 x 75	196366	
	CPVC	3 x 2	75 x 50	197470	
		4 x 2	100 x 50	197472	

FGV REDUCER BUSHING SP x H					
PVC		1-1/2 x 1/2	40 x 15	196653	
		2 x 1-1/2	50 x 40	196282	
	DVO	2-1/2 x 1-1/2	65 x 40	196666	
	PVC	2-1/2 x 2	65 x 50	196667	
		3 x 2	75 x 50	196284	
		3 x 2-1/2	75 x 65	196673	

#### PRODUCT SELECTION CHART

		Dimer inches	nsion mm	Product Code
FGV REDUCER BUSHI	ng sp x h	IOSE BARB		
	PVC	1-1/2 x 1/2	40 x 15	196278
	CPVC	1-1/2 x 1/2	40 x 15	197278

#### FGV HEX HEAD REDUCER BUSHING SP x H



PVC	3 x 2	75 x 50	196672
	2 x 1/2	50 x 15	197385
	2 x 3/4	50 x 20	197386
CPVC	2 x 1-1/2	50 x 40	197389
CFVC	3 x 2	75 x 50	197394
	3 x 2-1/2	75 x 65	197395
	4 x 2	100 x 50	197396
CPVC	6 x 4	150 x 100	197400
LG DIA.	8 x 6	200 x 150	197401

#### FGV FEMALE THREAD ADAPTER H x FPT



PVC	2	50	196564
CPVC	2	50	197224

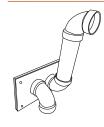
#### FGV CONDENSATE DRAIN ASSEMBLY SP $\times$ FPT



CPVC	4 x 1/2	100 x 15	197002
LG DIA.	6 x 1/2	150 x 15	197003

		Dime	ension	Product
		inches	mm	Code
FGV CONCENTRIC V	ENT KIT			
		2 x 16	50 x 400	196005
		2 x 28	50 x 700	196105
-		2 x 40	50 x 1000	196125
1	PVC	3 x 20	75 x 500	196006
Length		3 x 32	75 x 800	196106
		3 x 44	75 x 1100	196116
		4 x 36	100 x 900	196021
		2 x 16	50 x 400	197040
		2 x 28	50 x 700	197033
	CPVC	3 x 20	75 x 500	197009
	CFVC	3 x 32	75 x 800	197107
		3 x 44	75 x 1100	197117
		4 x 36	100 x 900	197021
		Vent Screen n	not included	

#### FGV PVC WALL TERMINATION KIT



2	50	081216
2-1/2	65	081218
3	75	081219
Vent Screen no	t included	

#### FGV PVC LOW PROFILE TERMINATION KIT (Beige)



2	50	196984
3	75	196985
4	100	196986

#### FACEPLATE - ROUND (w/ self sealing foam back)



	•	•	
	2	50	196063
	3	75	196064
С	4	100	196055
C	2 grey	50	197053
	3 grey	75	197054
	4 grey	100	197055

grey matches CPVC

PVC Note: For use with gas fired appliances producing flue gases  $65^{\circ}$ C (149°F) or less. CPVC Note: For use with gas fired appliances producing flue gases  $90^{\circ}$ C (194°F) or less.



Dimension		Product	
inches	mm	Code	

#### FACEPLATE - RECTANGULAR (white w/ self sealing foam back)



2	50	196216
2-1/2	65	196218
3	75	196219

#### TERMINATION VENT SCREENS



* 2	50	196050
* 3	75	196051
* 4	100	196052
† 6	150	196090
t 8	200	196091

Vent screens are not ULC S636 Certified. Friction fit vent screens inside termination fitting bells to prevent debris & rodents from entering vent.

\* Polyethylene

+ Stainless Steel

#### DEBURRING TOOL (DEB 4)



1-1/2 to 4 pipe	40 to 100 pipe	196246

To ensure quality solvent cement connections, deburr all pipe ends prior to cementing. For guidance on deburring 6" & 8" (150mm & 200mm) pipe, contact IPEX.

#### CUTTER



1-1/2 to 3	40 to 75	196247

 Volume imperial
 Product Code

 PVC CEMENT
 1 pint
 473
 196040

 1 quart
 946
 196041

 Low VOC
 1 pint
 473
 196041

#### **CPVC CEMENT**



1 pint	473	196046
1 quart	946	196047
1 gallon	3785	196015
Low VOC also certified for t	C	

#### TRANSITION CEMENT



1 pint	473	196044
for transitions to A	ABS only	

#### PVC / CPVC PRIMER



1 pint (purple)	473 (purple)	196042
1 pint (clear)	473 (clear)	196017
1 quart (purple)	946 (purple)	196043

#### Low VOC

- Primer shall be used when installing System 636® PVC or CPVC products at temperatures below 0°C (32°F).
- Primer is always required on 6" & 8" CPVC.
- Primer is required in some jurisdictions regardless of temperature, verify with your local Authority Having Jurisdiction.

Note: Use only System 636 cements and primers. Substituting other cements and primers will void certification and warranty.

All pint and quart cans supplied with dauber (applicator) for use up to 4".

#### Swab



gallon 3785 074456

For pipe diameters 6" and larger fits 196015 can.

# FLAME SPREAD & SMOKE DEVELOPMENT RATINGS

Both System 636 PVC and CPVC pipe exhibit a Flame Spread Rating of 10, while CPVC pipe has the added feature of a Smoke Developed Classification of 50. These properties are listed as per the ULC S102.2 test standard.

#### SYSTEM 636 PVC MAY BE USED IN:

Noncombustible buildings, as detailed in clause
 3.1.5.16 of the National Building Code (NBC)

#### SYSTEM 636 CPVC MAY BE USED IN:

- Noncombustible buildings, as detailed in clause
   3.1.5.16 of the National Building Code (NBC)
- Air plenums, as per NBC article 3.6.4.3.(1)
- Buildings deemed to be high-rise, as per NBC article 3.2.6.

# ULC S636 STANDARD – PLASTIC VENT PIPE FOR GAS FIRED APPLIANCE

IPEX recommends the use of certified thermoplastics for flue gas venting and offers a fully certified system in both PVC and CPVC, System 636.

Reasons for the implementation of the ULC S636 standard

- Appliance standards do not address the flue gas venting system and its acceptability for the application.
- Prior to 2007, uncertified flue gas piping failures forced the adoption and enforcement of a national standard for flue gas venting.
- Beyond the testing involved in the certification process the standard goes an important step further to ensure safety. ULC S636 stipulates that no mixing of components from different manufactures can occur in the venting system. This would include pipe, fittings, cements and terminations.
- ❖ The no mixing clause ensures quality and compatibility.
- Several appliance manufactures specify certain approved materials for venting in their installation manuals. The ULC S636 standard ensures that these materials meet the testing and specifications, creating a safer flue gas venting system.
- ULC S636 has been enforced nationwide in Canada since 2007.

#### Enforcing the ULC S636 Standard will ensure:

- · Pipe, fittings, and cements compatibility
- Proper use of materials and product for the application
- Long life of the venting system
- Single source liability
- Single source product support

## ADDITIONAL PRODUCTS

#### Xirtec 140° PVC – Corzan° CPVC

1/2" - 24" (12mm - 600mm) XIRTEC 140®: PVC Schedule 40 & 80 pipe and fittings systems. CORZAN®: CPVC Schedule 80 pipe and fittings systems cell classification 24448 & 23447





PROCESS PIPING **SYSTEMS** 



1/2" - 4" (12mm - 100mm)

High-purity polypropylene pipe, valves and fittings with a socket fusion joining system.







#### Enfield™

1-1/2" - 12" (40mm - 300mm)

Electrofusion acid waste system consists of Polypropylene Schedule 40 & 80 IPS pipe and fittings.







# **ACID WASTE SYSTEMS**

#### **Labline®**

1-1/2" - 4" (40mm - 100mm)

Mechanical joint acid waste system in polypropylene Schedule 40 & 80 IPS pipe (flame-retardant and non-flameretardant) and fittings.





#### Plenumline™

1-1/2" - 4" (40mm - 100mm)

Flame-retardant PVDF mechanical joint acid waste system made for return air plenum high-temperature corrosive plenum high-temperatur. - chemical waste applications.







# THERMOPLASTIC VALVES

#### Thermoplastic Valves

1/2" - 12" (12mm - 300mm)

IPEX offers a variety of manual & actuated valves in PVC, CPVC, PP, PVDF and ABS.





# ADDITIONAL PRODUCTS

#### Guardian™

Carrier: 1/2" – 12" (15mm – 300mm)
Containment: 2" – 18" (50mm – 450mm)
Vinyl double containment and leak
detection system in tough industrial
grade PVC and high temperature
CPVC.



#### Encase™

1-1/2" - 12" (40mm - 300mm)

Polypropylene double containment system for corrosive waste drainage onsisting of an electrofusion fitting with a heavy-gauge resistance wire molded into the socket.





#### PAL-AT Cable Leak Detection

A microprocessor based system for continuous leak detection.



# DOUBLE CONTAINMENT SYSTEMS



1/2" - 8" (12mm - 200mm)

Fully pressure rated clear containment PVC system with Guardian's patented Centra-Lok fitting design.



#### **CustomGuard®**

Carrier: 1/2" – 20" (15mm – 500mm)
Containment: 2" – 26" (50mm – 660mm)
Custom designed and fabricated double containment systems for similar &

dissimilar materials.



#### Drain-Guard™

Carrier: 1-1/2" - 12" (40mm - 300mm) Containment: 4" - 16" (100mm - 400mm)

(Larger sizes available upon request)

A complete double containment drainage system – enabling improved safety and reliability in Drain, Waste and Vent (DWV) applications.





**COMPRESSED AIR** 

#### Centra-Guard™

Patented electronic low point leak detection system for above ground and below grade piping systems.

#### **Duratec® Airline**

3/8" – 1" (10mm – 25mm) Composite pipe and fittings for conveying compressed air and inert gases.





# Duraplus™ Airline

1/2" – 8" (15mm – 200mm)

A high-impact, ductile ABS pressurized piping system for conveying compressed air and inert gases.



# SPECIALTY PRODUCTS

#### **Ventilation Duct**

PVC 6" – 24" (150mm – 600mm) CPVC 6" – 16" (150mm – 400mm) Seamless PVC & CPVC ventilation duct systems for corrosive fume handling applications





#### **Grooved PVC Pipe**

2" – 24" (50mm – 600mm) Schedule 40, SDR 26 and SDR 21 factory-grooved PVC pipe.







NOTES:		

#### SALES AND CUSTOMER SERVICE

Call IPEX USA LLC. Toll Free: (800) 463-9572

www.ipexamerica.com

#### About the IPEX Group of Companies

As leading suppliers of thermoplastic piping systems, the IPEX Group of Companies provides our customers with some of the world's largest and most comprehensive product lines. All IPEX products are backed by more than 50 years of experience. With state-of-the-art manufacturing facilities and distribution centers across North America, we have established a reputation for product innovation, quality, end-user focus and performance.

Markets served by IPEX group products are:

- Electrical systems
- · Telecommunications and utility piping systems
- Industrial process piping systems
- · Municipal pressure and gravity piping systems
- Plumbing and mechanical piping systems
- PE Electrofusion systems for gas and water
- · Industrial, plumbing and electrical cements
- Irrigation systems
- PVC, CPVC, PP, PVCO, ABS, PEX, FR-PVDF, NFRPP, FRPP, HDPE, PVDF and PE pipe and fittings (1/4" to 48")

Product is manufactured by IPEX Inc. and distributed in the United States by IPEX USA LLC.

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This literature is published in good faith and is believed to be reliable. However, it does not represent and/or warrant in any manner the information and suggestions contained in this brochure. Data presented is the result of laboratory tests and field experience.

A policy of ongoing product improvement is maintained. This may result in modifications of features and/or specifications without notice.

