

Product Certification



This is to certify that all Plastic Pipe and Fittings manufactured by Charlotte Pipe and Foundry Company are manufactured in the United States and conform to the following standards:

PVC SCH. 40 SOLID WALL PIPE

ASTM D 1784, ASTM D 1785, ASTM D 2665
FHA UM 79a
FEDERAL SPECIFICATION L-P-320a
NSF STANDARD 14 AND 61

PVC SCH. 40 DWV CELLULAR CORE PIPE

ASTM D 4396, ASTM F 891
NSF STANDARD NO. 14

PVC SCH. 40 DWV FITTINGS

ASTM D 1784, ASTM D 2665, ASTM D 3311,
ASTM F1866
FHA UM 79a
FEDERAL SPECIFICATION L-P-320a
NSF STANDARD NO. 14

PVC SDR-21 AND SDR-26 PRESSURE PIPE

ASTM D 1784, ASTM D 2241
NSF STANDARD NO. 14 AND 61

PVC SCH. 40 PRESSURE FITTINGS

ASTM D 1784, ASTM D 2466
NSF STANDARD 14 AND 61

PVC SCH. 40 WELL CASING PIPE

ASTM D 1784, ASTM F 480
NSF STANDARD NO. 14 AND 61

PVC SCH. 80 PIPE

ASTM D 1784, ASTM D 1785
NSF STANDARD NO. 14 AND 61

PVC SCH. 80 FITTINGS

ASTM D 1784, ASTM D 2467
ASTM D 2464 ASTM F 1970
NSF STANDARD NO. 14 AND 61

PVC SDR 35 SEWER MAIN PIPE

ASTM D 1784, ASTM D 3034, SDR 35
ASTM D 3212, ASTM F 477

PVC SEWER AND DRAIN PIPE

ASTM D 1784, ASTM D 2729

PVC THIN WALL PIPE & FITTINGS

ASTM D 1784, ASTM D 2949
NSF STANDARD NO. 14

CPVC FLOWGUARD GOLD® CTS PIPE & FITTINGS

ASTM D 1784, ASTM D 2846
FHA UM-61a
NSF STANDARD NO. 14 AND 61
CSA LISTED ON SPECIFIED ITEMS

CPVC CHEMDRAIN® SCH. 40 PIPE & FITTINGS

ASTM D 1784, ASTM F 2618
NSF STANDARD 14

ABS SCH. 40 DWV CELLULAR CORE PIPE

ASTM D 3965, ASTM F 628
NSF STANDARD NO. 14

ABS PLUS® SCH. 40 DWV CELLULAR CORE PIPE

ASTM D 3965, ASTM D 4396, ASTM F 1488

ABS SCH. 40 DWV FITTINGS

ASTM D 3965, ASTM D 2661, ASTM D 3311
FHA UM 79a
FEDERAL SPECIFICATION L-P-322b
NSF STANDARD NO. 14

CHARLOTTE PIPE AND FOUNDRY COMPANY

Product Certification

ChemDrain® CPVC chemical waste system is a complete system of pipe, fittings, solvent cement and accessories. Charlotte Pipe and Foundry CPVC pipe and fittings are listed for chemical waste systems by NSF International and bear the mark NSF-cw. For additional information log on to www.nsf.org.

Physical Properties of CPVC Material

PROPERTY	CPVC 4120	UNITS	STANDARD
Mechanical Properties			
Specific Gravity	1.55		ASTM D 792
Tensile Strength (73°F)	7,000	psi	ASTM D 638
Modulus of Elasticity in Tension (73°F)	360,000	psi	ASTM D 638
Flexural Strength (73°F)	15,100	psi	ASTM D 790
Izod Impact Cell Class 23447 (notched at 73°F) Min.	1.5 Fittings	ft lb/ in.	ASTM D 256
Hardness (Durometer D)	–		ASTM D 2240
Hardness (Rockwell R)	119		ASTM D 785
Compressive Strength (73°F)	10,100	psi	ASTM D 695
Hydrostatic Design Stress	2,000	psi	
Thermal Properties			
Heat Distortion Temperature at 264 psi Minimum	212°F (Cell Class 23447)	degrees F	ASTM D 648
Coefficient of Thermal Conductivity	.95	BTU/ hr/sq ft/ °F/ in.	ASTM C 177
Coefficient of Linear Expansion	3.4 x 10 ⁻⁵	in./ in./ °F	ASTM D 696
Specific Heat	0.34	BTU/lb°F	ASTM D 2766
Water Absorption (24 hrs at 73°F)	.03	% weight gain	ASTM D 570
Cell Classification	23447-Pipe and Fittings		ASTM D 1784
Flammability			
Limiting Oxygen Index	60%		ASTM D2883
Burning Rate	Self Extinguishing		ASTM D 635
Burning Class	V-0		UL 94
Flame & Smoke Rating¹			
	Flame Spread	0	CAN/ULC S 102.2
	Smoke Developed ²	8-22	
Solvent Cement	Heavy Body, Mustard Yellow Color		ASTM F 493

Above data is based upon information provided by the raw material manufacturers. It should be used only as a recommendation and not as a guarantee of performance.

¹ Based on test of physical product, as opposed to test of material only. Test was conducted on 1½" - 6" pipe.

² Results vary based on pipe diameter.

Pressure/Temperature Relationship

Maximum Operating Temperatures For Various Piping Systems (de-rate operating pressure at temperatures in excess of 73°F)

Piping System	Max. Operating Temp. °F
ABS	140
PVC	140
CPVC - FlowGuard Gold® CTS	180
CPVC - Corzan® Sch. 80	200
CPVC - ChemDrain®*	220

* See the ChemDrain Technical Manual for more information on this product.

NOTICE: The maximum recommended temperature and de-rating of working pressure applies to both heat generated from fluid being distributed through pipe system and heat generated from sources external to the pipe system.

Temperature De-Rating For Schedule 40 & 80 PVC & CPVC

The operating pressure of PVC and CPVC pipe will be reduced as the operating temperature increases above 73° F. To calculate this reduction, multiply the operating pressures shown on the previous pages by the correction factors shown below:

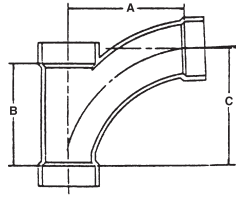
Operating Temperature (°F)	Correction Factors	
	PVC	CPVC
73	1.00	1.00
80	.88	1.00
90	.75	.91
100	.62	.82
110	.50	.77
120	.40	.65
130	.30	.62
140	.22	.50
150	NR	.47
160	NR	.40
170	NR	.32
180	NR	.25
200	NR	.20

For example, the operating pressure for 6" Schedule 80 PVC pipe is 280 psi. If the operating temperature is 140° F, the maximum operating pressure is now 62 psi (280 x .22).

PART NO. AW 501C

**Combination Wye and 1/8 Bend
(One Piece)
ALL HUB**

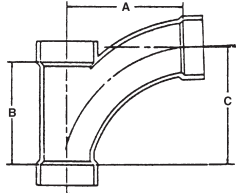
SIZE	A	B	C
1½	3 ⁵ / ₁₆	3½	3 ¹⁵ / ₁₆
2	5 ¹ / ₈	4 ⁷ / ₁₆	5 ¹ / ₈
3	7 ⁹ / ₁₆	6½	7 ⁹ / ₁₆
4	10	8½	10



PART NO. AW 502C

**Combination Wye and 1/8 Bend,
Reducing
(One Piece)
ALL HUB**

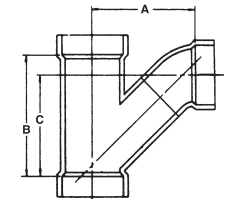
SIZE	A	B	C
2 x 2 x 1½	4 ³ / ₁₆	3½	3 ¹⁵ / ₁₆
3 x 3 x 1½	4¾	3½	3 ¹⁵ / ₁₆
3 x 3 x 2	5 ¹¹ / ₁₆	4 ⁷ / ₁₆	5 ¹ / ₈
4 x 4 x 2	6 ¹ / ₈	4½	5 ¹ / ₈
4 x 4 x 3	8 ¹ / ₁₆	6½	7 ⁹ / ₁₆



PART NO. AW 503C

**Combination Wye and 1/8 Bend
ALL HUB**

SIZE	A	B	C
6**	11 ¹⁵ / ₃₂	10 ⁵ / ₃₂	11 ⁹ / ₆₄
8**	14 ¹⁹ / ₃₂	14 ¹ / ₃₂	14 ²³ / ₃₂

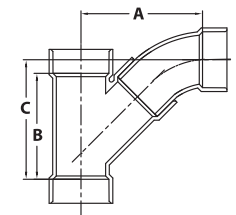


** Two pieces

PART NO. AW 504C

**Combination Wye and 1/8 Bend,
Reducing
ALL HUB**

SIZE	A	B	C
6 x 6 x 3**	9 ³ / ₈	7 ⁵ / ₆₄	7 ¹⁹ / ₃₂
6 x 6 x 4*	8 ¹⁵ / ₁₆	8 ⁵ / ₈	7 ¹³ / ₁₆



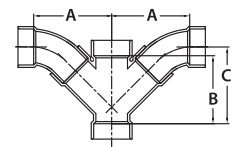
* One piece short pattern

** Two pieces

PART NO. AW 507C

**Double Combination Wye and 1/8 Bend
ALL HUB**

SIZE	A	B	C
2†	5 ¹⁷ / ₆₄	5 ³ / ₈	4 ²⁷ / ₆₄
2x2x1½x1½†	4 ⁵ / ₃₂	4 ⁷ / ₃₂	3 ⁶¹ / ₆₄
3†	6¼	7 ⁵ / ₈	6 ⁵ / ₁₆
3x3x2x2†	6 ⁵ / ₆₄	5 ⁵ / ₃₂	5 ¹¹ / ₆₄
4†	9 ¹³ / ₃₂	8 ³ / ₁₆	9 ⁵ / ₃₂
4x4x2x2†	7 ⁵ / ₁₆	5	6
4x4x3x3†	8 ¹⁹ / ₆₄	6 ⁹ / ₁₆	7 ¹⁹ / ₃₂

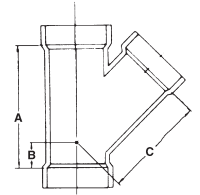


† Three pieces.

PART NO. AW 600C

**Wye
(45° Wye)
ALL HUB**

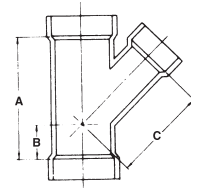
SIZE	A	B	C
1½	4	1 ¹ / ₈	2 ⁷ / ₈
2	5	1 ³ / ₈	3 ⁵ / ₈
3	6 ⁵ / ₈	1 ⁵ / ₈	5
4	8¼	1 ⁷ / ₈	6 ³ / ₈
6	10 ³ / ₁₆	1¾	8 ⁷ / ₁₆
8	14 ¹ / ₈	2 ³ / ₈	11¾



PART NO. AW 601C

**Wye, Reducing
(45° Wye)
ALL HUB**

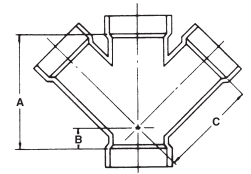
SIZE	A	B	C
2 x 2 x 1½	4½	1	3 ⁷ / ₁₆
3 x 3 x 1½	4¼	½	4 ⁵ / ₁₆
3 x 3 x 2	5	7 ⁷ / ₈	4 ⁵ / ₈
4 x 4 x 2	5 ¹ / ₁₆	¾	5 ⁹ / ₁₆
4 x 4 x 3	6 ⁵ / ₈	1 ¹ / ₁₆	6
6 x 6 x 4	6 ⁷ / ₈	¾	7½
8 x 8 x 4	10½	1	11 ⁹ / ₁₆
8 x 8 x 6	10½	1	9 ¹³ / ₁₆



PART NO. AW 611C

**Double Wye
(Double 45° Wye)
ALL HUB**

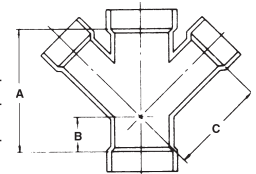
SIZE	A	B	C
1½	4	1 ¹ / ₈	2 ⁷ / ₈
2	5	1 ³ / ₈	3 ⁵ / ₈
3	6 ⁵ / ₈	1 ⁵ / ₈	5
4	8¼	1 ⁷ / ₈	6 ³ / ₈
6	10 ³ / ₁₆	1¾	8 ⁷ / ₁₆



PART NO. AW 612C

**Double Wye, Reducing
(Double 45° Wye)
ALL HUB**

SIZE	A	B	C
2 x 2 x 1½ x 1½	4 ³ / ₈	1 ¹ / ₁₆	3 ⁷ / ₁₆
3 x 3 x 2 x 2	5	7 ⁷ / ₈	4 ⁵ / ₈
4 x 4 x 3 x 3	6 ⁵ / ₈	1 ¹ / ₁₆	6



PART NO. AW 706XC

**P-Trap with Solvent Weld Joint
HUB X HUB**

SIZE	A	B	C
1½	4 ⁵ / ₈	3 ¹⁵ / ₁₆	1¾
2	6 ¹³ / ₁₆	4 ⁷ / ₈	2 ³ / ₈
3	8 ¹⁵ / ₁₆	6 ¹⁵ / ₁₆	3 ¹ / ₁₆
4	11 ¹ / ₁₆	8 ⁷ / ₁₆	3 ¹¹ / ₁₆

