CHARLOTTE
PIPE AND FOUNDRY COMPANY

You can't beat the system.®

Submittal Package

Edge HP IRON™ No-Hub System

(Updated April 16, 2025)

SUBMITTAL PACKAGE

Table of Contents for Edge HP Iron™ No-Hub Submittal Package

Page

SUBMITTAL FOR CHARLOTTE PIPE® EDGE HP IRON HUBLESS PIPE AND FITTINGS

Date: _____

Job Name: _____ Location: _____

Engineer: _____ Contractor: _____

Scope:

This specification covers Edge HP Iron Hubless pipe, fittings, and couplings used in sanitary drain, waste and vent (DWV), sewer, and storm drainage applications. This system is intended for use in non-pressure, aggressive DWV applications.

Specification:

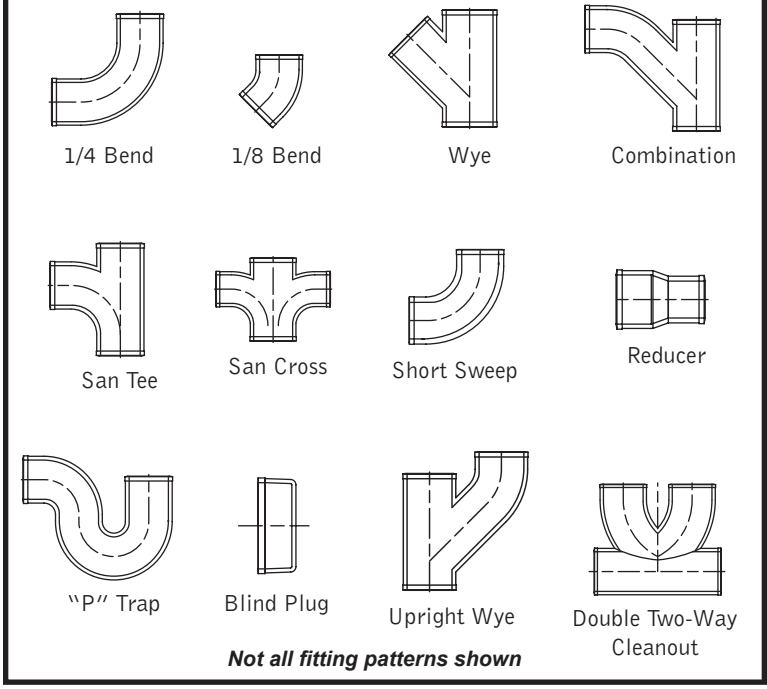
Edge HP Iron hubless pipe and fittings shall be marked with the collective trademark of the Cast Iron Soil Pipe Institute ® CISPI and listed by NSF® International. The inside of each pipe shall be reamed prior to coating to decrease the coefficient of friction. The pipe coating shall consist of chemically deposited zinc-phosphate pretreatment layer followed by an electrically deposited, high performance cathodic epoxy coating, and finally an electrically deposited, high performance anodic epoxy top coat. The fitting coating shall consist of a chemically deposited zinc-phosphate pretreatment layer followed by an electrically deposited, high performance cathodic epoxy coating, and finally an epoxy acrylic powder top coat.

Installation:

Installation shall comply with the latest installation instructions published by Charlotte Pipe and Foundry Company® and shall conform to all applicable plumbing, fire, and building code requirements. The system shall be hydrostatically tested after installation to 10 ft. of head (4.3 psi maximum). **WARNING!** Never test with or transport/store compressed air or gas in Cast Iron pipe or fittings. Doing so can result in explosive failures and cause severe injury or death.

Referenced Standards:

ASTM C 564:	Rubber Gaskets for Cast Iron Soil Pipe and Fittings
CISPI 301:	Hubless Cast Iron Soil Pipe and Fittings
CISPI 310:	Hubless Couplings for Cast Iron Soil Pipe and Fittings
ASTM C 1277:	Hubless Couplings
ASTM C 1540:	Hubless Medium Duty and Heavy Duty Couplings



Not all fitting patterns shown

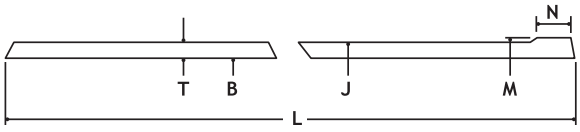


TABLE 1

DIMENSIONS AND TOLERANCES (IN INCHES) OF SPIGOTS AND BARRELS FOR NO-HUB PIPE AND FITTINGS

Size	Inside Barrel Diameter	Outside Diameter Barrel	Outside Diameter Spigot	Width Spigot Bead N	Thickness of Barrel		Gasket Positioning Lug
	B	J	M	(± .13)	T-Nom.	T-Min.	W
2	1.96 ± .09	2.35 ± .09	2.41 ± .09	.25	.16	.13	1.13
3	2.96 ± .09	3.35 ± .09	3.41 ± .09	.25	.16	.13	1.13
4	3.94 ± .09	4.38 + .09 − .05 − .05	4.44 ± .09	.31	.19	.15	1.13
6	5.94 ± .09	6.30 + .09 − .05	6.36 ± .09	.31	.19	.15	1.50
8	7.94 ± .13	8.38 ± .09	8.44 ± .09	.31	.23	.17	2.00
10	10.00 ± .13	10.56 ± .09	10.62 ± .09	.31	.28	.22	2.00
12	11.94 ± .09	12.50 ± .13	12.62 ± .13	.31	.28	.22	2.75
15	15.11 ± .09	15.83 ± .13	16.12 ± .13	.31	.36	.30	2.75

Note: *Charlotte Pipe does not recommend or warrant installations joined with unshielded hubless couplings.*

CHARLOTTE
PIPE AND FOUNDRY COMPANY®

CHARLOTTE® CAST IRON SOIL PIPE AND FITTINGS

SPECIFICATIONS

This is to certify that products manufactured by Charlotte Pipe and Foundry, Cast Iron Division, are manufactured in the United States and conform to the following standards:

EDGE HP NO-HUB (HUBLESS) PIPE AND FITTINGS

All cast iron soil pipe and fittings shall be marked with the collective trademark of the Cast Iron Soil Pipe Institute (CISPI).
CISPI Standard 301
ASTM A 888
Meets the performance requirements of EN 877
Listed by NSF® International to the UP Code
ISO 9001:2015 Certified
ICC-ES PMG-1082/1083

NO-HUB (HUBLESS) COUPLINGS

Cast Iron Soil Pipe Institute Standard No. 310
ASTM C 1277
Certified by NSF® International

NO-HUB (HUBLESS) HEAVY DUTY COUPLINGS

ASTM C 1540
Factory Mutual 1680

Charlotte Pipe products are manufactured to the applicable ASTM standard. Charlotte Pipe and Foundry cannot accept responsibility for the performance, dimensional accuracy, or compatibility of pipe, fittings, gaskets, or couplings not manufactured or sold by Charlotte Pipe and Foundry.

Reference Standards Cast Iron

AMERICAN SOCIETY FOR TESTING AND MATERIALS

ASTM	TITLE
A 888	SPECIFICATION FOR HUBLESS CAST IRON SOIL PIPE AND FITTINGS
SCOPE:	THIS SPECIFICATION COVERS CAST IRON PIPE AND FITTINGS USED IN SANITARY DRAIN, WASTE, AND VENT (DWV), SEWER AND STORM DRAINAGE APPLICATIONS. THIS SYSTEM IS INTENDED FOR USE IN NONPRESSURE APPLICATIONS.
C 564	SPECIFICATION FOR RUBBER GASKETS FOR CAST IRON SOIL PIPE AND FITTINGS
SCOPE:	THIS SPECIFICATION COVERS PREFORMED RUBBER GASKETS USED TO SEAL JOINTS IN CAST IRON SOIL PIPE AND FITTINGS.
C 1277	SPECIFICATION FOR COUPLING FOR USE IN CONNECTION WITH HUBLESS CAST IRON PIPE AND FITTINGS FOR SANITARY AND STORM DRAIN, WASTE, AND VENT PIPING APPLICATION (REGULAR HUBLESS COUPLING)
SCOPE:	THE PURPOSE OF THIS SPECIFICATION IS TO ESTABLISH CRITERIA FOR MATERIAL DIMENSIONS AND TOLERANCES FOR ONE TYPE OF COUPLING USED IN HUBLESS CAST IRON SOIL PIPE AND FITTING FOR SANITARY AND STORM DRAIN, WASTE AND VENT PIPING APPLICATIONS.
C 1540	SPECIFICATION FOR SHIELDED COUPLINGS JOINING HUBLESS CAST IRON SOIL PIPE AND FITTINGS (HEAVY DUTY COUPLINGS)
SCOPE:	THIS SPECIFICATION COVERS THE EVALUATION OF THE PERFORMANCE OF SHIELDED HUBLESS COUPLINGS TO JOIN CAST IRON SOIL PIPE AND FITTINGS.

CAST IRON SOIL PIPE INSTITUTE

CISPI	TITLE
301	SPECIFICATION FOR HUBLESS CAST IRON SOIL PIPE AND FITTINGS FOR SANITARY AND STORM DRAIN, WASTE, AND VENT PIPING APPLICATIONS
SCOPE:	THE PURPOSE OF THIS STANDARD IS TO ESTABLISH STANDARDS COVERING MATERIAL, DIMENSIONS, AND TOLERANCE FOR PIPE AND FITTINGS FOR HUBLESS CAST IRON SANITARY AND STORM DRAIN, SANITARY WASTE, AND VENT PIPING APPLICATIONS.
310	SPECIFICATION FOR COUPLING FOR USE IN CONNECTION WITH HUBLESS CAST IRON PIPE AND FITTINGS FOR SANITARY AND STORM DRAIN, WASTE, AND VENT PIPING APPLICATION (REGULAR HUBLESS COUPLING)
SCOPE:	THE PURPOSE OF THIS SPECIFICATION IS TO ESTABLISH CRITERIA FOR MATERIAL DIMENSIONS AND TOLERANCES FOR ONE TYPE OF COUPLING USED IN HUBLESS CAST IRON SOIL PIPE AND FITTING FOR SANITARY AND STORM DRAIN, WASTE AND VENT PIPING APPLICATIONS.

Gray Iron Physical Properties

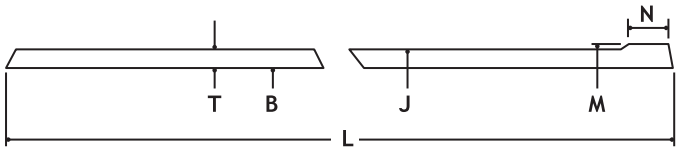
Tensile Strength	20,000 p.s.i. — 60,000 p.s.i. (21,000 p.s.i.)
Elastic Modulus (Young's modulus)	10 - 23 x 10^6 p.s.i.
Hardness (Brinell)	150 - 250 BHN
Thermal Conductivity	0.110 - 0.137 calories/cm^2/Sec/cm/ °C
Thermal Expansion	10 x 10^{-6} / °C 6 x 10^{-6} / °F
Density	0.25 - 0.28 lb./in^3 6.95 - 7.35 gm/cm^3
Specific Heat	0.13 BTU / lb / °F 0.13 cal / gm / °C

Composition of Gray Iron

The following are typical ranges of elements present in unalloyed gray cast iron normally produced in commercial practice:

Carbon (C)	2.60 - 3.85%
Silicon (Si)	1.25 - 2.90%
Manganese (Mn)	0.40 - 1.00%
Phosphorus (P)	0.02 - 0.90%
Sulfur (S)	0.04 - 0.20%

Hubless Edge HP IRON™



DIMENSIONS AND TOLERANCES (IN INCHES) OF SPIGOTS AND BARRELS FOR HUBLESS PIPE AND FITTINGS

Size	Inside Barrel Diameter	Outside Diameter Barrel	Outside Diameter Spigot	Width Spigot Bead N	Thickness of Barrel		Gasket Positioning Lug
	B	J	M	(± .13)	T-Nom.	T-Min.	W
2	1.96 ± .09	2.35 ± .09	2.41 ± .09	.25	.16	.13	1.13
3	2.96 ± .09	3.35 ± .09	3.41 ± .09	.25	.16	.13	1.13
4	3.94 ± .09	4.38 + .09 − .05	4.44 ± .09	.31	.19	.15	1.13
6	5.94 ± .09	6.30 + .09 − .05	6.36 ± .09	.31	.19	.15	1.50
8	7.94 ± .13	8.38 ± .09	8.44 ± .09	.31	.23	.17	2.00
10	10.00 ± .13	10.56 ± .09	10.62 ± .09	.31	.28	.22	2.00
12	11.94 ± .09	12.50 ± .13	12.62 ± .13	.31	.28	.22	2.75
15	15.11 ± .09	15.83 ± .13	16.12 ± .13	.31	.36	.30	2.75

⚠ WARNING

Cast Iron pipe and fittings are only intended for DWV (drain, waste and vent) non-pressure applications. Using cast iron pipe and fittings in pressure applications could result in explosive failures, causing serious injury or death or property damage.

⚠ WARNING

Testing with or use of compressed air or gas in Cast Iron pipe or fittings can result in explosive failures and cause severe injury or death.

- NEVER test with or transport/store compressed air or gas in Cast Iron pipe or fittings.
- NEVER test Cast Iron pipe or fittings with compressed air or gas.
- ONLY use Cast Iron pipe and fittings for drain, waste and vent or sanitary sewer applications.

Hubless Edge HP IRON™

Hubless Edge HP Iron Soil Pipe

Part No. HP NH 2
Edge HP No-Hub (Hubless) Pipe

Size	Weight
2″x10′	35.0
3″x10′	54.0
4″x10′	76.0
6″x10′	117.8
8″x10′	170.9
10″x10′	254.6
12″x10′	318.1
15″x10′	492.6

⚠ WARNING

Cast Iron pipe and fittings are only intended for DWV (drain, waste and vent) non-pressure applications. Using cast iron pipe and fittings in pressure applications could result in explosive failures, causing serious injury or death or property damage.

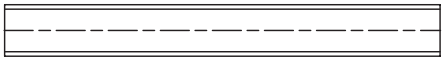
⚠ WARNING

Testing with or use of compressed air or gas in Cast Iron pipe or fittings can result in explosive failures and cause severe injury or death.

- NEVER test with or transport/store compressed air or gas in Cast Iron pipe or fittings.
- NEVER test Cast Iron pipe or fittings with compressed air or gas.
- ONLY use Cast Iron pipe and fittings for drain, waste and vent or sanitary sewer applications.

Hubless Edge HP IRON™

PART NO. HP NH 2



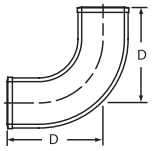
Edge HP No-Hub Pipe - Ten Feet Laying Length

Size	Weight
2″ x 10′	35.0
3″ x 10′	54.0
4″ x 10′	76.0
6″ x 10′	117.8
8″ x 10′	170.9
10″ x 10′	254.6
12″ x 10′	318.1
15″ x 10′	492.6

PART NO. HP NH 4

Edge HP Quarter Bend

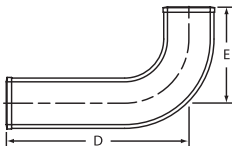
Size	D	Weight
2	4 1/2	2.9
3	5	3.5
4	5 1/2	6.0
4 x 3	5 1/2	5.5
6	7	15.0
8	8 1/2	23.1



PART NO. HP NH 4

Edge HP Extended Quarter Bend

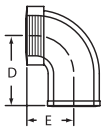
Size	D	E	Weight
2 x 12	12	4 1/2	5.4
2 x 18	18	4 1/2	8.8
2 x 24	24	4 1/2	10.7
3 x 12	12	5	7.5
4 x 12	12	5 1/2	11.2



PART NO. HP NH 4 A

Edge HP Tapped Quarter Bend

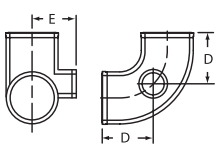
Size	E	D	Weight
2 x 12	3 1/4	2 1/4	1.8



PART NO. HP NH 6

Edge HP Quarter Bend with 2" Side Inlet

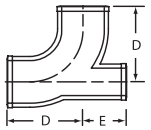
Size	E	D	Weight
3 x 2	3 1/4	4	5.1
4 x 2	3 3/4	4 5/16	7.5



PART NO. HP NH 8

Edge HP Quarter Bend with 2" Heel Inlet

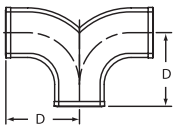
Size	D	E	Weight
3 x 2	5	2 7/8	5.6
4 x 2	5 1/2	3 1/4	7.2



PART NO. HP NH 8 A

Edge HP Double Quarter Bend

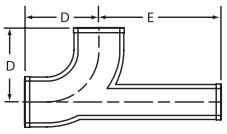
Size		Weight
2	4 1/2	4.5
3	5	7.1
4	5 1/2	9.7



PART NO. HP NH 8 B

Edge HP Extended Quarter Bend with Low Heel Outlet

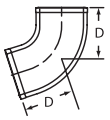
Size	D	E	Weight
3 x 2	5	10 1/2	7.8



PART NO. HP NH 9

Edge HP Fifth Bend

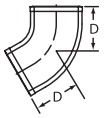
Size	D	Weight
2	3 11/16	2.3
3	4 1/16	3.7
4	4 7/16	5.7



PART NO. HP NH 10

Edge HP Sixth Bend

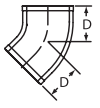
Size	D	Weight
2	3 1/4	2.2
3	3 1/2	3.2
4	3 13/16	5.3



PART NO. HP NH 12

Edge HP Eighth Bend

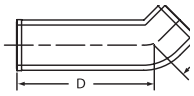
Size	D	Weight
2	2 3/4	1.6
3	3	2.9
4	3 1/8	3.9
6	4 1/16	9.1
8	5	14.9
10	5 15/16	31.7
12	6 9/16	33.3
15	7 13/16	62.0



PART NO. HP NH 12

Edge HP Long Eighth Bend

Size	D	E	Weight
2 x 12	12	2 3/4	4.6
2 x 18	18	2 3/4	7.3
3 x 12	12	3	7.4
3 x 18	18	3	10.2
4 x 12	12	3 1/8	9.7



PART NO. HP NH 14

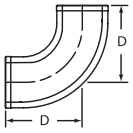
Edge HP Sixteenth Bend

Size	D	Weight
2	2 1/8	1.4
3	2 1/4	2.1
4	2 5/16	3.4
6	3	6.7
8	3 3/4	12.0

PART NO. HP NH 16

Edge HP Short Sweep

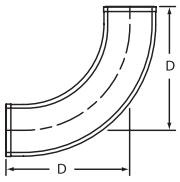
Size	D	Weight
2	6 1/2	3.1
3	7	6.3
4	7 1/2	8.1
6	9	18.0
8	10 1/2	28.8
10	12	53.4
12	13 1/4	61.3
15	14 3/4	105.6



PART NO. HP NH 18

Edge HP Long Sweep

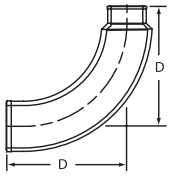
Size	D	Weight
2	9 1/2	5.8
3	10	9.4
4	10 1/2	12.3
6	12	23.3



PART NO. HP NH 18

Edge HP Reducing Long Sweep

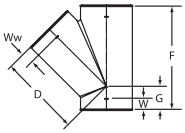
Size	D	Weight
4 x 3	10 1/2	12.4



PART NO. HP NH 20

Edge HP Wye

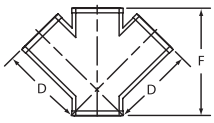
Size	D	F	G	Weight
2 x 2	4 5/8	6 5/8	2	3.3
3 x 2	5 5/16	6 5/8	1 1/2	3.4
3	5 3/4	8	2 1/4	4.6
4 x 2	6	6 5/8	1	5.1
4 x 3	6 1/2	8	1 11/16	7.3
4	7 1/16	9 1/2	2 7/16	9.1
6 x 2	8 1/4	8 5/16	1/2	9.8
6 x 3	8 3/4	9 3/4	1 1/4	12.5
6 x 4	9 1/4	11 3/16	1 15/16	14.6
6	10 3/4	14 1/16	3 5/16	19.7
8 x 3	9 13/16	9 15/16	1/8	17.5
8 x 4	10 3/8	11 7/16	15/16	22.0
8 x 6	11 13/16	14 3/16	2 5/16	28.3
8	13 3/8	17 1/8	3 3/4	36.3
10 x 4	11 11/16	12 5/8	3/4	32.9
10 x 6	13 1/8	15 7/16	2 3/16	42.1
10 x 8	14 11/16	18 3/8	3 5/8	56.1
10	16 1/2	21 1/2	5 1/16	74.9
12	19 3/4	25 1/2	5 3/4	97.0
15	23 1/4	30	6 3/4	189.5



PART NO. HP NH 21

Edge HP Double Wye

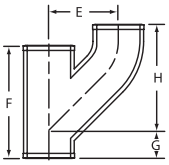
Size	D	F	Weight
2	4 5/8	6 5/8	4.5
3 x 2	5 3/16	6 5/8	5.5
3	5 3/4	8	7.9
4 x 2	6	6 5/8	6.9
4 x 3	6 1/2	8	8.8
4	7 1/16	9 1/2	12.1
6 x 4	9 1/4	11 3/16	16.4
6	10 3/4	14 1/16	27.4
8	13 3/8	17 1/8	45.3
8 x 4	10 3/8	11 7/16	23.0
8 x 6	11 13/16	14 3/16	31.3



PART NO. HP NH 21 A

Edge HP Upright Wye

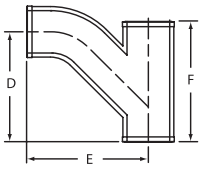
Size	H	E	F	G	Weight
2	8 1/4	5 1/2	7	2	4.8
3 x 2	8 3/16	5 1/2	7	1 1/2	5.7
3	8 7/16	5 1/2	8 3/8	2 3/16	9.5
4 x 2	8 1/4	5 1/2	7	1	7.7
4 x 3	8 7/16	5 1/2	8 3/8	1 11/16	10.1
4	9 1/8	6	9 3/4	2 7/16	12.9



PART NO. HP NH 22

Edge HP Combination

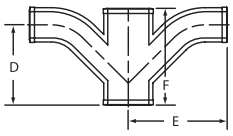
Size	D	E	F	Weight
2	5 3/8	6 1/8	6 5/8	3.5
3 x 2	5 1/2	6 3/4	6 5/8	5.7
3	7 5/16	8	8	8.5
4 x 2	5 1/2	7 1/4	6 5/8	6.6
4 x 3	7 1/4	8 1/2	8	9.5
4	9 1/4	10	9 1/2	13.7
6 x 2	6	8 1/4	8 5/16	10.9
6 x 3	7 13/16	9 1/2	9 3/4	14.7
6 x 4	9 3/4	11	11 3/16	18.4
6	13 5/8	14 3/8	14 1/16	30.0
8 x 4	9 7/16	11 5/16	11 3/16	25.1
8 x 6	12	13 3/8	13 15/16	35.4
8	14 3/4	15 9/16	16 15/16	49.3



PART NO. HP NH 24

Edge HP Double Combination

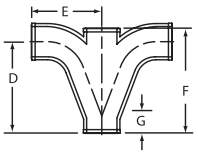
Size	D	E	F	Weight
2	5 3/8	6 1/8	6 5/8	6.6
3 x 2	5 1/2	6 3/4	6 5/8	7.7
3	7 5/16	8	8	11.8
4 x 2	5 1/2	7 1/4	6 5/8	8.3
4 x 3	7 1/4	8 1/2	8	13.7
4	9 1/4	10	9 1/2	20.5



PART NO. HP NH 25

Edge HP Figure Five Double Fixture Fitting

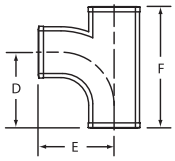
Size	D	E	F	G	Weight
2	6 1/2	5	8	1 13/16	6.0
3	8 7/8	6 9/16	10 1/8	2	12.1
3 x 2 x 3 x 3	8 7/8	6 9/16	9 1/4	2	10.7
4	10 1/4	7 3/4	12	1 15/16	22.5
4 x 2 x 4 x 4	10 1/4	7 3/4	11 1/2	1 15/16	18.5



PART NO. HP NH 28

Edge HP Sanitary Tee

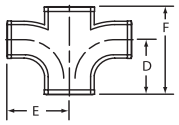
Size	E	F	D	Weight
2	4 1/2	6 7/8	4 1/2	2.8
3 x 2	5	6 7/8	4 1/2	4.7
3	5	8	5	5.8
4 x 2	5 1/2	6 7/8	4 1/2	5.3
4 x 3	5 1/2	8	5	7.6
4	5 1/2	9 1/8	5 1/2	8.5
6 x 2	6 1/2	8 3/16	5	9.9
6 x 3	6 1/2	9 3/16	5 1/2	11.5
6 x 4	6 1/2	10 1/16	6	12.0
6	7	12 1/2	7	13.4
8 x 3	7 1/2	10 3/8	6	17.9
8 x 4	7 1/2	11 1/2	6 1/2	21.6
8 x 6	8	13 1/2	7 1/2	24.0
8	8 1/2	15 1/2	8 1/2	30.8



PART NO. HP NH 30

Edge HP Sanitary Cross

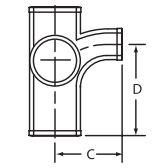
Size	E	F	D	Weight
2	4 1/2	6 7/8	4 1/2	5.0
3 x 2	5	6 7/8	4 1/2	6.2
3	5	8	5	7.6
4 x 2	5 1/2	6 7/8	4 1/2	7.3
4 x 3	5 1/2	8	5	8.5
4	5 1/2	9 1/8	5 1/2	11.0
6 x 4	6 1/2	10 1/16	6	14.8
6	7	12 1/2	7	21.0
8 x 4	7 1/2	11 1/2	6 1/2	22.0
8	8 1/2	15 1/2	8 1/2	37.9

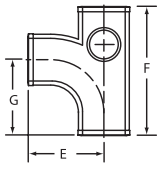


PART NO. HP NH 31

Edge HP Sanitary Tee (New Orleans Code, with 2" 90° Sanitary Inlet Above Center)

Size	C	D	E	F	G	Weight
3 (L)	4 1/2	6	5	8 1/2	5	6.7
3 (R)	4 1/2	6	5	8 1/2	5	6.3
4 (L)	5	6 1/2	5 1/2	9 3/16	5 1/2	8.7
4 (R)	5	6 1/2	5 1/2	9 3/16	5 1/2	8.5



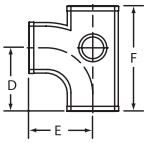


(Right Inlet)

PART NO. HP NH 32

Edge HP Sanitary Tee (with 2" Right and Left Side Inlets)

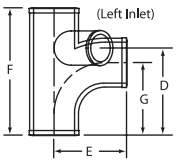
Size	E	F	D	Weight
4 x 4 w/RH & LH	5 9/16	9 1/8	5 1/2	10.9

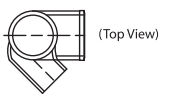


PART NO. HP NH 32 B

Edge HP Sanitary (New Orleans Code, with 2" 45° Sanitary Inlet Above Center)

Size	D	E	F	G	Weight
3 (L)	6	5	8 1/2	5	8.2
3 (R)	6	5	8 1/2	5	7.7
3 (R&L)	6	5	8 1/2	5	9.1
4 (L)	6 1/2	5 1/2	9 3/16	5 1/2	10.7
4 (R)	6 1/2	5 1/2	9 3/16	5 1/2	10.4

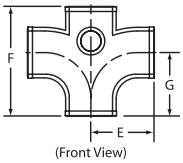




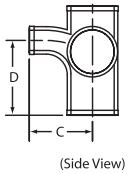
PART NO. HP NH 33 A

Edge HP Sanitary Cross (New Orleans Code, with 2" 90° Sanitary Inlet Above Center)

Size	C	D	E	F	G	Weight
4	5	6 1/2	5 1/2	9 3/16	5 1/2	10.8



(Front View)

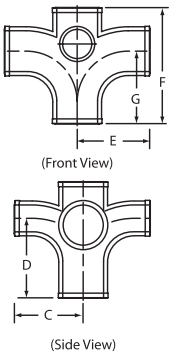


(Side View)

PART NO. HP NH 33 C

Edge HP Sanitary Cross (New Orleans Code, with 2" 90° Sanitary Inlets Right and Left Above Center)

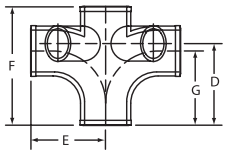
Size	C	D	E	F	G	Weight
3	4 1/2	6	5	8 1/2	5	9.0
4	5	6 1/2	5 1/2	9 3/16	5 1/2	11.9



PART NO. HP NH 33 F

Edge HP Sanitary Cross (New Orleans Code, with Two 2" 45° Sanitary Inlets Same Side)

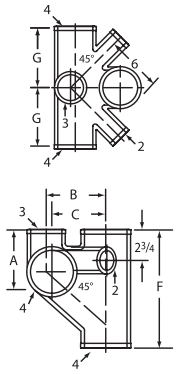
Size	D	E	F	G	Weight
3	6	5	8 1/2	5	9.8
4	5 1/2	5 1/2	9 1/16	5 1/2	13.8



PART NO. HP NH 33 G

Edge HP Sanitary Cross (with 3" Vent and Two 2" 45° Inlets)

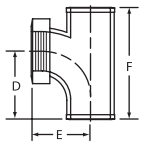
Size	A	B	C	F	G	Weight
4x3x4x2x2	3 3/4	5 1/4	4 3/4	10 1/2	6 1/2	20.3



PART NO. HP NH 34

Edge HP Sanitary Tapped Tee

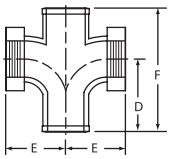
Size	D	E	F	Weight
2 x 1 1/2	3 1/4	2 13/16	5 11/16	3.1
2 x 2	3 3/4	3 1/16	6 3/8	3.9
3 x 1 1/2	3 1/4	3 5/16	5 11/16	3.6
3 x 2	3 3/4	3 9/16	6 3/8	4.9
3 x 3	4 7/8	4 1/8	8	7.3



PART NO. HP NH 35 S

Edge HP Sanitary Tapped
Edge HP Sanitary Tapped Tee Cross with Southern Raised-Head Brass Plugs Installed

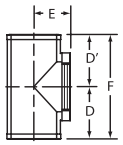
Size	D	E	F	Weight
2 x 1 1/2	3 1/4	2 13/16	5 11/16	4.4



PART NO. HP NH 36 S

Edge HP Test Tee with Southern Raised-Head Brass Plug Installed

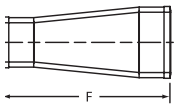
Size	IPS Tap	E	F	D	D'	Weight
2	2	2	6 3/8	3 3/16	3 3/16	3.3
3	3	2 11/16	7 3/4	3 7/8	3 7/8	6.3
4	4	3	8 7/8	4 7/16	4 7/16	10.1
6	6	5	12 1/2	6 1/4	6 1/4	23.9
8	8	6	15 1/4	7 5/8	7 5/8	40.6



PART NO. HP NH 40

Edge HP Increaser-Reducer

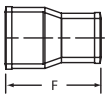
Size	F	Weight
2 x 3	8	3.3
2 x 4	8	4.4
3 x 4	8	5.0



PART NO. HP NH 40 A

Edge HP Short Reducer

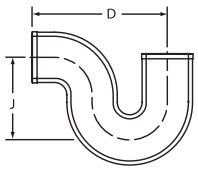
Size	F	Weight
3 x 2	3 5/8	1.8
4 x 2	3 5/8	2.3
4 x 3	3 5/8	2.3
6 x 2	4	4.0
6 x 3	4	3.9
6 x 4	4	4.1
8 x 2	4 1/2	7.0
8 x 3	4 1/2	7.3
8 x 4	4 1/2	7.7
8 x 6	5	8.0
10 x 4	5 1/2	14.1
10 x 6	6	13.3
10 x 8	6	14.9
12 x 4	6 1/2	19.1
12 x 6	6 1/2	18.3
12 x 8	7	17.3
12 x 10	7 1/2	18.9
15 x 4	7	32.4
15 x 6	7	31.8
15 x 8	7	32.2
15 x 10	7 1/2	32.2
15 x 12	7 3/4	30.5



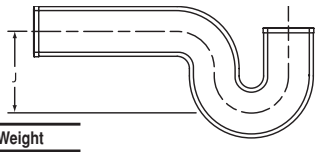
PART NO. HP NH 42

Edge HP P-Trap

Size	D	J	Weight
2	7 1/2	4	4.7
3	9	5 1/2	8.9
4	10 1/2	6 1/2	17.0
6	14	8 1/2	33.6



PART NO. HP NH 42



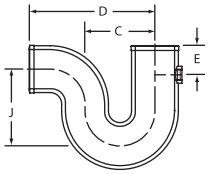
Edge HP Long P-Trap

Size	D	J	Weight
2 x 12	12	4	6.1
2 x 18	18	4	8.0

PART NO. HP NH 43

Edge HP P Trap with 1/2" Tap in Heel

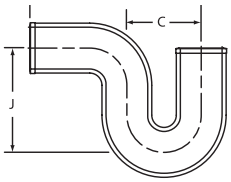
Size	C	D	J	E	Weight
2	4	7 1/2	2	4	5.0
3	5	9	2	5 1/2	11.1
4	6	10 1/2	2	6 1/2	17.9



ART NO. HP NH 44 A

Edge HP Deep Seal P Trap

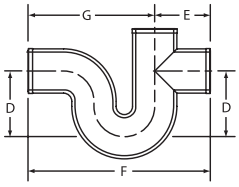
Size	C	D	J	Weight
2	4	7 1/2	7	7.1
3	5	9	7	11.0
4	6	10 1/2	8	18.6



PART NO. HP NH 45

Edge HP Running Trap with Vent

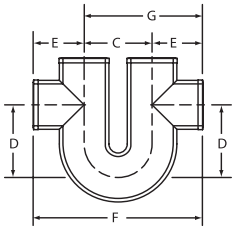
Size	D	E	F	G	Weight
4	6 1/2	4 1/2	15	10 1/2	20.5



PART NO. HP NH 45 A

Edge HP Running Trap with Double Vent

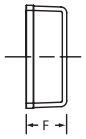
Size	C	D	E	F	G	Weight
4	6	6 1/2	4 1/2	15	10 1/2	21.4



PART NO. HP NH 50

Edge HP Blind Plug

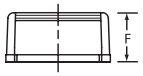
Size	F	Weight
2	1 3/4	0.6
3	1 3/4	1.1
4	1 3/4	2.0
6	1 3/4	3.2
8	2 1/4	6.5
10	3	14.7
12	3 1/2	17.6
15	3 1/2	29.4



PART NO. HP NH 52 S

Edge HP Tapped Ferrule with Southern Raised-Head Brass Plug Installed

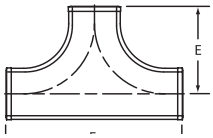
Size	F	IPS Tapping	Weight
2	2 3/16	1 1/2	1.1
2	2 5/8	2	1.1
3	2 3/16	2 1/2	2.3
4	2 3/16	3 1/2	3.2
6	4 1/2	5	9.4
8	4 1/2	6	13.9



PART NO. HP NH 53

Edge HP Single Two-Way Cleanout

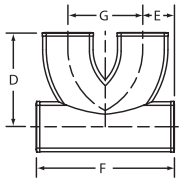
Size	E	F	Weight
4	7 1/2	15	16.0



PART NO. HP NH 53 A

Edge HP Double Two-Way Cleanout

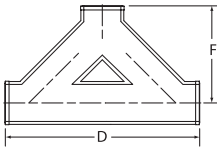
Size	D	E	F	G	Weight
4	8 1/4	2 3/4	12	6 1/2	15.0



PART NO. HP NH 54

Edge HP Two-Way Baffle Cleanout

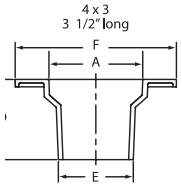
Size	D	F	Weight
3 x 3 x 4	15	9	14.2
4 x 4 x 4	18 3/8	9 1/2	23.5

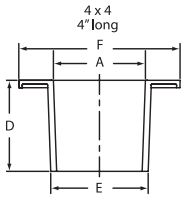


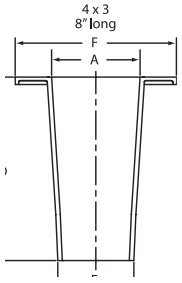
PART NO. HP NH 56

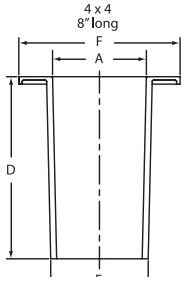
Edge HP Notched and Slotted Closet Collar

Size	D	E	F	A	Weight
4 x 3	3 1/2	3 3/8	7 1/4	4 7/32	3.4
4 x 3	8	3 27/64	7 1/4	4	6.1
4 x 4	4	4 3/8	7 1/4	4 9/64	4.9
4 x 4	8	4 3/8	7 1/4	4 7/32	7.2









SUBMITTAL FOR CHARLOTTE® STANDARD NO-HUB COUPLINGS

Date: _____

Job Name: _____ Location: _____

Engineer: _____ Contractor: _____

Charlotte® Standard No-Hub Couplings, manufactured by Ideal Clamp Products, are engineered to connect hub-less cast iron pipe and fittings. The coupling sleeve or gasket is manufactured from a properly vulcanized virgin compound where the primary elastomer is polychloroprene (neoprene). The gasket is housed inside a 301 stainless steel corrugated shield. Depending on the size of the shield, (2) or (4) 301 stainless steel clamps surround the shield and provide the sealing force. The 5/16" hex-head screws are made from 305 grade stainless steel. The Charlotte Standard No-Hub Couplings are available in sizes ranging from 2" – 10". The couplings are designed for installation torque of 60 in-lbs. The entire coupling is corrosion resistant.

Size	Installation Torque Inch Pounds	No. of Clamps Per Coupling
2"	60	2
3"	60	2
4"	60	2
6"	60	4
8"	60	4
10"	60	4
3" x 2"	60	2
4" x 3"	60	2

The Design:
The Charlotte Standard No-Hub Coupling is engineered to provide superior sealing performance. The coupling is NSF® Certified* and is in full compliance to CISPI 310, ASTM C 1277 and ASTM C 564. ***Sizes 2" through 10" only**

The Gasket:
The gasket is made from a properly vulcanized virgin compound in compliance to ASTM C 564. The Charlotte No-Hub gasket features multiple sealing beads under the clamp bands. The sealing beads on the gasket impede the movement of the gasket and pipe, providing a positive, reliable seal.

The Shield:
The 0.007" thick type 301 stainless steel shield requires less band load to transfer pressure to the gasket, leaving more clamping load in reserve to compress the gasket. The patented, bi-directional corrugations create clamp sealing pressure in both parallel and transverse patterns on the gasket and pipe, thereby avoiding pull-out failures, and providing a positive, reliable seal.

The Clamps:
Standard 301 stainless steel clamps and 5/16" hex-head 305 screws provide the sealing force. 2" through 4" couplings use two (2) clamps; 6" through 10" couplings use four (4) clamps. The entire assembly is corrosion resistant.

NSF

MADE IN USA

CHARLOTTE® STANDARD NO-HUB COUPLINGS

Product Information Submittal for No-Hub Systems

TEST	GASKET PHYSICAL TEST MIN. OR MAX. REQUIREMENTS	ASTM METHOD
Tensile Strength	1500 psi min.	D 412
Elongation	250 min.	D 412
Durometer (Shore A)	70 +/-5 @ 76°F +/- 5°F	D 2240
Accelerated Aging	15% maximum tensile and 20% maximum elongation, 10 points maximum increase in hardness, all determinations after oven aging for 96 hours at 158°F	D 573
Compression Set	25% max. after 22 hours at 158°F	D 395 Method B
Oil Immersion	80% max. volume change after immersion in IRM 903 for 70 hours at 212°F.	D 471
Ozone Cracking	No visible cracking at 2 times magnification of the gasket after 100 hours exposure in 1.5 ppm ozone concentration at 104°F. Testing and inspection to be on gasket which is loop mounted to give approximately 20% elongation of outer surface.	D 1149
Tear Resistance	150 lbf /in. min.	D 624
Water Absorption	20% max. by weight after 7 days at 158°F	D 471

MATERIALS	
Clamp	Type 301 AISI stainless steel
Screw	Type 305 AISI stainless steel 5/16" hex head/shoulder
Shield	Type 301 AISI stainless steel, corrugated. Shield thickness 0.007"
Gasket	The gasket is made of an elastomeric compound that meets the requirements of ASTM C 564

The Charlotte® patented Standard No-Hub Coupling has been engineered to provide an all stainless steel coupling, balancing the desire for a more rigid joint with the need to provide a superior, positive, reliable seal which can accommodate possible disparities in the mating of No-Hub pipe and fittings.

The 2", 3" and 4" diameter couplings consist of a 2⅛" wide bi-directional, corrugated 301 stainless steel shield in conjunction with two (2) stainless steel clamps mounted in a series, secured in place by means of fixed and "floating" eyelets to allow the clamp "travel" during tightening. The 6" couplings consist of a 3" wide corrugated 301 stainless steel shield in conjunction with four (4) clamps and the 8" and 10" coupling consists of a 4" wide corrugated 301 stainless steel shield with four (4) stainless steel clamps.

All Charlotte Standard No-Hub Couplings are designed to be installed with a pre-set torque wrench calibrated at 60 in-lbs. to accommodate the 305 stainless steel 5/16" hex-head/shoulder screw.

MADE IN USA

SUBMITTAL FOR CHARLOTTE®
HEAVY-DUTY "MD" NO-HUB COUPLINGS

Date: _____

Job Name: _____ Location: _____

Engineer: _____ Contractor: _____

Charlotte® Heavy-Duty "MD" (yellow shield) No-Hub Couplings, manufactured by Ideal Clamp Products, are engineered to connect No-Hub cast iron pipe in applications replacing the less-efficient hub & spigot material. Coupling consists of an elastomeric compound gasket (ASTM C 564) housed inside a 304 stainless steel corrugated shield. Depending on the size of the shield, (4) or (6) 304 stainless steel clamps surround the shield and provide the sealing force. The 5/16" hex-head screws are made from 305 stainless steel. The Charlotte patented Heavy-Duty "MD" No-Hub Couplings are available in sizes ranging from 2" – 10". The couplings are designed to be torqued to 80 in-lbs. The entire coupling is corrosion resistant. Conforms to ASTM C 1540.

Heavy-Duty "MD" No-Hub Couplings

Size	Installation Torque Inch Pounds	No. of Clamps Per Coupling
2"	80	4
3"	80	4
4"	80	4
6"	80	6
8"	80	6
10"	80	6

The Design:
The Charlotte Heavy-Duty "MD" No-Hub Couplings are engineered to provide all the extra holding power of a Heavy-Duty coupling without all the extra cost. Conforms to ASTM C 1540.

The Gasket:
Made from high-quality elastomeric compound (ASTM C 564), the Charlotte No-Hub gasket features a pattern of multiple thick sealing sectors and adjacent groove sectors laterally spaced. When the clamps are tightened, this pattern permits the clamping bands and the shield to form a restriction impeding the movement of the shield relative to the gasket.

The Shield:
0.008" thick type 304 stainless steel yellow shield requires less band load to transfer pressure to the gasket, leaving more clamping load in reserve to compress the gasket. The patented, bi-directional corrugations create clamp sealing pressure in both parallel and transverse patterns on the gasket and pipe, thereby avoiding pull-out failures, and providing a positive, reliable seal.

The Clamps:
Heavy-duty 304 stainless steel clamps and 5/16" hex-head 305 screws provide the sealing force. 2" through 4" couplings use four (4) clamps; 6" through 10" couplings use six (6) clamps. The entire assembly is corrosion resistant.

MADE IN USA

CHARLOTTE® HEAVY-DUTY "MD" NO-HUB COUPLINGS

Product Information Submittal for No-Hub Systems

TEST	GASKET PHYSICAL TEST MIN. OR MAX. REQUIREMENTS	ASTM METHOD
Tensile Strength	1500 psi min.	D 412
Elongation	250 min.	D 412
Durometer (Shore A)	70 +/-5 @ 76°F +/- 5°F	D 2240
Accelerated Aging	15% maximum tensile and 20% maximum elongation, 10 points maximum increase in hardness, all determinations after oven aging for 96 hours at 158°F	D 573
Compression Set	25% max. after 22 hours at 158°F	D 395 Method B
Oil Immersion	80% max. volume change after immersion in IRM 903 for 70 hours at 212°F.	D 471
Ozone Cracking	No visible cracking at 2 times magnification of the gasket after 100 hours exposure in 1.5 ppm ozone concentration at 104°F. Testing and inspection to be on gasket which is loop mounted to give approximately 20% elongation of outer surface.	D 1149
Tear Resistance	150 lbf /in. min.	D 624
Water Absorption	20% max. by weight after 7 days at 158°F	D 471

MATERIALS	
Clamp	Type 304 AISI stainless steel
Screw	Type 305 AISI stainless steel 5/16" hex head/shoulder
Shield	Type 304 AISI stainless steel, corrugated. Shield thickness 0.008"
Gasket	The gasket is made of an elastomeric compound that meets the requirements of ASTM C 564

The Charlotte® Heavy-Duty "MD" No-Hub Coupling has been engineered to provide a mid-range, all stainless steel coupling, balancing the desire for a more rigid joint with the need to provide a superior, positive seal which can accommodate possible disparities in the mating of No-Hub pipe and fittings. This has been accomplished by manufacturing our coupling with a mid-range corrugated shield of sufficient width to accommodate additional surface-bearing sealing clamps.

The additional sealing clamps, when torqued to 80 in-lbs, deliver additional performance benefits. First the overall dimensional thickness of the clamp and shield, in conjunction with the additional width of the coupling, result in a more uniformly rigid joint, with the load being supported at both the outer edge of the coupling and the centerline of the joint. Second, the additional sealing clamps yield increased surface-bearing contact between the coupling and the pipe or fittings, thereby inhibiting joint movement at higher internal pressures not commonly associated with DWV systems.

The 2", 3" and 4" diameter couplings consist of a 3" wide bi-directional, corrugated 304 stainless steel shield in conjunction with four (4) stainless steel clamps mounted in a series, secured in place by means of fixed and "floating" eyelets to allow the clamp "travel" during tightening. The 6", 8" and 10" couplings consist of a 4" corrugated 304 stainless steel shield and six (6) stainless steel clamps.

All Charlotte Heavy-Duty "MD" No-Hub Couplings are designed to be installed with a pre-set torque wrench calibrated at 80 in-lbs. accommodates the 305 stainless steel 5/16" hex-head/ shoulder screw.

MADE IN USA

SUBMITTAL FOR CHARLOTTE®
HEAVY-DUTY "HD" NO-HUB COUPLINGS

Date: _____

Job Name: _____ Location: _____

Engineer: _____ Contractor: _____

- **Charlotte® Heavy-Duty "HD" (green shield) No-Hub Couplings**, manufactured by Ideal Clamp Products, are engineered to connect No-Hub cast iron pipe in applications replacing the less-efficient hub & spigot material. The Coupling consists of an elastomeric compound gasket (ASTM C 564) housed inside a 304 stainless steel corrugated shield. Depending on the size of the shield, (4) or (6) 304 stainless steel clamps surround the shield and provide the sealing force. The 3/8" hex-head screws are made from 305 stainless- steel. Charlotte Heavy-Duty "HD" No-Hub Couplings are available in sizes ranging from 2" – 10". The couplings are designed to be torqued to 80 in-lbs. The entire coupling is corrosion resistant. Conforms to ASTM C 1540.

Heavy-Duty "HD" No-Hub Couplings

Size	Installation Torque Inch Pounds	No. of Clamps Per Coupling
2"	80	4
3"	80	4
4"	80	4
6"	80	6
8"	80	6
10"	80	6

- **The Design:**
Charlotte Heavy-Duty "HD" No-Hub Couplings have been re-engineered to install with 80 in-lbs. of screw torque and boasts an ultimate torque rating exceeding 100 in/lbs. Our patented, extra wide bi-directional shield is now constructed with a heavier gauge stainless steel. The mechanically interlocked 9/16" wide clamps have also been augmented with a heavier gauge stainless steel and a 3/8" hex-head screw. These changes, teamed with our specially beaded gasket, enable our new Heavy-Duty "HD" coupling to exert exceptional hold on the pipe for a positive, reliable seal. Conforms to ASTM C 1540.

- **The Gasket:**
Made from high-quality elastomeric compound (ASTM C 564), the Charlotte No-Hub gasket features a pattern of multiple thick sealing sectors and adjacent groove sectors laterally spaced. When the clamps are tightened, this pattern permits the clamping bands and the shield to form a restriction impeding the movement of the shield relative to the gasket.

- **The Shield:**
0.008" thick type 304 stainless steel green shield requires less band load to transfer pressure to the gasket, leaving more clamping load in reserve to compress the gasket. The patented, bi-directional corrugations create clamp sealing pressure in both parallel and transverse patterns on the gasket and pipe, thereby avoiding pull-out failures, and providing a positive, reliable seal.

- **The Clamps:**
Heavy-duty 304 stainless steel clamps and 3/8" hex-head 305 screws provide the sealing force. 2" through 4" couplings use four (4) clamps; 6" through 10" couplings use six (6) clamps. The entire assembly is corrosion resistant.

CHARLOTTE® HEAVY-DUTY "HD" NO-HUB COUPLINGS

Product Information Submittal for No-Hub Systems

TEST	GASKET PHYSICAL TEST MIN. OR MAX. REQUIREMENTS	ASTM METHOD
Tensile Strength	1500 psi min.	D 412
Elongation	250 min.	D 412
Durometer (Shore A)	70 +/-5 @ 76°F +/- 5°F	D 2240
Accelerated Aging	15% maximum tensile and 20% maximum elongation, 10 points maximum increase in hardness, all determinations after oven aging for 96 hours at 158°F	D 573
Compression Set	25% max. after 22 hours at 158°F	D 395 Method B
Oil Immersion	80% max. volume change after immersion in IRM 903 for 70 hours at 212°F.	D 471
Ozone Cracking	No visible cracking at 2 times magnification of the gasket after 100 hours exposure in 1.5 ppm ozone concentration at 104°F. Testing and inspection to be on gasket which is loop mounted to give approximately 20% elongation of outer surface.	D 1149
Tear Resistance	150 lbf /in. min.	D 624
Water Absorption	20% max. by weight after 7 days at 158°F	D 471

MATERIALS	
Clamp	Type 304 AISI stainless steel
Screw	Type 305 AISI stainless steel 3/8" hex head/shoulder
Shield	Type 304 AISI stainless steel, corrugated. Shield thickness 0.008"
Gasket	The gasket is made of an elastomeric compound that meets the requirements of ASTM C 564

The Charlotte® patented Heavy-Duty "HD" No-Hub Coupling has been engineered to provide a heavy-duty, all stainless steel coupling, balancing the desire for a more rigid joint with the need to provide a superior, positive seal which can accommodate possible disparities in the mating of No-Hub pipe and fittings. This has been accomplished by manufacturing our Charlotte patented No-Hub Heavy-Duty "HD" coupling with a heavy-duty corrugated shield of sufficient width to accommodate additional surface-bearing sealing clamps.

The additional sealing clamps, when torqued to 80 in-lbs., deliver additional performance benefits. First, the overall dimensional thickness of the clamp and shield, in conjunction with the additional width of the coupling, result in a more uniformly rigid joint, with the load being supported at both the outer edge of the coupling and the centerline of the joint. Second, the additional sealing clamps yield increased surface-bearing contact between the coupling and the pipe or fittings, thereby inhibiting joint movement at higher internal pressures not commonly associated with DWV systems.

The 1½", 2", 3" and 4" diameter couplings consist of a 3" wide bi-directional, corrugated 304 stainless steel shield in conjunction with four (4) stainless steel clamps mounted in a series, secured in place by means of fixed and "floating" eyelets to allow the clamp "travel" during tightening. The 6", 8" and 10" couplings consist of a 4" corrugated 304 stainless steel shield and six (6) stainless steel clamps.

All Charlotte patented Heavy-Duty "HD" No-Hub Couplings are designed to be installed with a pre-set torque wrench calibrated at 80 in-lbs. to accommodate the 305 stainless steel 3/8" hex-head/shoulder screw.

MADE IN USA

SUBMITTAL FOR CHARLOTTE®
12" AND 15" HEAVY-DUTY NO-HUB COUPLINGS

Date: _____

Job Name: _____ Location: _____

Engineer: _____ Contractor: _____

Charlotte® Heavy-Duty No-Hub Couplings, manufactured by Ideal Clamp Products, are engineered to connect No-Hub cast iron pipe in applications replacing the less-efficient hub & spigot material. The Couplings consist of an elastomeric compound gasket (ASTM C 564) housed inside a 304 stainless steel corrugated shield. Six (6) 304 stainless steel clamps surround the shield and provide the sealing force. The 3/8" hex-head screws are made from 305 stainless steel. The Couplings are designed for installation torque of 120 in-lbs. The entire coupling is corrosion resistant.

12" & 15" Heavy-Duty No-Hub Couplings

Size	Installation Torque Inch Pounds	No. of Clamps Per Coupling
12"	120	6
15"	120	6

The Design:
Charlotte 12" and 15" Heavy-Duty No-Hub Couplings are engineered to provide superior performance at a very competitive cost. Conforms to ASTM C 1277.

The Gasket:
Made from high-quality elastomeric compound (ASTM C 564), the Charlotte No-Hub gasket features a pattern of multiple, thick sealing sectors and adjacent groove sectors laterally spaced. When the clamps are tightened, this pattern permits the clamping bands and the shield to form a restriction impeding the movement of the shield relative to the gasket.

The Shield:
0.008" thick type 304 stainless steel shield requires less band load to transfer pressure to the gasket, leaving more clamping load in reserve to compress the gasket. The patented, bi-directional corrugations create clamp sealing pressure in both parallel and transverse patterns on the gasket and pipe, thereby avoiding pull-out failures, and providing a positive, reliable seal. In addition, the shield design adjusts to differences in the circumference and outside diameters of the pipes being joined. This eliminates gasket wrinkling and thereby eliminating leak paths.

The Clamps:
Heavy-duty 304 stainless steel clamps and 3/8" hex-head 305 screws provide the sealing force. Both the 12" and the 15" coupling use six (6) 5/8" wide clamps. The entire assembly is corrosion resistant.

MADE IN USA

CHARLOTTE® 12" & 15" NO-HUB COUPLINGS

Product Information Submittal for No-Hub Systems

TEST	GASKET PHYSICAL TEST MIN. OR MAX. REQUIREMENTS	ASTM METHOD
Tensile Strength	1500 psi min.	D 412
Elongation	250 min.	D 412
Durometer (Shore A)	70 +/-5 @ 76°F +/- 5°F	D 2240
Accelerated Aging	15% maximum tensile and 20% maximum elongation, 10 points maximum increase in hardness, all determinations after oven aging for 96 hours at 158°F	D 573
Compression Set	25% max. after 22 hours at 158°F	D 395 Method B
Oil Immersion	80% max. volume change after immersion in IRM 903 for 70 hours at 212°F.	D 471
Ozone Cracking	No visible cracking at 2 times magnification of the gasket after 100 hours exposure in 1.5 ppm ozone concentration at 104°F. Testing and inspection to be on gasket which is loop mounted to give approximately 20% elongation of outer surface.	D 1149
Tear Resistance	150 lbf /in. min.	D 624
Water Absorption	20% max. by weight after 7 days at 158°F	D 471

MATERIALS	
Clamp	Type 304 AISI stainless steel
Screw	Type 305 AISI stainless steel 3/8" hex head/shoulder
Shield	Type 304 AISI stainless steel, corrugated. Shield thickness 0.008"
Gasket	The gasket is made of an elastomeric compound that meets the requirements of ASTM C 564

The Charlotte® Heavy-Duty No-Hub Coupling has been engineered to provide an all stainless steel coupling, balancing the desire for a more rigid joint with the need to provide a superior, positive, reliable seal which can accommodate possible disparities in the mating of No-Hub pipe and fittings. This has been accomplished by manufacturing our coupling with our standard corrugated shield of sufficient width to accommodate additional surface-bearing sealing clamps.

The additional sealing clamps, when torqued to 120 in-lbs., deliver additional performance benefits. First, the overall dimensional thickness of the clamp and shield, in conjunction with the additional width of the coupling, result in a more uniformly rigid joint, with the load being supported at both the outer edge of the coupling and the centerline of the joint. Second, the additional sealing clamps yield increased surface-bearing contact between the coupling and the pipe or fittings, thereby inhibiting joint movement at higher internal pressures not commonly associated with DWV systems.

The 12" and 15" diameter couplings consist of a 5 1/2" wide bi-directional, corrugated 304 stainless steel shield in conjunction with six (6) stainless steel clamps mounted in a series, secured in place by means of fixed and "floating" eyelets to allow the clamp "travel" during tightening.

MADE IN USA

LIMITED WARRANTY

Charlotte Pipe and Foundry Company® (Charlotte Pipe®) Products are warranted to be free from manufacturing defects and to conform to currently applicable ASTM standards for a period of five (5) years from date of delivery. Buyer's remedy for breach of this warranty is limited to replacement of, or credit for, the defective product. This warranty excludes any expense for removal or reinstallation of any product and any other incidental, consequential, or punitive damages. **This limited warranty is the only warranty made by seller and is expressly in lieu of all other warranties, express and implied, including any warranties of merchantability and fitness for a particular purpose.** No statement, conduct or description by Charlotte Pipe or its representative, in addition to or beyond this Limited Warranty, shall constitute a warranty. This Limited Warranty may only be modified in writing signed by an officer of Charlotte Pipe.

This Limited Warranty will not apply if:

1) The Products are used for purposes other than their intended purpose as defined by local plumbing and building codes, and the applicable ASTM standard.
2) The Products are not installed in good and workmanlike manner consistent with normal industry standards; installed in compliance with the latest instructions published by Charlotte Pipe and good plumbing practices; and installed in conformance with all applicable plumbing, fire and building code requirements.
3) This limited warranty does not apply when the products of Charlotte Pipe are used with the products of other manufacturers that do not meet the applicable ASTM or CISPI standards or that are not marked in a manner to indicate the entity that manufactured them.
4) In hubless cast iron installations, this warranty will not apply if products are joined with unshielded hubless couplings. Charlotte Pipe requires that its hubless cast iron pipe and fittings be joined only with shielded hubless couplings manufactured in accordance with CISPI 310, ASTM C 1277 and certified by NSF® International or with Heavy Duty Couplings meeting ASTM C 1540.
5) The Products fail due to defects or deficiencies in design, engineering, or installation of the piping system of which they are a part.
6) The Products have been the subject of modification; misuse; misapplication; improper maintenance or repair; damage caused by the fault or negligence of anyone other than Charlotte Pipe; or any other act or event beyond the control of Charlotte Pipe.
7) The Products fail due to the freezing of water in the Products.
8) The Products fail due to contact with chemical agents, fire stopping materials, thread sealant, plasticized vinyl products, or other aggressive chemical agents that are not compatible.
9) Pipe outlets, sound attenuation systems or other devices are permanently attached to the surface of Charlotte® PVC, ABS or CPVC products with solvent cement or adhesive glue.

Charlotte Pipe products are manufactured to the applicable ASTM or CISPI standard. Charlotte Pipe and Foundry **cannot** accept responsibility for the performance, dimensional accuracy, or compatibility of pipe, fittings, gaskets, or couplings not manufactured or sold by Charlotte Pipe and Foundry.

This Limited Warranty will not apply unless written notice of a claim is mailed to Charlotte Pipe at the address below within 30 days of discovery of the allegedly defective product.

Any Charlotte Pipe products alleged to be defective **must** be made available to Charlotte Pipe at the following address for verification, inspection and determination of cause:

Charlotte Pipe and Foundry Company
Attention: Technical Services
2109 Randolph Road
Charlotte, North Carolina 28207

Purchaser must obtain a return materials authorization and instructions for return shipment to Charlotte Pipe of any product claimed defective or shipped in error.

Any Charlotte Pipe product **proved** to be defective in manufacture will be replaced F.O.B. point of original delivery, or credit will be issued, at the discretion of Charlotte Pipe.

5/19/23

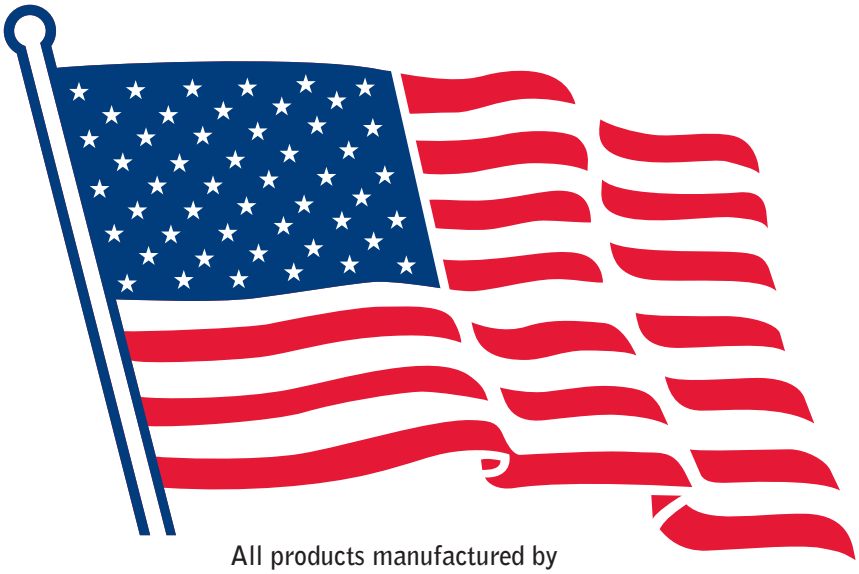
PO BOX 35430 CHARLOTTE, NORTH CAROLINA 28235
SALES PHONE (704) 348 6450 (800) 572 4199
TECHNICAL PHONE (800) 438 6091 FAX (800) 553 1605
WWW.CHARLOTTEPIPE.COM

NOTES

CHARLOTTE
PIPE AND FOUNDRY COMPANY®

PO BOX 35430
CHARLOTTE
NORTH CAROLINA 28235
PHONE (704) 348-6450
(800) 438-6091
FAX (800) 553-1605
WWW.CHARLOTTEPIPE.COM

MADE IN USA



All products manufactured by
Charlotte Pipe and Foundry Company
are proudly made in the U.S.A.