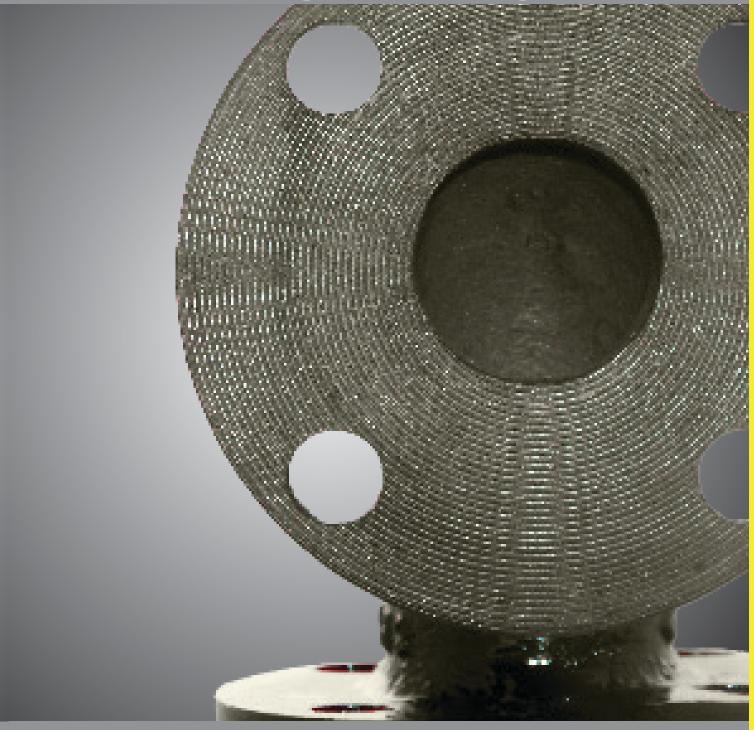
## **∑** SIGMA<sub>™</sub> Piping Products

Quality - Service - Commitment - Delivered.

## Flanged Fittings



SIGMA Corporation

Alexander City, AL Ontario, CA Auburn, WA Worcester,MA Cream Ridge, NJ

281-987-1200 800-999-0109 spp-sales@sigmaco.com

www.sigmaco.com



## Specifications

#### Material

Cast Iron: ASTM A48, Grade 25B (Ductile Iron (ASTM A536) may be substituted at the manufacturer's option)

#### Pressure

250 PSI Water Working Pressure

#### **Testing**

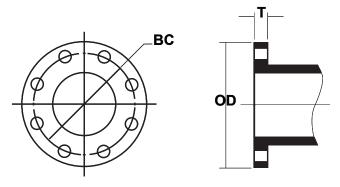
In accordance with ANSI / AWWA C110 / A21.10 where applicable. Other items are in accordance with manufacturer's standards.

#### Laying Length

In accordance with ANSI / AWWA C110 / A21.10 where applicable. Other items are in accordance with manufacturer's standards.

#### **Approvals**

Underwriters Laboratories listed and Factory Mutual Approved.

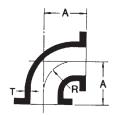


SIZE	OD	ВС	Т	Hole Dia.	<b>BOLT SIZE</b>	# OF BOLTS
2	6.00	4.75	0.62	0.75	5/8 x 2 1/2	4
3	7.50	6.00	0.75	0.75	5/8 x 2 1/2	4
4	9.00	7.50	0.94	0.75	5/8 x 3	8
5	10.00	8.50	0.94	0.88	3/4 x 3	8
6	11.00	9.50	1.00	0.88	3/4 x 3 1/2	8
8	13.50	11.75	1.12	0.88	3/4 x 3 1/2	8
10	16.00	14.25	1.19	1.00	7/8 x 4	12
12	19.00	17.00	1.25	1.00	7/8 x 4	12

## Flanged Fittings

#### Description

1/4 (90 DEG) Bends

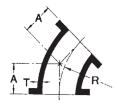




SIZE	ITEM CODE	Α	R	Т	Wt.
2	DFB290B	4.50	3.00	0.31	16
3	DFB390B	5.50	4.00	0.48	25
4	DFB490B	6.50	4.50	0.52	45
5	DFB590B	7.50	5.50	0.52	52
6	DFB690B	8.00	6.00	0.55	65
8	DFB890B	9.00	7.00	0.60	105
10	DFB1090B	11.00	9.00	0.68	165
12	DFB1290B	12.00	10.00	0.75	235

#### Description

1/8 (45 DEG) Bends





SIZE	ITEM CODE	Α	R	Т	Wt.
2	DFB245B	2.50	2.41	.31	12
3	DFB345B	3.00	3.62	.48	20
4	DFB445B	4.00	4.81	.52	40
5	DFB545B	4.50	6.04	.52	45
6	DFB645B	5.00	7.25	.55	55
8	DFB845B	5.50	8.44	.60	90
10	DFB1045B	6.50	10.88	.68	130
12	DER12//5B	7.50	13 25	.75	105

#### Description

1/16 (22-1/2 DEG) Bends

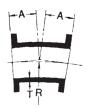




SIZE	ITEM CODE	Α	R	Т	Wt.
2	DFB222B	2.50	6.04	0.31	12
3	DFB322B	3.00	7.56	0.48	20
4	DFB422B	4.00	10.06	0.52	40
5	DFB522B	4.50	10.86	0.52	45
6	DFB622B	5.00	15.06	0.55	55
8	DFB822B	5.50	17.62	0.60	90
10	DFB1022B	6.50	22.62	0.68	135
12	DFB1222B	7 50	27 62	0.75	205

#### Description

1/32 (11-1/4 DEG) Bends

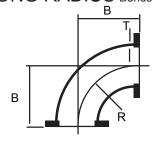




SIZE	ITEM CODE	Α	R	Т	Wt.
2	DFB211B	2.50	12.69	0.31	12
3	DFB311B	3.00	15.25	0.48	20
4	DFB411B	4.00	20.31	0.52	40
5	DFB511B	4.50	22.85	0.52	45
6	DFB611B	5.00	30.50	0.55	55
8	DFB811B	5.50	35.50	0.60	90
10	DFB1011B	6.50	45.69	0.68	135
12	DFR1211B	7 50	55.81	0.75	205

#### Description

LONG RADIUS Bends



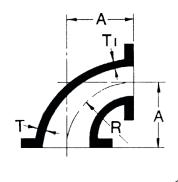


SIZE	ITEM CODE	Α	R	Т	Wt.
3	DFL390B	7.75	6.25	0.48	30
4	DFL490B	9.00	7.00	0.52	50
6	DFL690B	11.50	9.50	0.55	80
8	DFL890B	14.00	12.00	0.60	140
10	DFL1090B	16.50	14.50	0.68	215
12	DFL1290B	19.00	17.00	0.75	325

## Flange Pack

#### Description

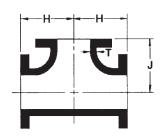
#### Reducing 90 Degree Bends



SIZE	ITEM CODE	Α	R	Т	T1	Wt.
3 x 2	DFB32B	5.60	4.0	.48	.31	22
4 x 3	DFB43B	6.50	4.5	.52	.48	29
6 x 3	DFB63B	8.00	6.0	.55	.48	56
6 x 4	DFB64B	8.00	6.0	.55	.52	55
6 x 5	DFB65B	8.00	6.0	.55	.52	65
8 x 4	DFB84B	9.00	7.0	.60	.52	75
8 x 5	DFB85B	9.00	7.0	.60	.52	80
8 x 6	DFB86B	9.00	7.0	.60	.55	85
10 x 4	DFB104B	11.00	9.0	.68	.52	130
10 x 6	DFB106B	11.00	9.0	.68	.55	135
10 x 8	DFB108B	11.00	9.0	.68	.60	150
12 x 4	DFB124B	12.00	10.0	.75	.52	140
12 x 6	DFB126B	12.00	10.0	.75	.55	160
12 x 8	DFB128B	12.00	10.0	.75	.60	180
12 x 10	DFB1210B	12.00	10.0	.75	.68	200

Description

#### Straight Tee





SIZE	ITEM CODE	Н	J	Т	Wt.
2	DFT22B	4.50	4.50	0.31	20
3	DFT33B	5.50	5.50	0.48	40
4	DFT44B	6.50	6.50	0.52	65
5	DFT55B	7.50	7.50	0.52	85
6	DFT66B	8.00	8.00	0.55	95
8	DFT88B	9.00	9.00	0.60	155
10	DFT1010B	11.00	11.00	0.80	270
12	DFT1212B	12.00	12.00	0.87	385

Description

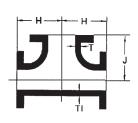
#### Reducing Tee



SIZE	ITEM CODE	Н	J	Т	T1	Wt.
6 x 4 x 4	DRT644B	8.00	8.00	. 55	.52	85
6 x 4 x 6	DRT646B	8.00	8.00	.55	.52	90
8 x 6 x 4	DRT864B	9.00	9.00	.60	.55	125
8 x 6 x 6	DRT866B	9.00	9.00	.60	.55	135
8 x 6 x 8	DRT868B	9.00	9.00	.60	.65	145

Description

#### Bullhead Tees





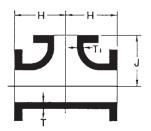
SIZE	ITEM CODE	Н	J	T	T1	Wt.
4x4x6	DBT446B	8.00	8.00	.52	.55	90
6x6x8	DBT668B	9.00	9.00	.55	.60	140
8x8x10	DBT810B	11.00	11.00	.60	.67	260
10x10x12	DBT1012B	12.00	12.00	.80	.87	355

www.sigmaco.com

## Flanged Fittings

#### Description

#### Reducing Tees

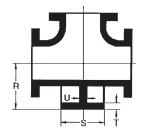


SIZE	ITEM CODE	Н	J	Т	T1	Wt.
3 x 2	DFT32B	5.50	6.50	.48	.31	35
4 x 2	DFT42B	6.50	6.50	.52	.31	50
4 x 2 ½	DFT425B	6.50	6.50	.52	.31	55
4 x 3	DFT43B	6.50	6.50	.52	.48	60
6 x 2	DFT62B	8.00	8.00	.55	.31	85
6 x 3	DFT63B	8.00	8.00	.55	.48	85
6 x 4	DFT64B	8.00	8.00	.55	.52	90
8 x 4	DFT84B	9.00	9.00	.60	.52	140
8 x 6	DFT86B	9.00	9.00	.60	.55	145
10 x 4	DFT104B	11.00	11.00	.68	.52	205
10 x 6	DFT106B	11.00	11.00	.68	.55	215
10 x 8	DFT108B	11.00	11.00	.68	.60	225
12 x 4	DFT124B	12.00	12.00	.75	.52	290
12 x 6	DFT126B	12.00	12.00	.75	.55	295
12 x 8	DFT128B	12.00	12.00	.75	.60	310
12 x 10	DFT1210B	12.00	12.00	.87	.80	360



#### Description

#### Base Tees

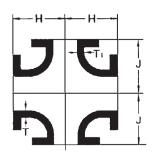




OIZE	ITEM CODE	-		-	- 11	DIAM	WEIGHT	
SIZE	ITEM CODE	R	S		U	DIAM.	BASE TEE	BASE ONLY
3	DFV33B	4.88	5.00	0.56	0.50	5/8	45	5
4	DFV44B	5.50	6.00	0.62	0.50	3/4	75	10
6	DFV66B	7.00	7.00	0.69	0.62	3/4	110	15
8	DFV88B	8.38	9.00	0.94	0.88	3/4	185	30
10	DFV1010B	9.75	9.00	0.94	0.88	3/4	300	30
12	DFV1212B	11.25	11.00	1.00	1.00	7/8	430	45

#### Description

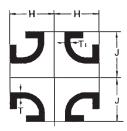
#### Straight Crosses

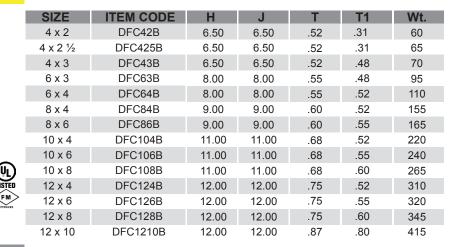




SIZE	ITEM CODE	Α	R	Т	Wt.
2	DFC22	4.50	4.50	0.31	30
3	DFC33	5.50	5.50	0.48	50
4	DFC44	6.50	6.50	0.52	80
6	DFC66	8.00	8.00	0.55	120
8	DFC88	9.00	9.00	0.60	195
10	DFC1010	11.00	11.00	0.80	330
12	DFC1212	12.00	12.00	0.87	460

#### Reducing Crosses





Description

#### Base 90 Degree Bends

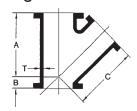




ш	0175	ITEM CODE			-		***	OIII
ı	SIZE	ITEM CODE	R	S		U	BASE BEND	BASE ONLY
	3	DFD390B	4.88	5.00	0.56	0.50	35	10
	4	DFD490B	5.50	6.00	0.62	0.50	55	10
	6	DFD690B	7.00	7.00	0.69	0.62	85	20
	8	DFD890B	8.38	9.00	0.94	0.88	145	40
	10	DFD1090B	9.75	9.00	0.94	0.88	210	45
	12	DFD1290B	11 25	11 00	1.00	1.00	300	65

Description

#### 45 Degree Lateral wyes

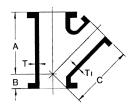




SIZE	ITEM CODE	Н	J	Т	T1	Wt.
3	DFY33B	10.00	3.00	10.00	0.48	45
4	DFY44B	12.00	3.00	12.00	0.52	75
6	DFY66B	14.50	3.50	14.50	0.55	120
8	DFY88B	17.50	4.50	17.50	0.60	200
10	DFY1010B	20.50	5.00	20.50	0.68	335
12	DFY1212B	24.50	5.50	24.50	0.75	515

Description

## 45 Degree Lateral Reducing wyes





SIZE	ITEM CODE		J	Т	T1	T1	Wt.
4 x 3	DFY43B	12.00	3.00	12.00	0.52	0.48	65
6 x 4	DFY64B	14.50	3.50	14.50	0.55	0.52	115
8 x 4	DFY84B	17.50	4.50	17.50	0.60	0.52	180
8 x 6	DFY86B	17.50	4.50	17.50	0.60	0.55	190
10 x 4	DFY104B	20.50	5.00	20.50	0.68	0.52	260
10 x 6	DFY106B	20.50	5.00	20.50	0.68	0.55	270
10 x 8	DFYI08B	20.50	5.00	20.50	0.68	0.60	295
12 x 4	DFY124B	24.50	5.50	24.50	0.75	0.52	380
12 x 6	DFY126B	24.50	5.50	24.50	0.75	0.55	395
12 x 8	DFY128B	24.50	5.50	24.50	0.75	0.60	420
12 x 10	DFY1210B	24.50	5.50	24.50	0.75	0.68	455

■ Cast Iron: ASTM A48, Grade 25B (Ductile Iron (ASTM A536) may be substituted at the manufacturer's option)

#### Description

#### Reducers







ITEM CODE							
	SIZE	Eccentric	Concentric	L	Т	T1	Wt.
	3 x 2	DFE32B	DFR32B	6	0.48	0.31	16
	3 x 2 1/2	DFE325B	DFR325B	6	0.48	0.31	21
	4 x 2	DFE42B	DFR42B	7	0.52	0.31	25
	4 x 2 1/2	DFE425B	DFR425B	7	0.52	0.31	28
	4 x 3	DFE43B	DFR43B	7	0.52	0.48	30
	6 x 2	DFE62B	DFR62B	9	0.55	0.31	35
	6 x 2 1/2	DFE625B	DFR625B	9	0.55	0.31	38
	6 x 3	DFE63B	DFR63B	9	0.55	0.48	40
	6 x 4	DFE64B	DFR64B	9	0.55	0.52	45
	6 x5	DFE65B	DFR65B	9	0.55	0.52	51
	8 x 4	DFE84B	DFR84B	11	0.60	0.52	65
	8 x 5	DFE85B	DFR85B	11	0.60	0.52	70
	8 x 6	DFE86B	DFR86B	11	0.60	0.55	75
	10 x 4	DFE104B	DFR104B	12	0.68	0.52	85
	10 x 6	DFE106B	DFR106B	12	0.68	0.55	90
	10 x 8	DFE108B	DFR108B	12	0.68	0.60	110
	12 x 4	DFE124B	DFR124B	14	0.75	0.52	120
	12 x 6	DFE126B	DFR126B	14	0.75	0.55	130
	12 x 8	DFE128B	DFR128B	14	0.75	0.60	145
	12 x 10	DFF1210B	DFR1210B	14	0.75	0.68	170

#### Description

#### Blind Flanges

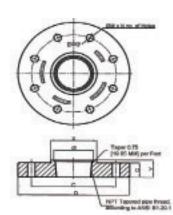




SIZE	ITEM CODE	0	Q	V	Wt.
3	BDF3	7.50	0.75	0.69	9
4	BDF4	9.00	0.94	0.88	14
6	BDF6	11.00	1.00	0.94	24
8	BDF8	13.50	1.12	1.06	38
10	BDF10	16.00	1.19	1.12	59
12	BDF12	19.00	1.25	0.81	76

#### Description

#### Companion Flanges

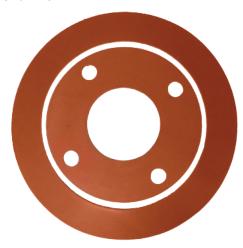


SIZE	ITEM CODE	0	Q	X	Wt.
2x6	CICF02	6.00	0.62	3.06	5.1
2-1/2x7	CICF025	7.00	0.69	3.56	6.0
3x7-1/2	CICF03	7.50	0.75	4.25	8.3
3x9	CICF0403	9.00	0.94	4.25	12.8
3x11	CICF0603	11.00	1.00	4.25	24.0
4x9	CICF04	9.00	0.94	5.31	11.7
4x11	CICF0604	11.00	1.00	5.31	21.0
4x13-1/2	CICF0804	13.50	1.12	5.31	37.0
6x11	CICF06	11.00	1.00	7.56	19.2
6x13-1/2	CICF0806	13.50	1.12	7.56	31.0
8x13-1/2	CICF08	13.50	1.12	9.69	29.9
10x16	CICF10	16.00	1.19	11.94	38.0
12x19	CICF12	19.00	1.25	14.06	60.0

www.sigmaco.com

- Bolt Specification: Standard Zinc plated Bolt and Nut sets contain Hex head machine bolts I/A/W ASTM A563 Gr. A. Dimensional specifications are I/A/W ANSI/ASME B18.2.1. Heavy Hex pattern nuts are I/A/W ASTM A563 Gr. A. All bolts and nuts have national Coarse threads, C1.2A fit.
- Gasket Specification: Standard Flange Packs contain Synthetic Red Rubber ASTM D-1330 gaskets. Dimensional requirements are I/A/W ANSI/ASME B16.21. Available in full face or ring style. Thickness available is 1/8" and 1/16".





Description

#### Flanged Pack 1

	Flange Pack							
SIZE	Packs with Red Rubber RING Gaskets and ZINC Hardware							
	Gasket 1/8"	<b>Gasket 1/16</b> "	<b>Hardware Type</b>	Bolt Size	No. of Bolts			
2"	FRP08-02Z	FRP16-02Z	ZINC	5/8" X 2 1/2"	4			
2.5"	FRP08-025Z	FRP16-025Z	ZINC	5/8" X 2 1/2"	4			
3"	FRP08-03Z	FRP16-03Z	ZINC	5/8" X 2 1/2"	4			
4"	FRP08-04Z	FRP16-04Z	ZINC	5/8" X 3"	8			
5"	FRP08-05Z	FRP16-05Z	ZINC	3/4" X 3"	8			
6"	FRP08-06Z	FRP16-06Z	ZINC	3/4" X 3 1/2"	8			
8"	FRP08-08Z	FRP16-08Z	ZINC	3/4" X 3 1/2"	8			
10"	FRP08-10Z	FRP16-10Z	ZINC	7/8" X 4"	12			
12"	FRP08-12Z	FRP16-12Z	ZINC	7/8" X 4"	12			

Description

#### Flanged Pack 2

	Flange Pack							
SIZE	Packs with Red Rubber FULL FACE Gaskets and ZINC PLATED Hardware							
	Gasket 1/8"	Gasket 1/16"	<b>Hardware Type</b>	Bolt Size	No. of Bolts			
2"	FGP08-02Z	FGP16-02Z	ZINC	5/8" X 2 1/2"	4			
2.5"	FGP08-025Z	FGP16-025Z	ZINC	5/8" X 2 1/2"	4			
3"	FGP08-03Z	FGP16-03Z	ZINC	5/8" X 2 1/2"	4			
4"	FGP08-04Z	FGP16-04Z	ZINC	5/8" X 3"	8			
5"	FGP08-05Z	FGP16-05Z	ZINC	3/4" X 3"	8			
6"	FGP08-06Z	FGP16-06Z	ZINC	3/4" X 3 1/2"	8			
8"	FGP08-08Z	FGP16-08Z	ZINC	3/4" X 3 1/2"	8			
10"	FGP08-10Z	FGP16-10Z	ZINC	7/8" X 4"	12			
12"	FGP08-12Z	FGP16-12Z	ZINC	7/8" X 4"	12			

# E SIGNA

#### TERMS, CONDITIONS, AND GUIDELINES OF SALES

- 1. All orders are subject to approval and acceptance by SIGMA Piping Products.
- 2. PRICES: Prices are subject to change without notice.
- 3. SHORTAGES: All sales are F.O.B. Shipping Point. Any damage or shortage must be noted on the delivery bill of lading or our packing list and acknowledged by the delivering carrier's agent. All claims for damage or shortage must be made in writing within 7 (seven) days of receipt of material.
- 4. DELIVERY OF MATERIAL: SIGMA will make every effort to make delivery within time specified. Any delay in meeting shipping schedules will not make SIGMA liable for damages of any kind, liquidated or unliquidated, including damages for loss of use.
- 5. WARRANTY: SIGMA gives warranty for material furnished under its trade names against any defects in material or workmanship subject to normal use, for a period of one year after date of shipment. SIGMA will replace the defective product at the delivery point or, at its option, repay price paid for the product plus any transportation charges paid by Buyer in addition to such price. SIGMA is not responsible for consequential or incidental damages for loss of use, or any other damages whatsoever, in connection with the warranties set forth above or implied by law, or any purported negligence of SIGMA. No terms or conditions, other than those stated above, and no agreement or
- understanding, oral or written, in any way purporting to modify these terms or conditions, whether contained in Buyer's purchase orders or shipping release forms, or elsewhere, shall be binding on SIGMA unless hereafter made in writing and signed by SIGMA'S authorized representative.
- 6. All sales, use, excise, state, local or similar taxes are the responsibility of the Buyer. In the event SIGMA must pay or collect such taxes, the Buyer agrees to promptly reimburse the same to SIGMA.
- 7. TERMS: All invoices are payable in net 30 days, unless other terms are explicitly mentioned in the invoices. A service charge may be added to all past due accounts.
- 8. Buyer may not return or cancel any part or all of the order without prior written authorization. There will be a minimum restocking charge of 25% for goods accepted for return.
- 9. Buyer will furnish and pay for necessary labor to unload and store material.
- 10. Please use Sigma's item numbering system in all your orders or inquiries to facilitate faster and easier processing.
- 11. Please try to order in Sigma's standard inner box quantities, outer box quantities, or full pallet quantities, whenever possible, to facilitate quicker processing of your orders.
- 12. Sigma is constantly adding newer sizes and items to its on-hand inventory available for immediate delivery. Please check with us for the update in availability when you put your list together the items you are looking for may already be here!
- 13. FREIGHT TERMS: The minimum order for freight allowed is \$1500 of Sigma Piping Products material.

### Products for Fire, Plumbing and Industrial

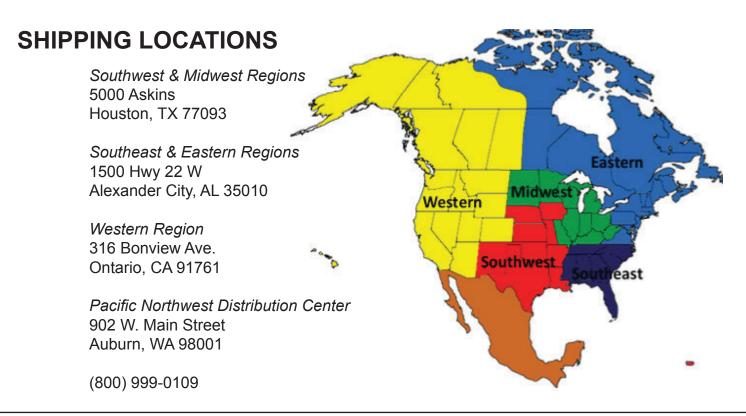
#### COMPANY OVERVIEW

Our mission is to supply the highest quality engineered products to customers in the Commercial & Residential Plumbing, Gas, Electrical, Industrial, Fire Protection and HVAC industries. SIGMA uses its relationships with the most qualified and reliabl suppliers in the world along with the comprehensive knowledge of supply chain management to provide the finest quality services available

Our experience, technical expertise and network of global resources enables us to offer the advantages of using a "one-stop shop". This provides engineering, quality assurance, product scheduling, importing, warehousing and delivery.

SIGMA Piping Products is a division of SIGMA Corporation. SIGMA Corporation has been developing products for the North American Water and Wastewater industry for over 25 years. Today we are one of the world's largest suppliers of specialty water products within the American Waterworks Association (AWWA) range. At SIGMA we are proud to offer the highest quality ductile iron waterworks fittings, pipe restrain products and municipal casting products available in the market. We operate a network of warehouses and distribution offices that provide us with a national reach

The company has grown rapidly through an increased focus on geographic expansion and by broadening our extensive product line. We have recently complemented our portfolio by acquiring a number of new product lines to service the Fire Protection, Plumbing and Industrial industries. These strategic acquisitions broaden our business and play to the strengths of the SIGMA team.



### Products for Fire, Plumbing and Industrial

#### **Quality Management**

SIGMA believes that quality does not cost, it pays. Our team commitment to quality is to maximize the combined value of our service to each of our customers by supplying all of our products to the highest requirements and standards of customer satisfaction. We strive to ensure that our products are delivered free of defects at a competitive price with the utmost attention to all aspects of product development, production and supply chain management.

The SIGMA Quality Plan is unique to the industry. We have designed our Quality Plan to assure reliability to the highest level. The plan starts with each casting having a casting ID that we call a heat number that enables us to identify the location, production facility, date and batch of production.

SIGMA uses detailed Quality Inspection Procedures (QIP) for each product category to guide our overseas production facilities. These QIPs incorporate the relevant standards and go much further in detail as to what SIGMA expects the factory to do. The aggregation of the QIPs, the Quality Plan and Statistical Process Control together assures SIGMA and our customers of the high reliability of our products.

#### Associations/Approvals/Listings/Memberships



-- American Fire Sprinkler Association



---- National Fire Sprinkler Association



---- Factory Mutual Approves



MEA ---- MEA Listed (New York City Approval)



----- American Society for Testing Materials



----- American National Standards Institute



ASME----- American Society Of Mechanical Engineers



----- Underwriters' Labratories



CUL USTED ---- Underwriters' Labratories of Canada & US



----- Underwriters' Labratories of Canada



South Central 5000 Askins Houston, TX 77093

Southeast 1500 Hwy 22 W Alexander City, AL 35010

West 4652 E. Guasti Rd. Ontario, CA 91761

Northwest 902 W. Main Street Auburn, WA 98001

Northeast 50 Howe Avet Millbury, MA 01527

**SIGMA Piping Products** 

Phone: 800-999-0109

Fax: 281-987-0200

Email: sppsales@sigmaco.com