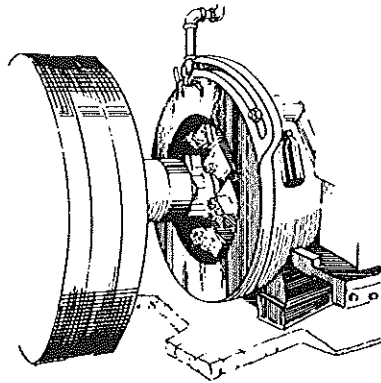


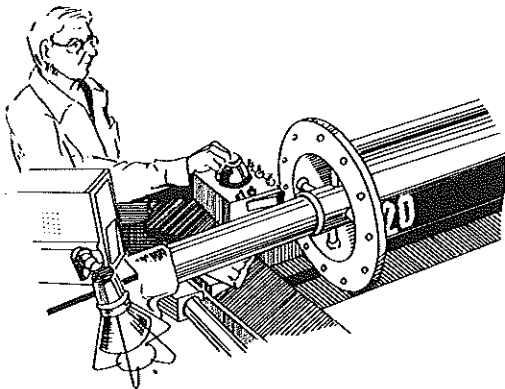
## FLANGED DUCTILE IRON PIPE

Ductile iron pipe is commonly fabricated for use as interior process piping in water and sewage treatment facilities and has been covered by ANSI standards since 1926. Under direction of Committee A/21 of AWWA, this standard is subject to periodic review and is updated to include fabricator practices reflecting current usage in the industry.

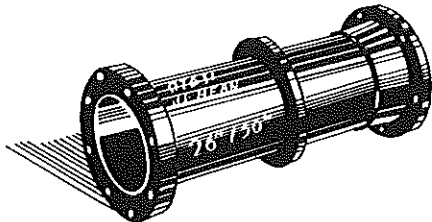
Flanged ductile iron pipe is fabricated by means of threading the pipe and attaching threaded companion flanges in accordance with ANSI/AWWA C115/A21.15.



Taper pipe threads in accordance with ANSI B2.1 table 15.1 and 15.2 of above standard.



Machine tightened flanges and pipe ends shall be faced after fabrication.



Length, weight and fabrication mark, (if other than flange manufacturer) must appear on each piece of fabricated pipe.

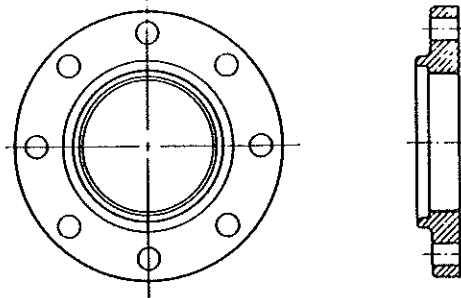
# CUSTOM PIPE & COUPLING INC.

## FLANGES

### Class 125 Flanges

Standard flanges are plain-faced without projection or raised faces and are furnished smooth or with shallow serrations (re: table 15.3 ANSI/AWWA C115/A21.15).

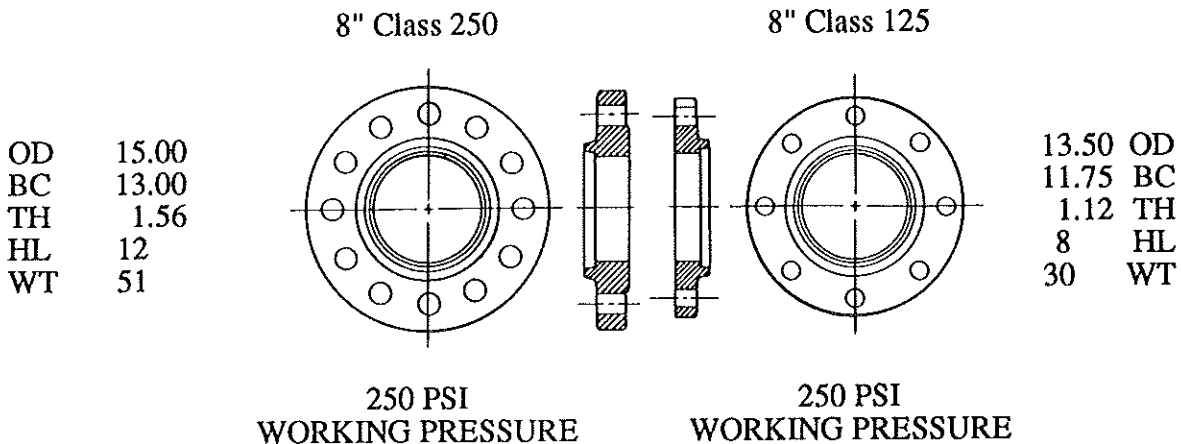
Either ductile-iron or gray-iron flanges may be used unless otherwise specified by the owner. Flanges shall conform to the respective chemical and physical properties specified for gray-iron and ductile iron fittings in ANSI/AWWA C110/A21.10, Standard for Ductile-Iron and Gray-Iron Fittings, 3 in. through 54 in., for Water and Other Liquids. Flanges are to be adequately marked as C. I. or D. I., Class Rating, Manufacturer or Fabricator's mark if different from manufacturer.



These flanges are adequate for water service of 250 psi working pressure. Bolt circle and bolt holes can be joined with Class 125 ANSI B16.1 or Class 150 ANSI B16.5 flanges. However, these flanges cannot be joined with Class 250 ANSI B16.1 flanges, flanged fittings and valves.

### Class 250 Flanges

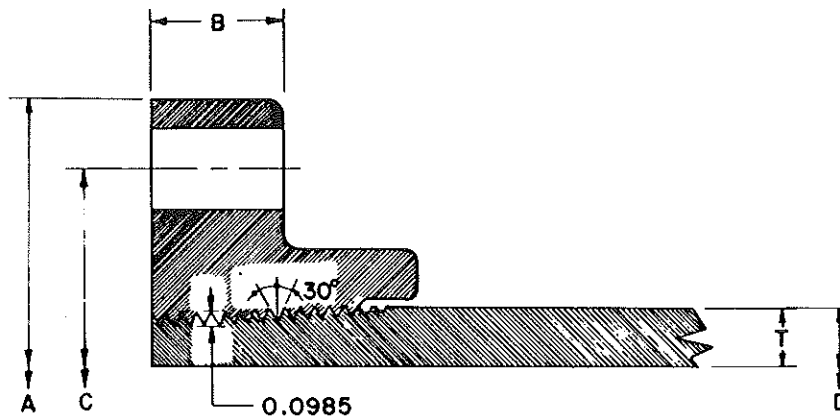
These flanges as shown in ANSI B16.1 are larger, thicker and possess different bolt circles and may have more bolt holes. They cannot be joined to Class 125 flanges. They are rated for 250 psi working pressure.



Note: Class 250 flanges have raised faces. If Class 250 flanges have raised faces, they should not be mated with flat faced Class 250 flanges.

# CUSTOM PIPE & COUPLING INC.

## BASIC DIMENSIONS OF STANDARD TAPER PIPE THREAD FOR DUCTILE IRON PIPE



Nom. Pipe Size	A. Flange O.D.	B. Flange Thickness	C. Bolt Circle	D. Pipe O.D.	T. Nominal Thickness	Dia. Bolt Holes	Bolt Size	Number of Bolts
3"	7.50	0.75	6.00	3.96	0.31	3/4	3/8 x 2 1/2	4
4"	9.00	0.94	7.50	4.80	0.32	3/4	3/8 x 3	8
6"	11.00	1.00	9.50	6.90	0.34	7/8	3/4 x 3 1/2	8
8"	13.50	1.12	11.75	9.05	0.36	7/8	3/4 x 3 1/2	8
10"	16.00	1.19	14.25	11.10	0.38	1	7/8 x 4	12
12"	19.00	1.25	17.00	13.20	0.40	1	7/8 x 4	12
14"	21.00	1.38	18.75	15.30	0.42	1 1/8	1 x 4 1/2	12
16"	23.50	1.44	21.25	17.40	0.43	1 1/8	1 x 4 1/2	16
18"	25.00	1.56	22.75	19.50	0.44	1 1/4	1 1/8 x 5	16
20"	27.50	1.69	25.00	21.60	0.45	1 1/4	1 1/8 x 5	20
24"	32.00	1.88	29.50	25.80	0.47	1 1/2	1 1/4 x 5 1/2	20
30"	38.75	2.12	36.00	32.00	0.51	1 3/4	1 1/4 x 6 1/2	28
36"	46.00	2.38	42.75	38.30	0.58	1 3/4	1 1/2 x 7	32
42"	53.00	2.62	49.50	44.50	0.65	1 3/4	1 1/2 x 7 1/2	36
48"	59.50	2.75	56.00	50.80	0.72	1 3/4	1 1/2 x 8	44
54"	66.25	3.00	62.75	57.10	0.81	2	1 3/4 x 8 1/2	44

### NOTES

- All ductile iron pipe used with threaded flanges to have a minimum thickness of Class 53.
- Thickness of flanges have the following tolerance:
  - 3" thru 12" -  $\pm .12"$  - .065
  - 14" thru 24" -  $\pm .19"$  - .095
  - 30" thru 54" -  $\pm .25"$  - .125
- All ductile iron pipe sizes 3" thru 54" to have American Standard Pipe Threads: 8 threads/in. on a taper of .75 in./ft. on diameter.

## Other Flange Design Considerations

There are design considerations for flanges not addressed by ANSI B16.1 but which are integral design considerations for flanges (see ANSI/AWWA C115/A21.15 Table 15.3 and Figure 15.1).

These include but are not limited to hub length and cavities between bolt holes.

## Loose Flanges

Flanged pipe fabricated in accordance with these standards requires facing after machine tightening (ANSI/AWWA C115/A21.15 Section 15-9.2). It is therefore not recommended that flanges be ordered with flanges loose for field completion.

## Threaded Mechanical joint Adapters

Currently many fabricators provide threaded on mechanical joint bells in lieu of static castings. These bells are produced from dimensions provided by ANSI/AWWA C111/A21.11 and are threaded in accordance with ANSI/AWWA C115/A21.15.

