

**Standardized  
Mechanical Joint Cast Iron Pipe  
and Fittings**

**(Revised, 1950)**

**UNITED STATES PIPE & FOUNDRY CO.**

*General Office: Birmingham, Ala.*

# **Standardized Mechanical Joint Cast Iron Pipe and Fittings**

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## **UNITED STATES PIPE & FOUNDRY CO.**

*General Office: Birmingham, Ala.*

*Plants: Bessemer (Ala.), Birmingham (Ala.), Burlington (N. J.), Chattanooga (Tenn.), Decoto (Calif.).*

*District Sales Offices: Burlington, New York, Boston, Pittsburgh, Birmingham, Kansas City, Houston, Dallas, Chicago, Cleveland, Minneapolis, San Francisco, Los Angeles, Seattle, Syracuse*

## **General Specifications** *for mechanical joint cast iron pipe, fittings and accessories*

Pipe shall be cast iron produced centrifugally in sand lined or metal molds, horizontally in green sand molds or by the pit cast method. Each pipe shall be provided with a mechanical joint socket on one end and the other end shall be plain. Fittings shall be provided with sockets at all openings unless specifically ordered otherwise.

Three to twelve-inch fittings conform to A.S.A. Specification A-21.10 (for short body fittings) and joints conform to A.S.A. Specification A-21.11 (for mechanical joints).

Pipe shall be tested in a suitable hydraulic press to the pressure indicated in the appropriate pipe specification.

Pipe and fittings shall be furnished to dimensions as tabulated. All sockets and plain ends shall be checked with ring and plug gages.

Pipe and fittings shall be furnished uncoated and unlined unless otherwise specified. If coatings are required they shall meet specifications agreed upon by the purchaser and seller.

All joint surfaces shall be protected by suitable means at the foundry against corrosion during storage and shipment.

High strength Cast Iron Tee Head Bolts and Hex Nuts shall be furnished in sufficient quantities to provide for each socket opening on pipe and fittings. These bolts shall have a minimum tensile strength of 50,000 pounds per square inch.

Cast Iron Glands shall be furnished in sufficient quantities to provide for each socket opening on pipe and fittings. These glands shall be made of high strength Cast Iron.

Gaskets shall be furnished in sufficient quantities to provide for each socket opening on pipe or fittings. The type of gasket shall be as stipulated in sales contract.

## **Weights and Dimensions** *of mechanical joint cast iron pipe, fittings and accessories*

Fittings and all accessories for mechanical joint cast iron pipe are standardized and interchangeable regardless of which member, or members, of the Cast Iron Pipe Research Association they are obtained from.

Association members have devoted many years of research, involving the testing to destruction of hundreds of specimens, to the improvement of design and strength factors of fittings.

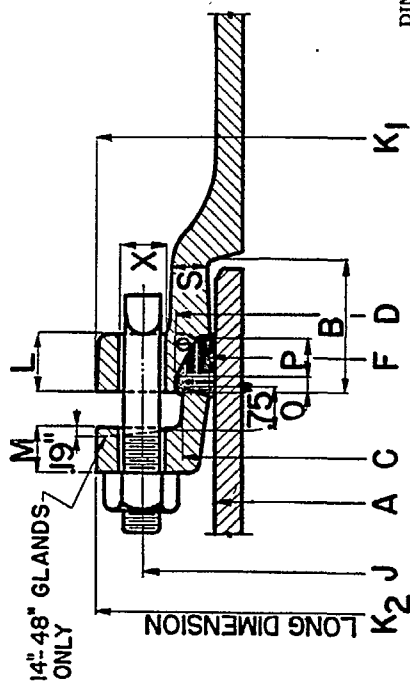
On the pages following are shown cross-sectional drawings and Tables of Weights and Dimensions of Pipe; Bends; Tees and Crosses; Reducers; Sleeves; Glands, Plugs and Caps; Connecting Pieces; Offsets and Drip Pots.

All fittings are made to dimensions, as shown in the Tables, of high quality cast iron and are rigidly inspected and tested. They are furnished with sockets at all openings unless otherwise specified. Socket dimensions of pipe and fittings are the same.

Joint surfaces are protected against corrosion during storage and shipment. Fittings are furnished uncoated and unlined unless otherwise specified.

For further information, refer to General Specifications for Mechanical Joint Cast Iron Pipe, Fittings and Accessories on page 17.

For information regarding Gaskets, Bolts and Glands please turn to page 32.



## Dimensions of mechanical joint cast iron pipe and fittings

DIMENSIONS IN INCHES

| Size | A                     | B                     | C                      | D                      | F                      | φ   | X                      | J                      | KI                     |                            | K2                     | L                      | M                      | O                      | P                      | S                      |                            | Bolts |      | Weight of Bell, lb. |            | Weight of Gland, Bolt and Gasket, lbs. |
|------|-----------------------|-----------------------|------------------------|------------------------|------------------------|-----|------------------------|------------------------|------------------------|----------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|----------------------------|-------|------|---------------------|------------|----------------------------------------|
|      |                       |                       |                        |                        |                        |     |                        |                        | Cent. Pipe             | Pit Cast Pipe and Fittings |                        |                        |                        |                        |                        | Cent. Pipe             | Pit Cast Pipe and Fittings | No.   | Size | Lgth.               | Cent. Pipe |                                        |
| 3    | ±.06<br>3.96          | 2.50<br>±.04<br>4.84  | ±.06<br>-0.04<br>4.94  | ±.07<br>-0.03<br>4.06  | ±.07<br>-0.03<br>4.06  | 28° | ±.06<br>-0.04<br>4.06  | ±.06<br>-0.04<br>4.06  | ±.06<br>-0.04<br>4.06  | ±.06<br>-0.04<br>4.06      | ±.06<br>-0.04<br>4.06  | ±.06<br>-0.04<br>4.06  | ±.06<br>-0.04<br>4.06  | ±.06<br>-0.04<br>4.06  | ±.06<br>-0.04<br>4.06  | ±.06<br>-0.04<br>4.06  | ±.06<br>-0.04<br>4.06      | 4     | ¾    | 3                   | 11         | 7                                      |
| 4    | ±.06<br>4.80          | 2.50<br>±.04<br>5.92  | ±.06<br>-0.04<br>6.02  | ±.07<br>-0.03<br>4.90  | ±.07<br>-0.03<br>4.90  | 28° | ±.06<br>-0.04<br>4.90  | ±.06<br>-0.04<br>4.90  | ±.06<br>-0.04<br>4.90  | ±.06<br>-0.04<br>4.90      | ±.06<br>-0.04<br>4.90  | ±.06<br>-0.04<br>4.90  | ±.06<br>-0.04<br>4.90  | ±.06<br>-0.04<br>4.90  | ±.06<br>-0.04<br>4.90  | ±.06<br>-0.04<br>4.90  | ±.06<br>-0.04<br>4.90      | 4     | ¾    | 3½                  | 16         | 10                                     |
| 6    | ±.06<br>6.90          | 2.50<br>±.04<br>8.02  | ±.06<br>-0.04<br>8.12  | ±.07<br>-0.03<br>7.00  | ±.07<br>-0.03<br>7.00  | 28° | ±.06<br>-0.04<br>7.00  | ±.06<br>-0.04<br>7.00  | ±.06<br>-0.04<br>7.00  | ±.06<br>-0.04<br>7.00      | ±.06<br>-0.04<br>7.00  | ±.06<br>-0.04<br>7.00  | ±.06<br>-0.04<br>7.00  | ±.06<br>-0.04<br>7.00  | ±.06<br>-0.04<br>7.00  | ±.06<br>-0.04<br>7.00  | ±.06<br>-0.04<br>7.00      | 6     | ¾    | 3½                  | 22         | 16                                     |
| 8    | ±.06<br>9.05          | 2.50<br>±.04<br>10.17 | ±.06<br>-0.04<br>10.27 | ±.07<br>-0.03<br>9.15  | ±.07<br>-0.03<br>9.15  | 28° | ±.06<br>-0.04<br>9.15  | ±.06<br>-0.04<br>9.15  | ±.06<br>-0.04<br>9.15  | ±.06<br>-0.04<br>9.15      | ±.06<br>-0.04<br>9.15  | ±.06<br>-0.04<br>9.15  | ±.06<br>-0.04<br>9.15  | ±.06<br>-0.04<br>9.15  | ±.06<br>-0.04<br>9.15  | ±.06<br>-0.04<br>9.15  | ±.06<br>-0.04<br>9.15      | 6     | ¾    | 4                   | 30         | 25                                     |
| 10   | ±.06<br>11.10         | 2.50<br>±.06<br>12.22 | ±.06<br>-0.04<br>12.34 | ±.07<br>-0.03<br>11.20 | ±.07<br>-0.03<br>11.20 | 28° | ±.06<br>-0.04<br>11.20 | ±.06<br>-0.04<br>11.20 | ±.06<br>-0.04<br>11.20 | ±.06<br>-0.04<br>11.20     | ±.06<br>-0.04<br>11.20 | ±.06<br>-0.04<br>11.20 | ±.06<br>-0.04<br>11.20 | ±.06<br>-0.04<br>11.20 | ±.06<br>-0.04<br>11.20 | ±.06<br>-0.04<br>11.20 | ±.06<br>-0.04<br>11.20     | 8     | ¾    | 4                   | 40         | 30                                     |
| 12   | ±.06<br>13.20         | 2.50<br>±.06<br>14.32 | ±.06<br>-0.04<br>14.44 | ±.07<br>-0.03<br>13.30 | ±.07<br>-0.03<br>13.30 | 28° | ±.06<br>-0.04<br>13.30 | ±.06<br>-0.04<br>13.30 | ±.06<br>-0.04<br>13.30 | ±.06<br>-0.04<br>13.30     | ±.06<br>-0.04<br>13.30 | ±.06<br>-0.04<br>13.30 | ±.06<br>-0.04<br>13.30 | ±.06<br>-0.04<br>13.30 | ±.06<br>-0.04<br>13.30 | ±.06<br>-0.04<br>13.30 | ±.06<br>-0.04<br>13.30     | 8     | ¾    | 4                   | 50         | 40                                     |
| 14   | ±.05<br>-0.08<br>3.50 | 3.50<br>±.07<br>16.40 | ±.07<br>-0.05<br>16.54 | ±.06<br>-0.07<br>15.44 | ±.06<br>-0.07<br>15.44 | 28° | ±.06<br>-0.07<br>15.44 | ±.06<br>-0.07<br>15.44 | ±.06<br>-0.07<br>15.44 | ±.06<br>-0.07<br>15.44     | ±.06<br>-0.07<br>15.44 | ±.06<br>-0.07<br>15.44 | ±.06<br>-0.07<br>15.44 | ±.06<br>-0.07<br>15.44 | ±.06<br>-0.07<br>15.44 | ±.06<br>-0.07<br>15.44 | ±.06<br>-0.07<br>15.44     | 10    | ¾    | 4                   | 78         | 45                                     |
| 16   | ±.05<br>-0.08<br>3.50 | 3.50<br>±.07<br>18.50 | ±.07<br>-0.05<br>18.64 | ±.06<br>-0.07<br>17.54 | ±.06<br>-0.07<br>17.54 | 28° | ±.06<br>-0.07<br>17.54 | ±.06<br>-0.07<br>17.54 | ±.06<br>-0.07<br>17.54 | ±.06<br>-0.07<br>17.54     | ±.06<br>-0.07<br>17.54 | ±.06<br>-0.07<br>17.54 | ±.06<br>-0.07<br>17.54 | ±.06<br>-0.07<br>17.54 | ±.06<br>-0.07<br>17.54 | ±.06<br>-0.07<br>17.54 | ±.06<br>-0.07<br>17.54     | 12    | ¾    | 4½                  | 95         | 55                                     |
| 18   | ±.05<br>-0.08<br>3.50 | 3.50<br>±.07<br>20.60 | ±.07<br>-0.05<br>20.74 | ±.06<br>-0.07<br>19.64 | ±.06<br>-0.07<br>19.64 | 28° | ±.06<br>-0.07<br>19.64 | ±.06<br>-0.07<br>19.64 | ±.06<br>-0.07<br>19.64 | ±.06<br>-0.07<br>19.64     | ±.06<br>-0.07<br>19.64 | ±.06<br>-0.07<br>19.64 | ±.06<br>-0.07<br>19.64 | ±.06<br>-0.07<br>19.64 | ±.06<br>-0.07<br>19.64 | ±.06<br>-0.07<br>19.64 | ±.06<br>-0.07<br>19.64     | 12    | ¾    | 4½                  | 113        | 65                                     |
| 20   | ±.05<br>-0.08<br>3.50 | 3.50<br>±.07<br>22.70 | ±.07<br>-0.05<br>22.84 | ±.06<br>-0.07<br>21.74 | ±.06<br>-0.07<br>21.74 | 28° | ±.06<br>-0.07<br>21.74 | ±.06<br>-0.07<br>21.74 | ±.06<br>-0.07<br>21.74 | ±.06<br>-0.07<br>21.74     | ±.06<br>-0.07<br>21.74 | ±.06<br>-0.07<br>21.74 | ±.06<br>-0.07<br>21.74 | ±.06<br>-0.07<br>21.74 | ±.06<br>-0.07<br>21.74 | ±.06<br>-0.07<br>21.74 | ±.06<br>-0.07<br>21.74     | 14    | ¾    | 4½                  | 134        | 85                                     |
| 24   | ±.05<br>-0.08<br>3.50 | 3.50<br>±.07<br>26.90 | ±.07<br>-0.05<br>27.04 | ±.06<br>-0.07<br>25.94 | ±.06<br>-0.07<br>25.94 | 28° | ±.06<br>-0.07<br>25.94 | ±.06<br>-0.07<br>25.94 | ±.06<br>-0.07<br>25.94 | ±.06<br>-0.07<br>25.94     | ±.06<br>-0.07<br>25.94 | ±.06<br>-0.07<br>25.94 | ±.06<br>-0.07<br>25.94 | ±.06<br>-0.07<br>25.94 | ±.06<br>-0.07<br>25.94 | ±.06<br>-0.07<br>25.94 | ±.06<br>-0.07<br>25.94     | 16    | ¾    | 5                   | 177        | 105                                    |
| 30   | 32.00<br>4.00         | 4.00<br>33.29         | 33.46                  | 32.17                  | 32.17                  | 20° | 1¼                     | 36.88                  | 39.12                  | 39.12                      | 39.12                  | 1.81                   | 2.00                   | .38                    | 1.00                   | 1.20                   | 1.50                       | 20    | 1    | 5¼                  | 285        | 220                                    |
| 36   | 38.30<br>4.00         | 4.00<br>39.59         | 39.76                  | 38.47                  | 38.47                  | 20° | 1¼                     | 43.75                  | 46.00                  | 46.00                      | 46.00                  | 2.00                   | 2.00                   | .38                    | 1.00                   | 1.35                   | 1.80                       | 24    | 1    | 5¼                  | 395        | 285                                    |
| 42   | 44.50<br>4.00         | 4.00<br>45.79         | 45.96                  | 44.67                  | 44.67                  | 20° | 1¼                     | 50.62                  | 53.12                  | 53.12                      | 53.12                  | 2.00                   | 2.00                   | .38                    | 1.00                   | 1.48                   | 1.95                       | 28    | 1¼   | 6                   | 510        | 400                                    |
| 48   | 50.80<br>4.00         | 4.00<br>52.09         | 52.26                  | 50.97                  | 50.97                  | 20° | 1¼                     | 57.50                  | 60.00                  | 60.00                      | 60.00                  | 2.00                   | 2.00                   | .38                    | 1.00                   | 1.61                   | 2.20                       | 32    | 1¼   | 6                   | 645        | 475                                    |

### NOTES:

1. Cored holes may be tapered an additional 0.06" in diameter.
2. In case of ovalness of the spigot O. D., the mean diameter measured by a circumferential tape shall not be less than the minimum diameter shown in the table. The minor axis shall not be less than the above minimum diameter plus an additional minus tolerance of .04" for sizes 8" through 12", and .07" for sizes 14" through 24".
3. K2 is O. D. of glands across bolt holes, outside of gland may be polygon shape.
4. Dimensions of 30"-48" sizes are tentative, consult the manufacturer.
5. This joint conforms to A.S.A. Specification A-21.11.

**STANDARD THICKNESSES AND WEIGHTS OF CAST IRON MECHANICAL JOINT PIPE  
CENTRIFUGALLY CAST IN METAL AND SAND LINED MOLDS FOR WATER AND OTHER LIQUIDS**

Note: Thicknesses in accordance with A.S.A. Specifications, 18,000 psi full length bursting tensile, 40,000 psi ring modulus of rupture. For pipe laid without blocks on flat bottom trench with tamped backfill under 5 feet of cover. For other conditions consult the manufacturer.

| Size<br>ins.                             | Weight Based On        |                               |                    |              |                    |              |                    |              |                    |              |                    |              |
|------------------------------------------|------------------------|-------------------------------|--------------------|--------------|--------------------|--------------|--------------------|--------------|--------------------|--------------|--------------------|--------------|
|                                          | Thick-<br>ness<br>ins. | Out-<br>side<br>Diam.<br>ins. | 12 ft. Lgth.*      |              | 16 ft. Lgth.*      |              | 16½ ft. Lgth.*     |              | 18 ft. Lgth.*      |              | 20 ft. Lgth.*      |              |
|                                          |                        |                               | Avg.<br>per<br>ft. | per<br>Lgth. | Avg.<br>per<br>ft. | per<br>Lgth. | Avg.<br>per<br>ft. | per<br>Lgth. | Avg.<br>per<br>ft. | per<br>Lgth. | Avg.<br>per<br>ft. | per<br>Lgth. |
| Class 50—50 Lb. Pressure—115 Foot Head   |                        |                               |                    |              |                    |              |                    |              |                    |              |                    |              |
| 3                                        | .32                    | 3.96                          | 12.3               | 150          | 12.2               | 195          | 12.1               | 200          | 12.0               | 215          |                    |              |
| 4                                        | .35                    | 4.80                          | 16.6               | 200          | 16.4               | 260          | 16.3               | 270          | 16.2               | 290          |                    |              |
| 6                                        | .38                    | 6.90                          | 26.1               | 315          | 25.7               | 410          | 25.6               | 420          | 25.5               | 460          |                    |              |
| 8                                        | .41                    | 9.05                          | 37.2               | 445          | 36.7               | 585          | 36.6               | 605          | 36.4               | 655          |                    |              |
| 10                                       | .44                    | 11.10                         | 49.3               | 590          | 48.5               | 775          | 48.4               | 800          | 48.2               | 870          |                    |              |
| 12                                       | .48                    | 13.20                         | 64.0               | 770          | 62.9               | 1005         | 62.8               | 1035         | 62.6               | 1125         | 62.3               | 1245         |
| 14                                       | .48                    | 15.30                         | 76.2               | 915          | 74.6               | 1195         | 74.4               | 1230         | 74.1               | 1335         | 73.6               | 1470         |
| 16                                       | .54                    | 17.40                         | 97.1               | 1165         | 95.0               | 1520         | 94.9               | 1565         | 94.5               | 1700         | 94.0               | 1880         |
| 18                                       | .54                    | 19.50                         | 109.8              | 1320         | 107.5              | 1720         | 107.2              | 1770         | 106.7              | 1920         | 106.0              | 2120         |
| 20                                       | .57                    | 21.60                         | 128.7              | 1545         | 125.9              | 2015         | 125.7              | 2075         | 124.9              | 2250         | 124.2              | 2485         |
| 24                                       | .63                    | 25.80                         | 170.2              | 2040         | 166.5              | 2665         | 166.1              | 2740         | 165.2              | 2975         | 164.2              | 3285         |
| 30                                       | .79                    | 32.00                         |                    |              | 259.5              | 4150         | 259.0              | 4275         |                    |              | 256.0              | 5120         |
| 36                                       | .87                    | 38.30                         |                    |              | 343.9              | 5500         |                    |              |                    |              |                    |              |
| 42                                       | .97                    | 44.50                         |                    |              | 445.7              | 7130         |                    |              |                    |              |                    |              |
| 48                                       | 1.06                   | 50.80                         |                    |              | 557.1              | 8915         |                    |              |                    |              |                    |              |
| Class 100—100 Lb. Pressure—231 Foot Head |                        |                               |                    |              |                    |              |                    |              |                    |              |                    |              |
| 3                                        | .32                    | 3.96                          | 12.3               | 150          | 12.2               | 195          | 12.1               | 200          | 12.0               | 215          |                    |              |
| 4                                        | .35                    | 4.80                          | 16.6               | 200          | 16.4               | 260          | 16.3               | 270          | 16.2               | 290          |                    |              |
| 6                                        | .38                    | 6.90                          | 26.1               | 315          | 25.7               | 410          | 25.6               | 420          | 25.5               | 460          |                    |              |
| 8                                        | .41                    | 9.05                          | 37.2               | 445          | 36.7               | 585          | 36.6               | 605          | 36.4               | 655          |                    |              |
| 10                                       | .44                    | 11.10                         | 49.3               | 590          | 48.5               | 775          | 48.4               | 800          | 48.2               | 870          |                    |              |
| 12                                       | .48                    | 13.20                         | 64.0               | 770          | 62.9               | 1005         | 62.8               | 1035         | 62.6               | 1125         | 62.3               | 1245         |
| 14                                       | .51                    | 15.30                         | 80.4               | 965          | 78.8               | 1260         | 78.6               | 1295         | 78.2               | 1410         | 77.8               | 1555         |
| 16                                       | .54                    | 17.40                         | 97.1               | 1165         | 95.0               | 1520         | 94.9               | 1565         | 94.5               | 1700         | 94.0               | 1880         |
| 18                                       | .58                    | 19.50                         | 117.0              | 1405         | 114.7              | 1835         | 114.4              | 1890         | 113.9              | 2050         | 113.2              | 2265         |
| 20                                       | .62                    | 21.60                         | 138.7              | 1665         | 135.9              | 2175         | 135.7              | 2240         | 134.9              | 2430         | 134.2              | 2685         |
| 24                                       | .68                    | 25.80                         | 182.2              | 2185         | 178.5              | 2855         | 178.1              | 2940         | 177.2              | 3190         | 176.2              | 3525         |
| 30                                       | .79                    | 32.00                         |                    |              | 259.5              | 4150         | 259.0              | 4275         |                    |              | 256.0              | 5120         |
| 36                                       | .87                    | 38.30                         |                    |              | 343.9              | 5500         |                    |              |                    |              |                    |              |
| 42                                       | .97                    | 44.50                         |                    |              | 445.7              | 7130         |                    |              |                    |              |                    |              |
| 48                                       | 1.06                   | 50.80                         |                    |              | 557.1              | 8915         |                    |              |                    |              |                    |              |
| Class 150—150 Lb. Pressure—346 Foot Head |                        |                               |                    |              |                    |              |                    |              |                    |              |                    |              |
| 3                                        | .32                    | 3.96                          | 12.3               | 150          | 12.2               | 195          | 12.1               | 200          | 12.0               | 215          |                    |              |
| 4                                        | .35                    | 4.80                          | 16.6               | 200          | 16.4               | 260          | 16.3               | 270          | 16.2               | 290          |                    |              |
| 6                                        | .38                    | 6.90                          | 26.1               | 315          | 25.7               | 410          | 25.6               | 420          | 25.5               | 460          |                    |              |
| 8                                        | .41                    | 9.05                          | 37.2               | 445          | 36.7               | 585          | 36.6               | 605          | 36.4               | 655          |                    |              |
| 10                                       | .44                    | 11.10                         | 49.3               | 590          | 48.5               | 775          | 48.4               | 800          | 48.2               | 870          |                    |              |
| 12                                       | .48                    | 13.20                         | 64.0               | 770          | 62.9               | 1005         | 62.8               | 1035         | 62.6               | 1125         | 62.3               | 1245         |
| 14                                       | .51                    | 15.30                         | 80.4               | 965          | 78.8               | 1260         | 78.6               | 1295         | 78.2               | 1410         | 77.8               | 1555         |
| 16                                       | .54                    | 17.40                         | 97.1               | 1165         | 95.0               | 1520         | 94.9               | 1565         | 94.5               | 1700         | 94.0               | 1880         |
| 18                                       | .58                    | 19.50                         | 117.0              | 1405         | 114.7              | 1835         | 114.4              | 1890         | 113.9              | 2050         | 113.2              | 2265         |
| 20                                       | .62                    | 21.60                         | 138.7              | 1665         | 135.9              | 2175         | 135.7              | 2240         | 134.9              | 2430         | 134.2              | 2685         |
| 24                                       | .73                    | 25.80                         | 194.2              | 2330         | 190.4              | 3045         | 190.1              | 3135         | 189.2              | 3405         | 188.2              | 3765         |
| 30                                       | .85                    | 32.00                         |                    |              | 277.3              | 4435         | 276.8              | 4565         |                    |              | 273.8              | 5475         |
| 36                                       | .94                    | 38.30                         |                    |              | 368.9              | 5900         |                    |              |                    |              |                    |              |
| 42                                       | 1.05                   | 44.50                         |                    |              | 479.1              | 7665         |                    |              |                    |              |                    |              |
| 48                                       | 1.14                   | 50.80                         |                    |              | 595.2              | 9525         |                    |              |                    |              |                    |              |

\*Including Bell. Calculated weight of pipe rounded off to nearest 5 pounds.

References: A.S.A.—A-21.6—pipe cast in metal molds. A.S.A.—A-21.8—pipe cast in sand lined molds. A.S.A.—A-21.11—mechanical joints.

Continued on page 21

| Size<br>ins.                             | Thick-<br>ness<br>ins. | Out<br>side<br>Diam.<br>ins. | Weight Based On    |              |                    |              |                    |              |                    |              |                    |              |
|------------------------------------------|------------------------|------------------------------|--------------------|--------------|--------------------|--------------|--------------------|--------------|--------------------|--------------|--------------------|--------------|
|                                          |                        |                              | 12 ft. Lgth.*      |              | 16 ft. Lgth.*      |              | 16½ ft. Lgth.*     |              | 18 ft. Lgth.*      |              | 20 ft. Lgth.*      |              |
|                                          |                        |                              | Avg.<br>per<br>ft. | per<br>Lgth. | Avg.<br>per<br>ft. | per<br>Lgth. | Avg.<br>per<br>ft. | per<br>Lgth. | Avg.<br>per<br>ft. | per<br>Lgth. | Avg.<br>per<br>ft. | per<br>Lgth. |
| Class 200—200 Lb. Pressure—462 Foot Head |                        |                              |                    |              |                    |              |                    |              |                    |              |                    |              |
| 3                                        | .32                    | 3.96                         | 12.3               | 150          | 12.2               | 195          | 12.1               | 200          | 12.0               | 215          |                    |              |
| 4                                        | .35                    | 4.80                         | 16.6               | 200          | 16.4               | 260          | 16.3               | 270          | 16.2               | 290          |                    |              |
| 6                                        | .38                    | 6.90                         | 26.1               | 315          | 25.7               | 410          | 25.6               | 420          | 25.5               | 460          |                    |              |
| 8                                        | .41                    | 9.05                         | 37.2               | 445          | 36.7               | 585          | 36.6               | 605          | 36.4               | 655          |                    |              |
| 10                                       | .44                    | 11.10                        | 49.3               | 590          | 48.5               | 775          | 48.4               | 800          | 48.2               | 870          |                    |              |
| 12                                       | .48                    | 13.20                        | 64.0               | 770          | 62.9               | 1005         | 62.8               | 1035         | 62.6               | 1125         | 62.3               | 1245         |
| 14                                       | .55                    | 15.30                        | 86.0               | 1030         | 84.4               | 1350         | 84.2               | 1390         | 83.8               | 1510         | 83.4               | 1670         |
| 16                                       | .58                    | 17.40                        | 103.5              | 1240         | 101.5              | 1625         | 101.3              | 1670         | 100.9              | 1815         | 100.3              | 2005         |
| 18                                       | .63                    | 19.50                        | 125.9              | 1510         | 123.5              | 1975         | 123.3              | 2035         | 122.8              | 2210         | 122.2              | 2445         |
| 20                                       | .67                    | 21.60                        | 148.7              | 1785         | 145.9              | 2335         | 145.7              | 2405         | 144.9              | 2610         | 144.2              | 2885         |
| 24                                       | .79                    | 25.80                        | 208.4              | 2500         | 204.8              | 3275         | 204.4              | 3375         | 203.5              | 3665         | 202.6              | 4050         |
| 30                                       | .92                    | 32.00                        |                    |              | 298.1              | 4770         | 297.6              | 4910         |                    |              | 294.6              | 5890         |
| 36                                       | 1.02                   | 38.30                        |                    |              | 397.4              | 6360         |                    |              |                    |              |                    |              |
| 42                                       | 1.13                   | 44.50                        |                    |              | 512.3              | 8195         |                    |              |                    |              |                    |              |
| 48                                       | 1.23                   | 50.80                        |                    |              | 637.9              | 10205        |                    |              |                    |              |                    |              |
| Class 250—250 Lb. Pressure—577 Foot Head |                        |                              |                    |              |                    |              |                    |              |                    |              |                    |              |
| 3                                        | .32                    | 3.96                         | 12.3               | 150          | 12.2               | 195          | 12.1               | 200          | 12.0               | 215          |                    |              |
| 4                                        | .35                    | 4.80                         | 16.6               | 200          | 16.4               | 260          | 16.3               | 270          | 16.2               | 290          |                    |              |
| 6                                        | .38                    | 6.90                         | 26.1               | 315          | 25.7               | 410          | 25.6               | 420          | 25.5               | 460          |                    |              |
| 8                                        | .41                    | 9.05                         | 37.2               | 445          | 36.7               | 585          | 36.6               | 605          | 36.4               | 655          |                    |              |
| 10                                       | .44                    | 11.10                        | 49.3               | 590          | 48.5               | 775          | 48.4               | 800          | 48.2               | 870          |                    |              |
| 12                                       | .52                    | 13.20                        | 68.8               | 825          | 67.7               | 1085         | 67.6               | 1115         | 67.4               | 1215         | 67.1               | 1340         |
| 14                                       | .59                    | 15.30                        | 91.6               | 1100         | 90.0               | 1440         | 89.8               | 1480         | 89.4               | 1610         | 89.0               | 1780         |
| 16                                       | .63                    | 17.40                        | 111.5              | 1340         | 109.6              | 1755         | 109.4              | 1805         | 108.9              | 1960         | 108.3              | 2165         |
| 18                                       | .68                    | 19.50                        | 134.8              | 1620         | 132.5              | 2120         | 132.2              | 2180         | 131.7              | 2370         | 131.0              | 2620         |
| 20                                       | .72                    | 21.60                        | 158.6              | 1905         | 155.7              | 2490         | 155.5              | 2565         | 154.8              | 2785         | 154.1              | 3080         |
| 24                                       | .79                    | 25.80                        | 208.4              | 2500         | 204.8              | 3275         | 204.4              | 3375         | 203.5              | 3665         | 202.6              | 4050         |
| 30                                       | .99                    | 32.00                        |                    |              | 318.7              | 5100         | 318.2              | 5250         |                    |              | 315.2              | 6305         |
| 36                                       | 1.10                   | 38.30                        |                    |              | 425.8              | 6815         |                    |              |                    |              |                    |              |
| 42                                       | 1.22                   | 44.50                        |                    |              | 549.5              | 8790         |                    |              |                    |              |                    |              |
| 48                                       | 1.33                   | 50.80                        |                    |              | 685.2              | 10965        |                    |              |                    |              |                    |              |
| Class 300—300 Lb. Pressure—693 Foot Head |                        |                              |                    |              |                    |              |                    |              |                    |              |                    |              |
| 3                                        | .32                    | 3.96                         | 12.3               | 150          | 12.2               | 195          | 12.1               | 200          | 12.0               | 215          |                    |              |
| 4                                        | .35                    | 4.80                         | 16.6               | 200          | 16.4               | 260          | 16.3               | 270          | 16.2               | 290          |                    |              |
| 6                                        | .38                    | 6.90                         | 26.1               | 315          | 25.7               | 410          | 25.6               | 420          | 25.5               | 460          |                    |              |
| 8                                        | .41                    | 9.05                         | 37.2               | 445          | 36.7               | 585          | 36.6               | 605          | 36.4               | 655          |                    |              |
| 10                                       | .48                    | 11.10                        | 53.3               | 640          | 52.5               | 840          | 52.4               | 865          | 52.2               | 940          |                    |              |
| 12                                       | .52                    | 13.20                        | 68.8               | 825          | 67.7               | 1085         | 67.6               | 1115         | 67.4               | 1215         | 67.1               | 1340         |
| 14                                       | .59                    | 15.30                        | 91.6               | 1100         | 90.0               | 1440         | 89.8               | 1480         | 89.4               | 1610         | 89.0               | 1780         |
| 16                                       | .68                    | 17.40                        | 119.3              | 1430         | 117.3              | 1875         | 117.2              | 1935         | 116.7              | 2100         | 116.2              | 2325         |
| 18                                       | .73                    | 19.50                        | 143.7              | 1725         | 141.4              | 2260         | 141.1              | 2330         | 140.6              | 2530         | 140.0              | 2800         |
| 20                                       | .78                    | 21.60                        | 170.4              | 2045         | 167.6              | 2680         | 167.3              | 2760         | 166.6              | 3000         | 165.9              | 3320         |
| 24                                       | .85                    | 25.80                        | 222.6              | 2670         | 219.0              | 3505         | 218.6              | 3605         | 217.7              | 3920         | 216.8              | 4335         |
| Class 350—350 Lb. Pressure—808 Foot Head |                        |                              |                    |              |                    |              |                    |              |                    |              |                    |              |
| 3                                        | .32                    | 3.96                         | 12.3               | 150          | 12.2               | 195          | 12.1               | 200          | 12.0               | 215          |                    |              |
| 4                                        | .35                    | 4.80                         | 16.6               | 200          | 16.4               | 260          | 16.3               | 270          | 16.2               | 290          |                    |              |
| 6                                        | .38                    | 6.90                         | 26.1               | 315          | 25.7               | 410          | 25.6               | 420          | 25.5               | 460          |                    |              |
| 8                                        | .41                    | 9.05                         | 37.2               | 445          | 36.7               | 585          | 36.6               | 605          | 36.4               | 655          |                    |              |
| 10                                       | .52                    | 11.10                        | 57.2               | 685          | 56.4               | 900          | 56.3               | 930          | 56.1               | 1010         |                    |              |
| 12                                       | .56                    | 13.20                        | 73.6               | 885          | 72.5               | 1160         | 72.4               | 1195         | 72.2               | 1300         | 71.9               | 1440         |
| 14                                       | .64                    | 15.30                        | 98.5               | 1180         | 96.9               | 1550         | 96.7               | 1595         | 96.3               | 1735         | 95.9               | 1920         |
| 16                                       | .68                    | 17.40                        | 119.3              | 1430         | 117.3              | 1875         | 117.2              | 1935         | 116.7              | 2100         | 116.2              | 2325         |
| 18                                       | .79                    | 19.50                        | 154.3              | 1850         | 152.0              | 2430         | 151.7              | 2505         | 151.2              | 2720         | 150.6              | 3010         |
| 20                                       | .84                    | 21.60                        | 182.1              | 2185         | 179.3              | 2870         | 179.0              | 2955         | 178.3              | 3210         | 177.6              | 3550         |
| 24                                       | .92                    | 25.80                        | 239.2              | 2870         | 235.4              | 3765         | 235.1              | 3880         | 234.2              | 4215         | 233.2              | 4665         |

\*Including Bell. Calculated weight of pipe rounded off to nearest 5 pounds.

**STANDARD THICKNESSES AND WEIGHTS OF CAST IRON MECHANICAL JOINT PIPE  
CENTRIFUGALLY CAST IN METAL AND SAND LINED MOLDS FOR GAS**

Note: Thicknesses in accordance with A.S.A. Specifications, 18,000 psi full length bursting tensile, 40,000 psi ring modulus of rupture. For pipe laid without blocks on flat bottom trench with tamped backfill under 5 feet of cover. For other conditions consult the manufacturer.

| Size ins.                  | Thick-ness ins.       | Out-side Diam. ins. | Weight Based On |           |               |           |                |           |               |           |              |           |
|----------------------------|-----------------------|---------------------|-----------------|-----------|---------------|-----------|----------------|-----------|---------------|-----------|--------------|-----------|
|                            |                       |                     | 12 ft. Lgth.*   |           | 16 ft. Lgth.* |           | 16½ ft. Lgth.* |           | 18 ft. Lgth.* |           | 20 ft.       | Lgth.*    |
|                            |                       |                     | Avg. per ft.    | per Lgth. | Avg. per ft.  | per Lgth. | Avg. per ft.   | per Lgth. | Avg. per ft.  | per Lgth. | Avg. per ft. | per Lgth. |
| Class 10—10 Lb. Pressure   |                       |                     |                 |           |               |           |                |           |               |           |              |           |
| 4                          | .35 <sup>(1)</sup>    | 4.80                | 16.6            | 200       | 16.4          | 260       | 16.3           | 270       | 16.2          | 290       |              |           |
|                            | or .38 <sup>(2)</sup> | 4.80                | 17.8            | 215       | 17.6          | 280       | 17.5           | 290       | 17.4          | 315       |              |           |
| 6                          | .38 <sup>(1)</sup>    | 6.90                | 26.1            | 315       | 25.7          | 410       | 25.6           | 420       | 25.5          | 460       |              |           |
|                            | or .41 <sup>(2)</sup> | 6.90                | 27.9            | 335       | 27.6          | 440       | 27.5           | 455       | 27.3          | 490       |              |           |
| 8                          | .41                   | 9.05                | 37.2            | 445       | 36.7          | 585       | 36.6           | 605       | 36.4          | 655       |              |           |
| 10                         | .44                   | 11.10               | 49.3            | 590       | 48.5          | 775       | 48.4           | 800       | 48.2          | 870       |              |           |
| 12                         | .48                   | 13.20               | 64.0            | 770       | 62.9          | 1005      | 62.8           | 1035      | 62.6          | 1125      | 62.3         | 1245      |
| 16                         | .50                   | 17.40               | 90.7            | 1090      | 88.7          | 1420      | 88.6           | 1460      | 88.1          | 1585      | 87.6         | 1750      |
| 20                         | .57                   | 21.60               | 128.7           | 1545      | 125.9         | 2015      | 125.7          | 2075      | 124.9         | 2250      | 124.2        | 2485      |
| 24                         | .63                   | 25.80               | 170.2           | 2040      | 166.5         | 2665      | 166.1          | 2740      | 165.2         | 2975      | 164.2        | 3235      |
| 30                         | .73                   | 32.00               |                 |           | 241.5         | 3865      | 241.0          | 3975      |               |           | 238.0        | 4760      |
| 36                         | .81                   | 38.30               |                 |           | 322.4         | 5160      |                |           |               |           |              |           |
| 42                         | .90                   | 44.50               |                 |           | 416.5         | 6665      |                |           |               |           |              |           |
| 48                         | .98                   | 50.80               |                 |           | 519.0         | 8305      |                |           |               |           |              |           |
| Class 50—50 Lb. Pressure   |                       |                     |                 |           |               |           |                |           |               |           |              |           |
| 4                          | .35 <sup>(1)</sup>    | 4.80                | 16.6            | 200       | 16.4          | 260       | 16.3           | 270       | 16.2          | 290       |              |           |
|                            | or .33 <sup>(2)</sup> | 4.80                | 17.8            | 215       | 17.6          | 280       | 17.5           | 290       | 17.4          | 315       |              |           |
| 6                          | .33 <sup>(1)</sup>    | 6.90                | 26.1            | 315       | 25.7          | 410       | 25.6           | 420       | 25.5          | 460       |              |           |
|                            | or .41 <sup>(2)</sup> | 6.90                | 27.9            | 335       | 27.6          | 440       | 27.5           | 455       | 27.3          | 490       |              |           |
| 8                          | .41                   | 9.05                | 37.2            | 445       | 36.7          | 585       | 36.6           | 605       | 36.4          | 655       |              |           |
| 10                         | .44                   | 11.10               | 49.3            | 590       | 48.5          | 775       | 48.4           | 800       | 48.2          | 870       |              |           |
| 12                         | .48                   | 13.20               | 64.0            | 770       | 62.9          | 1005      | 62.8           | 1035      | 62.6          | 1125      | 62.3         | 1245      |
| 16                         | .50                   | 17.40               | 90.7            | 1090      | 88.7          | 1420      | 88.6           | 1460      | 88.1          | 1585      | 87.6         | 1750      |
| 20                         | .57                   | 21.60               | 128.7           | 1545      | 125.9         | 2015      | 125.7          | 2075      | 124.9         | 2250      | 124.2        | 2485      |
| 24                         | .63                   | 25.80               | 170.2           | 2040      | 166.5         | 2665      | 166.1          | 2740      | 165.2         | 2975      | 164.2        | 3235      |
| 30                         | .79                   | 32.00               |                 |           | 259.5         | 4150      | 259.0          | 4275      |               |           | 256.0        | 5120      |
| 36                         | .87                   | 38.30               |                 |           | 343.9         | 5500      |                |           |               |           |              |           |
| 42                         | .97                   | 44.50               |                 |           | 445.7         | 7130      |                |           |               |           |              |           |
| 48                         | 1.06                  | 50.80               |                 |           | 557.1         | 8915      |                |           |               |           |              |           |
| Class 100—100 Lb. Pressure |                       |                     |                 |           |               |           |                |           |               |           |              |           |
| 4                          | .35 <sup>(1)</sup>    | 4.80                | 16.6            | 200       | 16.4          | 260       | 16.3           | 270       | 16.2          | 290       |              |           |
|                            | or .38 <sup>(2)</sup> | 4.80                | 17.8            | 215       | 17.6          | 280       | 17.5           | 290       | 17.4          | 315       |              |           |
| 6                          | .33 <sup>(1)</sup>    | 6.90                | 26.1            | 315       | 25.7          | 410       | 25.6           | 420       | 25.5          | 460       |              |           |
|                            | or .41 <sup>(2)</sup> | 6.90                | 27.9            | 335       | 27.6          | 440       | 27.5           | 455       | 27.3          | 490       |              |           |
| 8                          | .41                   | 9.05                | 37.2            | 445       | 36.7          | 585       | 36.6           | 605       | 36.4          | 655       |              |           |
| 10                         | .44                   | 11.10               | 49.3            | 590       | 48.5          | 775       | 48.4           | 800       | 48.2          | 870       |              |           |
| 12                         | .48                   | 13.20               | 64.0            | 770       | 62.9          | 1005      | 62.8           | 1035      | 62.6          | 1125      | 62.3         | 1245      |
| 16                         | .54                   | 17.40               | 97.1            | 1165      | 95.0          | 1520      | 94.9           | 1565      | 94.5          | 1700      | 94.0         | 1880      |
| 20                         | .62                   | 21.60               | 138.7           | 1665      | 135.9         | 2175      | 135.7          | 2240      | 134.9         | 2430      | 134.2        | 2685      |
| 24                         | .68                   | 25.80               | 182.2           | 2185      | 178.5         | 2855      | 178.1          | 2940      | 177.2         | 3190      | 176.2        | 3525      |
| Class 150—150 Lb. Pressure |                       |                     |                 |           |               |           |                |           |               |           |              |           |
| 4                          | .35 <sup>(1)</sup>    | 4.80                | 16.6            | 200       | 16.4          | 260       | 16.3           | 270       | 16.2          | 290       |              |           |
|                            | or .33 <sup>(2)</sup> | 4.80                | 17.8            | 215       | 17.6          | 280       | 17.5           | 290       | 17.4          | 315       |              |           |
| 6                          | .38 <sup>(1)</sup>    | 6.90                | 26.1            | 315       | 25.7          | 410       | 25.6           | 420       | 25.5          | 460       |              |           |
|                            | or .41 <sup>(2)</sup> | 6.90                | 27.9            | 335       | 27.6          | 440       | 27.5           | 455       | 27.3          | 490       |              |           |
| 8                          | .41                   | 9.05                | 37.2            | 445       | 36.7          | 585       | 36.6           | 605       | 36.4          | 655       |              |           |
| 10                         | .44                   | 11.10               | 49.3            | 590       | 48.5          | 775       | 48.4           | 800       | 48.2          | 870       |              |           |
| 12                         | .48                   | 13.20               | 64.0            | 770       | 62.9          | 1005      | 62.8           | 1035      | 62.6          | 1125      | 62.3         | 1245      |

\*Including Bell. Calculated weight of pipe rounded off to nearest 5 pounds.

<sup>(1)</sup>Class 22 thickness.

<sup>(2)</sup>Class 23 thickness offers increased factor of safety and is recommended for use in areas of dense population and heavy traffic.

References: A.S.A.—21.7—pipe cast in metal molds. A.S.A.—A-21.9—pipe cast in sand lined molds. A.S.A.—A-21.11—mechanical joints.

**STANDARD THICKNESSES AND WEIGHTS OF CAST IRON MECHANICAL  
JOINT PIT CAST PIPE FOR WATER AND OTHER LIQUIDS**

Note: Thicknesses in accordance with A.S.A. Specifications, 11,000 psi full length bursting tensile, 31,000 psi ring modulus of rupture. For pipe laid without blocks on flat bottom trench with tamped backfill under 5 feet of cover. For other conditions consult the manufacturer.

|              |                               | Class 50<br>50 lb. Pressure<br>115 ft. Head |                 |               | Class 100<br>100 lb. Pressure<br>231 ft. Head |                 |               | Class 150<br>150 lb. Pressure<br>346 ft. Head |                 |               | Class 200<br>200 lb. Pressure<br>462 ft. Head |                 |               |
|--------------|-------------------------------|---------------------------------------------|-----------------|---------------|-----------------------------------------------|-----------------|---------------|-----------------------------------------------|-----------------|---------------|-----------------------------------------------|-----------------|---------------|
| Size<br>ins. | Out-<br>side<br>Diam.<br>ins. | Weight Based on<br>12 ft. Length*           |                 |               | Weight Based on<br>12 ft. Length*             |                 |               | Weight Based on<br>12 ft. Length*             |                 |               | Weight Based on<br>12 ft. Length*             |                 |               |
|              |                               | Thick-<br>ness<br>ins.                      | Avg. per<br>ft. | per<br>Length | Thick-<br>ness<br>ins.                        | Avg. per<br>ft. | per<br>Length | Thick-<br>ness<br>ins.                        | Avg. per<br>ft. | per<br>Length | Thick-<br>ness<br>ins.                        | Avg. per<br>ft. | per<br>Length |
| 3            | 3.96                          | .37                                         | 13.9            | 165           | .37                                           | 13.9            | 165           | .37                                           | 13.9            | 165           | .37                                           | 13.9            | 165           |
| 4            | 4.80                          | .40                                         | 18.6            | 225           | .40                                           | 18.6            | 225           | .40                                           | 18.6            | 225           | .40                                           | 18.6            | 225           |
| 6            | 6.90                          | .43                                         | 29.2            | 350           | .43                                           | 29.2            | 350           | .43                                           | 29.2            | 350           | .43                                           | 29.2            | 350           |
| 8            | 9.05                          | .46                                         | 41.3            | 495           | .46                                           | 41.3            | 495           | .46                                           | 41.3            | 495           | .46                                           | 41.3            | 495           |
| 10           | 11.10                         | .50                                         | 55.4            | 665           | .50                                           | 55.4            | 665           | .54                                           | 59.3            | 710           | .58                                           | 63.2            | 760           |
| 12           | 13.20                         | .54                                         | 71.2            | 855           | .54                                           | 71.2            | 855           | .58                                           | 76.0            | 910           | .63                                           | 81.8            | 980           |
| 14           | 15.30                         | .54                                         | 84.7            | 1015          | .58                                           | 90.3            | 1085          | .63                                           | 97.2            | 1165          | .68                                           | 104.0           | 1250          |
| 16           | 17.40                         | .58                                         | 103.7           | 1245          | .63                                           | 111.7           | 1340          | .68                                           | 119.5           | 1435          | .79                                           | 136.7           | 1640          |
| 18           | 19.50                         | .63                                         | 126.2           | 1515          | .68                                           | 135.2           | 1620          | .79                                           | 154.6           | 1855          | .85                                           | 165.2           | 1980          |
| 20           | 21.60                         | .66                                         | 147.2           | 1765          | .71                                           | 157.1           | 1885          | .83                                           | 180.7           | 2170          | .90                                           | 194.3           | 2330          |
| 24           | 25.80                         | .74                                         | 197.2           | 2365          | .80                                           | 211.4           | 2535          | .93                                           | 242.1           | 2905          | 1.00                                          | 258.5           | 3100          |
| 30           | 32.00                         | .87                                         | 291.8           | 3500          | .94                                           | 312.4           | 3750          | 1.10                                          | 359.4           | 4315          | 1.19                                          | 385.7           | 4630          |
| 36           | 38.30                         | .97                                         | 392.0           | 4705          | 1.13                                          | 448.8           | 5385          | 1.22                                          | 480.5           | 5765          | 1.43                                          | 553.9           | 6645          |
| 42           | 44.50                         | 1.07                                        | 503.0           | 6035          | 1.16                                          | 540.3           | 6485          | 1.35                                          | 618.5           | 7420          | 1.58                                          | 712.2           | 8545          |
| 48           | 50.80                         | 1.18                                        | 634.3           | 7610          | 1.37                                          | 724.2           | 8690          | 1.48                                          | 775.9           | 9310          | 1.73                                          | 892.5           | 10710         |

|              |                               | Class 250<br>250 lb. Pressure<br>577 ft. Head |                 |               | Class 300<br>300 lb. Pressure<br>693 ft. Head |                 |               | Class 350<br>350 lb. Pressure<br>808 ft. Head |                 |               |
|--------------|-------------------------------|-----------------------------------------------|-----------------|---------------|-----------------------------------------------|-----------------|---------------|-----------------------------------------------|-----------------|---------------|
| Size<br>ins. | Out-<br>side<br>Diam.<br>ins. | Weight Based on<br>12 ft. Length*             |                 |               | Weight based on<br>12 ft. Length*             |                 |               | Weight Based on<br>12 ft. Length*             |                 |               |
|              |                               | Thick-<br>ness<br>ins.                        | Avg. per<br>ft. | per<br>Length | Thick-<br>ness<br>ins.                        | Avg. per<br>ft. | per<br>Length | Thick-<br>ness<br>ins.                        | Avg. per<br>ft. | per<br>Length |
| 3            | 3.96                          | .37                                           | 13.9            | 165           | .37                                           | 13.9            | 165           | .37                                           | 13.9            | 165           |
| 4            | 4.80                          | .40                                           | 18.6            | 225           | .40                                           | 18.6            | 225           | .40                                           | 18.6            | 225           |
| 6            | 6.90                          | .43                                           | 29.2            | 350           | .46                                           | 30.9            | 370           | .50                                           | 33.3            | 400           |
| 8            | 9.05                          | .50                                           | 44.5            | 535           | .54                                           | 47.6            | 570           | .58                                           | 50.8            | 610           |
| 10           | 11.10                         | .63                                           | 68.1            | 815           | .68                                           | 72.9            | 875           | .73                                           | 77.6            | 930           |
| 12           | 13.20                         | .68                                           | 87.6            | 1050          | .73                                           | 93.4            | 1120          | .79                                           | 100.4           | 1205          |
| 14           | 15.30                         | .79                                           | 119.0           | 1430          | .85                                           | 127.0           | 1525          | .92                                           | 136.3           | 1635          |
| 16           | 17.40                         | .85                                           | 146.0           | 1750          | .92                                           | 156.7           | 1880          | .99                                           | 167.2           | 2005          |
| 18           | 19.50                         | .92                                           | 177.2           | 2125          | .99                                           | 189.3           | 2270          | 1.07                                          | 203.0           | 2435          |
| 20           | 21.60                         | .97                                           | 207.8           | 2495          | 1.05                                          | 223.2           | 2680          | 1.22                                          | 255.4           | 3065          |
| 24           | 25.80                         | 1.17                                          | 297.9           | 3575          | 1.26                                          | 318.5           | 3820          | 1.36                                          | 341.2           | 4095          |
| 30           | 32.00                         | 1.39                                          | 443.2           | 5320          | 1.50                                          | 474.6           | 5695          | 1.62                                          | 508.6           | 6105          |
| 36           | 38.30                         | 1.54                                          | 592.0           | 7105          | 1.79                                          | 677.7           | 8130          | 1.93                                          | 725.1           | 8700          |
| 42           | 44.50                         | 1.71                                          | 764.7           | 9175          |                                               |                 |               |                                               |                 |               |
| 48           | 50.80                         | 2.02                                          | 1026.2          | 12315         |                                               |                 |               |                                               |                 |               |

\*Including Bell. Calculated weight of pipe rounded off to nearest 5 pounds.

References: Thicknesses—A.S.A.—A-21.2. Mechanical joint A.S.A.—A-21.11.

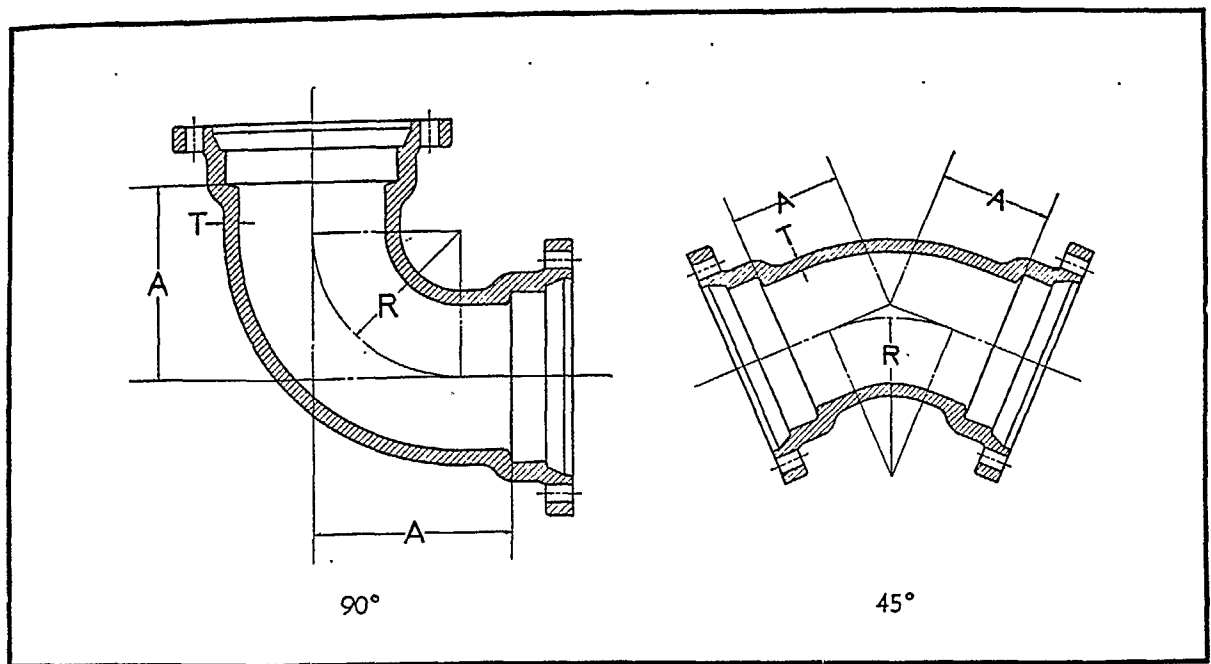
**STANDARD THICKNESSES AND WEIGHTS OF CAST IRON  
MECHANICAL JOINT PIT CAST PIPE FOR GAS**

Note: Thicknesses in accordance with A.S.A. Specifications, 11,000 psi full length bursting tensile, 31,000 psi ring modulus of rupture. For pipe laid without blocks on flat bottom trench with tamped backfill under 5 feet of cover. For other conditions consult the manufacturer.

| Size<br>ins. | Out-<br>side<br>Diam.<br>ins. | Class 10<br>10 lb. Pressure      |                 |              | Class 50<br>50 lb. Pressure      |                 |              | Class 100<br>100 lb. Pressure    |                 |              | Class 150<br>150 lb. Pressure    |                 |              |
|--------------|-------------------------------|----------------------------------|-----------------|--------------|----------------------------------|-----------------|--------------|----------------------------------|-----------------|--------------|----------------------------------|-----------------|--------------|
|              |                               | Weight Based on<br>12 ft. Lgth.* |                 |              | Weight Based on<br>12 ft. Lgth.* |                 |              | Weight Based on<br>12 ft. Lgth.* |                 |              | Weight Based on<br>12 ft. Lgth.* |                 |              |
|              |                               | Thick-<br>ness<br>ins.           | Avg. per<br>ft. | per<br>Lgth. | Thick-<br>ness<br>ins.           | Avg. per<br>ft. | per<br>Lgth. | Thick-<br>ness<br>ins.           | Avg. per<br>ft. | per<br>Lgth. | Thick-<br>ness<br>ins.           | Avg. per<br>ft. | per<br>Lgth. |
| 4            | 4.80                          | .40                              | 18.6            | 225          | .40                              | 18.6            | 225          | .40                              | 18.6            | 225          | .40                              | 18.6            | 225          |
| 6            | 6.90                          | .43                              | 29.2            | 350          | .43                              | 29.2            | 350          | .43                              | 29.2            | 350          | .43                              | 29.2            | 350          |
| 8            | 9.05                          | .46                              | 41.3            | 495          | .46                              | 41.3            | 495          | .46                              | 41.3            | 495          | .46                              | 41.3            | 495          |
| 10           | 11.10                         | .50                              | 55.4            | 665          | .50                              | 55.4            | 665          | .50                              | 55.4            | 665          | .50                              | 55.4            | 665          |
| 12           | 13.20                         | .54                              | 71.2            | 855          | .54                              | 71.2            | 855          | .54                              | 71.2            | 855          | .54                              | 71.2            | 855          |
| 16           | 17.40                         | .58                              | 103.7           | 1245         | .58                              | 103.7           | 1245         | .58                              | 103.7           | 1245         |                                  |                 |              |
| 20           | 21.60                         | .66                              | 147.2           | 1765         | .66                              | 147.2           | 1765         | .71                              | 157.1           | 1885         |                                  |                 |              |
| 24           | 25.80                         | .74                              | 197.2           | 2365         | .74                              | 197.2           | 2365         | .80                              | 211.4           | 2535         |                                  |                 |              |
| 30           | 32.00                         | .87                              | 291.8           | 3500         | .87                              | 291.8           | 3500         |                                  |                 |              |                                  |                 |              |
| 36           | 38.30                         | .97                              | 392.0           | 4705         | .97                              | 392.0           | 4705         |                                  |                 |              |                                  |                 |              |
| 42           | 44.50                         | 1.07                             | 503.0           | 6035         | 1.07                             | 503.0           | 6035         |                                  |                 |              |                                  |                 |              |
| 48           | 50.80                         | 1.18                             | 634.3           | 7610         | 1.18                             | 634.3           | 7610         |                                  |                 |              |                                  |                 |              |

\*Including Bell. Calculated weight of pipe rounded off to nearest 5 pounds.

References: Thicknesses—A.S.A.—A-21.3—pit cast for gas. Mechanical joint—A.S.A.—A-21.11.



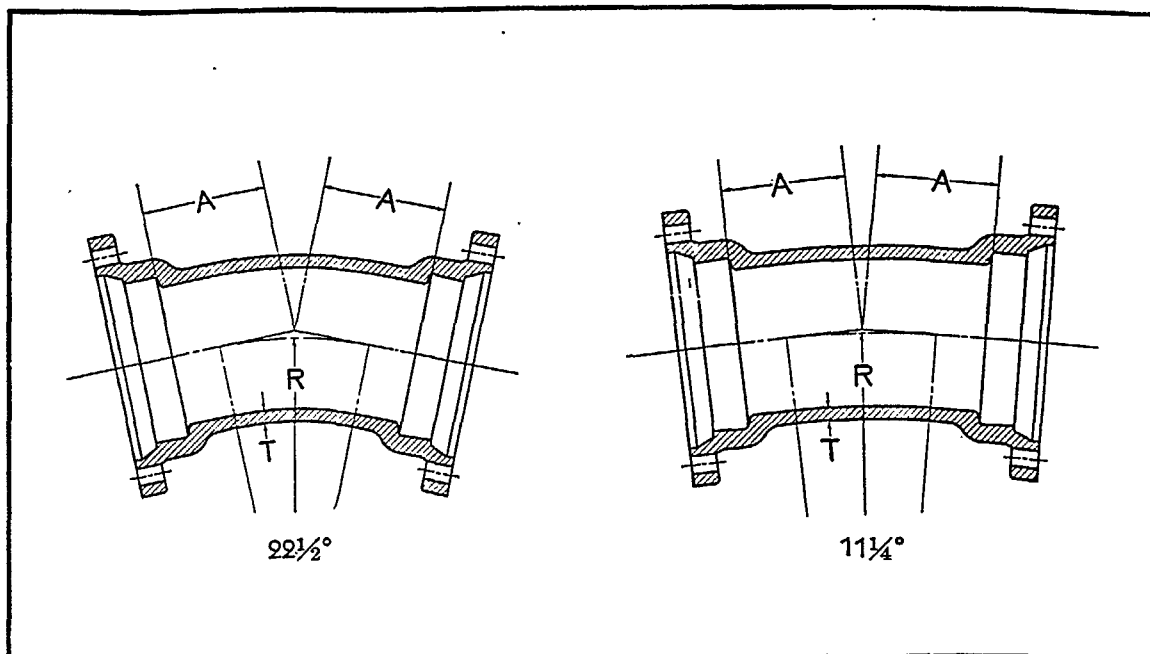
## Bends

| TABLE OF DIMENSIONS |                  |           |      |      |         |           |       |         |                             |
|---------------------|------------------|-----------|------|------|---------|-----------|-------|---------|-----------------------------|
| Nominal<br>Diam.    | Outside<br>Diam. | 90° Bends |      |      |         | 45° Bends |       |         | Max.<br>Working<br>Pressure |
|                     |                  | T         | A    | R    | Weights | A         | R     | Weights |                             |
| 3                   | 3.96             | .48       | 5.5  | 4.0  | 35      | 3.0       | 3.62  | 30      | 250                         |
| 4                   | 5.00             | .52       | 6.5  | 4.5  | 55      | 4.0       | 4.81  | 50      | 250                         |
| 6                   | 7.10             | .55       | 8.0  | 6.0  | 85      | 5.0       | 7.25  | 75      | 250                         |
| 8                   | 9.30             | .60       | 9.0  | 7.0  | 125     | 5.5       | 8.44  | 110     | 250                         |
| 10                  | 11.40            | .68       | 11.0 | 9.0  | 190     | 6.5       | 10.88 | 155     | 250                         |
| 12                  | 13.50            | .75       | 12.0 | 10.0 | 255     | 7.5       | 13.25 | 215     | 250                         |
| 14                  | 15.30            | .66       | 14.0 | 11.5 | 340     | 7.5       | 12.06 | 270     | 150                         |
| 16                  | 17.40            | .70       | 15.0 | 12.5 | 430     | 8.0       | 13.25 | 340     | 150                         |
| 18                  | 19.50            | .75       | 16.5 | 14.0 | 545     | 8.5       | 14.50 | 420     | 150                         |
| 20                  | 21.60            | .80       | 18.0 | 15.5 | 680     | 9.5       | 16.88 | 530     | 150                         |
| 24                  | 25.80            | .89       | 22.0 | 18.5 | 1025    | 11.0      | 18.12 | 755     | 150                         |
| 30                  | 32.00            | 1.03      | 36.0 | 32.5 | 2145    | 15.0      | 27.75 | 1380    | 150                         |
| 36                  | 38.30            | 1.15      | 48.0 | 44.5 | 3575    | 18.0      | 35.00 | 2095    | 150                         |
| 42                  | 44.50            | 1.28      | 48.0 | 44.5 | 4615    | 21.0      | 42.25 | 2955    | 150                         |
| 48                  | 50.80            | 1.42      | 54.0 | 50.5 | 6395    | 24.0      | 49.50 | 4080    | 150                         |

All weights are approximate and do not include joint accessories.

See page 19 for joint dimensions and weight of joint accessories.

Three to twelve-inch fittings conform to A.S.A. Specification—A-21.10—for short body fittings.



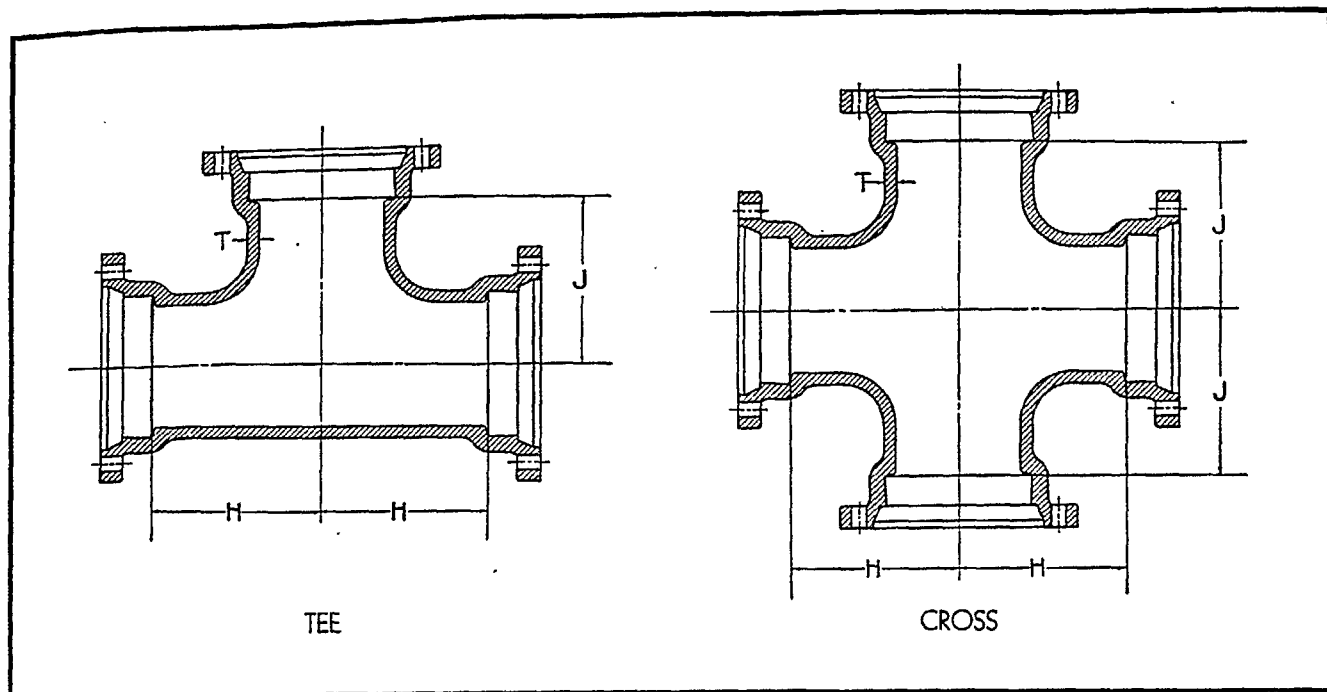
## Bends

| TABLE OF DIMENSIONS |                  |               |      |        |         |               |        |         |                             |
|---------------------|------------------|---------------|------|--------|---------|---------------|--------|---------|-----------------------------|
| Nominal<br>Diam.    | Outside<br>Diam. | 22 1/2° Bends |      |        |         | 11 1/4° Bends |        |         | Max.<br>Working<br>Pressure |
|                     |                  | T             | A    | R      | Weights | A             | R      | Weights |                             |
| 3                   | 3.96             | .48           | 3.0  | 7.56   | 30      | 3.0           | 15.25  | 30      | 250                         |
| 4                   | 5.00             | .52           | 4.0  | 10.06  | 50      | 4.0           | 20.31  | 50      | 250                         |
| 6                   | 7.10             | .55           | 5.0  | 15.06  | 75      | 5.0           | 30.50  | 75      | 250                         |
| 8                   | 9.30             | .60           | 5.5  | 17.62  | 110     | 5.5           | 35.50  | 110     | 250                         |
| 10                  | 11.40            | .68           | 6.5  | 22.62  | 160     | 6.5           | 45.69  | 160     | 250                         |
| 12                  | 13.50            | .75           | 7.5  | 27.62  | 220     | 7.5           | 55.81  | 220     | 250                         |
| 14                  | 15.30            | .66           | 7.5  | 25.12  | 275     | 7.5           | 50.75  | 275     | 150                         |
| 16                  | 17.40            | .70           | 8.0  | 27.62  | 345     | 8.0           | 55.81  | 345     | 150                         |
| 18                  | 19.50            | .75           | 8.5  | 30.19  | 430     | 8.5           | 60.94  | 430     | 150                         |
| 20                  | 21.60            | .80           | 9.5  | 35.19  | 535     | 9.5           | 71.06  | 540     | 150                         |
| 24                  | 25.80            | .89           | 11.0 | 37.69  | 765     | 11.0          | 76.12  | 770     | 150                         |
| 30                  | 32.00            | 1.03          | 15.0 | 57.81  | 1400    | 15.0          | 116.75 | 1410    | 150                         |
| 36                  | 38.30            | 1.15          | 18.0 | 72.88  | 2135    | 18.0          | 147.25 | 2145    | 150                         |
| 42                  | 44.50            | 1.28          | 21.0 | 88.00  | 3020    | 21.0          | 177.69 | 3035    | 150                         |
| 48                  | 50.80            | 1.42          | 24.0 | 103.06 | 4170    | 24.0          | 208.12 | 4190    | 150                         |

All weights are approximate and do not include joint accessories.

See page 19 for joint dimensions and weight of joint accessories.

Three to twelve-inch fittings conform to A.S.A. Specification—A-21.10—for short body fittings.



## Tees and Crosses

| TABLE OF DIMENSIONS |        |               |        |     |        |      |      |        |        |                  |
|---------------------|--------|---------------|--------|-----|--------|------|------|--------|--------|------------------|
| Nominal Diam.       |        | Outside Diam. |        | T   |        |      |      | Tee    | Cross  | Max.             |
| Run                 | Branch | Run           | Branch | Run | Branch | H    | J    | Weight | Weight | Working Pressure |
| 3                   | 3      | 3.96          | 3.96   | .48 | .48    | 5.5  | 5.5  | 55     | 70     | 250              |
| 4                   | 3      | 5.00          | 3.96   | .52 | .48    | 6.5  | 6.5  | 75     | 90     | 250              |
| 4                   | 4      | 5.00          | 5.00   | .52 | .52    | 6.5  | 6.5  | 80     | 105    | 250              |
| 6                   | 3      | 7.10          | 3.96   | .55 | .48    | 8.0  | 8.0  | 110    | 125    | 250              |
| 6                   | 4      | 7.10          | 5.00   | .55 | .52    | 8.0  | 8.0  | 115    | 140    | 250              |
| 6                   | 6      | 7.10          | 7.10   | .55 | .55    | 8.0  | 8.0  | 125    | 160    | 250              |
| 8                   | 4      | 9.30          | 5.00   | .60 | .52    | 9.0  | 9.0  | 165    | 185    | 250              |
| 8                   | 6      | 9.30          | 7.10   | .60 | .55    | 9.0  | 9.0  | 175    | 205    | 250              |
| 8                   | 8      | 9.30          | 9.30   | .60 | .60    | 9.0  | 9.0  | 185    | 235    | 250              |
| 10                  | 4      | 11.40         | 5.00   | .68 | .52    | 11.0 | 11.0 | 235    | 260    | 250              |
| 10                  | 6      | 11.40         | 7.10   | .68 | .55    | 11.0 | 11.0 | 250    | 285    | 250              |
| 10                  | 8      | 11.40         | 9.30   | .68 | .60    | 11.0 | 11.0 | 260    | 310    | 250              |
| 10                  | 10     | 11.64         | 11.64  | .80 | .80    | 11.0 | 11.0 | 310    | 380    | 250              |
| 12                  | 4      | 13.50         | 5.00   | .75 | .52    | 12.0 | 12.0 | 315    | 340    | 250              |
| 12                  | 6      | 13.50         | 7.10   | .75 | .55    | 12.0 | 12.0 | 325    | 360    | 250              |
| 12                  | 8      | 13.50         | 9.30   | .75 | .60    | 12.0 | 12.0 | 340    | 385    | 250              |
| 12                  | 10     | 13.74         | 11.64  | .87 | .80    | 12.0 | 12.0 | 390    | 460    | 250              |
| 12                  | 12     | 13.74         | 13.74  | .87 | .87    | 12.0 | 12.0 | 410    | 495    | 250              |
| 14                  | 6      | 15.30         | 7.10   | .66 | .55    | 14.0 | 14.0 | 435    | 475    | 150              |
| 14                  | 8      | 15.30         | 9.30   | .66 | .60    | 14.0 | 14.0 | 450    | 500    | 150              |
| 14                  | 10     | 15.30         | 11.40  | .66 | .68    | 14.0 | 14.0 | 465    | 540    | 150              |
| 14                  | 12     | 15.65         | 13.50  | .82 | .75    | 14.0 | 14.0 | 540    | 630    | 150              |
| 14                  | 14     | 15.65         | 15.65  | .82 | .82    | 14.0 | 14.0 | 585    | 710    | 150              |
| 16                  | 6      | 17.40         | 7.10   | .70 | .55    | 15.0 | 15.0 | 540    | 575    | 150              |
| 16                  | 8      | 17.40         | 9.30   | .70 | .60    | 15.0 | 15.0 | 550    | 605    | 150              |
| 16                  | 10     | 17.40         | 11.40  | .70 | .68    | 15.0 | 15.0 | 570    | 645    | 150              |
| 16                  | 12     | 17.40         | 13.50  | .70 | .75    | 15.0 | 15.0 | 590    | 685    | 150              |
| 16                  | 14     | 17.80         | 15.65  | .89 | .82    | 15.0 | 15.0 | 710    | 830    | 150              |
| 16                  | 16     | 17.80         | 17.80  | .89 | .89    | 15.0 | 15.0 | 740    | 895    | 150              |

All weights are approximate and do not include joint accessories.

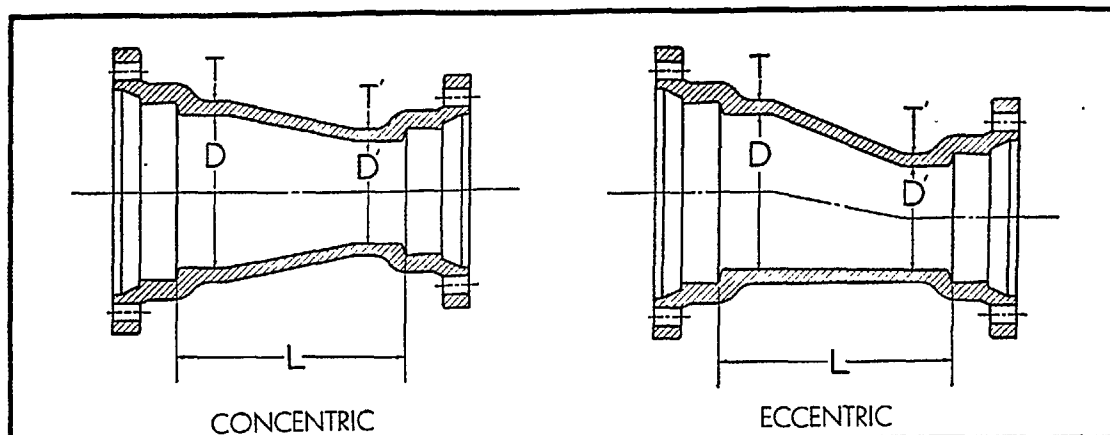
See page 19 for joint dimensions and weight of joint accessories.

Three to twelve-inch fittings conform to A.S.A. Specification—A-21.10—for short body fittings.

# Tees and Crosses Continued

| TABLE OF DIMENSIONS |        |               |        |      |        |      |      |        |        |                             |
|---------------------|--------|---------------|--------|------|--------|------|------|--------|--------|-----------------------------|
| Nominal Diam.       |        | Outside Diam. |        | T    |        |      |      | Tee    | Cross  | Max.<br>Working<br>Pressure |
| Run                 | Branch | Run           | Branch | Run  | Branch | H    | J    | Weight | Weight |                             |
| 18                  | 6      | 19.50         | 7.10   | .75  | .55    | 13.0 | 15.5 | 590    | 625    | 150                         |
| 18                  | 8      | 19.50         | 9.30   | .75  | .60    | 13.0 | 15.5 | 605    | 655    | 150                         |
| 18                  | 10     | 19.50         | 11.40  | .75  | .68    | 13.0 | 15.5 | 620    | 685    | 150                         |
| 18                  | 12     | 19.50         | 13.50  | .75  | .75    | 13.0 | 15.5 | 640    | 725    | 150                         |
| 18                  | 14     | 19.50         | 15.30  | .75  | .66    | 16.5 | 16.5 | 755    | 870    | 150                         |
| 18                  | 16     | 19.92         | 17.80  | .96  | .89    | 16.5 | 16.5 | 905    | 1060   | 150                         |
| 18                  | 18     | 19.92         | 19.92  | .96  | .96    | 16.5 | 16.5 | 945    | 1130   | 150                         |
|                     |        |               |        |      |        |      |      |        |        |                             |
| 20                  | 6      | 21.60         | 7.10   | .80  | .55    | 14.0 | 17.0 | 725    | 760    | 150                         |
| 20                  | 8      | 21.60         | 9.30   | .80  | .60    | 14.0 | 17.0 | 735    | 790    | 150                         |
| 20                  | 10     | 21.60         | 11.40  | .80  | .68    | 14.0 | 17.0 | 755    | 820    | 150                         |
| 20                  | 12     | 21.60         | 13.50  | .80  | .75    | 14.0 | 17.0 | 775    | 860    | 150                         |
| 20                  | 14     | 21.60         | 15.30  | .80  | .66    | 14.0 | 17.0 | 795    | 905    | 150                         |
| 20                  | 16     | 21.60         | 17.40  | .80  | .70    | 18.0 | 18.0 | 945    | 1085   | 150                         |
| 20                  | 18     | 22.06         | 19.92  | 1.03 | .96    | 18.0 | 18.0 | 1140   | 1330   | 150                         |
| 20                  | 20     | 22.06         | 22.06  | 1.03 | 1.03   | 18.0 | 18.0 | 1185   | 1415   | 150                         |
|                     |        |               |        |      |        |      |      |        |        |                             |
| 24                  | 6      | 25.80         | 7.10   | .89  | .55    | 15.0 | 19.0 | 985    | 1025   | 150                         |
| 24                  | 8      | 25.80         | 9.30   | .89  | .60    | 15.0 | 19.0 | 1000   | 1045   | 150                         |
| 24                  | 10     | 25.80         | 11.40  | .89  | .68    | 15.0 | 19.0 | 1020   | 1085   | 150                         |
| 24                  | 12     | 25.80         | 13.50  | .89  | .75    | 15.0 | 19.0 | 1030   | 1110   | 150                         |
| 24                  | 14     | 25.80         | 15.30  | .89  | .66    | 15.0 | 19.0 | 1055   | 1155   | 150                         |
| 24                  | 16     | 25.80         | 17.40  | .89  | .70    | 15.0 | 19.0 | 1075   | 1200   | 150                         |
| 24                  | 18     | 25.80         | 19.50  | .89  | .75    | 22.0 | 22.0 | 1400   | 1590   | 150                         |
| 24                  | 20     | 26.32         | 22.06  | 1.16 | 1.03   | 22.0 | 22.0 | 1720   | 1965   | 150                         |
| 24                  | 24     | 26.32         | 26.32  | 1.16 | 1.16   | 22.0 | 22.0 | 1815   | 2155   | 150                         |
|                     |        |               |        |      |        |      |      |        |        |                             |
| 30                  | 6      | 32.00         | 7.10   | 1.03 | .55    | 18.0 | 23.0 | 1730   | 1770   | 150                         |
| 30                  | 8      | 32.00         | 9.30   | 1.03 | .60    | 18.0 | 23.0 | 1745   | 1795   | 150                         |
| 30                  | 10     | 32.00         | 11.40  | 1.03 | .68    | 18.0 | 23.0 | 1760   | 1830   | 150                         |
| 30                  | 12     | 32.00         | 13.50  | 1.03 | .75    | 18.0 | 23.0 | 1780   | 1865   | 150                         |
| 30                  | 14     | 32.00         | 15.30  | 1.03 | .66    | 18.0 | 23.0 | 1800   | 1905   | 150                         |
| 30                  | 16     | 32.00         | 17.40  | 1.03 | .70    | 18.0 | 23.0 | 1820   | 1950   | 150                         |
| 30                  | 18     | 32.00         | 19.50  | 1.03 | .75    | 18.0 | 23.0 | 1845   | 2000   | 150                         |
| 30                  | 20     | 32.00         | 21.60  | 1.03 | .80    | 18.0 | 23.0 | 1875   | 2060   | 150                         |
| 30                  | 24     | 32.74         | 26.32  | 1.37 | 1.16   | 25.0 | 25.0 | 2880   | 3180   | 150                         |
| 30                  | 30     | 32.74         | 32.74  | 1.37 | 1.37   | 25.0 | 25.0 | 3105   | 3640   | 150                         |
|                     |        |               |        |      |        |      |      |        |        |                             |
| 36                  | 8      | 38.30         | 9.30   | 1.15 | .60    | 20.0 | 26.0 | 2520   | 2565   | 150                         |
| 36                  | 10     | 38.30         | 11.40  | 1.15 | .68    | 20.0 | 26.0 | 2535   | 2600   | 150                         |
| 36                  | 12     | 38.30         | 13.50  | 1.15 | .75    | 20.0 | 26.0 | 2550   | 2630   | 150                         |
| 36                  | 14     | 38.30         | 15.30  | 1.15 | .66    | 20.0 | 26.0 | 2570   | 2665   | 150                         |
| 36                  | 16     | 38.30         | 17.40  | 1.15 | .70    | 20.0 | 26.0 | 2585   | 2705   | 150                         |
| 36                  | 18     | 38.30         | 19.50  | 1.15 | .75    | 20.0 | 26.0 | 2610   | 2750   | 150                         |
| 36                  | 20     | 38.30         | 21.60  | 1.15 | .80    | 20.0 | 26.0 | 2635   | 2805   | 150                         |
| 36                  | 24     | 38.30         | 25.80  | 1.15 | .89    | 20.0 | 26.0 | 2690   | 2910   | 150                         |
| 36                  | 30     | 39.16         | 32.74  | 1.58 | 1.37   | 28.0 | 28.0 | 4345   | 4790   | 150                         |
| 36                  | 36     | 39.16         | 39.16  | 1.58 | 1.58   | 28.0 | 28.0 | 4590   | 5280   | 150                         |
|                     |        |               |        |      |        |      |      |        |        |                             |
| 42                  | 12     | 44.50         | 13.50  | 1.28 | .75    | 23.0 | 30.0 | 3555   | 3640   | 150                         |
| 42                  | 14     | 44.50         | 15.30  | 1.28 | .66    | 23.0 | 30.0 | 3575   | 3675   | 150                         |
| 42                  | 16     | 44.50         | 17.40  | 1.28 | .70    | 23.0 | 30.0 | 3595   | 3715   | 150                         |
| 42                  | 18     | 44.50         | 19.50  | 1.28 | .75    | 23.0 | 30.0 | 3615   | 3755   | 150                         |
| 42                  | 20     | 44.50         | 21.60  | 1.28 | .80    | 23.0 | 30.0 | 3640   | 3810   | 150                         |
| 42                  | 24     | 44.50         | 25.80  | 1.28 | .89    | 23.0 | 30.0 | 3690   | 3910   | 150                         |
| 42                  | 30     | 44.50         | 32.00  | 1.28 | 1.03   | 31.0 | 31.0 | 4650   | 5040   | 150                         |
| 42                  | 36     | 45.58         | 39.16  | 1.78 | 1.58   | 31.0 | 31.0 | 6075   | 6655   | 150                         |
| 42                  | 42     | 45.58         | 45.58  | 1.78 | 1.78   | 31.0 | 31.0 | 6320   | 7145   | 150                         |
|                     |        |               |        |      |        |      |      |        |        |                             |
| 48                  | 12     | 50.80         | 13.50  | 1.42 | .75    | 26.0 | 34.0 | 4870   | 4955   | 150                         |
| 48                  | 14     | 50.80         | 15.30  | 1.42 | .66    | 26.0 | 34.0 | 4885   | 4985   | 150                         |
| 48                  | 16     | 50.80         | 17.40  | 1.42 | .70    | 26.0 | 34.0 | 4905   | 5025   | 150                         |
| 48                  | 18     | 50.80         | 19.50  | 1.42 | .75    | 26.0 | 34.0 | 4925   | 5065   | 150                         |
| 48                  | 20     | 50.80         | 21.60  | 1.42 | .80    | 26.0 | 34.0 | 4950   | 5115   | 150                         |
| 48                  | 24     | 50.80         | 25.80  | 1.42 | .89    | 26.0 | 34.0 | 4995   | 5210   | 150                         |
| 48                  | 30     | 50.80         | 32.00  | 1.42 | 1.03   | 26.0 | 34.0 | 5140   | 5495   | 150                         |
| 48                  | 36     | 50.80         | 38.30  | 1.42 | 1.15   | 34.0 | 34.0 | 6280   | 6790   | 150                         |
| 48                  | 42     | 51.98         | 45.58  | 1.96 | 1.78   | 34.0 | 34.0 | 8130   | 8815   | 150                         |
| 48                  | 48     | 51.98         | 51.98  | 1.96 | 1.96   | 34.0 | 34.0 | 8420   | 9380   | 150                         |

All weights are approximate and do not include joint accessories.  
See page 19 for joint dimensions and weight of joint accessories.



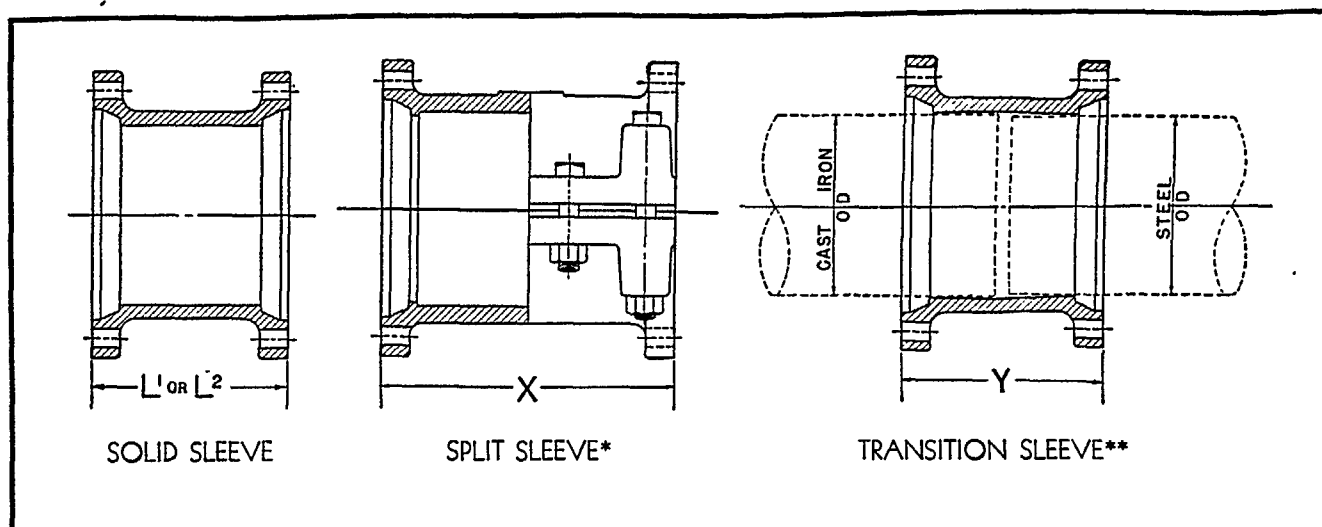
## Reducers

| TABLE OF DIMENSIONS |    |               |       |                 |      |             |        |                |        |                |        |                       |
|---------------------|----|---------------|-------|-----------------|------|-------------|--------|----------------|--------|----------------|--------|-----------------------|
| Nominal Diam.       |    | Outside Diam. |       | Metal Thickness |      | Bell & Bell |        | Large End Bell |        | Small End Bell |        | Max. Working Pressure |
| D                   | D' | Large         | Small | T               | T'   | L           | Weight | L              | Weight | L              | Weight |                       |
| 4                   | 3  | 5.00          | 3.96  | .52             | .48  | 7           | 40     | 15             | 40     | 15             | 35     | 250                   |
| 6                   | 3  | 7.10          | 3.96  | .55             | .48  | 9           | 55     | 17             | 55     | 17             | 50     | 250                   |
| 6                   | 4  | 7.10          | 5.00  | .55             | .52  | 9           | 60     | 17             | 60     | 17             | 60     | 250                   |
| 8                   | 4  | 9.30          | 5.00  | .60             | .52  | 11          | 80     | 19             | 80     | 19             | 80     | 250                   |
| 8                   | 6  | 9.30          | 7.10  | .60             | .55  | 11          | 95     | 19             | 90     | 19             | 90     | 250                   |
| 10                  | 4  | 11.40         | 5.00  | .68             | .52  | 12          | 105    | 20             | 100    | 20             | 100    | 250                   |
| 10                  | 6  | 11.40         | 7.10  | .68             | .55  | 12          | 115    | 20             | 115    | 20             | 115    | 250                   |
| 10                  | 8  | 11.40         | 9.30  | .68             | .60  | 12          | 135    | 20             | 130    | 20             | 130    | 250                   |
| 12                  | 4  | 13.50         | 5.00  | .75             | .52  | 14          | 135    | 22             | 130    | 22             | 130    | 250                   |
| 12                  | 6  | 13.50         | 7.10  | .75             | .55  | 14          | 150    | 22             | 145    | 22             | 150    | 250                   |
| 12                  | 8  | 13.50         | 9.30  | .75             | .60  | 14          | 165    | 22             | 165    | 22             | 165    | 250                   |
| 12                  | 10 | 13.50         | 11.40 | .75             | .68  | 14          | 190    | 22             | 185    | 22             | 190    | 250                   |
| 14                  | 6  | 15.30         | 7.10  | .66             | .55  | 16          | 190    | 24             | 185    | 24             | 175    | 150                   |
| 14                  | 8  | 15.30         | 9.30  | .66             | .60  | 16          | 210    | 24             | 205    | 24             | 190    | 150                   |
| 14                  | 10 | 15.30         | 11.40 | .66             | .68  | 16          | 230    | 24             | 230    | 24             | 215    | 150                   |
| 14                  | 12 | 15.30         | 13.50 | .66             | .75  | 16          | 255    | 24             | 255    | 24             | 240    | 150                   |
| 16                  | 6  | 17.40         | 7.10  | .70             | .55  | 18          | 230    | 26             | 230    | 26             | 210    | 150                   |
| 16                  | 8  | 17.40         | 9.30  | .70             | .60  | 18          | 250    | 26             | 250    | 26             | 230    | 150                   |
| 16                  | 10 | 17.40         | 11.40 | .70             | .68  | 18          | 280    | 26             | 275    | 26             | 255    | 150                   |
| 16                  | 12 | 17.40         | 13.50 | .70             | .75  | 18          | 305    | 26             | 305    | 26             | 285    | 150                   |
| 16                  | 14 | 17.40         | 15.30 | .70             | .66  | 18          | 335    | 26             | 315    | 26             | 310    | 150                   |
| 18                  | 8  | 19.50         | 9.30  | .75             | .60  | 19          | 295    | 27             | 295    | 27             | 270    | 150                   |
| 18                  | 10 | 19.50         | 11.40 | .75             | .68  | 19          | 325    | 27             | 320    | 27             | 300    | 150                   |
| 18                  | 12 | 19.50         | 13.50 | .75             | .75  | 19          | 350    | 27             | 350    | 27             | 325    | 150                   |
| 18                  | 14 | 19.50         | 15.30 | .75             | .66  | 19          | 380    | 27             | 365    | 27             | 355    | 150                   |
| 18                  | 16 | 19.50         | 17.40 | .75             | .70  | 19          | 415    | 27             | 395    | 27             | 390    | 150                   |
| 20                  | 10 | 21.60         | 11.40 | .80             | .68  | 20          | 375    | 28             | 375    | 28             | 345    | 150                   |
| 20                  | 12 | 21.60         | 13.50 | .80             | .75  | 20          | 405    | 28             | 405    | 28             | 375    | 150                   |
| 20                  | 14 | 21.60         | 15.30 | .80             | .66  | 20          | 430    | 28             | 415    | 28             | 400    | 150                   |
| 20                  | 16 | 21.60         | 17.40 | .80             | .70  | 20          | 470    | 28             | 445    | 28             | 435    | 150                   |
| 20                  | 18 | 21.60         | 19.50 | .80             | .75  | 20          | 510    | 28             | 485    | 28             | 475    | 150                   |
| 24                  | 12 | 25.80         | 13.50 | .89             | .75  | 24          | 550    | 32             | 550    | 32             | 510    | 150                   |
| 24                  | 14 | 25.80         | 15.30 | .89             | .66  | 24          | 575    | 32             | 560    | 32             | 535    | 150                   |
| 24                  | 16 | 25.80         | 17.40 | .89             | .70  | 24          | 615    | 32             | 595    | 32             | 575    | 150                   |
| 24                  | 18 | 25.80         | 19.50 | .89             | .75  | 24          | 660    | 32             | 635    | 32             | 620    | 150                   |
| 24                  | 20 | 25.80         | 21.60 | .89             | .80  | 24          | 705    | 32             | 675    | 32             | 665    | 150                   |
| 30                  | 18 | 32.00         | 19.50 | 1.03            | .75  | 30          | 990    | 38             | 965    | 38             | 885    | 150                   |
| 30                  | 20 | 32.00         | 21.60 | 1.03            | .80  | 30          | 1050   | 38             | 1020   | 38             | 945    | 150                   |
| 30                  | 24 | 32.00         | 25.80 | 1.03            | .89  | 30          | 1165   | 38             | 1125   | 38             | 1060   | 150                   |
| 36                  | 20 | 38.30         | 21.60 | 1.15            | .80  | 36          | 1450   | 44             | 1420   | 44             | 1285   | 150                   |
| 36                  | 24 | 38.30         | 25.80 | 1.15            | .89  | 36          | 1580   | 44             | 1535   | 44             | 1410   | 150                   |
| 36                  | 30 | 38.30         | 32.00 | 1.15            | 1.03 | 36          | 1855   | 44             | 1750   | 44             | 1690   | 150                   |
| 42                  | 20 | 44.50         | 21.60 | 1.28            | .80  | 42          | 1915   | 50             | 1880   | 50             | 1705   | 150                   |
| 42                  | 24 | 44.50         | 25.80 | 1.28            | .89  | 42          | 2060   | 50             | 2020   | 50             | 1855   | 150                   |
| 42                  | 30 | 44.50         | 32.00 | 1.28            | 1.03 | 42          | 2370   | 50             | 2265   | 50             | 2165   | 150                   |
| 42                  | 36 | 44.50         | 38.30 | 1.28            | 1.15 | 42          | 2695   | 50             | 2530   | 50             | 2485   | 150                   |
| 48                  | 30 | 50.80         | 32.00 | 1.42            | 1.03 | 48          | 3005   | 56             | 2900   | 56             | 2740   | 150                   |
| 48                  | 36 | 50.80         | 38.30 | 1.42            | 1.15 | 48          | 3370   | 56             | 3205   | 56             | 3100   | 150                   |
| 48                  | 42 | 50.80         | 44.50 | 1.42            | 1.28 | 48          | 3750   | 56             | 3540   | 56             | 3480   | 150                   |

All weights are approximate and do not include joint accessories.

See page 19 for joint dimensions and weight of joint accessories.

Three to twelve-inch fittings conform to A.S.A. Specification—A-21.10—for short body fittings.



## Sleeves

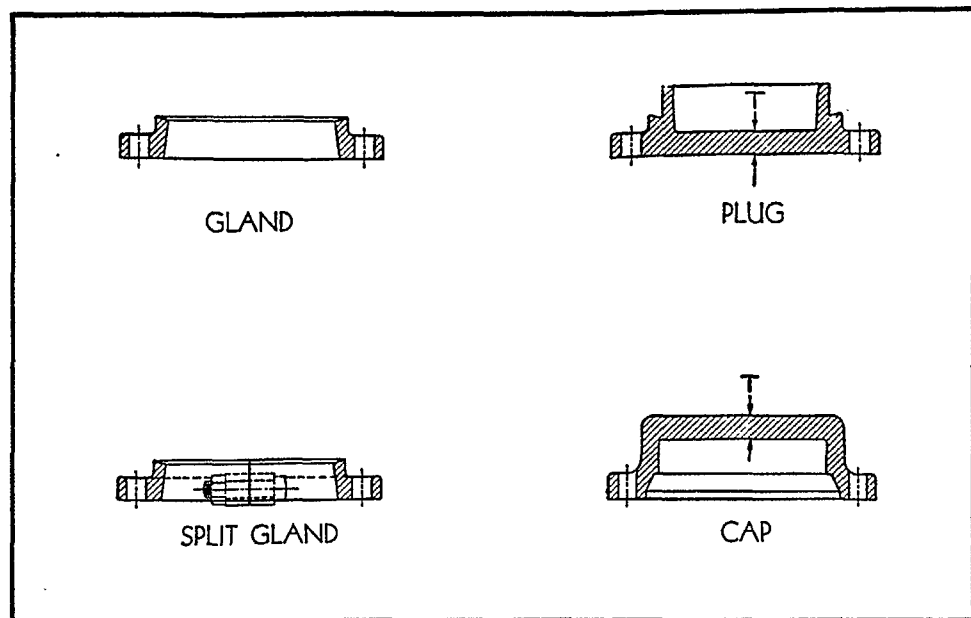
| TABLE OF DIMENSIONS |      |                             |                |        |                |        |                  |                             |      |        |                             |
|---------------------|------|-----------------------------|----------------|--------|----------------|--------|------------------|-----------------------------|------|--------|-----------------------------|
| Nominal<br>Diam.    | T    | Fits<br>O. D.<br>C. I. Pipe | Solid Sleeves  |        |                |        | Split<br>Sleeves | Transition Sleeves          |      |        | Max.<br>Working<br>Pressure |
|                     |      |                             | L <sub>1</sub> | Weight | L <sub>2</sub> | Weight | X<br>Min.        | Fits O. D.<br>Steel<br>Pipe | Y    | Weight |                             |
| 3                   | .48  | 3.96                        | 7.5            | 25     | 12             | 30     | 10               | 3.50                        | 7.50 | 25     | 250                         |
| 4                   | .52  | 4.80                        | 7.5            | 35     | 12             | 45     | 10               | 4.50                        | 7.50 | 35     | 250                         |
| 6                   | .55  | 6.90                        | 7.5            | 45     | 12             | 65     | 10               | 6.62                        | 7.50 | 45     | 250                         |
| 8                   | .60  | 9.05                        | 7.5            | 65     | 12             | 85     | 10               | 8.62                        | 7.50 | 65     | 250                         |
| 10                  | .68  | 11.10                       | 7.5            | 85     | 12             | 115    | 10               | 10.75                       | 7.50 | 85     | 250                         |
| 12                  | .75  | 13.20                       | 7.5            | 110    | 12             | 145    | 10               | 12.75                       | 7.50 | 110    | 250                         |
| 14                  | .82  | 15.30                       | 9.5            | 165    | 15             | 225    | 11               |                             |      |        | 150                         |
| 16                  | .89  | 17.40                       | 9.5            | 200    | 15             | 275    | 11               |                             |      |        | 150                         |
| 18                  | .96  | 19.50                       | 9.5            | 240    | 15             | 330    | 11               |                             |      |        | 150                         |
| 20                  | 1.03 | 21.60                       | 9.5            | 275    | 15             | 380    | 11               |                             |      |        | 150                         |
| 24                  | 1.16 | 25.80                       | 9.5            | 360    | 15             | 505    | 11               |                             |      |        | 150                         |
| 30                  | 1.37 | 32.00                       | 15.0           | 745    | 24             | 1085   | 15               |                             |      |        | 150                         |
| 36                  | 1.58 | 38.30                       | 15.0           | 1030   | 24             | 1495   | 15               |                             |      |        | 150                         |
| 42                  | 1.78 | 44.50                       | 15.0           | 1330   | 24             | 1940   | 15               |                             |      |        | 150                         |
| 48                  | 1.96 | 50.80                       | 15.0           | 1645   | 24             | 2405   | 15               |                             |      |        | 150                         |

\*This split sleeve can be furnished with boss and tap for service connection.

\*\*Transition sleeves are furnished with one end designed for standard steel outside diameter pipe and the other to fit mechanical joint cast iron pipe.

All weights are approximate and do not include joint accessories.

See page 19 for joint dimensions and weight of joint accessories.



## Glands, Plugs and Caps

| TABLE OF DIMENSIONS |                 |                 |                 |         |       |      |                             |
|---------------------|-----------------|-----------------|-----------------|---------|-------|------|-----------------------------|
| Nominal<br>Diam.    | Weights         |                 | Design          | Weights |       |      | Max.<br>Working<br>Pressure |
|                     | Solid<br>Glands | Split<br>Glands |                 | T       | Plugs | Caps |                             |
| 3                   | 5               | 9               | Flat            | .75     | 14    | 13   | 250                         |
| 4                   | 6               | 14              | Flat            | .75     | 20    | 20   | 250                         |
| 6                   | 11              | 18              | Flat            | .75     | 30    | 30   | 250                         |
| 8                   | 18              | 20              | Flat            | .75     | 50    | 45   | 250                         |
| 10                  | 20              | 30              | Flat            | .75     | 65    | 55   | 250                         |
| 12                  | 30              | 35              | Flat            | .75     | 85    | 75   | 250                         |
| 14                  | 35              | 60              | Dished          | .82     | 115   | 120  | 150                         |
| 16                  | 45              | 70              | Dished          | .89     | 150   | 155  | 150                         |
| 18                  | 55              | 85              | Dished          | .96     | 195   | 190  | 150                         |
| 20                  | 70              | 100             | Dished          | 1.03    | 225   | 240  | 150                         |
| 24                  | 90              | 130             | Dished          | 1.16    | 330   | 345  | 150                         |
| 30                  | 180             | 205             | Dished & Ribbed | 1.37    | 590   | 660  | 150                         |
| 36                  | 235             | 265             | Dished & Ribbed | 1.58    | 880   | 960  | 150                         |
| 42                  | 300             | 330             | Dished & Ribbed | 1.78    | 1250  | 1355 | 150                         |
| 48                  | 365             | 400             | Dished & Ribbed | 1.96    | 1670  | 1830 | 150                         |

All weights are approximate.

See page 19 for joint dimensions and weight of joint accessories.

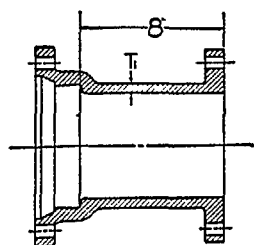


Figure A

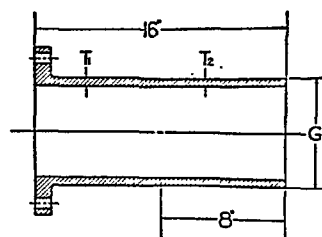


Figure B

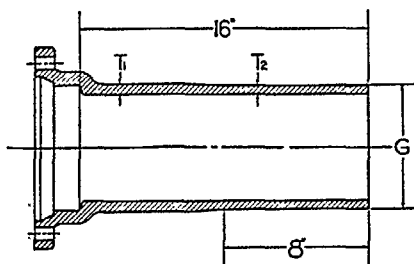


Figure C

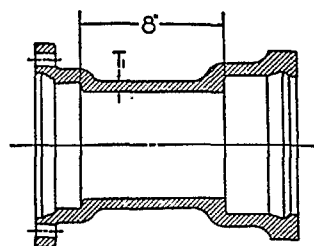


Figure D

All flanges are American 125 standard unless otherwise specified.

## Connecting Pieces

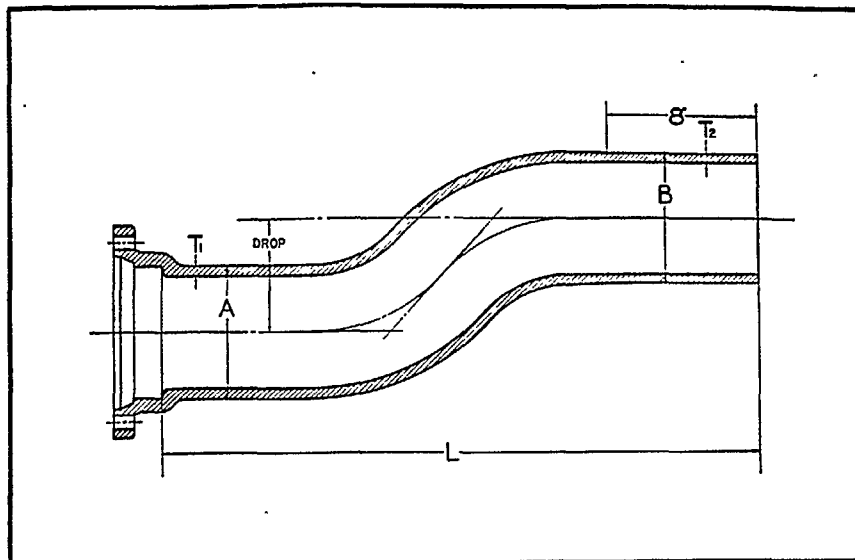
| TABLE OF DIMENSIONS |               |                |                       |                |                    |                     |                   |                  |                   |                             |
|---------------------|---------------|----------------|-----------------------|----------------|--------------------|---------------------|-------------------|------------------|-------------------|-----------------------------|
| Nominal<br>Diam.    | Body<br>O. D. | T <sub>1</sub> | P. E.<br>Diam.<br>"G" | T <sub>2</sub> | A                  | B                   | C                 | D                | E*                | Max.<br>Working<br>Pressure |
|                     |               |                |                       |                | MJ & Flg<br>Weight | Flg. & PE<br>Weight | MJ & PE<br>Weight | MJ & B<br>Weight | MJ & MJ<br>Weight |                             |
| 3                   | 3.96          | .48            | 3.96                  | .48            | 30                 | 30                  | 35                | 40               | 35                | 250                         |
| 4                   | 5.00          | .52            | 4.80                  | .45            | 40                 | 40                  | 45                | 55               | 45                | 250                         |
| 6                   | 7.10          | .55            | 6.90                  | .48            | 60                 | 55                  | 65                | 80               | 70                | 250                         |
| 8                   | 9.30          | .60            | 9.05                  | .51            | 85                 | 85                  | 95                | 115              | 95                | 250                         |
| 10                  | 11.40         | .68            | 11.10                 | .57            | 115                | 115                 | 125               | 150              | 130               | 250                         |
| 12                  | 13.50         | .75            | 13.20                 | .62            | 155                | 155                 | 165               | 190              | 165               | 250                         |
| 14                  | 15.30         | .66            | 15.30                 | .66            | 195                | 180                 | 205               | 230              | 220               | 150                         |
| 16                  | 17.40         | .70            | 17.40                 | .70            | 240                | 220                 | 250               | 290              | 270               | 150                         |
| 18                  | 19.50         | .75            | 19.50                 | .75            | 280                | 255                 | 300               | 340              | 325               | 150                         |
| 20                  | 21.60         | .80            | 21.60                 | .80            | 340                | 305                 | 360               | 405              | 390               | 150                         |
| 24                  | 25.80         | .89            | 25.80                 | .89            | 455                | 415                 | 475               | 530              | 515               | 150                         |
| 30                  | 32.00         | 1.03           | 32.00                 | 1.03           | 710                | 600                 | 730               | 820              | 840               | 150                         |
| 36                  | 38.30         | 1.15           | 38.30                 | 1.15           | 1000               | 830                 | 1005              | 1170             | 1170              | 150                         |
| 42                  | 44.50         | 1.28           | 44.50                 | 1.28           | 1325               | 1115                | 1295              | 1515             | 1500              | 150                         |
| 48                  | 50.80         | 1.42           | 50.80                 | 1.42           | 1655               | 1390                | 1640              | 1930             | 1910              | 150                         |

Fittings shown in Fig. B and C may be furnished from centrifugally cast pipe.

\*Figure E is a mechanical joint-to-mechanical joint connecting piece having laying length of 8".

All weights are approximate.

See page 19 for joint dimensions and weight of joint accessories.

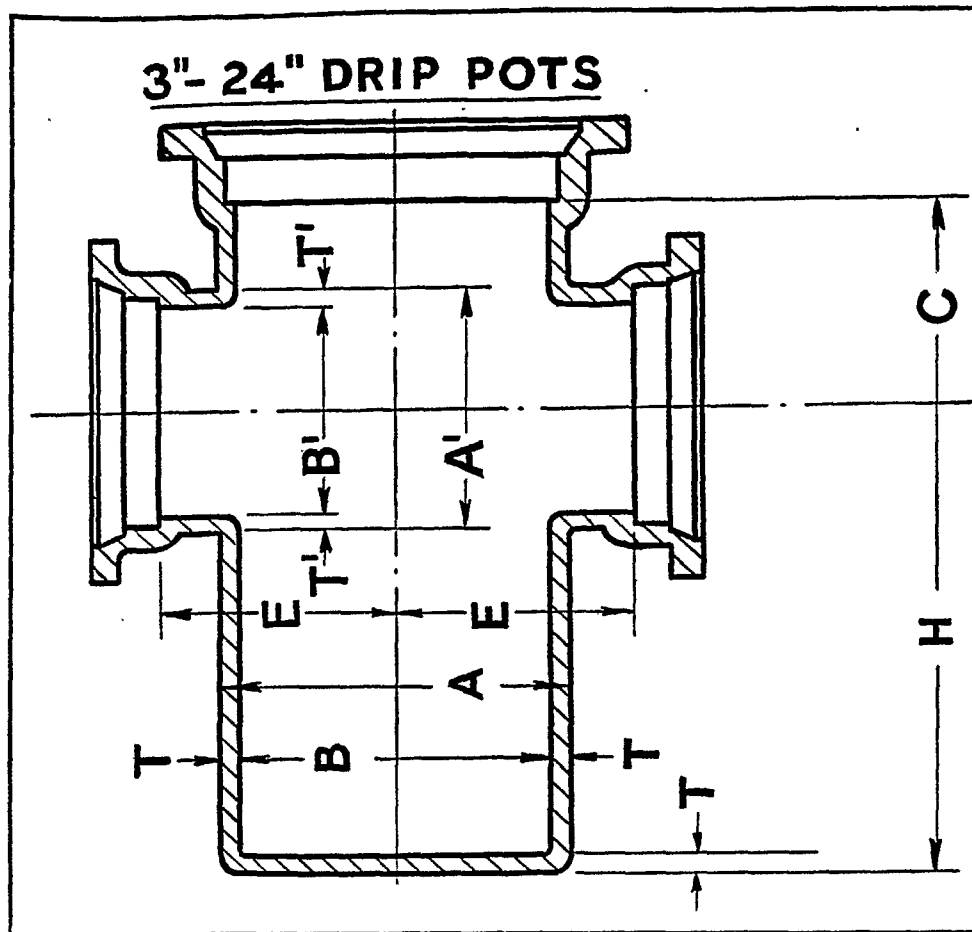


## Offsets

| TABLE OF DIMENSIONS |                 |                 |      |    |                |                |        |                       |
|---------------------|-----------------|-----------------|------|----|----------------|----------------|--------|-----------------------|
| Nominal Diam.       | Plain End Diam. | Outside Diam. A | Drop | L  | T <sub>1</sub> | T <sub>2</sub> | Weight | Max. Working Pressure |
| 3                   | 3.96            | 3.96            | 6    | 27 | .48            | .48            | 50     | 250                   |
| 3                   | 3.96            | 3.96            | 12   | 30 | .48            | .48            | 60     | 250                   |
| 3                   | 3.96            | 3.96            | 18   | 38 | .48            | .48            | 75     | 250                   |
| 4                   | 4.80            | 5.00            | 6    | 27 | .52            | .45            | 70     | 250                   |
| 4                   | 4.80            | 5.00            | 12   | 30 | .52            | .45            | 80     | 250                   |
| 4                   | 4.80            | 5.00            | 18   | 38 | .52            | .45            | 100    | 250                   |
| 6                   | 6.90            | 7.10            | 6    | 28 | .55            | .48            | 105    | 250                   |
| 6                   | 6.90            | 7.10            | 12   | 34 | .55            | .48            | 130    | 250                   |
| 6                   | 6.90            | 7.10            | 18   | 41 | .55            | .48            | 160    | 250                   |
| 8                   | 9.05            | 9.30            | 6    | 29 | .60            | .51            | 155    | 250                   |
| 8                   | 9.05            | 9.30            | 12   | 36 | .60            | .51            | 195    | 250                   |
| 8                   | 9.05            | 9.30            | 18   | 43 | .60            | .51            | 240    | 250                   |
| 10                  | 11.10           | 11.40           | 6    | 30 | .68            | .57            | 220    | 250                   |
| 10                  | 11.10           | 11.40           | 12   | 38 | .68            | .57            | 280    | 250                   |
| 10                  | 11.10           | 11.40           | 18   | 46 | .68            | .57            | 340    | 250                   |
| 12                  | 13.20           | 13.50           | 6    | 34 | .75            | .62            | 320    | 250                   |
| 12                  | 13.20           | 13.50           | 12   | 45 | .75            | .62            | 420    | 250                   |
| 12                  | 13.20           | 13.50           | 18   | 56 | .75            | .62            | 520    | 250                   |

All weights are approximate.

See page 19 for joint dimensions and weight of joint accessories.



## Drip Pots

| DIMENSIONS IN INCHES |                |       |                |       |       |       |                |                |      |               |               |               |
|----------------------|----------------|-------|----------------|-------|-------|-------|----------------|----------------|------|---------------|---------------|---------------|
| Size                 | A <sub>1</sub> | A     | B <sub>1</sub> | B     | C     | E     | H              | T <sub>1</sub> | T    | Plug-<br>Size | Cap.,<br>qts. | Wts.,<br>lbs. |
| 4                    | 5.00           | 15.30 | 3.96           | 13.98 | 6.00  | 10.75 | 14.75<br>26.75 | .52            | .66  | 14            | 32<br>64      | 435<br>530    |
| 6                    | 7.10           | 15.30 | 6.00           | 13.98 | 7.12  | 10.75 | 15.75<br>27.75 | .55            | .66  | 14            | 32<br>64      | 465<br>560    |
| 8                    | 9.30           | 15.30 | 8.10           | 13.98 | 8.25  | 10.75 | 28.75<br>40.88 | .60            | .66  | 14            | 64<br>96      | 595<br>695    |
| 10                   | 11.40          | 15.30 | 10.04          | 13.98 | 9.25  | 10.75 | 29.75<br>41.88 | .68            | .66  | 14            | 64<br>96      | 645<br>740    |
| 12                   | 13.50          | 17.40 | 12.00          | 16.00 | 10.25 | 11.75 | 30.88<br>42.88 | .75            | .70  | 16            | 84<br>126     | 815<br>930    |
| 16                   | 17.40          | 21.60 | 16.00          | 20.00 | 12.25 | 14.38 | 34.12<br>46.88 | .70            | .80  | 20            | 138<br>208    | 1285<br>1460  |
| 20                   | 21.60          | 25.80 | 20.00          | 24.02 | 15.38 | 16.50 | 36.75<br>49.62 | .80            | .89  | 24            | 203<br>304    | 1875<br>2110  |
| 24                   | 25.80          | 32.00 | 24.02          | 29.94 | 17.50 | 20.50 | 36.12<br>47.62 | .89            | 1.03 | 30            | 280<br>420    | 2895<br>3195  |

Weights include plug, bolts and gasket for top.  
All weights are approximate.  
See page 19 for joint dimensions and weight of joint accessories.

# Gaskets, Glands and Bolts

## *for mechanical joint cast iron pipe and fittings*

(in conformance with A.S.A.—A-21.11)

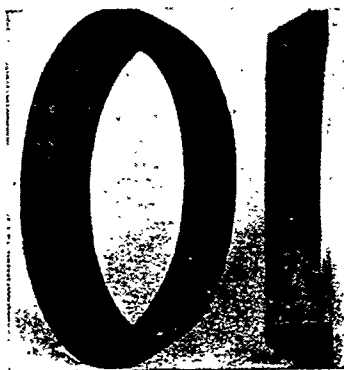
All *gaskets* furnished for the standardized mechanical joint are produced by long-established manufacturers who are recognized specialists in this field, and are made to accurate dimensions under rigid controls and inspection. Generally plain rubber gaskets are furnished and in sufficient quantities to provide for each socket opening on pipe and fittings. Metal tipped, duck tipped, Thiokol tipped and other special types of gaskets can be supplied when specified by the purchaser.

*Glands* are made of special high quality cast iron under rigid metallurgical controls and inspections.

*Bolts* furnished with the standardized mechanical joint are made of high strength cast iron and have a minimum tensile strength of 50,000 pounds per square inch. They possess the inherent corrosion resistance of cast iron and will therefore play their full part in living up to the long life records of the pipe itself. Other types of bolts for unusual requirements are furnished to meet purchasers' specifications.

Glands and bolts are furnished in sufficient quantities to provide for each socket opening on pipe and fittings.

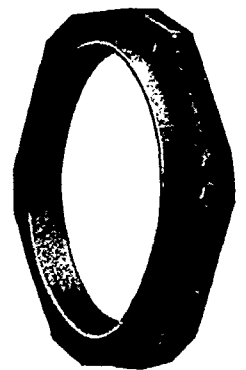
Thus, the standardized mechanical joint is homogeneous throughout—a true cast iron joint.



Plain rubber gasket



Cast iron bolt



Cast iron gland

|                       |             |                 |                         |
|-----------------------|-------------|-----------------|-------------------------|
| COPY FORM             |             | INITIALS<br>KSP | DATE<br>10-19-99        |
| BOX NUMBER<br>04-1913 | SEGMENT NO. |                 | REQUESTING PARTY<br>BIB |
| NOTES                 |             |                 |                         |