

# ASK

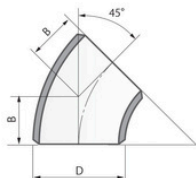
**Brochure**



**ASME 管継手の厚さ / WALL THICKNESS**

| Nominal Pipe Size |       | Outside Diameter |       | Nominal Wall Thickness |       |       |       |       |       |       |       |
|-------------------|-------|------------------|-------|------------------------|-------|-------|-------|-------|-------|-------|-------|
|                   |       |                  |       | Carbon & Alloy Steel   |       |       |       |       |       |       |       |
|                   |       |                  |       | ASME B36.10M           |       |       |       |       |       |       |       |
| DN                | NPS   | (inch)           | (mm)  | STD                    | XS    | XXS   | Sch10 | Sch20 | Sch30 | Sch40 | Sch60 |
| 15                | 1/2   | 0.840            | 21.3  | 2.77                   | 3.73  | 7.47  | 2.11  | -     | 2.41  | 2.77  | -     |
| 20                | 3/4   | 1.050            | 26.7  | 2.87                   | 3.91  | 7.82  | 2.11  | -     | 2.41  | 2.87  | -     |
| 25                | 1     | 1.315            | 33.4  | 3.38                   | 4.55  | 9.09  | 2.77  | -     | 2.90  | 3.38  | -     |
| 32                | 1-1/4 | 1.660            | 42.2  | 3.56                   | 4.85  | 9.70  | 2.77  | -     | 2.97  | 3.56  | -     |
| 40                | 1-1/2 | 1.900            | 48.3  | 3.68                   | 5.08  | 10.15 | 2.77  | -     | 3.18  | 3.68  | -     |
| 50                | 2     | 2.375            | 60.3  | 3.91                   | 5.54  | 11.07 | 2.77  | -     | 3.18  | 3.91  | -     |
| 65                | 2-1/2 | 2.875            | 73.0  | 5.16                   | 7.01  | 14.02 | 3.05  | -     | 4.78  | 5.16  | -     |
| 80                | 3     | 3.500            | 88.9  | 5.49                   | 7.62  | 15.24 | 3.05  | -     | 4.78  | 5.49  | -     |
| 90                | 3-1/2 | 4.000            | 101.6 | 5.74                   | 8.08  | -     | 3.05  | -     | 4.78  | 5.74  | -     |
| 100               | 4     | 4.500            | 114.3 | 6.02                   | 8.56  | 17.12 | 3.05  | -     | 4.78  | 6.02  | -     |
| 125               | 5     | 5.563            | 141.3 | 6.55                   | 9.53  | 19.05 | 3.40  | -     | -     | 6.55  | -     |
| 150               | 6     | 6.625            | 168.3 | 7.11                   | 10.97 | 21.95 | 3.40  | -     | -     | 7.11  | -     |
| 200               | 8     | 8.625            | 219.1 | 8.18                   | 12.70 | 22.23 | 3.76  | 6.35  | 7.04  | 8.18  | 10.31 |
| 250               | 10    | 10.750           | 273.0 | 9.27                   | 12.70 | 25.40 | 4.19  | 6.35  | 7.80  | 9.27  | 12.70 |
| 300               | 12    | 12.750           | 323.8 | 9.53                   | 12.70 | 25.40 | 4.57  | 6.35  | 8.38  | 10.31 | 14.27 |
| 350               | 14    | 14.000           | 355.6 | 9.53                   | 12.70 | -     | 6.35  | 7.92  | 9.53  | 11.13 | 15.09 |
| 400               | 16    | 16.000           | 406.4 | 9.53                   | 12.70 | -     | 6.35  | 7.92  | 9.53  | 12.70 | 16.66 |
| 450               | 18    | 18.000           | 457   | 9.53                   | 12.70 | -     | 6.35  | 7.92  | 11.13 | 14.27 | 19.05 |
| 500               | 20    | 20.000           | 508   | 9.53                   | 12.70 | -     | 6.35  | 9.53  | 12.70 | 15.09 | 20.62 |
| 550               | 22    | 22.000           | 559   | 9.53                   | 12.70 | -     | 6.35  | 9.53  | 12.70 | -     | 22.23 |
| 600               | 24    | 24.000           | 610   | 9.53                   | 12.70 | -     | 6.35  | 9.53  | 14.27 | 17.48 | 24.61 |
| 650               | 26    | 26.000           | 660   | 9.53                   | 12.70 | -     | 7.92  | 12.70 | -     | -     | -     |
| 700               | 28    | 28.000           | 711   | 9.53                   | 12.70 | -     | 7.92  | 12.70 | 15.88 | -     | -     |
| 750               | 30    | 30.000           | 762   | 9.53                   | 12.70 | -     | 7.92  | 12.70 | 15.88 | -     | -     |
| 800               | 32    | 32.000           | 813   | 9.53                   | 12.70 | -     | 7.92  | 12.70 | 15.88 | 17.48 | -     |
| 850               | 34    | 34.000           | 864   | 9.53                   | 12.70 | -     | 7.92  | 12.70 | 15.88 | 17.48 | -     |
| 900               | 36    | 36.000           | 914   | 9.53                   | 12.70 | -     | 7.92  | 12.70 | 15.88 | 19.05 | -     |
| 950               | 38    | 38.000           | 965   | 9.53                   | 12.70 | -     | -     | -     | -     | -     | -     |
| 1000              | 40    | 40.000           | 1016  | 9.53                   | 12.70 | -     | -     | -     | -     | -     | -     |
| 1050              | 42    | 42.000           | 1067  | 9.53                   | 12.70 | -     | -     | -     | -     | -     | -     |
| 1100              | 44    | 44.000           | 1118  | 9.53                   | 12.70 | -     | -     | -     | -     | -     | -     |
| 1150              | 46    | 46.000           | 1168  | 9.53                   | 12.70 | -     | -     | -     | -     | -     | -     |
| 1200              | 48    | 48.000           | 1219  | 9.53                   | 12.70 | -     | -     | -     | -     | -     | -     |

|  |       |        |        |        |                 |       |        |        | Outside Diameter |        | Nominal Pipe Size |      |       |
|--|-------|--------|--------|--------|-----------------|-------|--------|--------|------------------|--------|-------------------|------|-------|
|  |       |        |        |        |                 |       |        |        |                  |        |                   |      |       |
|  |       |        |        |        |                 |       |        |        |                  |        |                   |      |       |
|  |       |        |        |        | Stainless Steel |       |        |        |                  |        |                   |      |       |
|  |       |        |        |        | ASME B36.19M    |       |        |        |                  |        |                   |      |       |
|  | Sch80 | Sch100 | Sch120 | Sch140 | Sch160          | Sch5S | Sch10S | Sch40S | Sch80S           | (inch) | (mm)              | DN   | NPS   |
|  | 3.73  | -      | -      | -      | 4.78            | 1.65  | 2.11   | 2.77   | 3.73             | 0.840  | 21.3              | 15   | 1/2   |
|  | 3.91  | -      | -      | -      | 5.56            | 1.65  | 2.11   | 2.87   | 3.91             | 1.050  | 26.7              | 20   | 3/4   |
|  | 4.55  | -      | -      | -      | 6.35            | 1.65  | 2.77   | 3.38   | 4.55             | 1.315  | 33.4              | 25   | 1     |
|  | 4.85  | -      | -      | -      | 6.35            | 1.65  | 2.77   | 3.56   | 4.85             | 1.660  | 42.2              | 32   | 1-1/4 |
|  | 5.08  | -      | -      | -      | 7.14            | 1.65  | 2.77   | 3.68   | 5.08             | 1.900  | 48.3              | 40   | 1-1/2 |
|  | 5.54  | -      | -      | -      | 8.74            | 1.65  | 2.77   | 3.91   | 5.54             | 2.375  | 60.3              | 50   | 2     |
|  | 7.01  | -      | -      | -      | 9.53            | 2.11  | 3.05   | 5.16   | 7.01             | 2.875  | 73.0              | 65   | 2-1/2 |
|  | 7.62  | -      | -      | -      | 11.13           | 2.11  | 3.05   | 5.49   | 7.62             | 3.500  | 88.9              | 80   | 3     |
|  | 8.08  | -      | -      | -      | -               | 2.11  | 3.05   | 5.74   | 8.08             | 4.000  | 101.6             | 90   | 3-1/2 |
|  | 8.56  | -      | 11.13  | -      | 13.49           | 2.11  | 3.05   | 6.02   | 8.56             | 4.500  | 114.3             | 100  | 4     |
|  | 9.53  | -      | 12.70  | -      | 15.88           | 2.77  | 3.40   | 6.55   | 9.53             | 5.563  | 141.3             | 125  | 5     |
|  | 10.97 | -      | 14.27  | -      | 18.26           | 2.77  | 3.40   | 7.11   | 10.97            | 6.625  | 168.3             | 150  | 6     |
|  | 12.70 | 15.09  | 18.26  | 20.62  | 23.01           | 2.77  | 3.76   | 8.18   | 12.70            | 8.625  | 219.1             | 200  | 8     |
|  | 15.09 | 18.26  | 21.44  | 25.40  | 28.58           | 3.40  | 4.19   | 9.27   | 12.70            | 10.750 | 273.0             | 250  | 10    |
|  | 17.48 | 21.44  | 25.40  | 28.58  | 33.32           | 3.96  | 4.57   | 9.53   | 12.70            | 12.750 | 323.8             | 300  | 12    |
|  | 19.05 | 23.83  | 27.79  | 31.75  | 35.71           | 3.96  | 4.78   | 9.53   | 12.70            | 14.000 | 355.6             | 350  | 14    |
|  | 21.44 | 26.19  | 30.96  | 36.53  | 40.49           | 4.19  | 4.78   | 9.53   | 12.70            | 16.000 | 406.4             | 400  | 16    |
|  | 23.83 | 29.36  | 34.93  | 39.67  | 45.24           | 4.19  | 4.78   | 9.53   | 12.70            | 18.000 | 457               | 450  | 18    |
|  | 26.19 | 32.54  | 38.10  | 44.45  | 50.01           | 4.78  | 5.54   | 9.53   | 12.70            | 20.000 | 508               | 500  | 20    |
|  | 28.58 | 34.93  | 41.28  | 47.63  | 53.98           | 4.78  | 5.54   | -      | -                | 22.000 | 559               | 550  | 22    |
|  | 30.96 | 38.89  | 46.02  | 52.37  | 59.54           | 5.54  | 6.35   | 9.53   | 12.70            | 24.000 | 610               | 600  | 24    |
|  | -     | -      | -      | -      | -               | -     | -      | -      | -                | 26.000 | 660               | 650  | 26    |
|  | -     | -      | -      | -      | -               | -     | -      | -      | -                | 28.000 | 711               | 700  | 28    |
|  | -     | -      | -      | -      | -               | 6.35  | 7.92   | -      | -                | 30.000 | 762               | 750  | 30    |
|  | -     | -      | -      | -      | -               | -     | -      | -      | -                | 32.000 | 813               | 800  | 32    |
|  | -     | -      | -      | -      | -               | -     | -      | -      | -                | 34.000 | 864               | 850  | 34    |
|  | -     | -      | -      | -      | -               | -     | -      | -      | -                | 36.000 | 914               | 900  | 36    |
|  | -     | -      | -      | -      | -               | -     | -      | -      | -                | 38.000 | 965               | 950  | 38    |
|  | -     | -      | -      | -      | -               | -     | -      | -      | -                | 40.000 | 1016              | 1000 | 40    |
|  | -     | -      | -      | -      | -               | -     | -      | -      | -                | 42.000 | 1067              | 1050 | 42    |
|  | -     | -      | -      | -      | -               | -     | -      | -      | -                | 44.000 | 1118              | 1100 | 44    |
|  | -     | -      | -      | -      | -               | -     | -      | -      | -                | 46.000 | 1168              | 1150 | 46    |
|  | -     | -      | -      | -      | -               | -     | -      | -      | -                | 48.000 | 1219              | 1200 | 48    |

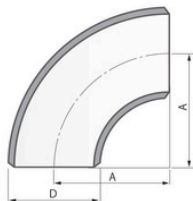
**ASME 45°エルボ (ロング) の形状・寸法・重量 / DIMENSIONS OF LONG RADIUS ELBOW**


45° LONG RADIUS ELBOW

ASME B 16.9

| Nominal<br>Pipe Size<br>(NPS) | Dimensions (Unit:mm)            |                                      | Carbon & Alloy Steel Weight (Unit:kg) |       |       |       |       |       |       |       |       |       |       |       |       |        | Stainless Steel Weight (Unit:kg) |       |       |       |
|-------------------------------|---------------------------------|--------------------------------------|---------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|----------------------------------|-------|-------|-------|
|                               | Outside<br>Diameter<br>at Bevel | Center -<br>to - End<br>45 Deg Elbow |                                       |       |       |       |       |       |       |       |       |       |       |       |       |        |                                  |       |       |       |
|                               |                                 |                                      | D                                     | B     | STD   | XS    | XXS   | S40   | S80   | S120  | S160  | S10   | S20   | S30   | S60   | S100   | S140                             | S10S  | S40S  | S80S  |
| 1/2                           | 21.3                            | 16                                   | 0.038                                 | 0.048 | 0.076 | 0.038 | 0.048 | -     | 0.058 | -     | -     | -     | -     | -     | -     | -      | 0.030                            | 0.040 | 0.050 | 0.060 |
| 3/4                           | 26.7                            | 19                                   | 0.060                                 | 0.077 | 0.131 | 0.060 | 0.077 | -     | 0.115 | -     | -     | -     | -     | -     | -     | -      | 0.050                            | 0.062 | 0.080 | 0.115 |
| 1                             | 33.4                            | 22                                   | 0.106                                 | 0.137 | 0.231 | 0.106 | 0.137 | -     | 0.180 | -     | -     | -     | -     | -     | -     | -      | 0.070                            | 0.107 | 0.140 | 0.180 |
| 1-1/4                         | 42.2                            | 25                                   | 0.163                                 | 0.215 | 0.374 | 0.163 | 0.215 | -     | 0.270 | -     | -     | -     | -     | -     | -     | -      | 0.110                            | 0.167 | 0.220 | 0.270 |
| 1-1/2                         | 48.3                            | 29                                   | 0.218                                 | 0.292 | 0.515 | 0.218 | 0.292 | -     | 0.390 | -     | -     | -     | -     | -     | -     | -      | 0.160                            | 0.220 | 0.295 | 0.395 |
| 2                             | 60.3                            | 35                                   | 0.361                                 | 0.497 | 0.893 | 0.361 | 0.497 | 0.560 | 0.736 | -     | -     | -     | -     | -     | -     | -      | 0.260                            | 0.365 | 0.510 | 0.750 |
| 2-1/2                         | 73.0                            | 44                                   | 0.728                                 | 0.961 | 1.720 | 0.728 | 0.961 | 0.740 | 1.260 | -     | -     | -     | -     | -     | -     | -      | 0.420                            | 0.735 | 0.970 | 1.270 |
| 3                             | 88.9                            | 51                                   | 1.090                                 | 1.470 | 2.670 | 1.090 | 1.470 | 1.455 | 2.060 | -     | -     | -     | -     | -     | -     | -      | 0.660                            | 1.100 | 1.490 | 2.090 |
| 3-1/2                         | 101.6                           | 57                                   | 1.470                                 | 2.020 | 3.690 | 1.470 | 2.020 | -     | 3.020 | -     | -     | -     | -     | -     | -     | -      | 0.820                            | 1.510 | 2.050 | 3.050 |
| 4                             | 114.3                           | 64                                   | 1.940                                 | 2.690 | 4.940 | 1.940 | 2.690 | 3.380 | 4.040 | -     | -     | -     | -     | -     | -     | -      | 1.100                            | 2.040 | 2.710 | 4.080 |
| 5                             | 141.3                           | 79                                   | 3.270                                 | 4.650 | 8.630 | 3.270 | 4.650 | 6.000 | 7.380 | -     | -     | -     | -     | -     | -     | -      | 2.010                            | 3.460 | 4.690 | 7.450 |
| 6                             | 168.3                           | 95                                   | 5.100                                 | 7.690 | 14.30 | 5.100 | 7.690 | 9.720 | 12.20 | -     | -     | -     | -     | -     | -     | -      | 2.950                            | 5.740 | 7.770 | 12.30 |
| 8                             | 219.1                           | 127                                  | 10.20                                 | 15.60 | 26.00 | 10.20 | 15.60 | 21.70 | 26.80 | -     | 10.20 | 10.20 | -     | -     | -     | -      | 5.150                            | 10.30 | 15.80 | -     |
| 10                            | 273.0                           | 159                                  | 18.10                                 | 24.50 | 46.40 | 18.10 | 28.80 | 39.80 | 51.80 | -     | 18.10 | 18.10 | -     | -     | -     | -      | 8.400                            | 18.30 | 24.60 | -     |
| 12                            | 323.8                           | 190                                  | 26.70                                 | 35.20 | 67.00 | 28.80 | 47.60 | 67.00 | 85.50 | -     | 26.70 | 26.70 | 39.10 | -     | -     | -      | 14.30                            | 26.75 | 35.35 | -     |
| 14                            | 355.6                           | 222                                  | 34.20                                 | 45.30 | -     | 39.80 | 66.60 | 94.10 | 119.0 | 34.20 | 34.20 | 34.20 | 53.00 | 94.10 | 119.0 | 18.300 | 40.20                            | -     | -     |       |
| 16                            | 406.4                           | 254                                  | 44.90                                 | 59.40 | -     | 59.40 | 97.90 | 137.0 | 176.0 | 44.90 | 44.90 | 44.90 | 76.50 | 137.0 | 176.0 | 36.10  | 60.00                            | -     | -     |       |
| 18                            | 457.0                           | 286                                  | 56.90                                 | 75.40 | -     | 84.50 | 138.0 | 196.0 | 249.0 | 56.90 | 56.90 | 75.40 | 110.0 | 196.0 | 249.0 | -      | -                                | -     | -     |       |
| 20                            | 508.0                           | 318                                  | 70.50                                 | 93.40 | -     | 110.0 | 187.0 | 264.0 | 338.0 | 70.50 | 70.50 | 93.40 | 148.0 | 264.0 | 338.0 | -      | -                                | -     | -     |       |
| 22                            | 559.0                           | 343                                  | 85.00                                 | 112.5 | -     | 140.0 | 246.0 | 347.0 | 442.0 | 85.00 | 83.70 | 112.5 | -     | 347.0 | 442.0 | -      | -                                | -     | -     |       |
| 24                            | 610.0                           | 381                                  | 102.0                                 | 135.0 | -     | 184.0 | 319.0 | 459.0 | 580.0 | 102.0 | 102.0 | 184.0 | 255.0 | 459.0 | 580.0 | -      | -                                | -     | -     |       |

## ASME 90°エルボ (ロング) の形状・寸法・重量 / DIMENSIONS OF LONG RADIUS ELBOW

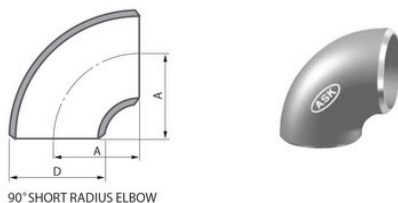


90° LONG RADIUS ELBOW



ASME B 16.9

| Nominal<br>Pipe Size<br>(NPS) | Dimensions (Unit:mm)            |                                      | Carbon & Alloy Steel Weight (Unit:kg) |       |       |       |       |       |       |       |       |       |       |       |       |       | Stainless Steel Weight (Unit:kg) |       |       |       |
|-------------------------------|---------------------------------|--------------------------------------|---------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------------------------------|-------|-------|-------|
|                               | Outside<br>Diameter<br>at Bevel | Center -<br>to - End<br>90 Deg Elbow |                                       |       |       |       |       |       |       |       |       |       |       |       |       |       |                                  |       |       |       |
|                               |                                 |                                      | D                                     | A     | STD   | XS    | XXS   | S40   | S80   | S120  | S160  | S10   | S20   | S30   | S60   | S100  | S140                             | S10S  | S40S  | S80S  |
| 1/2                           | 21.3                            | 38                                   | 0.078                                 | 0.097 | 0.152 | 0.078 | 0.097 | -     | 0.117 | -     | -     | -     | -     | -     | -     | -     | 0.060                            | 0.080 | 0.100 | 0.120 |
| 3/4                           | 26.7                            | 38                                   | 0.104                                 | 0.134 | 0.225 | 0.104 | 0.134 | -     | 0.176 | -     | -     | -     | -     | -     | -     | -     | 0.090                            | 0.110 | 0.130 | 0.180 |
| 1                             | 33.4                            | 38                                   | 0.150                                 | 0.194 | 0.326 | 0.150 | 0.194 | -     | 0.253 | -     | -     | -     | -     | -     | -     | -     | 0.130                            | 0.160 | 0.200 | 0.255 |
| 1-1/4                         | 42.2                            | 48                                   | 0.254                                 | 0.335 | 0.583 | 0.254 | 0.335 | -     | 0.421 | -     | -     | -     | -     | -     | -     | -     | 0.210                            | 0.250 | 0.350 | 0.425 |
| 1-1/2                         | 48.3                            | 57                                   | 0.364                                 | 0.486 | 0.858 | 0.364 | 0.486 | -     | 0.651 | -     | -     | -     | -     | -     | -     | -     | 0.300                            | 0.390 | 0.500 | 0.658 |
| 2                             | 60.3                            | 76                                   | 0.651                                 | 0.895 | 1.610 | 0.651 | 0.895 | 1.120 | 1.330 | -     | -     | -     | -     | -     | -     | -     | 0.500                            | 0.690 | 0.900 | 1.340 |
| 2-1/2                         | 73.0                            | 95                                   | 1.290                                 | 1.710 | 3.050 | 1.290 | 1.710 | 1.480 | 2.230 | -     | -     | -     | -     | -     | -     | -     | 0.800                            | 1.340 | 1.750 | 2.250 |
| 3                             | 88.9                            | 114                                  | 2.030                                 | 2.740 | 4.970 | 2.030 | 2.740 | 2.910 | 3.830 | -     | -     | -     | -     | -     | -     | -     | 1.280                            | 2.050 | 2.770 | 3.870 |
| 3-1/2                         | 101.6                           | 133                                  | 2.820                                 | 3.900 | 7.130 | 2.820 | 3.900 | -     | 5.830 | -     | -     | -     | -     | -     | -     | -     | 1.620                            | 2.870 | 3.950 | 5.890 |
| 4                             | 114.3                           | 152                                  | 3.850                                 | 5.340 | 9.820 | 3.850 | 5.340 | 6.760 | 8.030 | -     | -     | -     | -     | -     | -     | -     | 2.180                            | 3.900 | 5.420 | 8.110 |
| 5                             | 141.3                           | 191                                  | 6.510                                 | 9.260 | 17.20 | 6.510 | 9.260 | 12.00 | 14.70 | -     | -     | -     | -     | -     | -     | -     | 3.960                            | 6.580 | 9.300 | 14.80 |
| 6                             | 168.3                           | 229                                  | 10.10                                 | 15.30 | 28.40 | 10.10 | 15.30 | 19.50 | 24.20 | -     | -     | -     | -     | -     | -     | -     | 5.850                            | 10.20 | 15.50 | 24.40 |
| 8                             | 219.1                           | 305                                  | 20.40                                 | 30.90 | 51.70 | 20.40 | 30.90 | 43.20 | 53.30 | -     | 20.40 | 20.40 | -     | -     | -     | -     | 10.30                            | 21.60 | 31.20 | -     |
| 10                            | 273.0                           | 381                                  | 36.10                                 | 48.80 | 92.80 | 36.10 | 57.30 | 79.50 | 103.0 | -     | 36.10 | 36.10 | -     | -     | -     | -     | 16.80                            | 36.60 | 49.20 | -     |
| 12                            | 323.8                           | 457                                  | 53.00                                 | 70.00 | 134.0 | 57.20 | 94.70 | 134.0 | 171.0 | -     | 53.00 | 53.00 | 78.20 | 134.0 | 171.0 | 28.60 | 53.50                            | 70.70 | -     |       |
| 14                            | 355.6                           | 533                                  | 68.10                                 | 90.00 | -     | 79.10 | 132.0 | 188.0 | 236.0 | 68.10 | 68.10 | 68.10 | 106.0 | 188.0 | 236.0 | 36.60 | 79.90                            | -     | -     |       |
| 16                            | 406.4                           | 610                                  | 89.20                                 | 118.0 | -     | 118.0 | 195.0 | 274.0 | 350.0 | 89.20 | 89.20 | 89.20 | 153.0 | 274.0 | 350.0 | 72.10 | 180.7                            | -     | -     |       |
| 18                            | 457.0                           | 686                                  | 113.0                                 | 150.0 | -     | 168.0 | 274.0 | 391.0 | 495.0 | 113.0 | 113.0 | 150.0 | 221.0 | 391.0 | 440.0 | -     | -                                | -     | -     |       |
| 20                            | 508.0                           | 762                                  | 140.0                                 | 186.0 | -     | 219.0 | 372.0 | 528.0 | 676.0 | 140.0 | 140.0 | 186.0 | 296.0 | 528.0 | 676.0 | -     | -                                | -     | -     |       |
| 22                            | 559.0                           | 838                                  | 170.0                                 | 225.0 | -     | 280.0 | 492.0 | 693.0 | 884.0 | 170.0 | 170.0 | 225.0 | -     | 693.0 | 884.0 | -     | -                                | -     | -     |       |
| 24                            | 610.0                           | 914                                  | 202.0                                 | 269.0 | -     | 366.0 | 634.0 | 918.0 | 1160  | 202.0 | 202.0 | 366.0 | 510.0 | 918.0 | 1160  | -     | -                                | -     | -     |       |

**ASME 90°エルボ (ショート) の形状・寸法・重量 / DIMENSIONS OF SHORT RADIUS ELBOW**


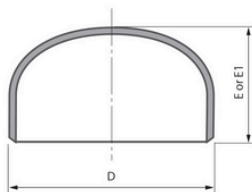
90° SHORT RADIUS ELBOW

ASME B 16.9

| Nominal<br>Pipe Size<br>(NPS) | Dimensions (Unit:mm)            |                                      | Carbon & Alloy Steel Weight (Unit:kg) |       |       |       |       |       |       |       |       |       |       | Stainless Steel Weight (Unit:kg) |       |       |  |
|-------------------------------|---------------------------------|--------------------------------------|---------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------------------------------|-------|-------|--|
|                               | Outside<br>Diameter<br>at Bevel | Center -<br>to - End<br>90 Deg Elbow |                                       |       |       |       |       |       |       |       |       |       |       |                                  |       |       |  |
|                               | D                               | A                                    | STD                                   | XS    | XXS   | S40   | S80   | S120  | S160  | S10   | S20   | S30   | S10S  | S40S                             | S80S  | S160  |  |
| 1                             | 33.4                            | 25                                   | 0.100                                 | 0.129 | 0.217 | 0.100 | 0.129 | -     | 0.169 | -     | -     | -     | 0.110 | 0.130                            | 0.150 | 0.200 |  |
| 1-1/4                         | 42.2                            | 32                                   | 0.169                                 | 0.223 | 0.388 | 0.169 | 0.223 | -     | 0.280 | -     | -     | -     | 0.180 | 0.250                            | 0.260 | 0.280 |  |
| 1-1/2                         | 48.3                            | 38                                   | 0.242                                 | 0.324 | 0.572 | 0.242 | 0.324 | -     | 0.434 | -     | -     | -     | 0.200 | 0.300                            | 0.330 | 0.440 |  |
| 2                             | 60.3                            | 51                                   | 0.434                                 | 0.597 | 1.070 | 0.434 | 0.597 | -     | 0.884 | -     | -     | -     | 0.400 | 0.450                            | 0.600 | 0.890 |  |
| 2-1/2                         | 73.0                            | 64                                   | 0.861                                 | 1.140 | 2.030 | 0.861 | 1.140 | -     | 1.490 | -     | -     | -     | 0.570 | 0.960                            | 1.150 | 1.500 |  |
| 3                             | 88.9                            | 76                                   | 1.350                                 | 1.830 | 3.310 | 1.350 | 1.830 | -     | 2.550 | -     | -     | -     | 0.800 | 1.400                            | 1.840 | 2.580 |  |
| 3-1/2                         | 101.6                           | 89                                   | 1.890                                 | 2.600 | 4.750 | 1.890 | 2.600 | -     | 3.890 | -     | -     | -     | 1.100 | 2.300                            | 2.630 | 3.930 |  |
| 4                             | 114.3                           | 102                                  | 2.570                                 | 3.560 | 6.550 | 2.570 | 3.560 | 4.500 | 5.350 | -     | -     | -     | 1.400 | 2.800                            | 3.600 | 5.400 |  |
| 5                             | 141.3                           | 127                                  | 4.340                                 | 6.170 | 11.50 | 4.340 | 6.170 | 8.030 | 9.700 | -     | -     | -     | 2.400 | 4.600                            | 6.230 | 9.800 |  |
| 6                             | 168.3                           | 152                                  | 6.770                                 | 10.20 | 19.00 | 6.770 | 10.20 | 13.00 | 16.20 | -     | -     | -     | 4.100 | 7.000                            | 10.30 | 16.40 |  |
| 8                             | 219.1                           | 203                                  | 13.60                                 | 20.40 | 34.40 | 13.60 | 20.60 | 28.90 | 35.50 | -     | 13.60 | 13.60 | 6.700 | 13.80                            | 20.80 | -     |  |
| 10                            | 273.0                           | 254                                  | 24.10                                 | 32.50 | 61.80 | 24.10 | 38.20 | 53.00 | 68.70 | -     | 24.10 | 24.10 | 11.20 | 24.40                            | 32.80 | -     |  |
| 12                            | 323.8                           | 305                                  | 35.30                                 | 46.60 | 89.50 | 38.20 | 63.10 | 89.50 | 114.0 | -     | 35.30 | 35.30 | 17.50 | 35.70                            | 47.10 | -     |  |
| 14                            | 355.6                           | 356                                  | 45.40                                 | 60.00 | -     | 52.80 | 88.30 | 125.0 | 157.0 | 45.40 | 45.40 | 45.40 | 24.40 | 53.20                            | -     | -     |  |
| 16                            | 406.4                           | 406                                  | 59.50                                 | 78.70 | -     | 78.70 | 130.0 | 183.0 | 233.0 | 59.50 | 59.50 | 59.50 | 31.90 | 79.50                            | -     | -     |  |
| 18                            | 457.0                           | 457                                  | 75.50                                 | 100.0 | -     | 125.0 | 183.0 | 261.0 | 330.0 | 75.50 | 75.50 | 100.0 | -     | -                                | -     | -     |  |
| 20                            | 508.0                           | 508                                  | 93.40                                 | 124.0 | -     | 146.0 | 248.0 | 352.0 | 451.0 | 93.40 | 93.40 | 124.0 | -     | -                                | -     | -     |  |
| 22                            | 559.0                           | 559                                  | 113.0                                 | 150.2 | -     | 186.0 | 328.0 | 462.0 | 590.0 | 113.0 | 113.0 | 150.2 | -     | -                                | -     | -     |  |
| 24                            | 610.0                           | 610                                  | 135.0                                 | 179.0 | -     | 244.0 | 422.0 | 613.0 | 773.0 | 135.0 | 135.0 | 244.0 | -     | -                                | -     | -     |  |



## ASME キャップの形状・寸法・重量 / DIMENSIONS OF CAP



CAP



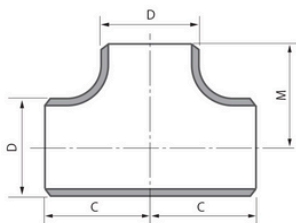
ASME B 16.9

| Nominal<br>Pipe Size<br>(NPS) | Dimensions (Unit:mm)            |               |                                          |               | Carbon & Alloy Steel Weight (Unit:kg) |       |     |       |       |       |       |       |       |       | Stainless Steel Weight (Unit:kg) |       |       |       |
|-------------------------------|---------------------------------|---------------|------------------------------------------|---------------|---------------------------------------|-------|-----|-------|-------|-------|-------|-------|-------|-------|----------------------------------|-------|-------|-------|
|                               | Outside<br>Diameter<br>at Bevel | Length<br>(1) | Limiting wall<br>Thickness<br>For Length | Length<br>(2) |                                       |       |     |       |       |       |       |       |       |       |                                  |       |       |       |
|                               | D                               | E             | E                                        | E1            | STD                                   | XS    | XXS | S40   | S80   | S120  | S160  | S10   | S20   | S30   | S10S                             | S40S  | S80S  | S160  |
| 1/2                           | 21.3                            | 25            | 4.57                                     | 25            | 0.100                                 | 0.150 | -   | 0.100 | 0.150 | -     | 0.220 | -     | -     | -     | 0.078                            | 0.100 | 0.150 | -     |
| 3/4                           | 26.7                            | 25            | 3.81                                     | 25            | 0.100                                 | 0.150 | -   | 0.100 | 0.150 | -     | 0.220 | -     | -     | -     | 0.078                            | 0.100 | 0.150 | -     |
| 1                             | 33.4                            | 38            | 4.57                                     | 38            | 0.109                                 | 0.165 | -   | 0.109 | 0.165 | -     | 0.230 | -     | -     | -     | 0.090                            | 0.110 | 0.167 | -     |
| 1-1/4                         | 42.2                            | 38            | 4.83                                     | 38            | 0.145                                 | 0.197 | -   | 0.145 | 0.197 | -     | 0.260 | -     | -     | -     | 0.110                            | 0.146 | 0.199 | -     |
| 1-1/2                         | 48.3                            | 38            | 5.08                                     | 38            | 0.171                                 | 0.236 | -   | 0.171 | 0.236 | -     | 0.340 | -     | -     | -     | 0.130                            | 0.172 | 0.238 | -     |
| 2                             | 60.3                            | 38            | 5.59                                     | 44            | 0.234                                 | 0.330 | -   | 0.234 | 0.330 | -     | 0.520 | -     | -     | -     | 0.170                            | 0.240 | 0.330 | 1.550 |
| 2-1/2                         | 73.0                            | 38            | 7.11                                     | 51            | 0.420                                 | 0.565 | -   | 0.420 | 0.565 | -     | 0.770 | -     | -     | -     | 0.245                            | 0.420 | 0.565 | 2.840 |
| 3                             | 88.9                            | 51            | 7.62                                     | 64            | 0.664                                 | 0.917 | -   | 0.664 | 0.917 | -     | 1.350 | -     | -     | -     | 0.365                            | 0.670 | 0.917 | 3.780 |
| 3-1/2                         | 101.6                           | 64            | 8.13                                     | 76            | 0.958                                 | 1.360 | -   | 0.958 | 1.360 | -     | -     | -     | -     | -     | -                                | -     | -     | -     |
| 4                             | 114.3                           | 64            | 8.64                                     | 76            | 1.170                                 | 1.680 | -   | 1.170 | 1.680 | 2.680 | 2.520 | -     | -     | -     | 0.591                            | 1.180 | 1.680 | 6.780 |
| 5                             | 141.3                           | 76            | 9.65                                     | 89            | 1.900                                 | 2.730 | -   | 1.900 | 2.730 | 4.350 | 4.100 | -     | -     | -     | 0.990                            | 1.920 | 2.730 | 10.70 |
| 6                             | 168.3                           | 89            | 10.92                                    | 102           | 2.830                                 | 4.380 | -   | 2.830 | 4.380 | 6.280 | 6.580 | -     | -     | -     | 1.370                            | 2.850 | 4.380 | 17.95 |
| 8                             | 219.1                           | 102           | 12.70                                    | 127           | 5.110                                 | 7.910 | -   | 5.110 | 7.910 | 13.20 | 16.70 | -     | 5.190 | 5.190 | 2.520                            | 5.160 | 7.910 | -     |
| 10                            | 273.0                           | 127           | 12.70                                    | 152           | 8.920                                 | 12.20 | -   | 8.920 | 16.40 | 23.30 | 33.40 | -     | 6.330 | 9.150 | 3.870                            | 9.000 | 13.80 | -     |
| 12                            | 323.8                           | 152           | 12.70                                    | 178           | 13.00                                 | 17.40 | -   | 14.10 | 26.40 | 38.60 | 50.60 | -     | 9.430 | 13.30 | 6.890                            | 13.20 | 19.50 | -     |
| 14                            | 355.6                           | 165           | 12.70                                    | 191           | 15.90                                 | 21.20 | -   | 18.60 | 34.90 | 51.10 | 65.60 | 16.60 | 13.20 | 15.90 | -                                | -     | -     | -     |
| 16                            | 406.4                           | 178           | 12.70                                    | 203           | 20.00                                 | 26.70 | -   | 26.70 | 49.00 | 70.80 | 92.80 | 21.20 | 16.60 | 20.00 | -                                | -     | -     | -     |
| 18                            | 457.0                           | 203           | 12.70                                    | 229           | 25.50                                 | 34.10 | -   | 41.50 | 69.00 | 101.0 | 131.0 | 31.90 | 21.20 | 25.60 | -                                | -     | -     | -     |
| 20                            | 508.0                           | 229           | 12.70                                    | 254           | 31.80                                 | 42.50 | -   | 54.10 | 93.80 | 136.0 | 179.0 | 31.90 | 31.90 | 50.40 | -                                | -     | -     | -     |
| 22                            | 559.0                           | 254           | 12.70                                    | 254           | -                                     | -     | -   | -     | -     | -     | -     | -     | -     | -     | -                                | -     | -     | -     |
| 24                            | 610.0                           | 267           | 12.70                                    | 305           | 45.10                                 | 60.10 | -   | 89.70 | 160.0 | 237.0 | 306.0 | 45.10 | 45.10 | 82.70 | -                                | -     | -     | -     |

### NOTES:

- (1) Length E applies for thickness not exceeding that given in column "Limiting Wall Thickness for Length E".  
 (2) Length E1 applies for thickness greater than that given in column "Limiting Wall Thickness" for NPS24 and smaller.

## ASME 同径Tの形状・寸法・重量 / DIMENSIONS OF STRAIGHT TEE



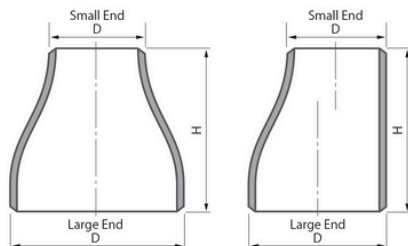
STRAIGHT TEE



ASME B 16.9

| Nominal<br>Pipe Size<br>(NPS) | Dimensions (Unit:mm)            |                   |        | Carbon & Alloy Steel Weight (Unit:kg) |       |       |       |       |       |       |       |       |       |       |       |       |       | Stainless Steel Weight (Unit:kg) |       |       |       |
|-------------------------------|---------------------------------|-------------------|--------|---------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------------------------------|-------|-------|-------|
|                               | Outside<br>Diameter<br>at Bevel | Center - to - End |        |                                       |       |       |       |       |       |       |       |       |       |       |       |       |       |                                  |       |       |       |
|                               |                                 | Run               | Outlet |                                       |       |       |       |       |       |       |       |       |       |       |       |       |       |                                  |       |       |       |
|                               |                                 | D                 | C      | M                                     | STD   | XS    | XXS   | S40   | S80   | S120  | S160  | S10   | S20   | S30   | S60   | S100  | S140  | S10S                             | S40S  | S80S  | S160  |
| 1/2                           | 21.3                            | 25                | 25     | 25                                    | 0.102 | 0.118 | 0.170 | 0.102 | 0.118 | -     | 0.139 | -     | -     | -     | -     | -     | -     | 0.100                            | 0.120 | 0.120 | 0.150 |
| 3/4                           | 26.7                            | 29                | 29     | 29                                    | 0.136 | 0.180 | 0.250 | 0.136 | 0.180 | -     | 0.211 | -     | -     | -     | -     | -     | -     | 0.140                            | 0.170 | 0.190 | 0.220 |
| 1                             | 33.4                            | 38                | 38     | 38                                    | 0.300 | 0.388 | 0.544 | 0.300 | 0.388 | -     | 0.424 | -     | -     | -     | -     | -     | -     | 0.310                            | 0.350 | 0.390 | 0.430 |
| 1-1/4                         | 42.2                            | 48                | 48     | 48                                    | 0.500 | 0.686 | 0.959 | 0.500 | 0.686 | -     | 0.696 | -     | -     | -     | -     | -     | -     | 0.470                            | 0.640 | 0.690 | 0.700 |
| 1-1/2                         | 48.3                            | 57                | 57     | 57                                    | 0.720 | 0.990 | 1.620 | 0.720 | 0.990 | -     | 1.230 | -     | -     | -     | -     | -     | -     | 0.680                            | 0.850 | 1.000 | 1.240 |
| 2                             | 60.3                            | 64                | 64     | 64                                    | 1.070 | 1.430 | 2.450 | 1.070 | 1.430 | -     | 2.070 | -     | -     | -     | -     | -     | -     | 0.850                            | 1.130 | 1.440 | 2.080 |
| 2-1/2                         | 73.0                            | 76                | 76     | 76                                    | 2.070 | 2.760 | 4.590 | 2.070 | 2.760 | -     | 3.420 | -     | -     | -     | -     | -     | -     | 1.360                            | 2.090 | 2.790 | 3.450 |
| 3                             | 88.9                            | 86                | 86     | 86                                    | 2.860 | 3.530 | 6.450 | 2.860 | 3.530 | -     | 4.540 | -     | -     | -     | -     | -     | -     | 1.800                            | 3.020 | 3.500 | 4.590 |
| 3-1/2                         | 101.6                           | 95                | 95     | 95                                    | 3.630 | 5.070 | 8.200 | 3.630 | 5.070 | -     | 6.550 | -     | -     | -     | -     | -     | -     | 2.120                            | 3.600 | 5.440 | -     |
| 4                             | 114.3                           | 105               | 105    | 105                                   | 4.830 | 6.330 | 11.10 | 4.830 | 6.330 | 8.010 | 9.260 | -     | -     | -     | -     | -     | -     | 2.900                            | 5.160 | 6.390 | 9.350 |
| 5                             | 141.3                           | 124               | 124    | 124                                   | 7.720 | 10.00 | 18.10 | 7.720 | 10.00 | 13.30 | 15.70 | -     | -     | -     | -     | -     | -     | 4.480                            | 7.600 | 10.10 | 15.90 |
| 6                             | 168.3                           | 143               | 143    | 143                                   | 11.20 | 16.80 | 27.50 | 11.20 | 16.80 | 19.70 | 23.90 | -     | 11.20 | -     | -     | -     | -     | 6.210                            | 11.92 | 16.90 | 23.30 |
| 8                             | 219.1                           | 178               | 178    | 178                                   | 20.50 | 30.00 | 47.00 | 20.50 | 30.00 | 39.20 | 47.00 | -     | 20.50 | 20.50 | 24.30 | 32.40 | 42.10 | 11.70                            | 20.30 | 30.30 | -     |
| 10                            | 273.0                           | 216               | 216    | 216                                   | 36.60 | 44.10 | 82.20 | 36.60 | 51.00 | 72.10 | 90.20 | -     | 36.60 | 36.60 | 44.10 | 61.40 | 82.20 | 18.00                            | 35.20 | 44.20 | -     |
| 12                            | 323.8                           | 254               | 254    | 254                                   | 48.60 | 69.50 | 107.0 | 50.20 | 95.80 | 111.0 | 147.0 | -     | 48.60 | 48.60 | 78.20 | 93.70 | 113.0 | 23.70                            | 45.80 | 70.80 | -     |
| 14                            | 355.6                           | 279               | 279    | 279                                   | 66.40 | 81.50 | -     | 71.20 | 129.0 | 202.0 | 260.0 | 66.40 | 66.40 | 66.40 | 129.0 | 202.0 | 260.0 | 28.60                            | 64.00 | -     | -     |
| 16                            | 406.4                           | 305               | 305    | 305                                   | 71.30 | 110.0 | -     | 110.0 | 173.0 | 277.0 | 354.0 | 71.30 | 71.30 | 71.30 | 173.0 | 277.0 | 354.0 | 35.20                            | 90.00 | -     | -     |
| 18                            | 457.0                           | 343               | 343    | 343                                   | 131.0 | 145.0 | -     | 156.0 | 253.0 | 396.0 | 501.0 | 131.0 | 131.0 | 145.0 | -     | -     | -     | -                                | -     | -     | -     |
| 20                            | 508.0                           | 381               | 381    | 381                                   | 173.0 | 175.0 | -     | 204.0 | 353.0 | 535.0 | 684.0 | 173.0 | 173.0 | 175.0 | -     | -     | -     | -                                | -     | -     | -     |
| 22                            | 559.0                           | 419               | 419    | 419                                   | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -                                | -     | -     | -     |
| 24                            | 610.0                           | 432               | 432    | 432                                   | 274.0 | 300.0 | -     | 343.0 | 597.0 | 863.0 | 1090  | 274.0 | 274.0 | 348.0 | -     | -     | -     | -                                | -     | -     | -     |

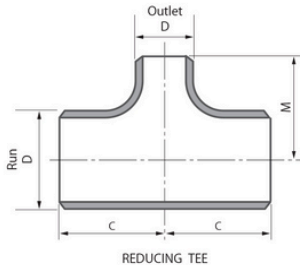


**ASME レジューサの形状・寸法・重量 / DIMENSIONS OF REDUCER**

**ASME B 16.9**

| Nominal<br>Pipe Size<br>(NPS) | Dimensions (Unit:mm) |              |                  | Carbon & Alloy Steel Weight (Unit:kg) |       |       |       |       |      |       |     |     |     |      | Stainless Steel Weight (Unit:kg) |       |       |       |
|-------------------------------|----------------------|--------------|------------------|---------------------------------------|-------|-------|-------|-------|------|-------|-----|-----|-----|------|----------------------------------|-------|-------|-------|
|                               | Outside Diameter     |              | End<br>to<br>End |                                       |       |       |       |       |      |       |     |     |     |      |                                  |       |       |       |
|                               | Large<br>End         | Small<br>End |                  |                                       |       |       |       |       |      |       |     |     |     |      |                                  |       |       |       |
|                               | D                    | D            | H                | STD                                   | XS    | XXS   | S40   | S80   | S120 | S160  | S10 | S20 | S30 | S100 | S10S                             | S40S  | S80S  | S160  |
| 3/4 x 1/2                     | 26.7                 | 21.3         | 38               | 0.059                                 | 0.075 | -     | 0.059 | 0.075 | -    | 0.150 | -   | -   | -   | -    | 0.070                            | 0.090 | 0.100 | 0.110 |
| 1 x 3/4                       | 33.4                 | 26.7         | 51               | 0.116                                 | 0.147 | 0.246 | 0.116 | 0.147 | -    | 0.200 | -   | -   | -   | -    | 0.100                            | 0.120 | 0.148 | 0.200 |
| x 1/2                         |                      | 21.3         |                  | 0.105                                 | 0.133 | 0.215 | 0.105 | 0.133 | -    | 0.190 | -   | -   | -   | -    | 0.100                            | 0.120 | 0.134 | 0.180 |
| 1-1/4 x 1                     | 42.2                 | 33.4         | 51               | 0.157                                 | 0.195 | 0.350 | 0.195 | 0.206 | -    | 0.257 | -   | -   | -   | -    | 0.130                            | 0.160 | 0.208 | 0.260 |
| x 3/4                         |                      | 26.7         |                  | 0.155                                 | 0.187 | 0.310 | 0.187 | 0.200 | -    | 0.232 | -   | -   | -   | -    | 0.130                            | 0.160 | 0.189 | 0.235 |
| x 1/2                         |                      | 21.3         |                  | 0.150                                 | 0.171 | 0.279 | 0.171 | 0.190 | -    | 0.211 | -   | -   | -   | -    | 0.130                            | 0.160 | 0.173 | 0.215 |
| 1-1/2 x 1-1/4                 | 48.3                 | 42.2         | 64               | 0.275                                 | 0.324 | 0.567 | 0.275 | 0.324 | -    | 0.429 | -   | -   | -   | -    | 0.190                            | 0.250 | 0.327 | 0.433 |
| x 1                           |                      | 33.4         |                  | 0.260                                 | 0.300 | 0.500 | 0.260 | 0.300 | -    | 0.382 | -   | -   | -   | -    | 0.190                            | 0.250 | 0.294 | 0.385 |
| x 3/4                         |                      | 26.7         |                  | 0.250                                 | 0.290 | 0.449 | 0.250 | 0.290 | -    | 0.379 | -   | -   | -   | -    | 0.190                            | 0.250 | 0.270 | 0.383 |
| x 1/2                         |                      | 21.3         |                  | 0.250                                 | 0.290 | 0.407 | 0.250 | 0.290 | -    | 0.319 | -   | -   | -   | -    | 0.190                            | 0.250 | 0.250 | 0.322 |
| 2 x 1-1/2                     | 60.3                 | 48.3         | 76               | 0.400                                 | 0.590 | 0.909 | 0.400 | 0.590 | -    | 0.780 | -   | -   | -   | -    | 0.280                            | 0.380 | 0.513 | 0.760 |
| x 1-1/4                       |                      | 42.2         |                  | 0.400                                 | 0.500 | 0.851 | 0.400 | 0.500 | -    | 0.740 | -   | -   | -   | -    | 0.280                            | 0.380 | 0.484 | 0.710 |
| x 1                           |                      | 33.4         |                  | 0.390                                 | 0.480 | 0.765 | 0.390 | 0.480 | -    | 0.700 | -   | -   | -   | -    | 0.280                            | 0.380 | 0.442 | 0.650 |
| x 3/4                         |                      | 26.7         |                  | 0.390                                 | 0.480 | 0.699 | 0.390 | 0.480 | -    | 0.650 | -   | -   | -   | -    | 0.280                            | 0.380 | 0.410 | 0.590 |
| x 1/2                         |                      | -            |                  | 0.380                                 | 0.470 | 0.500 | 0.380 | 0.470 | -    | 0.600 | -   | -   | -   | -    | 0.280                            | 0.380 | 0.400 | 0.560 |
| 2-1/2 x 2                     | 73.0                 | 60.3         | 89               | 0.724                                 | 0.946 | 1.680 | 0.724 | 0.946 | -    | 1.230 | -   | -   | -   | -    | 0.440                            | 0.730 | 0.956 | 1.240 |
| x 1-1/2                       |                      | 48.3         |                  | 0.661                                 | 0.900 | 1.510 | 0.661 | 0.900 | -    | 1.120 | -   | -   | -   | -    | 0.440                            | 0.670 | 0.870 | 1.130 |
| x 1-1/4                       |                      | 42.2         |                  | 0.630                                 | 0.860 | 1.420 | 0.630 | 0.860 | -    | 1.060 | -   | -   | -   | -    | 0.440                            | 0.640 | 0.828 | 1.070 |
| x 1                           |                      | 33.4         |                  | 0.630                                 | 0.830 | 1.300 | 0.630 | 0.830 | -    | 0.977 | -   | -   | -   | -    | 0.440                            | 0.590 | 0.768 | 0.990 |
| x 3/4                         |                      | -            |                  | -                                     | -     | -     | -     | -     | -    | -     | -   | -   | -   | -    | 0.280                            | 0.380 | 0.410 | 0.590 |
| 3 x 2-1/2                     | 88.9                 | 73.0         | 89               | 1.000                                 | 1.250 | 2.250 | 1.000 | 1.250 | -    | 1.750 | -   | -   | -   | -    | 0.530                            | 0.950 | 1.260 | 1.770 |
| x 2                           |                      | 60.3         |                  | 0.960                                 | 1.200 | 2.010 | 0.960 | 1.200 | -    | 1.570 | -   | -   | -   | -    | 0.530                            | 0.860 | 1.140 | 1.590 |
| x 1-1/2                       |                      | 48.3         |                  | 0.900                                 | 1.150 | 1.830 | 0.900 | 1.150 | -    | 1.490 | -   | -   | -   | -    | 0.530                            | 0.790 | 1.050 | 1.450 |
| x 1-1/4                       |                      | 42.2         |                  | 0.840                                 | 1.100 | 1.750 | 0.840 | 1.100 | -    | 1.400 | -   | -   | -   | -    | 0.530                            | 0.760 | 1.000 | 1.390 |
| x 1                           |                      | 26.7         |                  | 0.800                                 | 1.000 | 1.600 | 0.800 | 1.000 | -    | 1.300 | -   | -   | -   | -    | 0.530                            | 0.760 | 0.960 | 1.350 |
| 3-1/2 x 3                     | 101.6                | 88.9         | 102              | 1.280                                 | 1.770 | 2.800 | 1.280 | 1.770 | -    | 2.640 | -   | -   | -   | -    | 0.700                            | 0.920 | 1.290 | -     |
| x 2-1/2                       |                      | 73.0         |                  | 1.230                                 | 1.650 | 2.760 | 1.230 | 1.650 | -    | 2.450 | -   | -   | -   | -    | 0.700                            | 0.920 | 1.240 | -     |
| x 2                           |                      | 60.3         |                  | 1.100                                 | 1.510 | 2.540 | 1.100 | 1.510 | -    | 2.210 | -   | -   | -   | -    | 0.700                            | 0.920 | 1.110 | -     |
| x 1-1/2                       |                      | 48.3         |                  | 1.020                                 | 1.410 | 2.400 | 1.020 | 1.410 | -    | 2.050 | -   | -   | -   | -    | 0.700                            | 0.920 | 1.030 | -     |
| x 1-1/4                       |                      | 42.2         |                  | 0.988                                 | 1.350 | 2.350 | 0.988 | 1.350 | -    | 2.100 | -   | -   | -   | -    | 0.700                            | 0.920 | 1.000 | -     |
| 4 x 3-1/2                     | 114.3                | 101.6        | 102              | 1.550                                 | 2.200 | 3.760 | 1.600 | 2.200 | -    | 3.250 | -   | -   | -   | -    | 0.800                            | 1.470 | 2.040 | 3.040 |
| x 3                           |                      | 88.9         |                  | 1.550                                 | 2.150 | 3.650 | 1.600 | 2.150 | -    | 3.100 | -   | -   | -   | -    | 0.800                            | 1.470 | 2.040 | 3.040 |
| x 2-1/2                       |                      | 73.0         |                  | 1.470                                 | 2.100 | 3.410 | 1.470 | 2.100 | -    | 3.000 | -   | -   | -   | -    | 0.800                            | 1.390 | 1.920 | 2.850 |
| x 2                           |                      | 60.3         |                  | 1.400                                 | 2.000 | 3.110 | 1.400 | 2.000 | -    | 2.900 | -   | -   | -   | -    | 0.800                            | 1.290 | 1.780 | 2.620 |
| x 1-1/2                       |                      | 48.3         |                  | 1.350                                 | 1.950 | 2.900 | 1.350 | 1.950 | -    | 2.800 | -   | -   | -   | -    | 0.800                            | 1.200 | 1.670 | 2.440 |
| x 1-1/4                       |                      | 42.2         |                  | 1.300                                 | -     | -     | -     | -     | -    | -     | -   | -   | -   | -    | 0.780                            | 1.170 | 1.640 | 2.400 |
| x 1                           |                      | 33.5         |                  | 1.300                                 | -     | -     | -     | -     | -    | -     | -   | -   | -   | -    | 0.770                            | 1.160 | 1.620 | 2.380 |

| Nominal<br>Pipe Size<br>(NPS) |   |       | Dimensions (Unit:mm) |              |                      | Carbon & Alloy Steel Weight (Unit:kg) |       |       |       |       |       |       |       |       |       |       |       | Stainless Steel Weight (Unit:kg) |       |       |      |
|-------------------------------|---|-------|----------------------|--------------|----------------------|---------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------------------------------|-------|-------|------|
|                               |   |       | Outside Diameter     |              | End<br>- to<br>- End |                                       |       |       |       |       |       |       |       |       |       |       |       |                                  |       |       |      |
|                               |   |       | Large<br>End         | Small<br>End |                      |                                       |       |       |       |       |       |       |       |       |       |       |       |                                  |       |       |      |
|                               |   |       | D                    | D            |                      | H                                     | STD   | XS    | XXS   | S40   | S80   | S120  | S160  | S10   | S20   | S30   | S100  | S10S                             | S40S  | S80S  | S160 |
| 5                             | x | 4     | 141.3                | 114.3        | 127                  | 2.800                                 | 3.720 | 6.470 | 2.800 | 3.720 | 4.570 | 5.700 | -     | -     | -     | -     | 1.490 | 2.550                            | 3.550 | 5.630 |      |
|                               | x | 3-1/2 |                      | 101.6        |                      | 2.800                                 | 3.720 | 6.200 | 2.800 | 3.720 | -     | 5.700 | -     | -     | -     | -     | 1.490 | 2.550                            | 3.550 | 5.630 |      |
|                               | x | 3     |                      | 88.9         |                      | 2.760                                 | 3.700 | 5.780 | 2.760 | 3.700 | -     | 5.650 | -     | -     | -     | -     | 1.450 | 2.300                            | 3.210 | 5.050 |      |
|                               | x | 2-1/2 |                      | 73.0         |                      | 2.600                                 | 3.350 | 5.460 | 2.600 | 3.350 | -     | 5.200 | -     | -     | -     | -     | 1.400 | 2.190                            | 3.050 | 4.780 |      |
|                               | x | 2     |                      | 60.3         |                      | 2.470                                 | 3.200 | 5.300 | 2.470 | 3.200 | -     | 5.000 | -     | -     | -     | -     | 1.300 | 2.050                            | 2.860 | 4.440 |      |
| 6                             | x | 5     | 168.3                | 141.3        | 140                  | 5.000                                 | 5.780 | 9.890 | 3.800 | 5.780 | 6.830 | 8.450 | -     | -     | -     | -     | 2.020 | 3.650                            | 5.430 | 8.530 |      |
|                               | x | 4     |                      | 114.3        |                      | 3.800                                 | 5.500 | 8.980 | 3.800 | 5.500 | 6.280 | 7.750 | -     | -     | -     | -     | 1.950 | 3.350                            | 5.010 | 7.830 |      |
|                               | x | 3-1/2 |                      | 101.6        |                      | 3.750                                 | 5.300 | 8.400 | 3.750 | 5.300 | -     | 7.410 | -     | -     | -     | -     | 1.950 | 3.350                            | 5.010 | 7.830 |      |
|                               | x | 3     |                      | 88.9         |                      | 3.700                                 | 5.160 | 8.210 | 3.700 | 5.160 | -     | 7.080 | -     | -     | -     | -     | 1.820 | 3.070                            | 4.610 | 7.150 |      |
|                               | x | 2-1/2 |                      | 73.0         |                      | 3.480                                 | 5.000 | 7.830 | 3.480 | 5.000 | -     | 6.750 | -     | -     | -     | -     | 1.750 | 2.950                            | 4.400 | 6.820 |      |
|                               | x | 2     |                      | 60.3         |                      | 3.400                                 | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | 1.700 | 2.920                            | 4.300 | 6.700 |      |
| 8                             | x | 6     | 219.1                | 168.3        | 152                  | 6.650                                 | 9.250 | 15.40 | 6.650 | 9.250 | 12.80 | 14.70 | -     | 6.650 | -     | -     | 3.190 | 5.800                            | 8.750 | -     |      |
|                               | x | 5     |                      | 141.3        |                      | 6.400                                 | 8.900 | 14.50 | 6.400 | 8.900 | 12.20 | 13.80 | -     | 6.400 | -     | -     | 3.080 | 5.550                            | 8.250 | -     |      |
|                               | x | 4     |                      | 114.3        |                      | 6.000                                 | 8.500 | 13.60 | 6.000 | 8.500 | 11.60 | 12.90 | -     | 6.000 | -     | -     | 3.010 | 5.170                            | 7.800 | -     |      |
|                               | x | 3-1/2 |                      | 101.6        |                      | 5.200                                 | 7.800 | -     | 5.200 | 7.800 | -     | 12.60 | -     | 5.200 | -     | -     | 3.010 | 5.170                            | 7.800 | -     |      |
|                               | x | 3     |                      | 88.9         |                      | 5.200                                 | 7.800 | -     | -     | -     | -     | -     | -     | -     | -     | -     | 2.900 | 5.000                            | 7.400 | -     |      |
| 10                            | x | 8     | 273.0                | 219.1        | 178                  | 11.20                                 | 13.70 | 25.00 | 11.20 | 15.70 | 21.30 | 27.00 | -     | 11.20 | 11.20 | 21.30 | 5.200 | 9.700                            | 12.90 | -     |      |
|                               | x | 6     |                      | 168.3        |                      | 10.90                                 | 13.50 | 22.70 | 10.90 | 14.60 | 19.30 | 24.50 | -     | 10.90 | -     | 19.30 | 5.000 | 8.900                            | 12.30 | -     |      |
|                               | x | 5     |                      | 141.3        |                      | 10.00                                 | 13.00 | 21.50 | 10.00 | 14.10 | 18.10 | 23.30 | -     | 10.00 | -     | 18.10 | 4.890 | 8.600                            | 11.60 | -     |      |
|                               | x | 4     |                      | 114.3        |                      | 9.800                                 | 12.70 | 20.50 | 9.800 | 13.80 | 17.30 | 22.10 | -     | 9.800 | -     | 17.30 | 4.800 | 8.300                            | 11.40 | -     |      |
| 12                            | x | 10    | 323.8                | 273.0        | 203                  | 14.00                                 | 19.00 | 34.50 | 15.90 | 23.00 | 34.00 | 43.60 | -     | 14.00 | 14.00 | 34.00 | 7.980 | 13.80                            | 18.20 | -     |      |
|                               | x | 8     |                      | 219.1        |                      | 13.80                                 | 17.80 | 32.20 | 15.80 | 21.00 | 31.70 | 40.30 | -     | 13.80 | 13.80 | 31.70 | 7.620 | 12.90                            | 16.80 | -     |      |
|                               | x | 6     |                      | 168.3        |                      | 13.60                                 | 17.20 | 30.00 | 15.70 | 18.60 | 29.40 | 37.20 | -     | 13.60 | -     | 29.40 | 7.430 | 12.10                            | 15.70 | -     |      |
|                               | x | 5     |                      | 141.3        |                      | 13.00                                 | 16.00 | 28.70 | 15.20 | 18.00 | 28.30 | 35.70 | -     | 13.00 | -     | 28.30 | 7.250 | 11.80                            | 15.00 | -     |      |
| 14                            | x | 12    | 355.6                | 323.8        | 330                  | 25.40                                 | 31.00 | -     | 29.50 | 49.30 | 70.10 | 87.70 | -     | 25.40 | 25.40 | -     | -     | -                                | -     | -     |      |
|                               | x | 10    |                      | 273.0        |                      | 23.60                                 | 29.40 | -     | 28.40 | 45.70 | 64.70 | 80.90 | -     | 23.60 | 23.60 | -     | -     | -                                | -     | -     |      |
|                               | x | 8     |                      | 219.1        |                      | 23.00                                 | 29.00 | -     | 27.40 | 44.20 | 59.70 | 74.30 | -     | 23.00 | 23.00 | -     | -     | -                                | -     | -     |      |
|                               | x | 6     |                      | 168.3        |                      | 21.00                                 | 27.60 | -     | 25.40 | 40.00 | 54.80 | 67.90 | -     | 21.00 | -     | -     | -     | -                                | -     | -     |      |
| 16                            | x | 14    | 406.4                | 355.6        | 356                  | 31.00                                 | 43.00 | -     | 43.00 | 69.80 | 95.00 | 121.0 | 31.00 | 31.00 | 43.00 | -     | -     | -                                | -     | -     |      |
|                               | x | 12    |                      | 323.8        |                      | 29.60                                 | 42.50 | -     | 42.50 | 66.50 | 90.40 | 115.0 | -     | 29.60 | 42.50 | -     | -     | -                                | -     | -     |      |
|                               | x | 10    |                      | 273.0        |                      | 27.80                                 | 42.00 | -     | 42.00 | 62.30 | 84.40 | 107.0 | -     | 27.80 | 42.00 | -     | -     | -                                | -     | -     |      |
|                               | x | 8     |                      | 219.1        |                      | 24.80                                 | 38.00 | -     | 38.00 | 55.40 | 78.60 | 99.50 | -     | 24.80 | 38.00 | -     | -     | -                                | -     | -     |      |
| 18                            | x | 16    | 457                  | 406.4        | 381                  | 51.00                                 | 68.20 | -     | 76.00 | 126.0 | 130.0 | 164.0 | 51.00 | 51.00 | 68.20 | -     | -     | -                                | -     | -     |      |
|                               | x | 14    |                      | 355.6        |                      | 49.00                                 | 65.50 | -     | 73.00 | 121.0 | 123.0 | 155.0 | 49.00 | 49.00 | 65.50 | -     | -     | -                                | -     | -     |      |
|                               | x | 12    |                      | 323.8        |                      | 48.00                                 | 64.00 | -     | 71.70 | 119.0 | 118.0 | 148.0 | -     | 48.00 | 64.00 | -     | -     | -                                | -     | -     |      |
|                               | x | 10    |                      | 273.0        |                      | 43.00                                 | 57.50 | -     | 64.30 | 106.0 | 111.0 | 139.0 | -     | 43.00 | 57.50 | -     | -     | -                                | -     | -     |      |
| 20                            | x | 18    | 508                  | 457.0        | 508                  | 73.00                                 | 97.00 | -     | 115.0 | 198.0 | 212.0 | 271.0 | 73.00 | 73.00 | 97.00 | -     | -     | -                                | -     | -     |      |
|                               | x | 16    |                      | 406.4        |                      | 70.00                                 | 93.00 | -     | 110.0 | 190.0 | 201.0 | 256.0 | 70.00 | 70.00 | 93.00 | -     | -     | -                                | -     | -     |      |
|                               | x | 14    |                      | 355.6        |                      | 69.00                                 | 90.00 | -     | 107.0 | 187.0 | 190.0 | 242.0 | 69.00 | 69.00 | 90.00 | -     | -     | -                                | -     | -     |      |
|                               | x | 12    |                      | 323.8        |                      | 58.00                                 | 78.00 | -     | 91.00 | 157.0 | 182.0 | 231.0 | -     | 58.00 | 78.00 | -     | -     | -                                | -     | -     |      |
| 22                            | x | 20    | 559                  | 508.0        | 508                  | 78.00                                 | 103.0 | -     | 128.7 | 224.0 | 255.0 | 324.0 | 78.00 | 78.00 | 103.0 | -     | -     | -                                | -     | -     |      |
|                               | x | 18    |                      | 457.0        |                      | 65.50                                 | 86.50 | -     | 107.9 | 195.5 | 243.0 | 308.0 | 65.50 | 65.50 | 86.50 | -     | -     | -                                | -     | -     |      |
|                               | x | 16    |                      | 406.4        |                      | 63.50                                 | 83.80 | -     | 104.6 | 189.5 | 231.0 | 293.0 | 63.50 | 63.50 | 83.80 | -     | -     | -                                | -     | -     |      |
|                               | x | 14    |                      | 355.4        |                      | 62.00                                 | 81.80 | -     | 102.0 | 185.0 | 219.0 | 278.0 | 62.00 | 62.00 | 81.80 | -     | -     | -                                | -     | -     |      |
| 24                            | x | 22    | 610                  | 559.0        | 508                  | 83.00                                 | 110.0 | -     | 150.0 | 263.0 | 310.0 | 391.0 | 83.00 | 83.00 | 150.0 | -     | -     | -                                | -     | -     |      |
|                               | x | 20    |                      | 508.0        |                      | 82.00                                 | 109.0 | -     | 146.0 | 254.0 | 297.0 | 374.0 | 82.00 | 82.00 | 146.0 | -     | -     | -                                | -     | -     |      |
|                               | x | 18    |                      | 457.0        |                      | 79.00                                 | 104.0 | -     | 140.0 | 244.0 | 284.0 | 357.0 | 79.00 | 79.00 | 140.0 | -     | -     | -                                | -     | -     |      |
|                               | x | 16    |                      | 406.4        |                      | 70.00                                 | 92.00 | -     | 126.0 | 225.0 | 271.0 | 341.0 | 70.00 | 70.00 | 126.0 | -     | -     | -                                | -     | -     |      |

# ASME 径違いTの形状・寸法・重量 / DIMENSIONS OF REDUCING TEE



ASME B 16.9

| Nominal<br>Pipe Size<br>(NPS) | Dimensions (Unit:mm) |        |               |        | Carbon & Alloy Steel Weight (Unit:kg) |       |       |       |       |       |       |     |       |     |     |      |      |       | Stainless Steel Weight<br>(Unit:kg) |       |       |  |
|-------------------------------|----------------------|--------|---------------|--------|---------------------------------------|-------|-------|-------|-------|-------|-------|-----|-------|-----|-----|------|------|-------|-------------------------------------|-------|-------|--|
|                               | Outside Diameter     |        | Center-to-End |        |                                       |       |       |       |       |       |       |     |       |     |     |      |      |       |                                     |       |       |  |
|                               | Run                  | Outlet | Run           | Outlet |                                       |       |       |       |       |       |       |     |       |     |     |      |      |       |                                     |       |       |  |
|                               | D                    | D      | C             | M      | STD                                   | XS    | XXS   | S40   | S80   | S120  | S160  | S10 | S20   | S30 | S60 | S100 | S140 | S10S  | S40S                                | S80S  | S160  |  |
| 3/4 x 1/2                     | 26.7                 | 21.3   | 29            | 29     | 0.136                                 | 0.180 | 0.207 | 0.136 | 0.180 | -     | 0.195 | -   | -     | -   | -   | -    | -    | 0.160 | 0.180                               | 0.190 | 0.197 |  |
| 1 x 3/4                       | 33.4                 | 26.7   | 38            | 38     | 0.290                                 | 0.380 | 0.600 | 0.290 | 0.380 | -     | 0.394 | -   | -     | -   | -   | -    | -    | 0.300 | 0.300                               | 0.385 | 0.400 |  |
| x 1/2                         |                      | 21.3   |               | 38     | 0.290                                 | 0.380 | 0.600 | 0.290 | 0.380 | -     | 0.374 | -   | -     | -   | -   | -    | -    | 0.300 | 0.300                               | 0.385 | 0.380 |  |
| 1-1/4 x 1                     | 42.2                 | 33.4   | 48            | 48     | 0.500                                 | 0.660 | 0.940 | 0.500 | 0.660 | -     | 0.660 | -   | -     | -   | -   | -    | -    | 0.480 | 0.500                               | 0.670 | 0.670 |  |
| x 3/4                         |                      | 26.7   |               | 48     | 0.480                                 | 0.600 | 0.920 | 0.480 | 0.600 | -     | 0.623 | -   | -     | -   | -   | -    | -    | 0.470 | 0.500                               | 0.610 | 0.620 |  |
| x 1/2                         |                      | 21.3   |               | 48     | 0.480                                 | 0.600 | 0.900 | 0.480 | 0.600 | -     | 0.614 | -   | -     | -   | -   | -    | -    | 0.500 | 0.500                               | 0.610 | 0.610 |  |
| 1-1/2 x 1-1/4                 | 48.3                 | 42.2   | 57            | 57     | 0.740                                 | 1.000 | 1.380 | 0.740 | 1.000 | -     | 1.020 | -   | -     | -   | -   | -    | -    | 0.680 | 0.850                               | 1.010 | 1.030 |  |
| x 1                           |                      | 33.4   |               | 57     | 0.740                                 | 1.000 | 1.360 | 0.740 | 1.000 | -     | 0.975 | -   | -     | -   | -   | -    | -    | 0.680 | 0.850                               | 1.010 | 0.980 |  |
| x 3/4                         |                      | 26.7   |               | 57     | 0.720                                 | 0.990 | 1.340 | 0.720 | 0.990 | -     | 0.928 | -   | -     | -   | -   | -    | -    | 0.680 | 0.850                               | 1.000 | 0.940 |  |
| x 1/2                         |                      | 21.3   |               | 57     | 0.720                                 | 0.990 | 1.320 | 0.720 | 0.990 | -     | 0.930 | -   | -     | -   | -   | -    | -    | 0.680 | 0.850                               | 1.000 | 0.940 |  |
| 2 x 1-1/2                     | 60.3                 | 48.3   | 64            | 60     | 1.000                                 | 1.400 | 2.400 | 1.000 | 1.400 | -     | 2.030 | -   | -     | -   | -   | -    | -    | 0.830 | 1.100                               | 1.410 | 2.050 |  |
| x 1-1/4                       |                      | 42.2   |               | 57     | 1.000                                 | 1.360 | 1.930 | 1.000 | 1.360 | -     | 1.570 | -   | -     | -   | -   | -    | -    | 0.780 | 0.980                               | 1.370 | 1.590 |  |
| x 1                           |                      | 33.4   |               | 51     | 0.990                                 | 1.170 | 1.870 | 0.990 | 1.170 | -     | 1.600 | -   | -     | -   | -   | -    | -    | 0.780 | 0.970                               | 1.180 | 1.600 |  |
| x 3/4                         |                      | 26.7   |               | 44     | 0.970                                 | 1.150 | 1.800 | 0.970 | 1.150 | -     | 1.600 | -   | -     | -   | -   | -    | -    | 0.780 | 0.960                               | 1.160 | 1.600 |  |
| x 1/2                         |                      | -      |               | -      | -                                     | -     | -     | -     | -     | -     | -     | -   | -     | -   | -   | -    | -    | 0.780 | 0.960                               | 1.140 | 1.570 |  |
| 2-1/2 x 2                     | 73.0                 | 60.3   | 76            | 70     | 1.720                                 | 2.300 | 3.820 | 1.720 | 2.300 | -     | 2.850 | -   | 1.720 | -   | -   | -    | -    | 1.350 | 2.050                               | 2.320 | 2.880 |  |
| x 1-1/2                       |                      | 48.3   |               | 67     | 1.720                                 | 2.260 | 3.550 | 1.720 | 2.260 | -     | 2.850 | -   | -     | -   | -   | -    | -    | 1.340 | 2.000                               | 2.280 | 2.830 |  |
| x 1-1/4                       |                      | 42.2   |               | 64     | 1.720                                 | 2.260 | 3.400 | 1.720 | 2.260 | -     | 2.850 | -   | -     | -   | -   | -    | -    | 1.330 | 1.850                               | 2.280 | 2.830 |  |
| x 1                           |                      | 33.4   |               | 57     | 1.700                                 | 2.200 | 3.300 | 1.700 | 2.200 | -     | 2.850 | -   | -     | -   | -   | -    | -    | 1.250 | 1.800                               | 2.220 | 2.830 |  |
| x 3/4                         |                      | -      |               | -      | -                                     | -     | -     | -     | -     | -     | -     | -   | -     | -   | -   | -    | -    | 1.250 | 1.800                               | 2.200 | 2.800 |  |
| 3 x 2-1/2                     | 88.9                 | 73.0   | 86            | 83     | 2.830                                 | 3.400 | 6.210 | 2.830 | 3.400 | -     | 4.880 | -   | 2.830 | -   | -   | -    | -    | 1.770 | 2.800                               | 3.430 | 4.930 |  |
| x 2                           |                      | 60.3   |               | 76     | 2.310                                 | 2.850 | 5.210 | 2.310 | 2.850 | -     | 4.090 | -   | 2.310 | -   | -   | -    | -    | 1.650 | 2.500                               | 2.880 | 4.130 |  |
| x 1-1/2                       |                      | 48.3   |               | 73     | 2.270                                 | 2.770 | 5.000 | 2.270 | 2.770 | -     | 4.090 | -   | -     | -   | -   | -    | -    | 1.650 | 2.500                               | 2.800 | 4.130 |  |
| x 1-1/4                       |                      | 42.2   |               | 70     | 2.240                                 | 2.730 | 4.900 | 2.240 | 2.730 | -     | 4.090 | -   | -     | -   | -   | -    | -    | 1.670 | 2.410                               | 2.760 | 4.130 |  |
| x 1                           |                      | -      |               | -      | 2.230                                 | 2.700 | 5.000 | 2.230 | 2.700 | -     | 4.090 | -   | -     | -   | -   | -    | -    | 1.670 | 2.410                               | 2.740 | 4.100 |  |
| 3-1/2 x 3                     | 101.6                | 88.9   | 95            | 92     | 3.400                                 | 4.880 | 8.000 | 3.400 | 4.880 | -     | 6.190 | -   | 3.400 | -   | -   | -    | -    | 2.120 | 2.740                               | 3.600 | -     |  |
| x 2-1/2                       |                      | 73.0   |               | 89     | 3.200                                 | 4.630 | 7.800 | 3.200 | 4.630 | -     | 5.900 | -   | 3.200 | -   | -   | -    | -    | 2.120 | 2.740                               | 3.600 | -     |  |
| x 2                           |                      | 60.3   |               | 83     | 3.000                                 | 4.350 | 7.600 | 3.000 | 4.350 | -     | 6.000 | -   | 3.000 | -   | -   | -    | -    | 2.120 | 2.740                               | 3.600 | -     |  |
| x 1-1/2                       |                      | 48.3   |               | 79     | 2.900                                 | 4.000 | 7.400 | 2.900 | 4.000 | -     | 6.000 | -   | -     | -   | -   | -    | -    | 2.120 | 2.740                               | 3.600 | -     |  |
| x 3-1/2                       | 114.3                | 101.6  | 105           | 102    | 4.620                                 | 6.000 | 10.60 | 4.620 | 6.000 | -     | 9.200 | -   | 4.620 | -   | -   | -    | -    | 2.900 | 4.750                               | 6.120 | 9.290 |  |
| x 3                           |                      | 88.9   |               | 98     | 4.330                                 | 6.060 | 10.40 | 4.330 | 6.060 | -     | 8.870 | -   | 4.330 | -   | -   | -    | -    | 2.900 | 4.750                               | 6.120 | 9.290 |  |
| x 2-1/2                       |                      | 73.0   |               | 95     | 4.260                                 | 6.030 | 10.00 | 4.260 | 6.030 | -     | 8.820 | -   | 4.260 | -   | -   | -    | -    | 2.920 | 4.500                               | 6.090 | 8.960 |  |
| x 2                           |                      | 60.3   |               | 89     | 4.120                                 | 4.940 | 8.900 | 4.120 | 4.940 | -     | 7.230 | -   | 4.120 | -   | -   | -    | -    | 2.820 | 4.000                               | 5.000 | 8.900 |  |
| x 1-1/2                       |                      | 48.3   |               | 86     | 4.100                                 | 4.850 | 8.660 | 4.100 | 4.850 | -     | 7.230 | -   | -     | -   | -   | -    | -    | 2.820 | 3.960                               | 4.900 | 7.300 |  |
| x 1-1/4                       |                      | -      |               | -      | 4.100                                 | 4.700 | 8.660 | 4.100 | 4.700 | -     | 7.230 | -   | -     | -   | -   | -    | -    | 2.800 | 3.940                               | 4.860 | 7.260 |  |
| x 1                           |                      | -      |               | -      | 3.500                                 | 4.700 | 8.660 | 3.500 | 4.700 | -     | 7.230 | -   | -     | -   | -   | -    | -    | 2.780 | 3.920                               | 4.820 | 7.220 |  |
| 5 x 4                         | 141.3                | 114.3  | 124           | 117    | 7.100                                 | 9.700 | 17.60 | 7.100 | 9.700 | 11.10 | 15.20 | -   | 7.100 | -   | -   | -    | -    | 4.480 | 6.860                               | 9.800 | 15.30 |  |
| x 3-1/2                       |                      | 101.6  |               | 114    | 7.100                                 | 8.810 | 15.60 | 7.100 | 8.470 | -     | 15.00 | -   | 7.100 | -   | -   | -    | -    | 4.480 | 6.860                               | 9.800 | 15.30 |  |



| Nominal<br>Pipe Size<br>(NPS) | Dimensions (Unit:mm) |              |                      |       |     | Carbon & Alloy Steel Weight (Unit:kg) |       |       |       |       |       |       |       |       |       |       | Stainless Steel Weight (Unit:kg) |       |       |       |
|-------------------------------|----------------------|--------------|----------------------|-------|-----|---------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------------------------------|-------|-------|-------|
|                               | Outside Diameter     |              | End<br>- to<br>- End |       |     |                                       |       |       |       |       |       |       |       |       |       |       |                                  |       |       |       |
|                               | Large<br>End         | Small<br>End |                      |       |     |                                       |       |       |       |       |       |       |       |       |       |       |                                  |       |       |       |
|                               |                      |              |                      | D     | D   | H                                     | STD   | XS    | XXS   | S40   | S80   | S120  | S160  | S10   | S20   | S30   | S100                             | S10S  | S40S  | S80S  |
| 5                             | x                    | 4            | 141.3                | 114.3 | 127 | 2.800                                 | 3.720 | 6.470 | 2.800 | 3.720 | 4.570 | 5.700 | -     | -     | -     | -     | 1.490                            | 2.550 | 3.550 | 5.630 |
|                               | x                    | 3-1/2        |                      | 101.6 |     | 2.800                                 | 3.720 | 6.200 | 2.800 | 3.720 | -     | 5.700 | -     | -     | -     | -     | 1.490                            | 2.550 | 3.550 | 5.630 |
|                               | x                    | 3            |                      | 88.9  |     | 2.760                                 | 3.700 | 5.780 | 2.760 | 3.700 | -     | 5.650 | -     | -     | -     | -     | 1.450                            | 2.300 | 3.210 | 5.050 |
|                               | x                    | 2-1/2        |                      | 73.0  |     | 2.600                                 | 3.350 | 5.460 | 2.600 | 3.350 | -     | 5.200 | -     | -     | -     | -     | 1.400                            | 2.190 | 3.050 | 4.780 |
|                               | x                    | 2            |                      | 60.3  |     | 2.470                                 | 3.200 | 5.300 | 2.470 | 3.200 | -     | 5.000 | -     | -     | -     | -     | 1.300                            | 2.050 | 2.860 | 4.440 |
| 6                             | x                    | 5            | 168.3                | 141.3 | 140 | 5.000                                 | 5.780 | 9.890 | 3.800 | 5.780 | 6.830 | 8.450 | -     | -     | -     | -     | 2.020                            | 3.650 | 5.430 | 8.530 |
|                               | x                    | 4            |                      | 114.3 |     | 3.800                                 | 5.500 | 8.980 | 3.800 | 5.500 | 6.280 | 7.750 | -     | -     | -     | -     | 1.950                            | 3.350 | 5.010 | 7.830 |
|                               | x                    | 3-1/2        |                      | 101.6 |     | 3.750                                 | 5.300 | 8.400 | 3.750 | 5.300 | -     | 7.410 | -     | -     | -     | -     | 1.950                            | 3.350 | 5.010 | 7.830 |
|                               | x                    | 3            |                      | 88.9  |     | 3.700                                 | 5.160 | 8.210 | 3.700 | 5.160 | -     | 7.080 | -     | -     | -     | -     | 1.820                            | 3.070 | 4.610 | 7.150 |
|                               | x                    | 2-1/2        |                      | 73.0  |     | 3.480                                 | 5.000 | 7.830 | 3.480 | 5.000 | -     | 6.750 | -     | -     | -     | -     | 1.750                            | 2.950 | 4.400 | 6.820 |
|                               | x                    | 2            |                      | 60.3  |     | 3.400                                 | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | 1.700                            | 2.920 | 4.300 | 6.700 |
| 8                             | x                    | 6            | 219.1                | 168.3 | 152 | 6.650                                 | 9.250 | 15.40 | 6.650 | 9.250 | 12.80 | 14.70 | -     | 6.650 | -     | -     | 3.190                            | 5.800 | 8.750 | -     |
|                               | x                    | 5            |                      | 141.3 |     | 6.400                                 | 8.900 | 14.50 | 6.400 | 8.900 | 12.20 | 13.80 | -     | 6.400 | -     | -     | 3.080                            | 5.550 | 8.250 | -     |
|                               | x                    | 4            |                      | 114.3 |     | 6.000                                 | 8.500 | 13.60 | 6.000 | 8.500 | 11.60 | 12.90 | -     | 6.000 | -     | -     | 3.010                            | 5.170 | 7.800 | -     |
|                               | x                    | 3-1/2        |                      | 101.6 |     | 5.200                                 | 7.800 | -     | 5.200 | 7.800 | -     | 12.60 | -     | 5.200 | -     | -     | 3.010                            | 5.170 | 7.800 | -     |
|                               | x                    | 3            |                      | 88.9  |     | 5.200                                 | 7.800 | -     | -     | -     | -     | -     | -     | -     | -     | -     | 2.900                            | 5.000 | 7.400 | -     |
| 10                            | x                    | 8            | 273.0                | 219.1 | 178 | 11.20                                 | 13.70 | 25.00 | 11.20 | 15.70 | 21.30 | 27.00 | -     | 11.20 | 11.20 | 21.30 | 5.200                            | 9.700 | 12.90 | -     |
|                               | x                    | 6            |                      | 168.3 |     | 10.90                                 | 13.50 | 22.70 | 10.90 | 14.60 | 19.30 | 24.50 | -     | 10.90 | -     | 19.30 | 5.000                            | 8.900 | 12.30 | -     |
|                               | x                    | 5            |                      | 141.3 |     | 10.00                                 | 13.00 | 21.50 | 10.00 | 14.10 | 18.10 | 23.30 | -     | 10.00 | -     | 18.10 | 4.890                            | 8.600 | 11.60 | -     |
|                               | x                    | 4            |                      | 114.3 |     | 9.800                                 | 12.70 | 20.50 | 9.800 | 13.80 | 17.30 | 22.10 | -     | 9.800 | -     | 17.30 | 4.800                            | 8.300 | 11.40 | -     |
| 12                            | x                    | 10           | 323.8                | 273.0 | 203 | 14.00                                 | 19.00 | 34.50 | 15.90 | 23.00 | 34.00 | 43.60 | -     | 14.00 | 14.00 | 34.00 | 7.980                            | 13.80 | 18.20 | -     |
|                               | x                    | 8            |                      | 219.1 |     | 13.80                                 | 17.80 | 32.20 | 15.80 | 21.00 | 31.70 | 40.30 | -     | 13.80 | 13.80 | 31.70 | 7.620                            | 12.90 | 16.80 | -     |
|                               | x                    | 6            |                      | 168.3 |     | 13.60                                 | 17.20 | 30.00 | 15.70 | 18.60 | 29.40 | 37.20 | -     | 13.60 | -     | 29.40 | 7.430                            | 12.10 | 15.70 | -     |
|                               | x                    | 5            |                      | 141.3 |     | 13.00                                 | 16.00 | 28.70 | 15.20 | 18.00 | 28.30 | 35.70 | -     | 13.00 | -     | 28.30 | 7.250                            | 11.80 | 15.00 | -     |
| 14                            | x                    | 12           | 355.6                | 323.8 | 330 | 25.40                                 | 31.00 | -     | 29.50 | 49.30 | 70.10 | 87.70 | -     | 25.40 | 25.40 | -     | -                                | -     | -     | -     |
|                               | x                    | 10           |                      | 273.0 |     | 23.60                                 | 29.40 | -     | 28.40 | 45.70 | 64.70 | 80.90 | -     | 23.60 | 23.60 | -     | -                                | -     | -     | -     |
|                               | x                    | 8            |                      | 219.1 |     | 23.00                                 | 29.00 | -     | 27.40 | 44.20 | 59.70 | 74.30 | -     | 23.00 | 23.00 | -     | -                                | -     | -     | -     |
|                               | x                    | 6            |                      | 168.3 |     | 21.00                                 | 27.60 | -     | 25.40 | 40.00 | 54.80 | 67.90 | -     | 21.00 | -     | -     | -                                | -     | -     | -     |
| 16                            | x                    | 14           | 406.4                | 355.6 | 356 | 31.00                                 | 43.00 | -     | 43.00 | 69.80 | 95.00 | 121.0 | 31.00 | 31.00 | 43.00 | -     | -                                | -     | -     | -     |
|                               | x                    | 12           |                      | 323.8 |     | 29.60                                 | 42.50 | -     | 42.50 | 66.50 | 90.40 | 115.0 | -     | 29.60 | 42.50 | -     | -                                | -     | -     | -     |
|                               | x                    | 10           |                      | 273.0 |     | 27.80                                 | 42.00 | -     | 42.00 | 62.30 | 84.40 | 107.0 | -     | 27.80 | 42.00 | -     | -                                | -     | -     | -     |
|                               | x                    | 8            |                      | 219.1 |     | 24.80                                 | 38.00 | -     | 38.00 | 55.40 | 78.60 | 99.50 | -     | 24.80 | 38.00 | -     | -                                | -     | -     | -     |
| 18                            | x                    | 16           | 457                  | 406.4 | 381 | 51.00                                 | 68.20 | -     | 76.00 | 126.0 | 130.0 | 164.0 | 51.00 | 51.00 | 68.20 | -     | -                                | -     | -     | -     |
|                               | x                    | 14           |                      | 355.6 |     | 49.00                                 | 65.50 | -     | 73.00 | 121.0 | 123.0 | 155.0 | 49.00 | 49.00 | 65.50 | -     | -                                | -     | -     | -     |
|                               | x                    | 12           |                      | 323.8 |     | 48.00                                 | 64.00 | -     | 71.70 | 119.0 | 118.0 | 148.0 | -     | 48.00 | 64.00 | -     | -                                | -     | -     | -     |
|                               | x                    | 10           |                      | 273.0 |     | 43.00                                 | 57.50 | -     | 64.30 | 106.0 | 111.0 | 139.0 | -     | 43.00 | 57.50 | -     | -                                | -     | -     | -     |
| 20                            | x                    | 18           | 508                  | 457.0 | 508 | 73.00                                 | 97.00 | -     | 115.0 | 198.0 | 212.0 | 271.0 | 73.00 | 73.00 | 97.00 | -     | -                                | -     | -     | -     |
|                               | x                    | 16           |                      | 406.4 |     | 70.00                                 | 93.00 | -     | 110.0 | 190.0 | 201.0 | 256.0 | 70.00 | 70.00 | 93.00 | -     | -                                | -     | -     | -     |
|                               | x                    | 14           |                      | 355.6 |     | 69.00                                 | 90.00 | -     | 107.0 | 187.0 | 190.0 | 242.0 | 69.00 | 69.00 | 90.00 | -     | -                                | -     | -     | -     |
|                               | x                    | 12           |                      | 323.8 |     | 58.00                                 | 78.00 | -     | 91.00 | 157.0 | 182.0 | 231.0 | -     | 58.00 | 78.00 | -     | -                                | -     | -     | -     |
| 22                            | x                    | 20           | 559                  | 508.0 | 508 | 78.00                                 | 103.0 | -     | 128.7 | 224.0 | 255.0 | 324.0 | 78.00 | 78.00 | 103.0 | -     | -                                | -     | -     | -     |
|                               | x                    | 18           |                      | 457.0 |     | 65.50                                 | 86.50 | -     | 107.9 | 195.5 | 243.0 | 308.0 | 65.50 | 65.50 | 86.50 | -     | -                                | -     | -     | -     |
|                               | x                    | 16           |                      | 406.4 |     | 63.50                                 | 83.80 | -     | 104.6 | 189.5 | 231.0 | 293.0 | 63.50 | 63.50 | 83.80 | -     | -                                | -     | -     | -     |
|                               | x                    | 14           |                      | 355.4 |     | 62.00                                 | 81.80 | -     | 102.0 | 185.0 | 219.0 | 278.0 | 62.00 | 62.00 | 81.80 | -     | -                                | -     | -     | -     |
| 24                            | x                    | 22           | 610                  | 559.0 | 508 | 83.00                                 | 110.0 | -     | 150.0 | 263.0 | 310.0 | 391.0 | 83.00 | 83.00 | 150.0 | -     | -                                | -     | -     | -     |
|                               | x                    | 20           |                      | 508.0 |     | 82.00                                 | 109.0 | -     | 146.0 | 254.0 | 297.0 | 374.0 | 82.00 | 82.00 | 146.0 | -     | -                                | -     | -     | -     |
|                               | x                    | 18           |                      | 457.0 |     | 79.00                                 | 104.0 | -     | 140.0 | 244.0 | 284.0 | 357.0 | 79.00 | 79.00 | 140.0 | -     | -                                | -     | -     | -     |
|                               | x                    | 16           |                      | 406.4 |     | 70.00                                 | 92.00 | -     | 126.0 | 225.0 | 271.0 | 341.0 | 70.00 | 70.00 | 126.0 | -     | -                                | -     | -     | -     |

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