# Stainless Steel
# ANSI Pipe

What is a Pipe?

The term pipe covers a specific range of sizes laid down by ANSI specifications. Any sizes not covered by these specifications are tube.

Stainless Steel Pipe dimensions determined by ASME B36.19 covering the outside diameter and the Schedule wall thickness.

Note that stainless wall thicknesses to ANSI B36.19 all have an 'S' suffix. Sizes without an 'S' suffix are to ANSI B36.10 which is intended for carbon steel pipes.

## CONTACT


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## REVISION HISTORY

| | |
|---|---|
| Datasheet Updated | 18 July 2019 |

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DURBIN METAL INDUSTRIES



# ASTM Pipe

## Introduction

**The term pipe covers a specific range of sizes laid down by ANSI specifications. Any sizes not covered by these specifications are tube. Stainless Steel Pipe dimensions determined by ASME B36.19 covering the outside diameter and the Schedule wall thickness. Note that stainless wall thicknesses to ANSI B36.19 all have an 'S' suffix. Sizes without an 'S' suffix are to ANSI B36.10 which is intended for carbon steel pipes.**

### Seamless and Welded

**ASTM A312:** Seamless and straight-seam welded austenitic pipe intended for high temperature and general corrosive service. Filler metal not permitted during welding.

**ASTM A358:** Electric fusion welded austenitic pipe for corrosive and/or high temperature service. Typically only pipe up to 8 inch is produced to this specification. Addition of filler metal is permitted during welding.

**ASTM A790:** Seamless and straight-seam welded ferritic/austenitic (duplex) pipe intended for general corrosive service, with a particular emphasis on resistance to stress corrosion cracking.

**ASTM A409:** Straight-seam or spiral-seam electric fusion welded large diameter austenitic light-wall pipe in sizes 14" to 30" with walls Sch 5S and Sch 10S for corrosive and/or high temperature service.

**ASTM A376:** Seamless austenitic pipe for high temperature applications.

**ASTM A813:** Single-seam, single- or double- welded austenitic pipe for high temperature and general corrosive applications.

**ASTM A814:** Cold-worked welded austenitic pipe for high temperature and general corrosive service.

**Note:** Welded pipes manufactured to ASTM A312, A790 and A813 must be produced by an automatic process with NO addition of filler metal during the welding operation.

### Welded pipe specifications

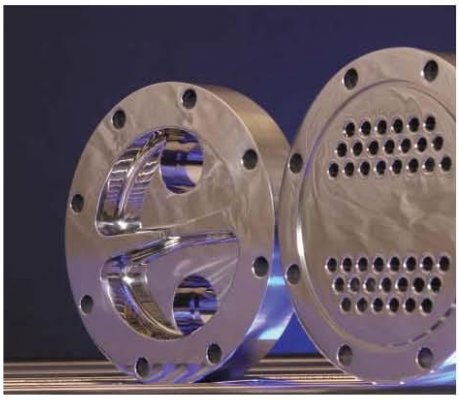
Usually it will be to ASTM A312. If it is to ASTM A358 then there are various Classes available as shown below. The Class Number dictates how the pipe is welded and what non-destructive tests:

- **Class 1:** Pipe shall be double welded by processes employing filler metal in all passes and shall be completely radiographed.
- **Class 2:** Pipe shall be double welded by processes employing filler metal in all passes. No-radiography is required.
- **Class 3:** Pipe shall be welded in one pass by processes employing filler metal and shall be completely radiographed.
- **Class 4:** Same as Class 3 except that the welding process exposed to the inside pipe surface may be made without the addition of filler metal.
- **Class 5:** Pipe shall be double welded by processes employing filler metal in all passes and shall be spot radiographed.

### Markings on pipe

The full identification of the pipe should be continuously marked down its whole length, including:

- Nominal Pipe Size (Nominal Bore)
- Schedule (Wall Thickness)
- Specification
- Grade
- Method of Manufacture (Seamless or Welded)
- Heat Number
- Manufacturer's Name or Symbol





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DURBIN METAL INDUSTRIES

# ASTM Pipe

## Pipe Sizes - ANSI/ASME B36.19M



### Dimensions and weights per metre - stainless steel pipe

| Nominal Pipe Size | OD | | Schedule 5S[1] | | | Schedule 10S[1] | | | Schedule 40S | | | Schedule 80S | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | in | mm | in | mm | kg/m | in | mm | kg/m | in | mm | kg/m | in | mm | kg/m |
| 1/8 | 0.405 | 10.3 | - | - | - | 0.049 | 1.24 | 0.28 | 0.068 | 1.73 | 0.37 | 0.095 | 2.41 | 0.47 |
| 1/4 | 0.540 | 13.7 | - | - | - | 0.065 | 1.65 | 0.49 | 0.088 | 2.24 | 0.63 | 0.119 | 3.02 | 0.80 |
| 3/8 | 0.675 | 17.1 | - | - | - | 0.065 | 1.65 | 0.63 | 0.091 | 2.31 | 0.84 | 0.126 | 3.20 | 1.10 |
| 1/2 | 0.840 | 21.3 | 0.065 | 1.65 | 0.80 | 0.083 | 2.11 | 1.00 | 0.109 | 2.77 | 1.27 | 0.147 | 3.73 | 1.62 |
| 3/4 | 1.050 | 26.7 | 0.065 | 1.65 | 1.03 | 0.083 | 2.11 | 1.28 | 0.113 | 2.87 | 1.69 | 0.154 | 3.91 | 2.20 |
| 1 | 1.315 | 33.4 | 0.065 | 1.65 | 1.30 | 0.109 | 2.77 | 2.09 | 0.133 | 3.38 | 2.50 | 0.179 | 4.55 | 3.24 |
| 1 1/4 | 1.660 | 42.2 | 0.065 | 1.65 | 1.65 | 0.109 | 2.77 | 2.70 | 0.140 | 3.56 | 3.39 | 0.191 | 4.85 | 4.47 |
| 1 1/2 | 1.900 | 48.3 | 0.065 | 1.65 | 1.91 | 0.109 | 2.77 | 3.11 | 0.145 | 3.68 | 4.05 | 0.200 | 5.08 | 5.41 |
| 2 | 2.375 | 60.3 | 0.065 | 1.65 | 2.40 | 0.109 | 2.77 | 3.93 | 0.154 | 3.91 | 5.44 | 0.218 | 5.54 | 7.48 |
| 2 1/2 | 2.875 | 73.0 | 0.083 | 2.11 | 3.69 | 0.120 | 3.05 | 5.26 | 0.203 | 5.16 | 8.63 | 0.276 | 7.01 | 11.41 |
| 3 | 3.500 | 88.9 | 0.083 | 2.11 | 4.51 | 0.120 | 3.05 | 6.45 | 0.216 | 5.49 | 11.29 | 0.300 | 7.62 | 15.27 |
| 3 1/2 | 4.000 | 101.6 | 0.083 | 2.11 | 5.18 | 0.120 | 3.05 | 7.40 | 0.226 | 5.74 | 13.57 | 0.318 | 8.08 | 18.63 |
| 4 | 4.500 | 114.3 | 0.083 | 2.11 | 5.84 | 0.120 | 3.05 | 8.36 | 0.237 | 6.02 | 16.07 | 0.337 | 8.56 | 22.32 |
| 5 | 5.563 | 141.3 | 0.109 | 2.77 | 9.47 | 0.134 | 3.40 | 11.57 | 0.258 | 6.55 | 21.77 | 0.375 | 9.53 | 30.97 |
| 6 | 6.625 | 168.3 | 0.109 | 2.77 | 11.32 | 0.134 | 3.40 | 13.84 | 0.280 | 7.11 | 28.26 | 0.432 | 10.97 | 42.56 |
| 8 | 8.625 | 219.1 | 0.109 | 2.77 | 14.79 | 0.148 | 3.76 | 19.96 | 0.322 | 8.18 | 42.55 | 0.500 | 12.70 | 64.64 |
| 10 | 10.750 | 273.1 | 0.134 | 3.40 | 22.63 | 0.165 | 4.19 | 27.78 | 0.365 | 9.27 | 60.31 | 0.500[2] | 12.70[2] | 96.01[2] |
| 12 | 12.750 | 323.9 | 0.156 | 3.96 | 31.25 | 0.180 | 4.57 | 36.00 | 0.375[2] | 9.53[2] | 73.88[2] | 0.500[2] | 12.70[2] | 132.08[2] |
| 14 | 14.000 | 355.6 | 0.156 | 3.96 | 34.36 | 0.188[2] | 4.78[2] | 41.30[2] | - | - | - | - | - | - |
| 16 | 16.000 | 406.4 | 0.165 | 4.19 | 41.56 | 0.188[2] | 4.78[2] | 47.29[2] | - | - | - | - | - | - |
| 18 | 18.000 | 457 | 0.165 | 4.19 | 46.81 | 0.188[2] | 4.78[2] | 53.26[2] | - | - | - | - | - | - |
| 20 | 20.000 | 508 | 0.188 | 4.78 | 59.25 | 0.218[2] | 5.54[2] | 68.61[2] | - | - | - | - | - | - |
| 22 | 22.000 | 559 | 0.188 | 4.78 | 65.24 | 0.218[2] | 5.54[2] | 75.53[2] | - | - | - | - | - | - |
| 24 | 24.000 | 610 | 0.218 | 5.54 | 82.47 | 0.250 | 6.35 | 94.45 | - | - | - | - | - | - |
| 30 | 30.000 | 762 | 0.250 | 6.35 | 118.31 | 0.312 | 7.92 | 147.36 | - | - | - | - | - | - |

Notes
1 Schedules 5S and 10S wall thicknesses do not permit threading in accordance with ANSI/ASME B1.20.1.
2 These dimensions and weights do not conform to ANSI/ASME B36.10M.
- The suffix 'S' after the schedule number indicates that the pipe dimensions and weight are in compliance with this stainless steel pipe specification, ANSI/ASME B36.19M-1985, and not the more general ANSI/ASME B36.10M-1995 specification.
- Although this specification is applicable to stainless steel, quoted weights are for carbon steel pipe and should be multiplied by 1.014 for austenitic and duplex steels, or by 0.985 for ferritic and martensitic steels.



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DURBIN METAL INDUSTRIES

# ASTM Pipe

## Pipe Sizes - ANSI/ASME B36.10M



### Dimensions and weights per metre - steel pipe

| Nominal Pipe Size | OD | | Schedule 10 | | | Schedule 20 | | | Schedule 30 | | | Schedule 40 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | in | mm | in | mm | kg/m | in | mm | kg/m | in | mm | kg/m | in | mm | kg/m |
| 1/8 | 0.405 | 10.3 | - | - | - | - | - | - | 0.057 | 1.45 | 0.32 | 0.068 | 1.73 | 0.37 |
| 1/4 | 0.540 | 13.7 | - | - | - | - | - | - | 0.073 | 1.85 | 0.54 | 0.088 | 2.24 | 0.63 |
| 3/8 | 0.675 | 17.1 | - | - | - | - | - | - | 0.073 | 1.85 | 0.70 | 0.091 | 2.31 | 0.84 |
| 1/2 | 0.840 | 21.3 | - | - | - | - | - | - | 0.095 | 2.41 | 1.12 | 0.109 | 2.77 | 1.27 |
| 3/4 | 1.050 | 26.7 | - | - | - | - | - | - | 0.095 | 2.41 | 1.44 | 0.113 | 2.87 | 1.69 |
| 1 | 1.315 | 33.4 | - | - | - | - | - | - | 0.114 | 2.90 | 2.18 | 0.133 | 3.38 | 2.50 |
| 1 1/4 | 1.660 | 42.2 | - | - | - | - | - | - | 0.117 | 2.97 | 2.87 | 0.140 | 3.56 | 3.39 |
| 1 1/2 | 1.900 | 48.3 | - | - | - | - | - | - | 0.125 | 3.18 | 3.53 | 0.145 | 3.68 | 4.05 |
| 2 | 2.375 | 60.3 | - | - | - | - | - | - | 0.125 | 3.18 | 4.48 | 0.154 | 3.91 | 5.44 |
| 2 1/2 | 2.875 | 73.0 | - | - | - | - | - | - | 0.188 | 4.78 | 8.04 | 0.203 | 5.16 | 8.63 |
| 3 | 3.500 | 88.9 | - | - | - | - | - | - | 0.188 | 4.78 | 9.92 | 0.216 | 5.49 | 11.29 |
| 3 1/2 | 4.000 | 101.6 | - | - | - | - | - | - | 0.188 | 4.78 | 11.41 | 0.226 | 5.74 | 13.57 |
| 4 | 4.500 | 114.3 | - | - | - | - | - | - | 0.188 | 4.78 | 12.91 | 0.237 | 6.02 | 16.07 |
| 5 | 5.563 | 141.3 | - | - | - | - | - | - | - | - | - | 0.258 | 6.55 | 21.77 |
| 6 | 6.625 | 168.3 | - | - | - | - | - | - | - | - | - | 0.280 | 7.11 | 28.26 |
| 8 | 8.625 | 219.1 | - | - | - | 0.250 | 6.35 | 33.31 | 0.277 | 7.04 | 36.81 | 0.322 | 8.18 | 42.55 |
| 10 | 10.750 | 273.0 | - | - | - | 0.250 | 6.35 | 41.77 | 0.307 | 7.80 | 51.03 | 0.365 | 9.27 | 60.31 |
| 12 | 12.750 | 323.8 | - | - | - | 0.250 | 6.35 | 49.73 | 0.330 | 8.38 | 65.20 | 0.406 | 10.31 | 79.73 |
| 14 | 14.000 | 355.6 | 0.250 | 6.35 | 54.69 | 0.312 | 7.92 | 67.90 | 0.375 | 9.53 | 81.33 | 0.438 | 11.13 | 94.55 |
| 16 | 16.000 | 406.4 | 0.250 | 6.35 | 62.64 | 0.312 | 7.92 | 77.83 | 0.375 | 9.53 | 93.27 | 0.500 | 12.70 | 123.30 |
| 18 | 18.000 | 457 | 0.250 | 6.35 | 70.57 | 0.312 | 7.92 | 87.71 | 0.438 | 11.13 | 122.38 | 0.562 | 14.27 | 155.80 |
| 20 | 20.000 | 508 | 0.250 | 6.35 | 78.55 | 0.375 | 9.53 | 117.15 | 0.500 | 12.70 | 155.12 | 0.594 | 15.09 | 183.42 |
| 22 | 22.000 | 559 | 0.250 | 6.35 | 86.54 | 0.375 | 9.53 | 129.13 | 0.500 | 12.70 | 171.09 | - | - | - |
| 24 | 24.000 | 610 | 0.250 | 6.35 | 94.53 | 0.375 | 9.53 | 141.12 | 0.562 | 14.27 | 209.64 | 0.688 | 17.48 | 255.41 |
| 26 | 26.000 | 660 | 0.312 | 7.92 | 127.36 | 0.500 | 12.70 | 202.72 | - | - | - | - | - | - |
| 28 | 28.000 | 711 | 0.312 | 7.92 | 137.32 | 0.500 | 12.70 | 218.69 | 0.625 | 15.88 | 271.21 | - | - | - |
| 30 | 30.000 | 762 | 0.312 | 7.92 | 147.28 | 0.500 | 12.70 | 234.67 | 0.625 | 15.88 | 292.18 | - | - | - |
| 32 | 32.000 | 813 | 0.312 | 7.92 | 157.24 | 0.500 | 12.70 | 250.64 | 0.625 | 15.88 | 312.15 | 0.688 | 17.48 | 342.91 |
| 34 | 34.000 | 864 | 0.312 | 7.92 | 167.20 | 0.500 | 12.70 | 266.61 | 0.625 | 15.88 | 332.12 | 0.688 | 17.48 | 364.90 |
| 36 | 36.000 | 914 | 0.312 | 7.92 | 176.96 | 0.500 | 12.70 | 282.27 | 0.625 | 15.88 | 351.70 | 0.750 | 19.05 | 420.42 |
| 38 | 38.000 | 965 | - | - | - | - | - | - | - | - | - | - | - | - |
| 40 | 40.000 | 1016 | - | - | - | - | - | - | - | - | - | - | - | - |
| 42 | 42.000 | 1067 | - | - | - | - | - | - | - | - | - | - | - | - |
| 44 | 44.000 | 1118 | - | - | - | - | - | - | - | - | - | - | - | - |
| 46 | 46.000 | 1168 | - | - | - | - | - | - | - | - | - | - | - | - |
| 48 | 48.000 | 1219 | - | - | - | - | - | - | - | - | - | - | - | - |

Notes
- This specification is applicable to all steel pipe including stainless steel. Quoted weights are for carbon steel pipe and should be multiplied by 1.014 for austenitic and duplex steels, or by 0.985 for ferritic and martensitic steels.



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DURBIN METAL INDUSTRIES

# ASTM Pipe

## Pipe Sizes - ANSI/ASME B36.10M



### Dimensions and weights per metre - steel pipe

| Nominal Pipe Size | OD | | Schedule (STD) | | | Schedule 60 | | | Extra Strong (XS) | | | Schedule 80 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | in | mm | in | mm | kg/m | in | mm | kg/m | in | mm | kg/m | in | mm | kg/m |
| 1/8 | 0.405 | 10.3 | 0.068 | 1.73 | 0.37 | - | - | - | 0.095 | 2.41 | 0.47 | 0.095 | 2.41 | 0.47 |
| 1/4 | 0.540 | 13.7 | 0.088 | 2.24 | 0.63 | - | - | - | 0.119 | 3.02 | 0.80 | 0.119 | 3.02 | 0.80 |
| 3/8 | 0.675 | 17.1 | 0.091 | 2.31 | 0.84 | - | - | - | 0.126 | 3.20 | 1.10 | 0.126 | 3.20 | 1.10 |
| 1/2 | 0.840 | 21.3 | 0.109 | 2.77 | 1.27 | - | - | - | 0.147 | 3.73 | 1.62 | 0.147 | 3.73 | 1.62 |
| 3/4 | 1.050 | 26.7 | 0.113 | 2.87 | 1.69 | - | - | - | 0.154 | 3.91 | 2.20 | 0.154 | 3.91 | 2.20 |
| 1 | 1.315 | 33.4 | 0.133 | 3.38 | 2.50 | - | - | - | 0.179 | 4.55 | 3.24 | 0.179 | 4.55 | 3.24 |
| 1 1/4 | 1.660 | 42.2 | 0.140 | 3.56 | 3.39 | - | - | - | 0.191 | 4.85 | 4.47 | 0.191 | 4.85 | 4.47 |
| 1 1/2 | 1.900 | 48.3 | 0.145 | 3.68 | 4.05 | - | - | - | 0.200 | 5.08 | 5.41 | 0.200 | 5.08 | 5.41 |
| 2 | 2.375 | 60.3 | 0.154 | 3.91 | 5.44 | - | - | - | 0.218 | 5.54 | 7.48 | 0.218 | 5.54 | 7.48 |
| 2 1/2 | 2.875 | 73.0 | 0.203 | 5.16 | 8.63 | - | - | - | 0.276 | 7.01 | 11.41 | 0.276 | 7.01 | 11.41 |
| 3 | 3.500 | 88.9 | 0.216 | 5.49 | 11.29 | - | - | - | 0.300 | 7.62 | 15.27 | 0.300 | 7.62 | 15.27 |
| 3 1/2 | 4.000 | 101.6 | 0.226 | 5.74 | 13.57 | - | - | - | 0.318 | 8.08 | 18.63 | 0.318 | 8.08 | 18.63 |
| 4 | 4.500 | 114.3 | 0.237 | 6.02 | 16.07 | - | - | - | 0.337 | 8.56 | 22.32 | 0.337 | 8.56 | 22.32 |
| 5 | 5.563 | 141.3 | 0.258 | 6.55 | 21.77 | - | - | - | 0.375 | 9.53 | 30.97 | 0.375 | 9.53 | 30.97 |
| 6 | 6.625 | 168.3 | 0.280 | 7.11 | 28.26 | - | - | - | 0.432 | 10.97 | 42.56 | 0.432 | 10.97 | 42.56 |
| 8 | 8.625 | 219.1 | 0.322 | 8.18 | 42.55 | 0.406 | 10.31 | 53.08 | 0.500 | 12.70 | 64.64 | 0.500 | 12.70 | 64.64 |
| 10 | 10.750 | 273.0 | 0.365 | 9.27 | 60.31 | 0.500 | 12.70 | 81.55 | 0.500 | 12.70 | 81.55 | 0.594 | 15.09 | 96.01 |
| 12 | 12.750 | 323.8 | 0.375 | 9.53 | 73.88 | 0.562 | 14.27 | 108.96 | 0.500 | 12.70 | 97.46 | 0.688 | 17.48 | 132.08 |
| 14 | 14.000 | 355.6 | 0.375 | 9.53 | 81.33 | 0.594 | 15.09 | 126.71 | 0.500 | 12.70 | 107.39 | 0.750 | 19.05 | 158.10 |
| 16 | 16.000 | 406.4 | 0.375 | 9.53 | 93.27 | 0.656 | 16.66 | 160.12 | 0.500 | 12.70 | 123.30 | 0.844 | 21.44 | 203.53 |
| 18 | 18.000 | 457 | 0.375 | 9.53 | 105.16 | 0.750 | 19.05 | 205.74 | 0.500 | 12.70 | 139.15 | 0.938 | 23.83 | 254.55 |
| 20 | 20.000 | 508 | 0.375 | 9.53 | 117.15 | 0.812 | 20.62 | 247.83 | 0.500 | 12.70 | 155.12 | 1.031 | 26.19 | 311.17 |
| 22 | 22.000 | 559 | 0.375 | 9.53 | 129.13 | 0.875 | 22.23 | 294.25 | 0.500 | 12.70 | 171.09 | 1.125 | 28.58 | 373.83 |
| 24 | 24.000 | 610 | 0.375 | 9.53 | 141.12 | 0.969 | 24.61 | 355.26 | 0.500 | 12.70 | 187.06 | 1.219 | 30.96 | 442.08 |
| 26 | 26.000 | 660 | 0.375 | 9.53 | 152.87 | - | - | - | 0.500 | 12.70 | 202.72 | - | - | - |
| 28 | 28.000 | 711 | 0.375 | 9.53 | 164.85 | - | - | - | 0.500 | 12.70 | 218.69 | - | - | - |
| 30 | 30.000 | 762 | 0.375 | 9.53 | 176.84 | - | - | - | 0.500 | 12.70 | 234.67 | - | - | - |
| 32 | 32.000 | 813 | 0.375 | 9.53 | 188.82 | - | - | - | 0.500 | 12.70 | 250.64 | - | - | - |
| 34 | 34.000 | 864 | 0.375 | 9.53 | 200.31 | - | - | - | 0.500 | 12.70 | 266.61 | - | - | - |
| 36 | 36.000 | 914 | 0.375 | 9.53 | 212.56 | - | - | - | 0.500 | 12.70 | 282.27 | - | - | - |
| 38 | 38.000 | 965 | 0.375 | 9.53 | 224.54 | - | - | - | 0.500 | 12.70 | 298.24 | - | - | - |
| 40 | 40.000 | 1016 | 0.375 | 9.53 | 236.53 | - | - | - | 0.500 | 12.70 | 314.22 | - | - | - |
| 42 | 42.000 | 1067 | 0.375 | 9.53 | 248.52 | - | - | - | 0.500 | 12.70 | 330.19 | - | - | - |
| 44 | 44.000 | 1118 | 0.375 | 9.53 | 260.50 | - | - | - | 0.500 | 12.70 | 346.16 | - | - | - |
| 46 | 46.000 | 1168 | 0.375 | 9.53 | 272.25 | - | - | - | 0.500 | 12.70 | 351.82 | - | - | - |
| 48 | 48.000 | 1219 | 0.375 | 9.53 | 284.24 | - | - | - | 0.500 | 12.70 | 377.79 | - | - | - |

Notes
- This specification is applicable to all steel pipe including stainless steel. Quoted weights are for carbon steel pipe and should be multiplied by 1.014 for austenitic and duplex steels, or by 0.985 for ferritic and martensitic steels.



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DURBIN METAL INDUSTRIES



# ASTM Pipe

## Pipe Sizes - ANSI/ASME B36.10M

### Dimensions and weights per metre - steel pipe

| Nominal Pipe Size | OD | | Schedule 100 | | | Schedule 120 | | | Schedule 140 | | | Schedule 160 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | in | mm | in | mm | kg/m | in | mm | kg/m | in | mm | kg/m | in | mm | kg/m |
| ½ | 0.840 | 21.3 | - | - | - | - | - | - | - | - | - | 0.188 | 4.78 | 1.95 |
| ¾ | 1.050 | 26.7 | - | - | - | - | - | - | - | - | - | 0.219 | 5.56 | 2.90 |
| 1 | 1.315 | 33.4 | - | - | - | - | - | - | - | - | - | 0.250 | 6.35 | 4.24 |
| 1¼ | 1.660 | 42.2 | - | - | - | - | - | - | - | - | - | 0.250 | 6.35 | 5.61 |
| 1½ | 1.900 | 48.3 | - | - | - | - | - | - | - | - | - | 0.281 | 7.14 | 7.25 |
| 2 | 2.375 | 60.3 | - | - | - | - | - | - | - | - | - | 0.344 | 8.74 | 11.11 |
| 2½ | 2.875 | 73.0 | - | - | - | - | - | - | - | - | - | 0.375 | 9.53 | 14.92 |
| 3 | 3.500 | 88.9 | - | - | - | - | - | - | - | - | - | 0.438 | 11.13 | 21.35 |
| 3½ | 4.000 | 101.6 | - | - | - | - | - | - | - | - | - | - | - | - |
| 4 | 4.500 | 114.3 | - | - | - | 0.438 | 11.13 | 28.32 | - | - | - | 0.531 | 13.49 | 33.54 |
| 5 | 5.563 | 141.3 | - | - | - | 0.500 | 12.70 | 40.28 | - | - | - | 0.625 | 15.88 | 49.11 |
| 6 | 6.625 | 168.3 | - | - | - | 0.562 | 14.27 | 54.20 | - | - | - | 0.719 | 18.26 | 67.56 |
| 8 | 8.625 | 219.1 | 0.594 | 15.09 | 75.92 | 0.719 | 18.26 | 90.44 | 0.812 | 20.62 | 100.92 | 0.906 | 23.01 | 111.27 |
| 10 | 10.750 | 273.0 | 0.719 | 18.26 | 114.75 | 0.844 | 21.44 | 133.06 | 1.000 | 25.40 | 155.15 | 1.125 | 28.58 | 172.33 |
| 12 | 12.750 | 323.8 | 0.844 | 21.44 | 159.91 | 1.000 | 25.40 | 186.97 | 1.125 | 28.58 | 208.14 | 1.312 | 33.32 | 238.76 |
| 14 | 14.000 | 355.6 | 0.938 | 23.83 | 194.96 | 1.094 | 27.79 | 224.65 | 1.250 | 31.75 | 253.56 | 1.406 | 35.71 | 281.70 |
| 16 | 16.000 | 406.4 | 1.031 | 26.19 | 245.56 | 1.219 | 30.96 | 286.64 | 1.438 | 36.53 | 333.19 | 1.594 | 40.49 | 365.35 |
| 18 | 18.000 | 457 | 1.156 | 29.36 | 309.62 | 1.375 | 34.93 | 363.56 | 1.562 | 39.67 | 408.26 | 1.781 | 45.24 | 459.37 |
| 20 | 20.000 | 508 | 1.281 | 32.54 | 381.53 | 1.500 | 38.10 | 441.49 | 1.750 | 44.45 | 508.11 | 1.969 | 50.01 | 564.81 |
| 22 | 22.000 | 559 | 1.375 | 34.93 | 451.42 | 1.625 | 41.28 | 527.02 | 1.875 | 47.63 | 600.63 | 2.125 | 53.98 | 672.26 |
| 24 | 24.000 | 610 | 1.531 | 38.89 | 547.71 | 1.812 | 46.02 | 640.03 | 2.062 | 52.37 | 720.15 | 2.344 | 59.54 | 808.22 |

| Nominal Pipe Size | OD | | Double Extra Strong (XXS) | | |
|---|---|---|---|---|---|
| | in | mm | in | mm | kg/m |
| ½ | 0.840 | 21.3 | 0.294 | 7.47 | 2.55 |
| ¾ | 1.050 | 26.7 | 0.308 | 7.82 | 3.64 |
| 1 | 1.315 | 33.4 | 0.358 | 9.09 | 5.45 |
| 1¼ | 1.660 | 42.2 | 0.382 | 9.70 | 7.77 |
| 1½ | 1.900 | 48.3 | 0.400 | 10.15 | 9.56 |
| 2 | 2.375 | 60.3 | 0.436 | 11.07 | 13.44 |
| 2½ | 2.875 | 73.0 | 0.552 | 14.02 | 20.39 |
| 3 | 3.500 | 88.9 | 0.600 | 15.24 | 27.68 |

| Nominal Pipe Size | OD | | Double Extra Strong (XXS) continued | | |
|---|---|---|---|---|---|
| | in | mm | in | mm | kg/m |
| continued | | | | | |
| 3½ | 4.000 | 101.6 | - | - | - |
| 4 | 4.500 | 114.3 | 0.674 | 17.12 | 41.03 |
| 5 | 5.563 | 141.3 | 0.750 | 19.05 | 57.43 |
| 6 | 6.625 | 168.3 | 0.864 | 21.95 | 79.22 |
| 8 | 8.625 | 219.1 | 0.875 | 22.23 | 107.92 |
| 10 | 10.750 | 273.0 | 1.000 | 25.40 | 155.15 |
| 12 | 12.750 | 323.8 | 1.000 | 25.40 | 186.97 |

Notes
- This specification is applicable to all steel pipe including stainless steel. Quoted weights are for carbon steel pipe and should be multiplied by 1.014 for austenitic and duplex steels, or by 0.985 for ferritic and martensitic steels.



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DURBIN METAL INDUSTRIES

# ASTM Pipe

## Chemical Compositions - ASTM A240/A240M

| Grade | UNS | Composition Percentage, Max or Range | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Carbon C | Manganese Mn | Phosphorous P | Sulphur S | Silicon Si | Nickel Ni | Chromium Cr | Molybdenum Mo | Titanium Ti | Niobium Nb | Tantalum Ta | Nitrogen N | Vanadium Va | Copper Cu | Cerium Ce | Boron Bo | Aluminium Al | Tungsten W | Selenium Se |
| 201 | S20100 | 0.15 | 5.50-7.50 | 0.060 | 0.030 | 1.00 | 3.5-5.5 | 16.00-18.00 | - | - | - | - | 0.25 | | - | - | - | - | - | - |
| 202 | S20200 | 0.15 | 7.50-10.0 | 0.060 | 0.030 | 1.00 | 4.00-6.00 | 17.00-19.00 | - | - | - | - | 0.25 | | - | - | - | - | - | - |
| 301 | S30100 | 0.15 | 2.00 | 0.045 | 0.030 | 1.00 | 6.00-8.00 | 16.00-18.00 | - | - | - | - | 0.10 | - | - | - | - | - | - | - |
| 302 | S30200 | 0.15 | 2.00 | 0.045 | 0.030 | 0.75 | 8.00-10.00 | 17.00-19.00 | - | - | - | - | 0.10 | - | - | - | - | - | - | - |
| 304 | S30400 | 0.07 | 2.00 | 0.045 | 0.030 | 0.75 | 8.00-10.50 | 17.50-19.50 | - | - | - | - | 0.10 | - | - | - | - | - | - | - |
| 304L | S30403 | 0.030 | 2.00 | 0.045 | 0.030 | 0.75 | 8.00-12.00 | 17.50-19.50 | - | - | - | - | 0.10 | - | - | - | - | - | - | - |
| 304H | S30409 | 0.04-0.10 | 2.00 | 0.045 | 0.030 | 0.75 | 8.00-10.50 | 18.00-20.00 | - | - | - | - | - | - | - | - | - | - | - | - |
| 309S | S30908 | 0.08 | 2.00 | 0.045 | 0.030 | 0.75 | 12.00-15.00 | 22.00-24.00 | - | - | - | - | - | - | - | - | - | - | - | - |
| 310S | S31008 | 0.08 | 2.00 | 0.045 | 0.030 | 1.50 | 19.00-22.00 | 24.00-26.00 | - | - | - | - | - | - | - | - | - | - | - | - |
| 310H | S31009 | 0.04-0.10 | 2.00 | 0.045 | 0.030 | 0.75 | 19.00-22.00 | 24.00-26.00 | - | - | - | - | - | - | - | - | - | - | - | - |
| 316 | S31600 | 0.08 | 2.00 | 0.045 | 0.030 | 0.75 | 10.00-14.00 | 16.00-18.00 | 2.00-3.00 | - | - | - | 0.10 | - | - | - | - | - | - | - |
| 316L | S31603 | 0.03 | 2.00 | 0.045 | 0.030 | 0.75 | 10.00-14.00 | 16.00-18.00 | 2.00-3.00 | - | - | - | 0.10 | - | - | - | - | - | - | - |
| 316H | S31609 | 0.04-0.10 | 2.00 | 0.045 | 0.030 | 0.75 | 10.00-14.00 | 16.00-18.00 | 2.00-3.00 | - | - | - | | - | - | - | - | - | - | - |
| 317 | S31700 | 0.08 | 2.00 | 0.045 | 0.030 | 0.75 | 11.00-15.00 | 18.00-20.00 | 3.00-4.00 | - | - | - | 0.10 | - | - | - | - | - | - | - |
| 317L | S31703 | 0.03 | 2.00 | 0.045 | 0.030 | 0.75 | 11.00-15.00 | 18.00-20.00 | 3.00-4.00 | - | - | - | 0.10 | - | - | - | - | - | - | - |
| 321 | S32100 | 0.08 | 2.00 | 0.045 | 0.030 | 0.75 | 9.00-12.00 | 17.00-19.00 | - | 5x(C+N) min, 0.70 max | - | - | 0.10 | - | - | - | - | - | - | - |
| 347 | S34700 | 0.08 | 2.00 | 0.045 | 0.030 | 0.75 | 9.00-13.00 | 17.00-19.00 | - | - | 10xC min, 1.00 max | - | - | - | - | - | - | - | - | - |
| 409 | S40910 | 0.03 | 1.00 | 0.040 | 0.020 | 1.00 | 0.50 | 10.50-11.70 | - | 6xC min, 0.5 max | 0.17 | - | 0.03 | - | - | - | - | - | - | - |
| 410 | S41000 | 0.08-0.15 | 1.00 | 0.040 | 0.030 | 1.00 | 0.75 | 11.5-13.5 | - | - | - | - | - | - | - | - | - | - | - | - |
| 430 | S43000 | 0.12 | 1.00 | 0.040 | 0.030 | 1.00 | 0.75 | 16.00-18.00 | - | - | - | - | - | - | - | - | - | - | - | - |
| 439 | S43035 | 0.03 | 1.00 | 0.040 | 0.030 | 1.00 | 0.050 | 17.00-19.00 | - | 0.20 + 4(C+N) min, 1.10 max | - | - | 0.03 | - | - | - | - | 0.15 | - | - |





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DURBIN METAL INDUSTRIES



# ASTM Pipe

## Dimensional Tolerences - ASTM A530/A530M

### Standard cross-section and weight tolerances (ASTM A530/A530M)

| NPS | Outside Diameter (OD)[1] Under | | Outside Diameter (OD)[1] Over | | Wall Thickness (t)[2] Under | Wall Thickness (t)[2] Over | Weight[3] Under | Weight[3] Over |
|---|---|---|---|---|---|---|---|---|
| | in | mm | in | mm | % | % | % | % |
| ⅛ to 1½ | 0.031 | 0.8 | 0.015 | 0.4 | 12.5 | 20 | 3.5 | 10 |
| >1½ to 4 | 0.031 | 0.8 | 0.031 | 0.8 | 12.5 | 20 | 3.5 | 10 |
| >4 to 8 | 0.031 | 0.8 | 0.062 | 1.6 | 12.5 | 22.5 | 3.5 | 10 |
| >8 to 12 | 0.031 | 0.8 | 0.093 | 2.4 | 12.5 | 22.5 | 3.5 | 10 |
| >12 to 18 | 0.031 | 0.8 | 0.093 | 2.4 | 12.5 | 22.5 | 5 | 10 |
| >18 to 26 | 0.031 | 0.8 | 0.125 | 3.2 | 12.5 | 22.5 | 5 | 10 |
| >26 to 34 | 0.031 | 0.8 | 0.156 | 4.0 | 12.5 | 22.5 | 5 | 10 |
| >34 to 48 | 0.031 | 0.8 | 0.187 | 4.8 | 12.5 | 22.5 | 5 | 10 |

Notes
1 Includes ovality tolerance except for thin wall pipe (i.e. t>3% OD).
2 Min wall thickness = Nominal wall thickness (t) x 0.875. Not applicable if filler metal added.
3 Refer to pages 1-2 to 1-5 for standard pipe weights. For non standard pipes W(lb/ft) = 10.68(OD-t)t, or W (kg/m) = 0.02466(OD-t) t

- **Standard Cut Lengths**. Pipe ordering alternatives are:
  - **Random**. Standard lengths are in the range 15 to 24 feet. Shorter lengths as agreed with the purchaser.
  - **Specified Lengths**. Cut lengths as specified, with end finish also specified.
- **Length tolerances**. No pipe shall be shorter than specified. No pipe shall be more than ¼ in (6mm) longer than specified. Tighter tolerances may be specified, e.g. for bevelled pipe.
- **Straightness**. All finished pipe shall be reasonably straight. For metal-arc welded pipe maximum deviation from straight = ⅛ in (3.2mm) in 10 ft (3 m).



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DURBIN METAL INDUSTRIES

# ASTM Pipe

## Pipe Specifications - ASTM A312/A312M



### Seamless and welded austenitic stainless steel pipes

This specification covers austenitic steel pipe intended for high temperature and general corrosive service. H grades in the chemical composition table are specifically for high temperature service.

### Manufacture

- **Manufacture**. In order to comply with this specification welded pipe must be manufactured by an automatic welding process using no filler metal, or it must be a seamless pipe. If a welded pipe has a nominal pipe size greater than 14 then it may be constructed from two longitudinal sections, and hence have two longitudinal welds. The pipe may be either hot finished or cold finished.

### Finish and repair

- **Finish**. The surface of the pipe must be clean and free of scale and contaminating iron particles. It can be bright annealed but may be pickled, blasted or can be passivated.
- **Repair by welding**. Permitted on ≤20% of the weld seam length of welded pipe if ≥NPS 6 and having a wall thickness ≥0.200 in (mm). Tungsten-arc welding process is used for repairs, with filler metal to a grade as specified in A 312 (not repeated here). Weld repairs must be identified on the pipe and in test certificate.

### Tensile requirements

| Grade | UNS | Tensile Strength min | | Yield Strength min | | Elongation in 2 in (50mm) or 4D min | |
|---|---|---|---|---|---|---|---|
| | | ksi | MPa | ksi | MPa | Longit % | Trans % |
| **All** | **All** | **75** | **515** | **30** | **205** | **35** | **25** |
| **All** = All grades listed in the chemical composition table except those listed below | | | | | | | |
| TP304L | S30403 | 70 | 485 | 25 | 170 | 35 | 25 |
| TP304N | S30451 | 80 | 550 | 35 | 240 | 35 | 25 |
| | S31272 | 65 | 450 | 29 | 200 | 35 | 25 |
| TP316L | S31603 | 70 | 485 | 25 | 170 | 35 | 25 |
| TP316N | S31651 | 80 | 550 | 35 | 240 | 35 | 25 |
| TP321 | S32100 | 75(70[1]) | 515(485[1]) | 30(25[1]) | 205(170[1]) | 35 | 25 |
| TP321H | S32109 | 75(70[1]) | 515(485[1]) | 30(25[1]) | 205(170[1]) | 35 | 25 |

Notes
1 Values for wall thickness >⅜ in (9.5mm)



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DURBIN METAL INDUSTRIES

# ASTM Pipe

## Pipe Specifications - ASTM A358/A358M



### Electric-fusion-welded austenitic chromium-nickel alloy steel pipe for high-temperature service

This specification covers electric-fusion-welded austenitic chromium-nickel alloy steel pipe suitable for high temperature and general corrosive service.

### Tolerances

- **Tolerances**. ASTM A530 requirements, apply unless otherwise stated below.
- **Outside Diameter**. ±0.5% of specified OD.
- **Wall Thickness**. Minimum wall thickness shall be ≤0.01 in (0.3mm) under nominal thickness.
- **Out-of-Roundness**. Major and minor outside diameters to differ by less than 1%.
- **Alignment**. The gap between the pipe and a 10 ft (3 m) straight edge shall ≤⅛ in (3mm)

### Finish and repair

- **Appearance**. Finished pipe will have a workmanlike finish.
- **Plate Defect Repair by Grinding**. Defects may be repaired by machining or grinding, provided the wall thickness is not reduced below the minimum.
- **Plate Defect Repair by Welding**. Defects which give unsatisfactory wall thickens can be repaired by welding if the purchaser agrees. Repair welds must be suitably NDT examined or lengths pressure tested if repair depth is >¼ wall thickness.
- **Finish**. Pipe will be free of scale and contaminating iron particles. Bright annealed pipe need not be pickled, or blasted. The purchaser may request a passivating treatment.