



DIMENSIONAL TOLERANCES

OUTSIDE DIAMETER ***

| | |
|-------------------------------|--------|
| When O.D. is 24" or less----- | ± .06" |
| When O.D. is over 24"----- | ± .12" |

INSIDE DIAMETER

SLIP-ON & LAP JOINT

| | |
|------------------------|--------------|
| 10" and smaller----- | + .04" - .0" |
| 12" to 24"----- | + .06" - .0" |
| 26" and larger***----- | + .09" - .0" |

WELD NECK, LONG WELD NECK and SOCKET WELD (Through BORE)

| | |
|----------------------|---------------|
| 10" and smaller----- | ± .04" |
| 12" to 18"----- | ± .06" |
| 20" and larger----- | + .12" - .06" |

DIAMETER OF CONTACT FACE

| | |
|---|---------------|
| 1/16" Raised Face----- | ± .04" |
| 1/4" Raised Face, Tongue and Groove, Male or Female----- | ± .02" |
| Ring Joint Face OD----- | + .020" - .0" |

DIAMETER OF COUNTERBORE

THREADED

| | |
|----------------------|--------------|
| 10" and smaller----- | + .04" - .0" |
| 12" and larger----- | + .06" - .0" |

SOCKET WELD BORE

| | |
|---------------------|--------------|
| 3" and smaller----- | ± .01" |
| 3" over***----- | + .03" - .0" |

FLANGE THICKNESS

| | |
|----------------------|--------------|
| 18" and smaller----- | + .12" - .0" |
| 18" to 24"----- | + .20" - .0" |

HUB

| | |
|--------------------------|--------|
| SO/ SW/ LJ/ THR*** ----- | ± .06" |
|--------------------------|--------|

WELDING NECK

Outside Diameter of hub at point of Weld

| | |
|---------------------|---------------|
| 5" and smaller----- | + .08" - .04" |
| 6" and larger----- | + .16" - .04" |

LONG WELDING NECK (O.D. of Neck)

| | |
|----------------|--------------|
| All Sizes----- | + .12" - .0" |
|----------------|--------------|

DRILLING

| | |
|---|--------|
| Bolt Circle Diameter----- | ± .06" |
| Bolt Hole Spacing----- | ± .03" |
| Concentricity of Bolt Circle and Facing | |
| NPS ≤ 2½ | ± .03" |
| NPS ≥ 3 | ± .06" |

OVERALL HEIGHT

THREADED, SLIP-ON, LAP-JOINT***

| | |
|----------------|--------|
| All Sizes----- | ± .06" |
|----------------|--------|

WELDING NECK

| | |
|---------------------|---------------|
| 4" and smaller----- | ± .06" |
| 5" to 10"----- | + .06" - .12" |
| 12" to 24"----- | + .12" - .20" |

DEPTH OF SOCKET WELD***

| | |
|-----------------|--------------|
| All sizes ----- | + .03" - .0" |
|-----------------|--------------|

26" and LARGER

FACINGS

| | |
|--------------------------------------|--------|
| Outside diameter of Raised Face----- | ± .08" |
| .06" Raised Face Height----- | ± .02" |
| .25" Raised Face Height----- | ± .08" |

NOTES

Thickness of Hub at Point of Weld:

Not less than 87½ % of the nominal thickness of the pipe to which the flange is to be attached.

Ring Joint Facing:

Diameter of raised portion minimum. Depth of groove should not exceed minimum flange thickness; (also refer GDL-QA-031)

Tongue and Groove and Small Male and All Female:

The gasket contact surface finish shall be 125µin. or better.

*** IN-HOUSE TOLERANCES, added for completeness



DIMENSIONS OF PIPE

| NOM PIPE SIZE | PIPE OD. | WALL I.D. | SCH 5S | SCH 10S | SCH 10 | SCH 20 | SCH 30 | STD & SCH 40S | SCH 40 | SCH 60 | XH & SCH 80S | SCH 80 | SCH 100 | SCH 120 | SCH 140 | SCH 160 | XX HVY | |
|---------------|----------|-----------|--------|---------|--------|--------|--------|---------------|--------|--------|--------------|--------|---------|---------|---------|---------|--------|-------|
| 1/2" | .840 | WALL | .065 | .083 | .083 | | | .109 | .109 | | .147 | .147 | | | | .188 | .294 | |
| | | I.D. | .710 | .674 | .674 | | | .622 | .622 | | .546 | .546 | | | | | .464 | .252 |
| 3/4" | 1.05 | WALL | .065 | .083 | .083 | | | .113 | .113 | | .154 | .154 | | | | .219 | .308 | |
| | | I.D. | .920 | .884 | .884 | | | .824 | .824 | | .742 | .742 | | | | | .612 | .434 |
| 1" | 1.315 | WALL | .065 | .109 | .109 | | | .133 | .133 | | .179 | .179 | | | | .250 | .358 | |
| | | I.D. | 1.185 | 1.097 | 1.097 | | | 1.049 | 1.049 | | .957 | .957 | | | | | .815 | .599 |
| 1 1/4" | 1.66 | WALL | .065 | .109 | .109 | | | .140 | .140 | | .191 | .191 | | | | .250 | .382 | |
| | | I.D. | 1.530 | 1.442 | 1.442 | | | 1.380 | 1.380 | | 1.278 | 1.278 | | | | | 1.160 | .896 |
| 1 1/2" | 1.90 | WALL | .065 | .109 | .109 | | | .145 | .145 | | .200 | .200 | | | | .281 | .400 | |
| | | I.D. | 1.770 | 1.682 | 1.682 | | | 1.610 | 1.610 | | 1.500 | 1.500 | | | | | 1.338 | 1.100 |
| 2" | 2.375 | WALL | .065 | .109 | .109 | | | .154 | .154 | | .218 | .218 | | | | .344 | .436 | |
| | | I.D. | 2.245 | 2.157 | 2.157 | | | 2.067 | 2.067 | | 1.939 | 1.939 | | | | | 1.687 | 1.503 |
| 2 1/2" | 2.875 | WALL | .083 | .120 | .120 | | | .203 | .203 | | .276 | .276 | | | | .375 | .552 | |
| | | I.D. | 2.709 | 2.635 | 2.635 | | | 2.469 | 2.469 | | 2.323 | 2.323 | | | | | 2.125 | 1.771 |
| 3" | 3.50 | WALL | .083 | .120 | .120 | | | .216 | .216 | | .300 | .300 | | | | .438 | .600 | |
| | | I.D. | 3.334 | 3.260 | 3.260 | | | 3.068 | 3.068 | | 2.900 | 2.900 | | | | | 2.624 | 2.300 |
| 3 1/2" | 4.00 | WALL | .083 | .120 | .120 | | | .226 | .226 | | .318 | .318 | | | | | | .636 |
| | | I.D. | 3.834 | 3.760 | 3.760 | | | 3.548 | 3.548 | | 3.364 | 3.364 | | | | | | 2.728 |
| 4" | 4.50 | WALL | .083 | .120 | .120 | | | .237 | .237 | | .337 | .337 | | .438 | | .531 | .674 | |
| | | I.D. | 4.334 | 4.260 | 4.260 | | | 4.026 | 4.026 | | 3.826 | 3.826 | | 3.624 | | | 3.438 | 3.152 |
| 5" | 5.563 | WALL | .109 | .134 | .134 | | | .258 | .258 | | .375 | .375 | | .500 | | .625 | .750 | |
| | | I.D. | 5.345 | 5.295 | 5.295 | | | 5.047 | 5.047 | | 4.813 | 4.813 | | 4.563 | | | 4.313 | 4.063 |
| 6" | 6.625 | WALL | .109 | .134 | .134 | | | .280 | .280 | | .432 | .432 | | .562 | | .719 | .864 | |
| | | I.D. | 6.407 | 6.357 | 6.357 | | | 6.065 | 6.065 | | 5.761 | 5.761 | | 5.501 | | | 5.187 | 4.897 |
| 8" | 8.625 | WALL | .109 | .148 | .148 | .250 | .277 | .322 | .322 | .406 | .500 | .500 | .594 | .719 | .812 | .906 | .875 | |
| | | I.D. | 8.407 | 8.329 | 8.329 | 8.125 | 8.071 | 7.981 | 7.981 | 7.813 | 7.625 | 7.625 | 7.437 | 7.187 | 7.001 | 6.813 | 6.875 | |
| 10" | 10.75 | WALL | .134 | .165 | .165 | .250 | .307 | .365 | .365 | .500 | .500 | .594 | .719 | .844 | 1.000 | 1.125 | 1.000 | |
| | | I.D. | 10.482 | 10.420 | 10.420 | 10.250 | 10.136 | 10.020 | 10.020 | 9.750 | 9.750 | 9.562 | 9.312 | 9.062 | 8.750 | 8.500 | 8.750 | |
| 12" | 12.75 | WALL | .156 | .180 | .180 | .250 | .330 | .375 | .406 | .562 | .500 | .688 | .844 | 1.000 | 1.125 | 1.312 | 1.000 | |
| | | I.D. | 12.438 | 12.390 | 12.390 | 12.250 | 12.090 | 12.000 | 11.938 | 11.626 | 11.750 | 11.374 | 11.062 | 10.750 | 10.500 | 10.126 | 10.750 | |
| 14" | 14.00 | WALL | .156 | .188 | .250 | .312 | .375 | .375 | .438 | .594 | .500 | .750 | .938 | 1.094 | 1.250 | 1.406 | | |
| | | I.D. | 13.688 | 13.624 | 13.500 | 13.376 | 13.250 | 13.250 | 13.124 | 12.812 | 13.000 | 12.500 | 12.124 | 11.812 | 11.500 | 11.188 | | |
| 16" | 16.00 | WALL | .165 | .188 | .250 | .312 | .375 | .375 | .500 | .656 | .500 | .844 | 1.031 | 1.219 | 1.438 | 1.594 | | |
| | | I.D. | 15.670 | 15.624 | 15.500 | 15.376 | 15.250 | 15.250 | 15.000 | 14.688 | 15.000 | 14.312 | 13.938 | 13.562 | 13.124 | 12.812 | | |
| 18" | 18.00 | WALL | .165 | .188 | .250 | .312 | .438 | .375 | .562 | .750 | .500 | .938 | 1.156 | 1.375 | 1.562 | 1.781 | | |
| | | I.D. | 17.670 | 17.624 | 17.500 | 17.376 | 17.124 | 17.250 | 16.876 | 16.500 | 17.000 | 16.124 | 15.688 | 15.250 | 14.876 | 14.438 | | |
| 20" | 20.00 | WALL | .188 | .218 | .250 | .375 | .500 | .375 | .594 | .812 | .500 | 1.031 | 1.281 | 1.500 | 1.750 | 1.969 | | |
| | | I.D. | 19.624 | 19.564 | 19.500 | 19.250 | 19.000 | 19.250 | 18.812 | 18.376 | 19.000 | 17.938 | 17.438 | 17.000 | 16.500 | 16.062 | | |
| 22" | 22.00 | WALL | .188 | .218 | .250 | | | .375 | | | .500 | | | | | | | |
| | | I.D. | 21.624 | 21.564 | 21.500 | | | 21.250 | | | 21.000 | | | | | | | |
| 24" | 24.00 | WALL | .218 | .250 | .250 | .375 | .562 | .375 | .688 | .969 | .500 | 1.219 | 1.531 | 1.812 | 2.062 | 2.344 | | |
| | | I.D. | 23.564 | 23.500 | 23.500 | 23.250 | 22.876 | 23.250 | 22.624 | 22.062 | 23.000 | 21.562 | 20.938 | 20.376 | 19.876 | 19.312 | | |
| 26" | 26.00 | WALL | | | | | | .375 | | | .500 | | | | | | | |
| | | I.D. | | | | | | 25.250 | | | 25.000 | | | | | | | |
| 30" | 30.00 | WALL | .250 | .312 | .312 | .500 | .625 | .375 | | | .500 | | | | | | | |
| | | I.D. | 29.500 | 29.376 | 29.376 | 29.000 | 28.750 | 29.250 | | | 29.000 | | | | | | | |
| 36" | 36.00 | WALL | | | .312 | .500 | .625 | .375 | .750 | | .500 | | | | | | | |
| | | I.D. | | | 35.376 | 35.000 | 34.750 | 35.250 | 34.500 | | 35.000 | | | | | | | |
| 40" | 40.00 | WALL | | | | | | .375 | | | .500 | | | | | | | |
| | | I.D. | | | | | | 39.250 | | | 39.000 | | | | | | | |
| 42" | 42.00 | WALL | | | | | | .375 | | | .500 | | | | | | | |
| | | I.D. | | | | | | 41.250 | | | 41.000 | | | | | | | |