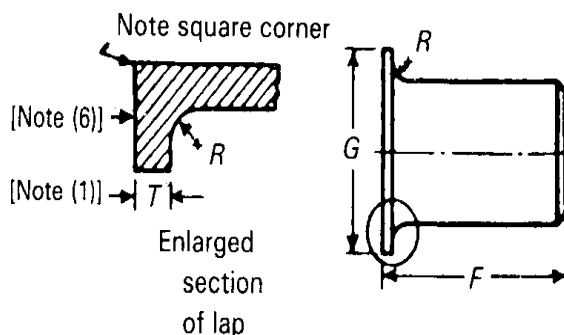


# ASME B 16.9

## Lap Joint Stub Ends

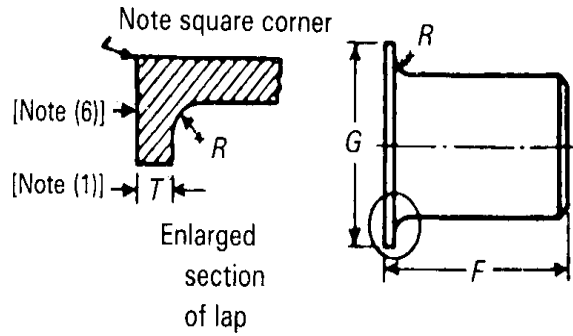


- Notes :**
- (1) The minimum lap thickness T shall not be less than nominal pipe wall thickness.
  - (2) When used with high pressure flanges, it may be necessary to increase the length of stub ends in NPS 12 and larger. Such increases in length shall be a matter of agreement between manufacturer and purchaser.
  - (3) When special facings such as tongue and groove, male and female, etc., are employed, additional lap thickness must be provided and such additional thickness shall be in addition to ( not included in ) the basic length F.
  - (4) These dimensions conform to the radius established for lap joint flanges in ANSI B 16.5, Pipe Flanges and Flanged Fittings.
  - (5) These dimensions conform to standard machined facings shown in ANSI B 16.5. The back face of the lap shall be machined to conform to the surface on which it seats. Where ring joint facings are to be applied, use dimensions as given in ANSI B 16.5.

| Nominal Pipe Size (NPS) | Outside Dia. Pipe | Wall thickness of Pipe Schedule / mm |      |      |       | Length (1) , (2) F | Radius of Fillet (3) R |             | Diameter of Lap (4) G |             | Outside Diameter of Barrel |        |
|-------------------------|-------------------|--------------------------------------|------|------|-------|--------------------|------------------------|-------------|-----------------------|-------------|----------------------------|--------|
|                         |                   | 5 S                                  | 10 S | 40 S | 80 S  |                    | Min.                   | Nom. & Max. | Min.                  | Nom. & Max. | Min.                       | Max.   |
| Inch                    | mm                |                                      |      |      |       | mm                 | mm                     | mm          | mm                    | mm          | mm                         |        |
| 1/2"                    | 21.3              | 1.65                                 | 2.11 | 2.77 | 3.73  | 51 / 76            | 2                      | 3           | 34                    | 35          | 20.55                      | 22.76  |
| 3/4"                    | 26.7              | 1.65                                 | 2.11 | 2.87 | 3.91  | 51 / 76            | 2                      | 3           | 42                    | 43          | 25.88                      | 28.09  |
| 1"                      | 33.4              | 1.65                                 | 2.77 | 3.38 | 4.55  | 51 / 102           | 2                      | 3           | 50                    | 51          | 32.61                      | 34.95  |
| 1.1/4"                  | 42.2              | 1.65                                 | 2.77 | 3.56 | 4.85  | 51 / 102           | 4                      | 5           | 63                    | 64          | 41.38                      | 43.59  |
| 1.1/2"                  | 48.3              | 1.65                                 | 2.77 | 3.68 | 5.08  | 51 / 102           | 5                      | 6           | 72                    | 73          | 47.47                      | 49.94  |
| 2"                      | 60.3              | 1.65                                 | 2.77 | 3.91 | 5.54  | 64 / 152           | 7                      | 8           | 91                    | 92          | 59.54                      | 62.38  |
| 2.1/2"                  | 73.0              | 2.11                                 | 3.05 | 5.16 | 7.01  | 64 / 152           | 7                      | 8           | 104                   | 105         | 72.24                      | 75.34  |
| 3"                      | 88.9              | 2.11                                 | 3.05 | 5.49 | 7.62  | 64 / 152           | 9                      | 10          | 126                   | 127         | 88.11                      | 91.34  |
| 3.1/2"                  | 101.6             | 2.11                                 | 3.05 | 5.74 | 8.08  | 76 / 152           | 9                      | 10          | 139                   | 140         | 100.81                     | 104.04 |
| 4"                      | 114.3             | 2.11                                 | 3.05 | 6.02 | 8.56  | 76 / 152           | 9                      | 11          | 156                   | 157         | 113.51                     | 116.66 |
| 5"                      | 141.3             | 2.77                                 | 3.40 | 6.55 | 9.53  | 76 / 203           | 9                      | 11          | 185                   | 186         | 140.51                     | 144.35 |
| 6"                      | 168.3             | 2.77                                 | 3.40 | 7.11 | 10.97 | 89 / 203           | 11                     | 13          | 215                   | 216         | 167.49                     | 171.27 |
| 8"                      | 219.1             | 2.77                                 | 3.76 | 8.18 | 12.70 | 102 / 203          | 11                     | 13          | 269                   | 270         | 218.29                     | 222.07 |
| 10"                     | 273.0             | 3.40                                 | 4.19 | 9.27 | 12.70 | 127 / 254          | 11                     | 13          | 322                   | 324         | 272.26                     | 277.19 |
| 12"                     | 323.9             | 3.96                                 | 4.57 | 9.53 | 12.70 | 152 / 254          | 11                     | 13          | 379                   | 381         | 323.06                     | 327.99 |
| 14"                     | 355.6             | 3.96                                 | 4.78 |      |       | 152 / 305          | 11                     | 13          | 411                   | 413         | 354.81                     | 359.92 |
| 16"                     | 406.4             | 4.19                                 | 4.78 |      |       | 152 / 305          | 11                     | 13          | 468                   | 470         | 405.61                     | 410.97 |
| 18"                     | 457.0             | 4.19                                 | 4.78 |      |       | 152 / 305          | 11                     | 13          | 531                   | 533         | 456.41                     | 462.03 |
| 20"                     | 508.0             | 4.78                                 | 5.54 |      |       | 152 / 305          | 11                     | 13          | 582                   | 584         | 507.21                     | 514.10 |
| 22"                     | 559.0             | 4.78                                 | 5.54 |      |       | 152 / 305          | 11                     | 13          | 690                   | 692         | 558.01                     | 564.90 |
| 24"                     | 610.0             | 5.54                                 | 6.35 |      |       | 152 / 305          |                        |             |                       |             | 608.81                     | 615.70 |

# MSS - SP43

## Lap Joint Stub Ends



- Notes:
- (A) = Minimum lap thickness shall not be less than nominal thickness
  - (B) = Contact faces of stub ends shall have a modified spiral or concentric serration.
  - (1) = See Table Tolerances for minimum and maximum dimensions of outside diameter at bevel.
  - (2) = These lengths and radii for use with Schedule 40S or thinner pipe.

| Nominal Pipe size (NPS) | Outside Diameter Pipe (1) | Wall thickness of Pipe Schedule / mm |      |      | Length F (2) | Diameter of Lap G (2) |             | Radius of Fillet (2) |               |        |
|-------------------------|---------------------------|--------------------------------------|------|------|--------------|-----------------------|-------------|----------------------|---------------|--------|
|                         |                           | 5 S                                  | 10 S | 40 S |              | Min.                  | Nom. & Max. | A Min.               | A Nom. & Max. | B Max. |
| Inch                    | mm                        |                                      |      |      | mm           | mm                    | mm          | mm                   | mm            | mm     |
| 1/2"                    | 21.3                      | 1.65                                 | 2.11 | 2.77 | 51           | 34                    | 35          | 2                    | 3             | 0.8    |
| 3/4"                    | 26.7                      | 1.65                                 | 2.11 | 2.87 | 51           | 42                    | 43          | 2                    | 3             | 0.8    |
| 1"                      | 33.4                      | 1.65                                 | 2.77 | 3.38 | 51           | 50                    | 51          | 2                    | 3             | 0.8    |
| 1.1/4"                  | 42.2                      | 1.65                                 | 2.77 | 3.56 | 51           | 63                    | 64          | 4                    | 5             | 0.8    |
| 1.1/2"                  | 48.3                      | 1.65                                 | 2.77 | 3.68 | 51           | 72                    | 73          | 5                    | 6             | 0.8    |
| 2"                      | 60.3                      | 1.65                                 | 2.77 | 3.91 | 64           | 91                    | 92          | 7                    | 8             | 0.8    |
| 2.1/2"                  | 73.0                      | 2.11                                 | 3.05 | 5.16 | 64           | 104                   | 105         | 7                    | 8             | 0.8    |
| 3"                      | 88.9                      | 2.11                                 | 3.05 | 5.49 | 64           | 126                   | 127         | 9                    | 10            | 0.8    |
| 3.1/2"                  | 101.6                     | 2.11                                 | 3.05 | 5.74 | 76           | 139                   | 140         | 9                    | 10            | 0.8    |
| 4"                      | 114.3                     | 2.11                                 | 3.05 | 6.02 | 76           | 156                   | 157.6       | 9                    | 11            | 0.8    |
| 5"                      | 141.3                     | 2.77                                 | 3.40 | 6.55 | 76           | 185                   | 186         | 9                    | 11            | 1.6    |
| 6"                      | 168.3                     | 2.77                                 | 3.40 | 7.11 | 89           | 215                   | 216         | 11                   | 13            | 1.6    |
| 8"                      | 219.1                     | 2.77                                 | 3.76 | 8.18 | 102          | 269                   | 270         | 11                   | 13            | 1.6    |
| 10"                     | 273.0                     | 3.40                                 | 4.19 | 9.27 | 127          | 322                   | 324         | 11                   | 13            | 1.6    |
| 12"                     | 323.9                     | 3.96                                 | 4.57 | 9.53 | 152          | 379                   | 381         | 11                   | 13            | 1.6    |
| 14"                     | 355.6                     | 3.96                                 | 4.78 |      | 152          | 411                   | 413         | 11                   | 13            | 1.6    |
| 16"                     | 406.4                     | 4.19                                 | 4.78 |      | 152          | 468                   | 470         | 11                   | 13            | 1.6    |
| 18"                     | 457.0                     | 4.19                                 | 4.78 |      | 152          | 531                   | 533         | 11                   | 13            | 1.6    |
| 20"                     | 508.0                     | 4.78                                 | 5.54 |      | 152          | 582                   | 584         | 11                   | 13            | 1.6    |
| 24"                     | 610.0                     | 5.54                                 | 6.35 |      | 152          | 690                   | 692         | 11                   | 13            | 1.6    |