



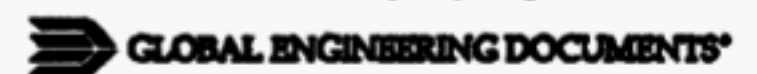
The American Society of  
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A N A M E R I C A N N A T I O N A L S T A N D A R D

# FACTORY-MADE WROUGHT BUTTWELDING FITTINGS

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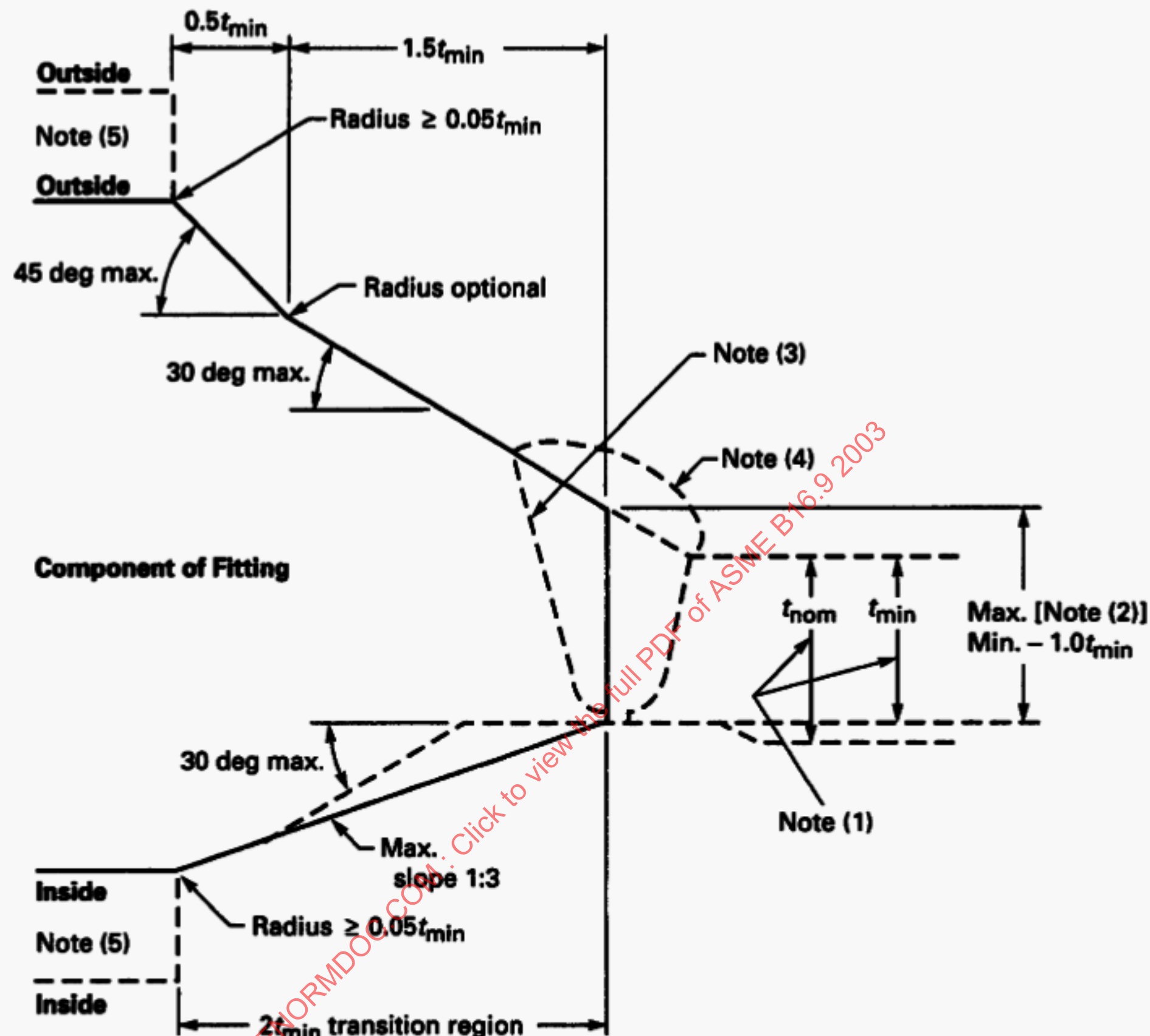












## NOTES:

- (1) The value of  $t_{min}$  is whichever of the following is applicable:
  - (a) the minimum ordered wall thickness of the pipe, to include pipe that is purchased to a nominal wall thickness with an undertolerance other than 12.5%;
  - (b) 0.875 times the nominal wall thickness of pipe ordered to a pipe schedule wall thickness that has an undertolerance of 12.5%.
- (2) The maximum thickness at the end of the component is:
  - (a) the greater of  $[t_{min} + 4 \text{ mm (0.16 in.)}]$  or  $1.15t_{min}$  when ordered on a minimum wall basis;
  - (b) the greater of  $[t_{min} + 4 \text{ mm (0.16 in.)}]$  or  $1.10t_{min}$  when ordered on a nominal wall basis.
- (3) Weld bevel shown is for illustration only.
- (4) The weld reinforcement permitted by applicable code may lie outside the maximum envelope.
- (5) Where transitions using maximum slope do not intersect the inside or outside surfaces within the transition region, as shown by phantom outline, maximum slopes shall be used. Alternatively, radii lying within the envelope may be used.

Fig. 1 Maximum Envelope for Welding End Transitions

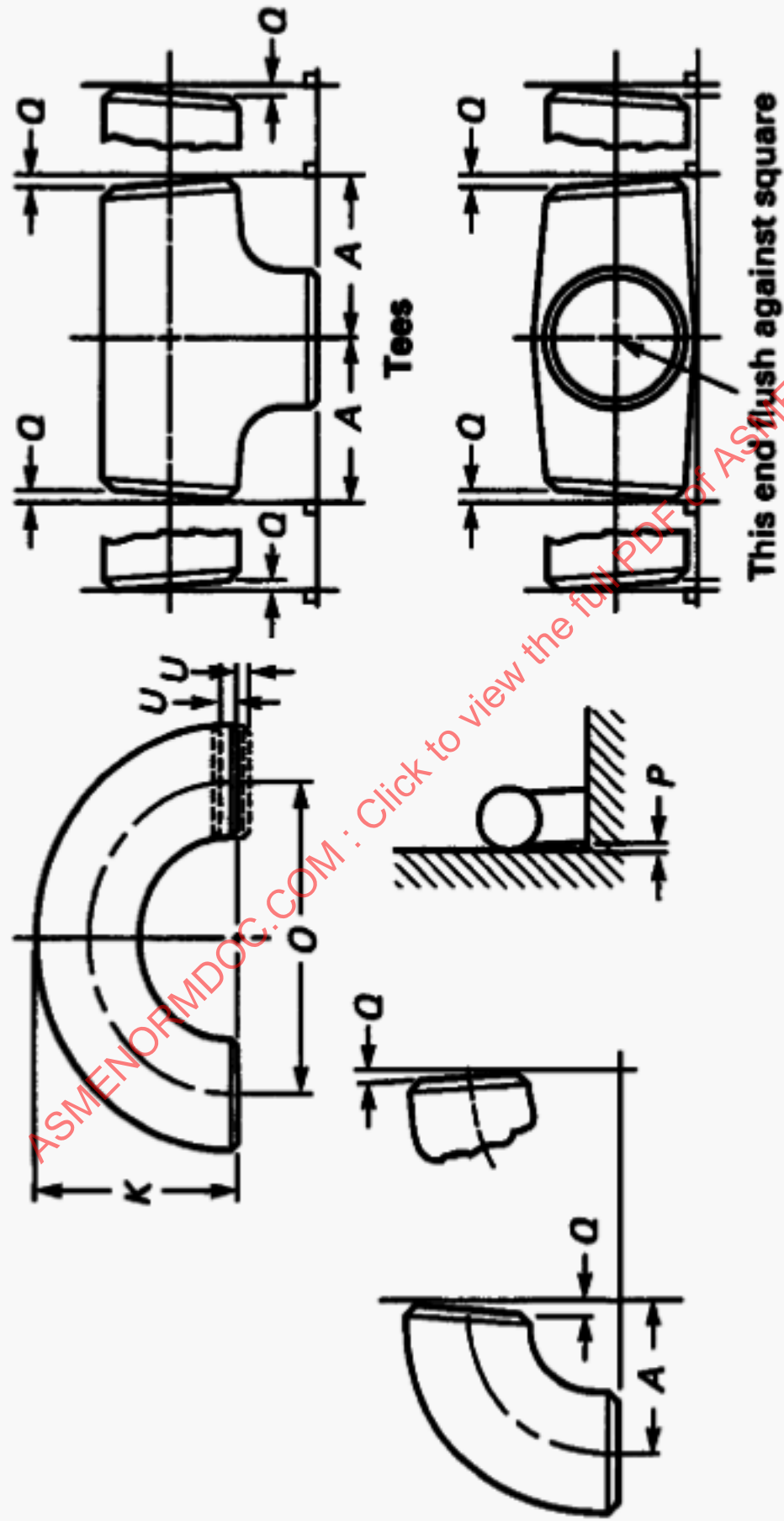
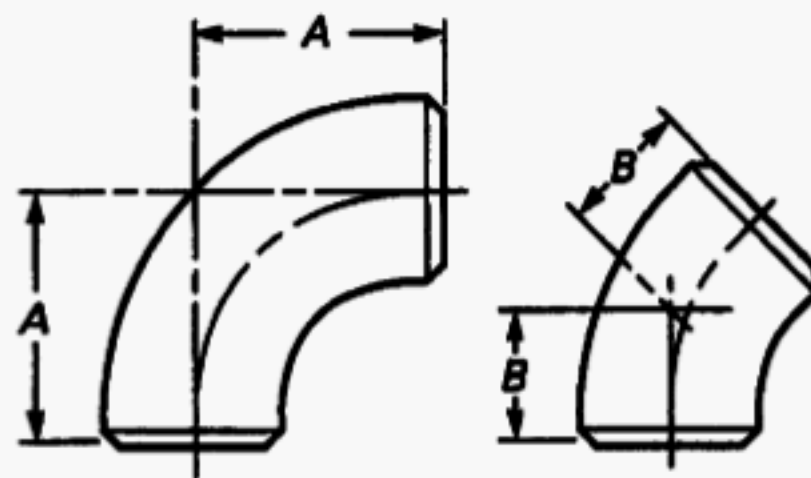


Table 2 Illustration



**Table 3 Dimensions of Long Radius Elbows**

| Nominal<br>Pipe<br>Size<br>(NPS) | Outside<br>Diameter<br>at Bevel | Center-to-End          |                        |
|----------------------------------|---------------------------------|------------------------|------------------------|
|                                  |                                 | 90 deg<br>Elbows,<br>A | 45 deg<br>Elbows,<br>B |
| 1/2                              | 21.3                            | 38                     | 16                     |
| 3/4                              | 26.7                            | 38                     | 19                     |
| 1                                | 33.4                            | 38                     | 22                     |
| 1 1/4                            | 42.2                            | 48                     | 25                     |
| 1 1/2                            | 48.3                            | 57                     | 29                     |
| 2                                | 60.3                            | 76                     | 35                     |
| 2 1/2                            | 73.0                            | 95                     | 44                     |
| 3                                | 88.9                            | 114                    | 51                     |
| 3 1/2                            | 101.6                           | 133                    | 57                     |
| 4                                | 114.3                           | 152                    | 64                     |
| 5                                | 141.3                           | 190                    | 79                     |
| 6                                | 168.3                           | 229                    | 95                     |
| 8                                | 219.1                           | 305                    | 127                    |
| 10                               | 273.0                           | 381                    | 159                    |
| 12                               | 323.8                           | 457                    | 190                    |
| 14                               | 355.6                           | 533                    | 222                    |
| 16                               | 406.4                           | 610                    | 254                    |
| 18                               | 457                             | 686                    | 286                    |
| 20                               | 508                             | 762                    | 318                    |
| 22                               | 559                             | 838                    | 343                    |
| 24                               | 610                             | 914                    | 381                    |
| 26                               | 660                             | 991                    | 406                    |
| 28                               | 711                             | 1 067                  | 438                    |
| 30                               | 762                             | 1 143                  | 470                    |
| 32                               | 813                             | 1 219                  | 502                    |
| 34                               | 864                             | 1 295                  | 533                    |
| 36                               | 914                             | 1 372                  | 565                    |
| 38                               | 965                             | 1 448                  | 600                    |
| 40                               | 1 016                           | 1 524                  | 632                    |
| 42                               | 1 067                           | 1 600                  | 660                    |
| 44                               | 1 118                           | 1 676                  | 695                    |
| 46                               | 1 168                           | 1 753                  | 727                    |
| 48                               | 1 219                           | 1 829                  | 759                    |

GENERAL NOTE: All dimensions are in millimeters.





















## MANDATORY APPENDIX I INCH TABLES

This Appendix provides tables of the standard inch dimensions for fittings.

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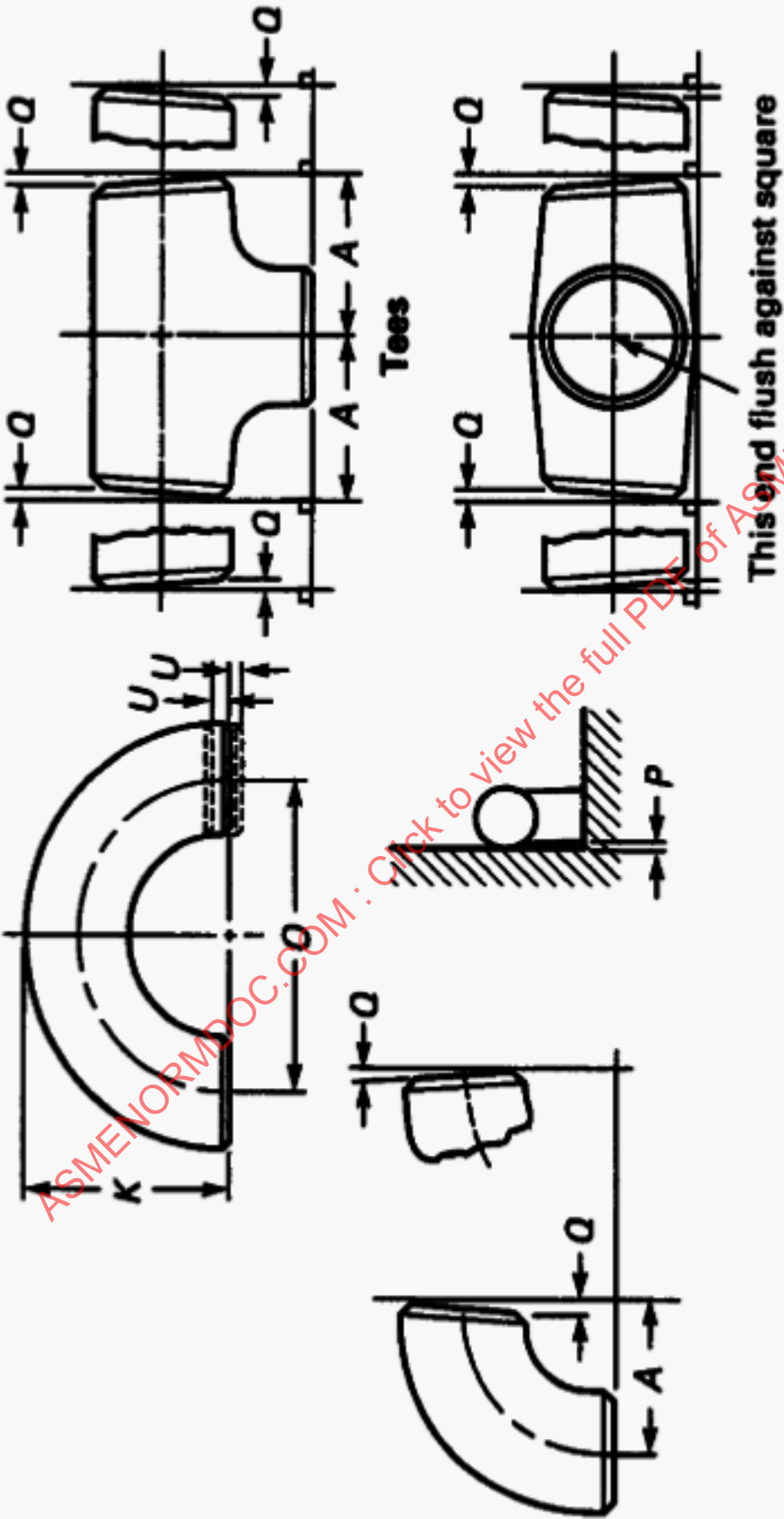


Table I1 Illustration

















