

MINIMUM LENGTH AND SPACING FOR WELDED BRANCH CONNECTIONS

Prepared by
Pipe Fabrication Institute Engineering Committee



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METRIC CONVERSIONS

The conversion of quantities between systems of units involves a determination of the number of significant digits to be retained. All conversions depend upon the intended precision of the original and are rounded to the appropriate accuracy.

Pipe sizes together with applicable wall thicknesses are not shown with metric equivalents.

The SI (metric) values were included with the customary U. S. values in this Standard are the rounded equivalents of the U. S. values and are for reference only.

Metric units were derived utilizing the following conversion factor:

Conversion	Factor
inches to millimeter	25.4

1. Scope

- 1.1 This Standard covers the minimum recommended branch connection length, branch connection distance from open end on run, and spacing dimensions of adjacent welded branch connections.

welded to a header may result in distortion of the header pipe. The elimination or reduction of such distortion is beyond the scope of this Standard. For some recommendations to reduce or eliminate such distortion refer to PFI standard ES-49.

2. Branch Connections without Saddles or Reinforcement

- 2.1 The branch connection spacings are based on practical access requirements for fit-up, welding and examination. Dimensions recommended for branch connections without saddles or reinforcements are as shown in Fig. 1 and Table 1.

- 5.2 All branch connection welds should be checked for compliance with the applicable Code requirements.

- 5.3 It is preferred that multiple branch openings of in-line branch connections be spaced so that their reinforcement zones do not overlap. If closer spacing is necessary, the reinforcement requirements of the applicable construction Code shall be met.

3. Branch Connections with Reinforcing Saddles or Rings

- 3.1 Dimensions recommended for branch connections with saddles or rings are as shown in Fig. 2 and Table 2.

- 5.4 Some configurations of integrally reinforced branch connections in combination with certain header sizes may present a problem in the radiographic examination of the attachment weld due to inability to meet the geometric unsharpness requirements of the construction Code.

4. Branch Connections – Integrally Reinforced

- 4.1 Dimensions recommended for integrally reinforced branch connections are as shown in Fig. 3 and Table 3. These dimensions do not apply to integrally reinforced insert butt weld branch connections.

- 5.5 Where attachments such as flanges, fittings, valves and pipe insulation are involved, minimum dimensions tabulated may have to be increased to allow for required clearances.

5. Design Considerations

- 5.1 Certain materials and combinations of branch connection and header pipe size and wall thickness together with multiple branch openings

- 5.6 In special cases, it may be possible to reduce the dimensions given in the tabulation. Such design should then be submitted to the fabricator for individual consideration, as close spacing may involve additional shop operations to prevent, or correct distortion.