

Access Holes, Bosses and Plugs for Radiographic Inspection of Pipe Welds

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 quantity 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 recommendations for access holes, bosses and plugs for the radiographic inspection of pipe butt welds where the radiographic source is located on the inside of the pipe.

2. Access Hole and Plug

- 2.1 For pipe wall thickness less than $\frac{5}{8}$ in. (16mm) thick, the location and design of the access hole and plug shall be as shown in Fig. 1 or Fig. 6.

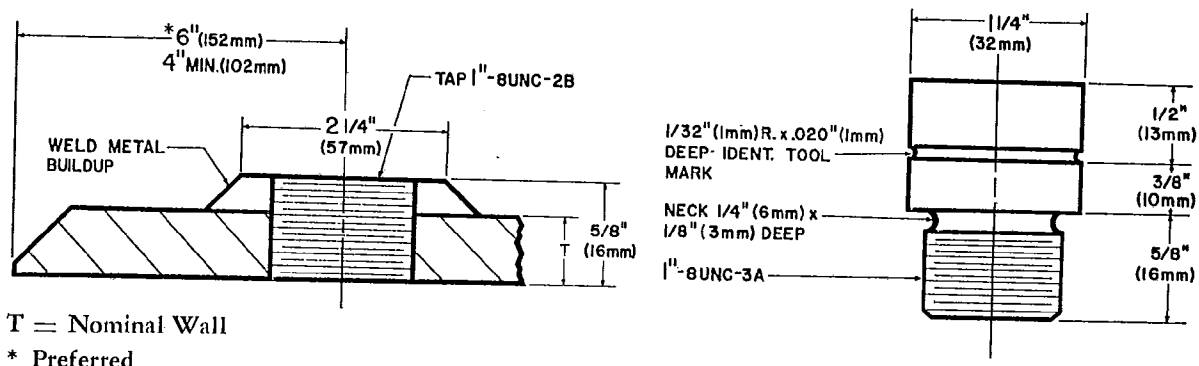


FIGURE 1

2.2 For pipe wall thickness $\frac{5}{8}$ in. (16 mm) through $1\frac{3}{8}$ in. (35 mm) the location and design of the access hole and plug shall be as shown in Fig. 2.

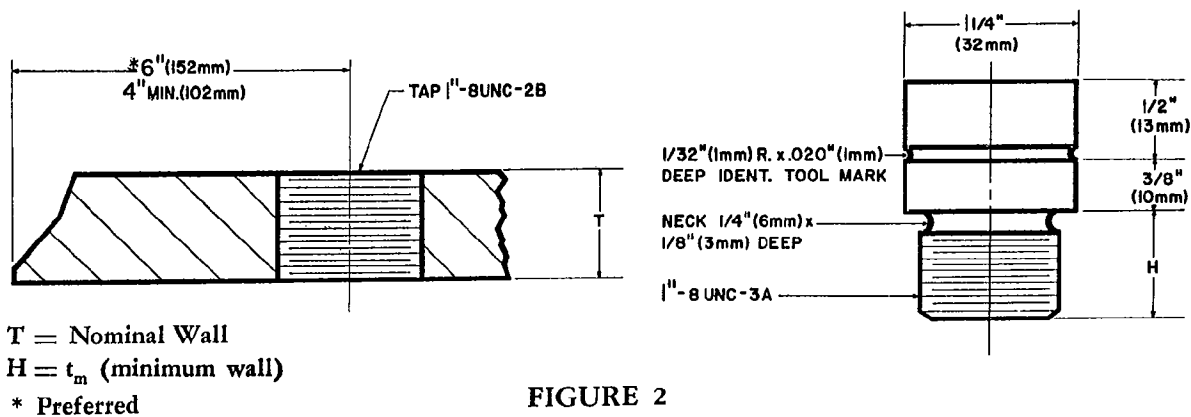


FIGURE 2

2.3 For pipe wall thickness over $1\frac{3}{8}$ in. (35 mm) through 3 in. (76 mm) the location and design of the access hole and plug shall be as shown in Fig. 3.

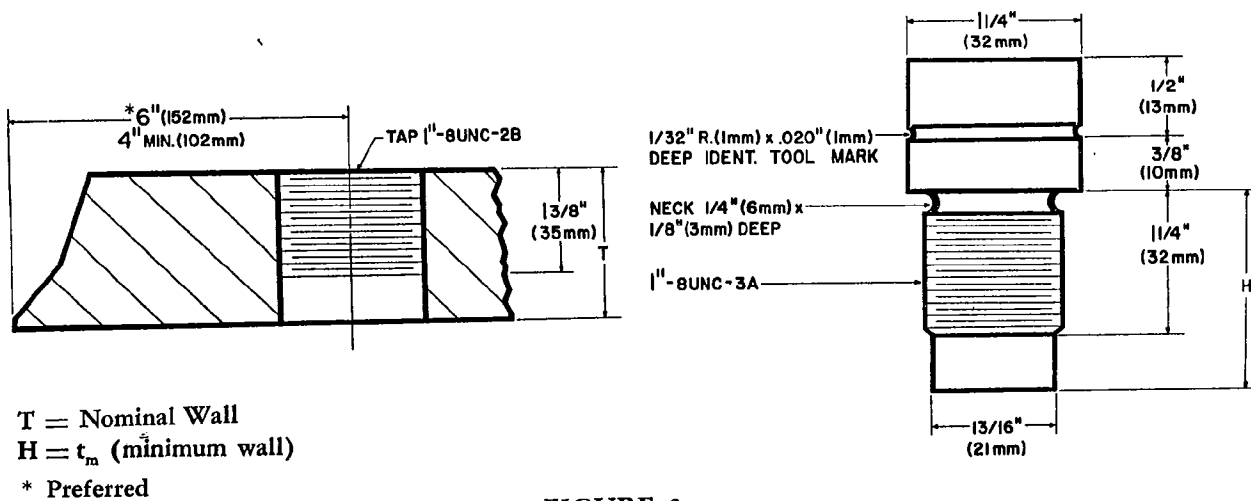


FIGURE 3

2.4 For pipe wall thickness over 3 in. (76 mm) through 5 in., (127 mm) the location and design of the access hole and plug shall be as shown in Fig. 4.

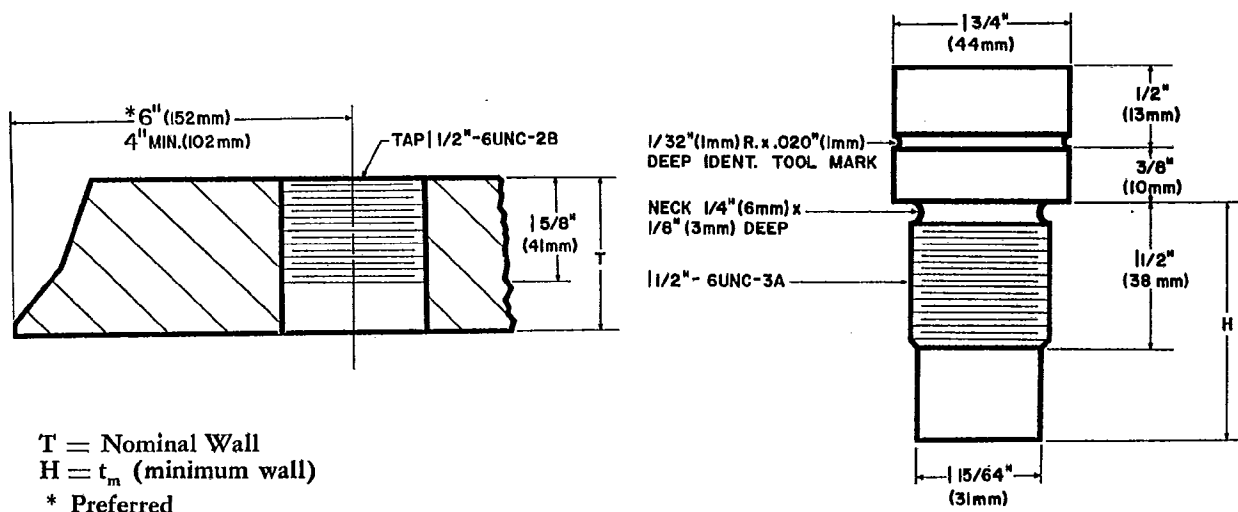


FIGURE 4

2.5 For pipe wall thickness over 5 in., (127 mm) the location and design of the access hole and plug shall be as shown in Fig. 5.

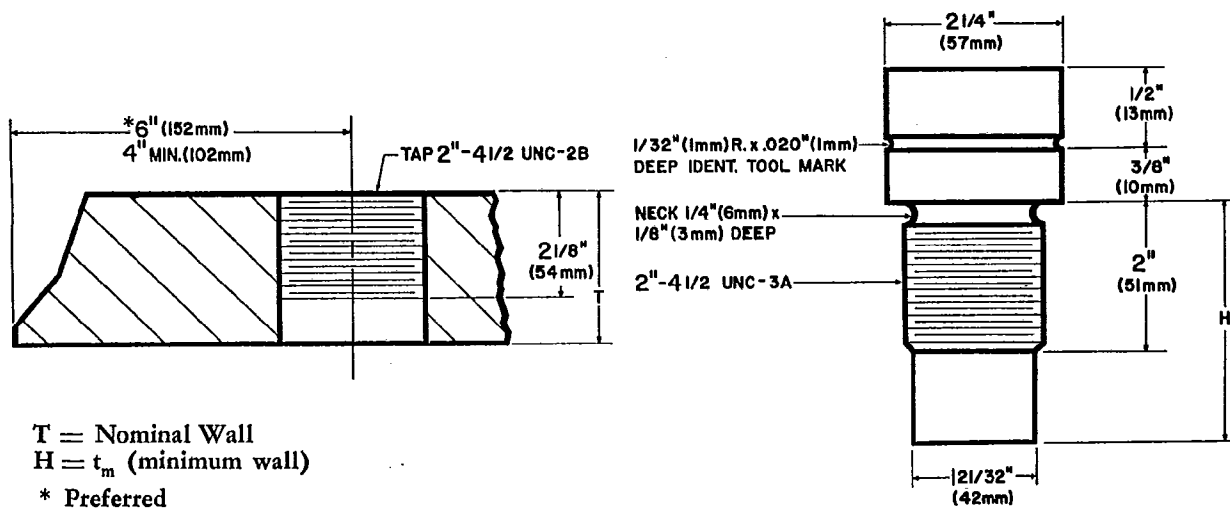
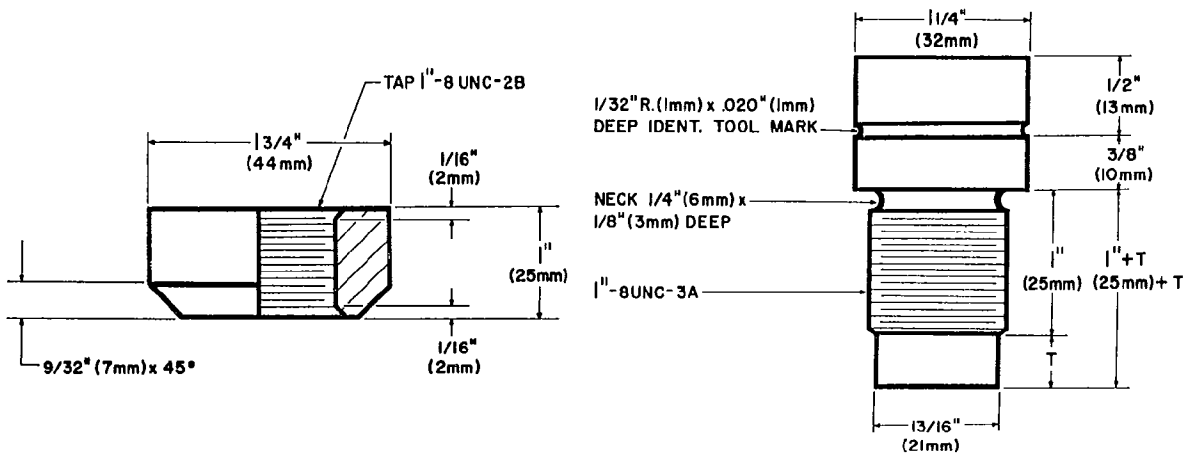


FIGURE 5

3. Radiographic Boss and Plug

3.1 Radiographic boss may be used in lieu of weld build-up (Fig. 1) for wall thicknesses $\frac{5}{8}$ " (16mm) or less to minimize or eliminate distortion and out-of-roundness. Attachment of the boss and the plug shall be as shown in Fig. 7.



T = Nominal Wall

FIGURE 6

4. Attachment of the Radiographic Boss and Seal Welding of Access Hole Plug

4.1 Attachment of the radiographic boss and seal welding of the access hole plug shall be as shown in Fig. 7.

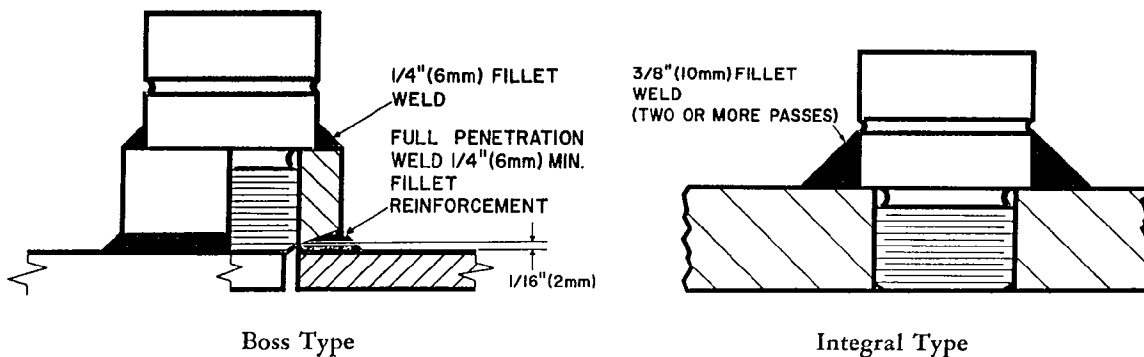


FIGURE 7

5. General Comments

- 5.1 Upon completion of radiography and acceptance of the weld, a plug shall be inserted to close the access hole and shall be seal welded to the pipe. Seal weld is not designed or intended to be a pressure retaining weld.
- 5.2 Plug and boss material selected from acceptable material specifications as listed in the applicable code and compatible with the pipe material shall be used. Proper consideration shall be given to the integrity of the plug and boss stock material.
- 5.3 Plug material designation shall be permanently marked on either the head or the side of each plug.
- 5.4 The boss material designation shall be permanently marked on the side of each boss.

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