

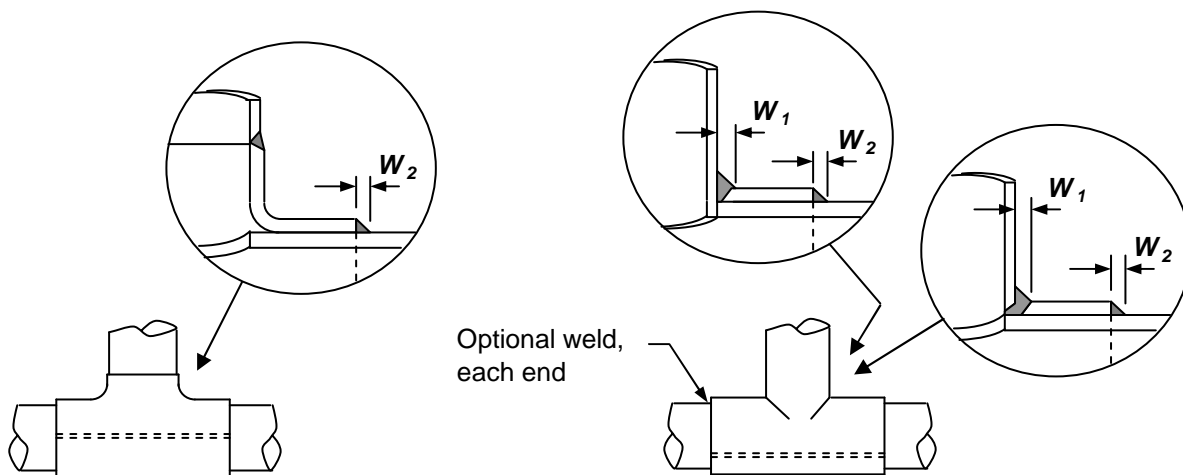
The referenced details below are NOT part of ASME B31.1.

Use only if shown on approved Engineering drawing or piping line class specification.

Possible reasons to use full encirclement include:

- 1.) Where a ring would be so large, it would extend wrap more than half way around the header pipe;
- 2.) When $D_h / T_h > 100$, then the header is likely to be unstable and needs additional thickness.

**Taken from ASME B31.4 Pipeline Transportation Systems
for Liquid Hydrocarbons and Other Liquids**



GENERAL NOTE:

Since fluid pressure is exerted on both sides of pipe metal under tee, the pipe metal does not provide reinforcement.

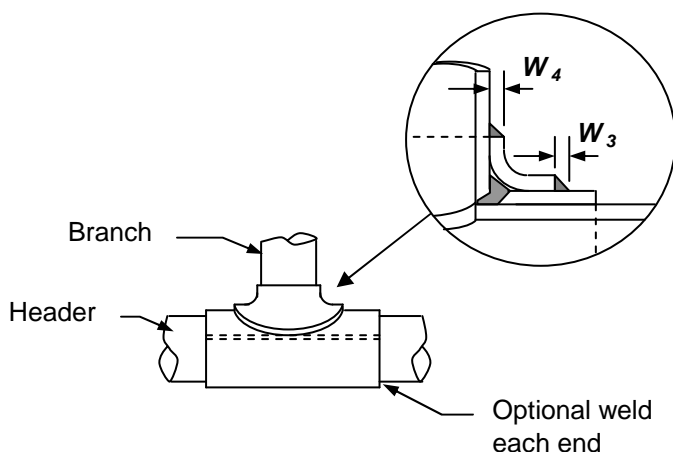
Tee Type

GENERAL NOTE:

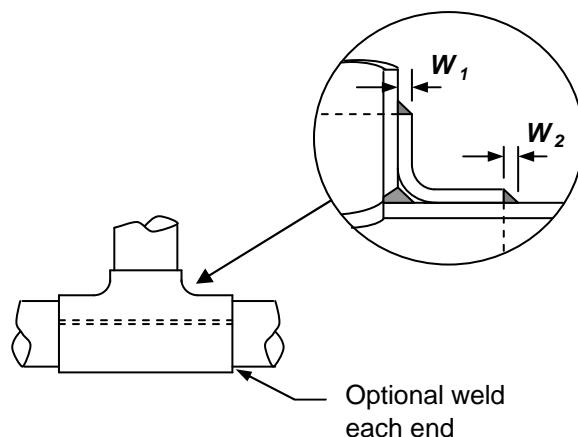
Provide hole in reinforcement to reveal leakage in buried welds and to provide venting during welding and heat treatment [see para. 404.3.1(d)(8)].

Not required for tee type.

Sleeve Type



Saddle and Sleeve Type



Saddle Type

GENERAL NOTE:

If the encircling member for tee, sleeve, or saddle type is thicker than the header and its ends are to be welded to the header, the ends shall be chamfered (at approximately 45 deg.) down to a thickness not in excess of the header thickness.

**Fig. 404.3.1(c)(1) Welding Details for Openings
With Complete Encirclement Types of Reinforcement**