Corner or tee joints may be made with fillet welds, provided the plates are properly supported independently of such welds, except that independent supports are not required for joints used for the purposes stated in TF-120.4.

(c) Figures TW-130.5-1 and TW-130.5-2 show several construction details that are not acceptable.

(d) Unless the sizing basis is given elsewhere in Section XII, the allowable load on fillet welds shall equal the product of the weld area (based on minimum leg dimension), the allowable stress value in tension of the material being welded, and a joint efficiency of 55%.

TW-130.7 NOZZLES IN TANKS CONSTRUCTED OF FERRITIC STEELS WITH TENSILE PROPERTIES ENHANCED BY HEAT TREATMENT

(a) All openings regardless of size shall meet the requirements for reinforcing, nozzle geometry, and nozzle attachments and shall conform to the details shown in Figures TW-130.7-1 and TW-130.7-2, or Figure TW-140.2-1, sketch (y-1) or sketch (z-1) when permitted by the provisions of TF-610.4(a), or as shown in Figure TW-140.2-1 when permitted by the provisions of TF-610.4(b).

(b) Except for nozzles covered in (c), all nozzles and reinforcing pads shall be made of material with the specified minimum yield strength within ±20% of that of the tank shell to which they are attached; however, pipe flanges, pipe, or communicating chambers may be of carbon, low, or high alloy steel welded to nozzle necks or the required material, provided

(1) the joint is a circumferential butt weld located not less than $\sqrt{R_{tn}}$ that, except for the nozzle type shown in Figure TW-130.7-1, sketch (f), is measured from the limit of reinforcement as defined in TD-640. For Figure TW-130.7-1, sketch (f), the $\sqrt{R_{tn}}$ is measured as shown in that figure. In these equations

$$R = \text{inside radius of the nozzle neck, except for Figure TW-130.7-1, sketch (f), where it is the inside radius of the vessel opening as shown in that figure, mm (in.)}$$

(2) the design of the nozzle neck at the joint is made on the basis of the allowable stress value of the weaker material.

(3) the slope of the nozzle neck does not exceed 3:1 for at least a distance of 1.5$t_{tn}$ from the center of the joint.

(4) the diameter of the nozzle neck does not exceed the limits given in TD-610.7 for openings designed to TD-100.5 and TD-600 through TD-670.

$tn$ shall not be less than the thickness required by TD-680.