B16 Case 24

To Allow an Alternate Welding Neck Flange Hub Profile To That Described in ASME B16.5 2020 Edition.

**Inquiry:** May an alternate welding neck flange hub profile to that described Figures 7 and 8 of the 2020 edition of ASME B16.5 be used?

**Reply:** In the opinion of the committee, yes, provided the profile is in accordance with the applicable profile shown in Figures 1 and 2. See ASME B16.5 Table 8 for the definitions of “Y” and “tf”.
Figure 1 Welding Neck Flange Hub and Welding End Profiles for Wall Thicknesses $t$
From 5 mm (0.19 in.) to 22 mm (0.88 in.)

Welding Ends (Welding Neck Flanges, No Backing Rings)

$A =$ nominal outside diameter of pipe
$B =$ nominal inside diameter of pipe
$t =$ nominal wall thickness of pipe
$x =$ diameter of hub (see dimensional tables)

GENERAL NOTES:
(a) See paras. 6.7, 6.8, and 7.4 for details and tolerances.
(b) See Figures 9 and 10 for additional details of welding ends.
(c) When the thickness of the hub at the bevel is greater than that of the pipe to which the flange is joined and the additional thickness is provided on the outside diameter, a taper weld having a slope not exceeding 1 to 3 may be used, or, alternatively, the greater outside diameter may be tapered at the same maximum slope or less, from a point on the welding bevel equal to the outside diameter of the mating pipe. Similarly, when the greater thickness is provided on the inside of the flange, it shall be taper-bored from the welding end at a slope not exceeding 1 to 3. When flanges covered by this Standard are intended for services with light wall, higher strength pipe, the thickness of the hub at the bevel may be greater than that of the pipe to which the flange is joined. Under these conditions, a single taper hub may be provided. The additional thickness may be provided on either inside or outside or partially on each side, but the total additional thickness shall not exceed one-half times the nominal wall thickness of intended mating pipe (see Figures 1 through 3).
(d) For welding end dimensions, refer to ASME B16.25.

NOTE: (1) For manufacturing purposes, the straight turn from the bevel is permitted to have a taper with the angle not exceeding 7 deg.
(2) The minimum hub height, H, shall be $2(Y-t)/3$. 

$H$ (Note 2)
Figure 2 Welding Neck Flange Hub and Welding End Profiles for Wall Thicknesses \( t \) Greater Than 22 mm (0.88 in.)

**Welding Ends (Welding Neck Flanges, No Backing Rings)**

- \( A \) = nominal outside diameter of pipe
- \( B \) = nominal inside diameter of pipe
- \( t \) = nominal wall thickness of pipe
- \( x \) = diameter of hub (see dimensional tables)

**GENERAL NOTES:**

(a) See paras. 6.7, 6.8, and 7.4 for details and tolerances.
(b) See Figures 9 and 10 for additional details of welding ends.
(c) When the thickness of the hub at the bevel is greater than that of the pipe to which the flange is joined and the additional thickness is provided on the outside diameter, a taper weld having a slope not exceeding 1 to 3 may be used, or, alternatively, the greater outside diameter may be tapered at the same maximum slope or less, from a point on the welding bevel equal to the outside diameter of the mating pipe. Similarly, when the greater thickness is provided on the inside of the flange, it shall be taper-bored from the welding end at a slope not exceeding 1 to 3. When flanges covered by this Standard are intended for services with light wall, higher strength pipe, the thickness of the hub at the bevel may be greater than that of the pipe to which the flange is joined. Under these conditions, a single taper hub may be provided. The additional thickness may be provided on either inside or outside or partially on each side, but the total additional thickness shall not exceed one-half times the nominal wall thickness of intended mating pipe (see Figures 1 through 3).
(d) For welding end dimensions, refer to ASME B16.25.

**NOTES:**

(1) For manufacturing purposes, the straight turn from the bevel is permitted to have a taper with the angle not exceeding 7 deg.
(2) The minimum hub height, \( H \), shall be \( 2(Y-t)/3 \).