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DIC.PPS

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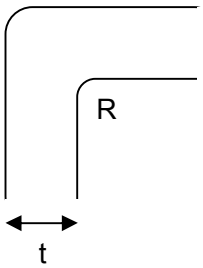
DIC-PPS Design Guide

Radii:

In order to avoid stress concentration at sharp corners, proper radii should be designed in parts. Not only at inside corners, radii should be applied to outside corners as well.



Recommendation: R = 0.6 x t
For small t;
R, minimum = 0.5 mm
R, reasonable = 1.0 mm

t = wall thickness
R = radius

Figure 1, Radii recommendation

Generally radius in case R/t = 0.6 or over provides favorable small stress concentration, where R represents the radius and t represents the wall thickness.
Figure 2 shows the relationship of stress concentration at a sharp corner as a function of the radius to wall thickness ratio.

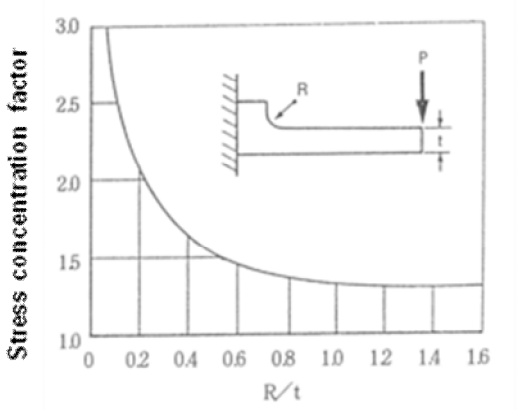
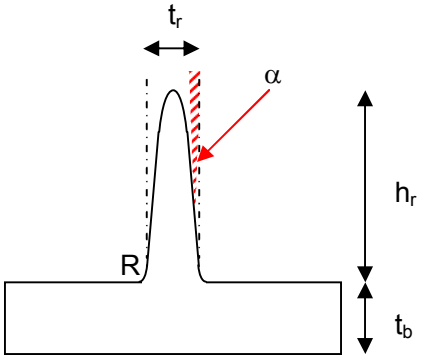


Figure 2, Relation between stress concentration factor and R/t

Ribs:

Ribs are designed in order to improve strength/stiffness of parts. However, too thick ribs can cause sink marks, warpage and cracking. For more efficient result, it is better to be considered increasing number of ribs than increasing thickness or height of ribs.



$R = 0.6\sim1.0\ t_b$
$t_r = 0{,}6\ t_b$
$h_r = 1.5t_b\sim3.0t_b$
$\alpha = 1\sim2°$

t_b = wall thickness bottom
h_r = height
t_r = wall thickness rib