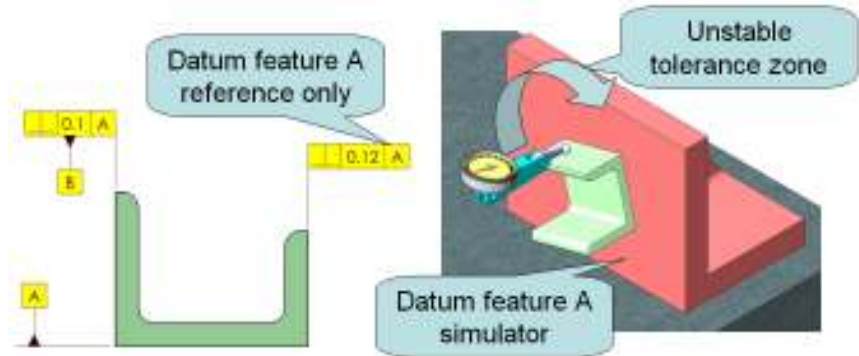


July 2009
Tip-of-the-Month
(in accordance with the ASME Y14.5-2009 standard)

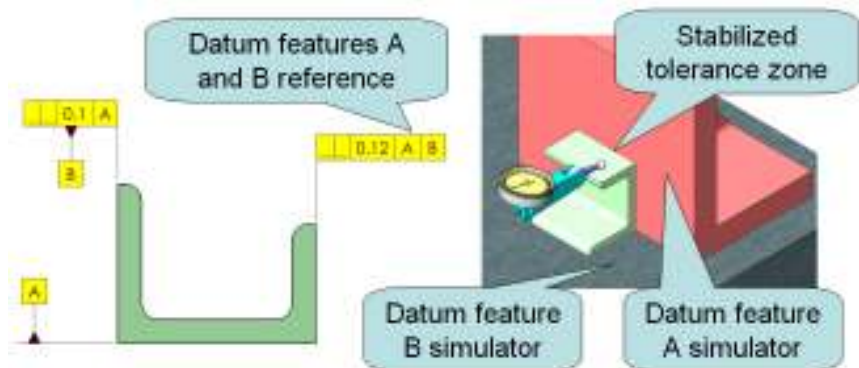
Stabilizing an Orientation Tolerance Zone

Adding a second datum feature reference to the orientation tolerances of perpendicularity or parallelism can be confusing.

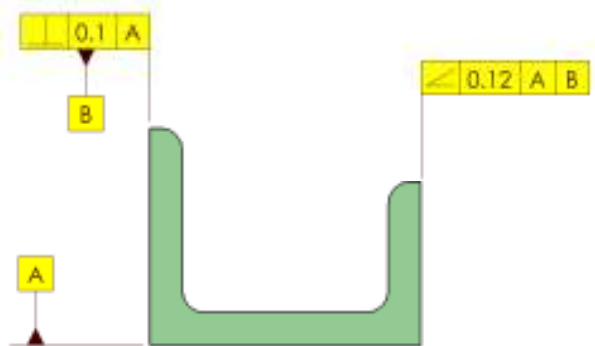
On this drawing there is a perpendicular relationship of the surface being controlled by perpendicularity and the datum plane established by datum feature A. The problem is that the tolerance zone is not stable. The part can spin on an angle plate used to establish the datum plane making the inspection difficult.



Adding a second datum feature reference will solve this. However, the feature control frame would read that *“the surface must be perpendicular to the datums established by datum feature A, primary and datum feature B, secondary”*. The problem with this is that the feature being tolerated is not perpendicular to the datum plane established by B. It is parallel. The 1994 Standard said that this is fine. The second datum feature reference is added to stabilize the tolerance zone.



The 2009 revision of the Standard gives us an Alternative Practice of using angularity for any of the orientation tolerances. Taking this approach eliminates this issue with orientation tolerances.



Go to <http://www.tec-ease.com/tips/Jul-09.htm> to view a video clip of Don Day explaining this Tip.

Please email us any suggestions or topics that you would like to see covered in our Tip-of-the-Month series.

www.tec-ease.com