5.8 LIMITS OF SIZE

UOS, the limits of size of an individual regular feature of size define the extent of allowable variation of geometric form, as well as size. The actual local size of an individual feature of size shall be within the specified limits of size.

5.8.1 Rule #1: The Envelope Principle (Variations of Form)

The form of an individual regular feature of size is controlled by its limits of size to the extent prescribed in (a) through (e) below and illustrated in Figure 5-7.

(a) The surface or surfaces of a regular feature of size shall not extend beyond an envelope that is a boundary of perfect form at MMC. This boundary is the true geometric form represented by the drawing views or model. No elements of the produced surface shall violate this boundary unless the requirement for perfect form at MMC has been removed. There are several methods of overriding Rule #1 that are covered in paras. 5.8.2, 5.8.3, 8.4.1.3, 8.4.2.1, and 8.5.

(b) Where the actual local size of a regular feature of size has departed from MMC toward LMC, a local variation in form is allowed equal to the amount of such departure.

(c) There is no default requirement for a boundary of perfect form at LMC, but a requirement may be invoked as explained in (d). Thus, a regular feature of size produced at its LMC limit of size is permitted to vary from true form to the maximum variation allowed by the boundary of perfect form at MMC.

(d) When a geometric tolerance is specified to apply at LMC, perfect form at LMC is required and there is no requirement for perfect form at MMC. See para. 10.3.5 and Figure 5-8.

(e) Where a portion of a regular feature of size has a localized area(s) that do not contain opposed points, the actual value of an individual distance at any cross section between the unrelated AME to a point on the surface may not violate the LMC limit. See Figure 5-9.

Figure 5-9 Size Meaning