7.   Rules

The Y14.5 standard contains numerous rules, which are only in rare cases referred to as rules. A small number of the most important rules have been made explcit in *Smart*GD&T and are listed here.

7.1 Free State Rule (Y14.5 §1.4 (l) p.4): Unless otherwise specified, all imposed tolerances must be met with the part in "the free state" (i.e. under the influence of no external forces, including gravity).

7.2 Rule of Standard Temperature, Pressure and Humidity (Y14.5 §1.4 (k) p.4) + (*Smart*GD&T): Unless otherwise specified all tolerances apply at 20 C°, 760 mm Hg, and 50% Humidity.

7.3 Rule of Implied Basic Dimensions (Y14.5 §1.4 (j) p.4): Basic angular dimensions of 0° and 90° degrees, Basic linear dimensions of zero, and Basic dimensions determined by the "EQUALLY SPACED" modifier, are implied, and need not be specified explicitly.

7.4 Envelope Rule (Y14.5 §2.7.1.2 p.27): In the absence of any TZS modifier, or in the presence of the TZS modifiers (S) and (M), the Envelope Rule requires the Size tools "Diameter" and "Thickness" to impose In-Space Envelopes of perfect form at Maximum Material Condition. In the presence of the TZS modifier (L) (Y14.5 §5.3.5 p.89), the Envelope Rule imposes an In-Material Envelope of perfect form at Least Material Condition. See also "The Rule of Size & Form".

Invocation: The Envelope Rule is invoked globally by the Y14.5 standard.

Explicit Revocation: The Envelope Rule can be revoked explicitly: 1) (Y14.5 §2.7.2 p.27) In individual instances, using the note PERFECT FORM AT MMC NOT REQD, and 2) (Y14.5 §2.7.1.3 p.27) by referencing a "stock material" specification.

Automatic Revocation (Y14.5 §6.4.1.1.2 p.158),: The Envelope Rule is automatically revoked when a Size tool is accompanied by a Median Line or Median Plane Straightness control, in which case the added tool assumes responsibility for volumetric form control.

7.5 Rule of Size and Form (Y14.5 §2.7.1 p.26): Where the Envelope Rule is invoked, Size tools impose an equal tolerance on both size and form.