

"PILLOWING" VERSUS SURFACE FLATNESS

HMMA 865-13 (Guide Specifications for Sound Control Hollow Metal Door & Frame Assemblies) Section 2.04.A.2.E (Manufacturing Tolerances) defines a tolerance = 1/8 inch (3.17mm) maximum for steel-door surface flatness. NAAWS (North American Architectural Woodwork Standards) Section 9.4.6 defines a tolerance = 1/4 inch (6.35mm) maximum for wood core door surface flatness.

HMMA-841-13 (Tolerances and Clearances for Commercial Hollow Metals Doors and Frames) Figure 3 Illustrates the required methods to measure for surface flatness, edge flatness and door twist.

NOTE: The door cannot be hung in the frame to collect accurate measurements of surface flatness. There are a number of variables which can be influencing the flatness of the door in the installed condition: Frame installation clearances, the NC3/NC3S/NC10/NC12 perimeter seal adjustment and hardware connection points. The door must be laid on a flat surface and measured with a level long enough to extended past the edge corner-to-corner as illustrated.

What is "Pillowing"? Pillowing (or a "belly") is a separation of the door skin sheet steel in the center zone inside and away from the perimeter edge channels, and is often mistaken for "twisting" or "warping". Pillowing does not affect the function or performance of the assembly. Racking a door will not correct for pillowing.

Pillowing is not a manufacturing defect and not an indication that the surface flatness of the door is out of tolerance. Pillowing is an inherent characteristic of high-performance acoustical doors which is not currently addressed in HMMA guidelines because pillowing is an aesthetic feature, not a functional or performance based feature.

Krieger's workmanship guarantee for pillowing is that the door is capable of being adjusted to be in plane with the frame faces. The degree to which the door skins "pillow" should not exceed 1/2". Installation adjustments such as blocking and clamping the lock edge to bring the door into plane with the frame faces are within the installers scope of responsibility.

HMMA-843-13 Figure 3

