

ZERO AIR CONTROL SYSTEMS

The simplest air (and smoke) control seals we offer are 188S, 488S, and 388S teardrop (see pages 64-65). These have been tested to BS 476-31.1 and BS EN 1634-3 and have a leakage not exceeding 3m³/m/h i.e. less than 3 cubic metres per metre of frame crack per hour at 25 Pa. Actual figures shown on page 50.

However, Zero has designed and tested other systems against air leakage to demonstrate the effectiveness of these products and materials at higher pressures. They have been tested for air infiltration (positive pressure) where high pressure pushes the door against the seal, and also for the more onerous air exfiltration (negative pressure) where high pressure pushes the door away from the seal. By specifying a complete "Air Control System" you are assured that the components installed for head, jamb and sill will perform properly together.

The table on page 51 shows tests conducted under positive and negative pressure at 76 Pa (25 mph), 100 Pa (28 mph), 150 Pa (35 mph), 306 Pa (50 mph), 688 Pa (75 mph), and 1223 Pa (100 mph).

Positive pressure (air infiltration) - where high pressure pushes the door against the seals. For example, external outward opening doors with panic exit devices.

Negative pressure (air exfiltration) - where high pressure pushes the door away from the seals. For example, computer rooms, halon systems, hotel bedroom doors etc. Negative pressure tests are the more onerous.

The higher the air pressure differential, the better the quality of the gasketing is needed. Adjustable gasketing facilitates installation and allows adjustment when needed for consistent performance over time.

Below we show two specific sets of seals that have been tested; the Dade County set and the Safe Haven set. These illustrate where the seals are fitted on the door.

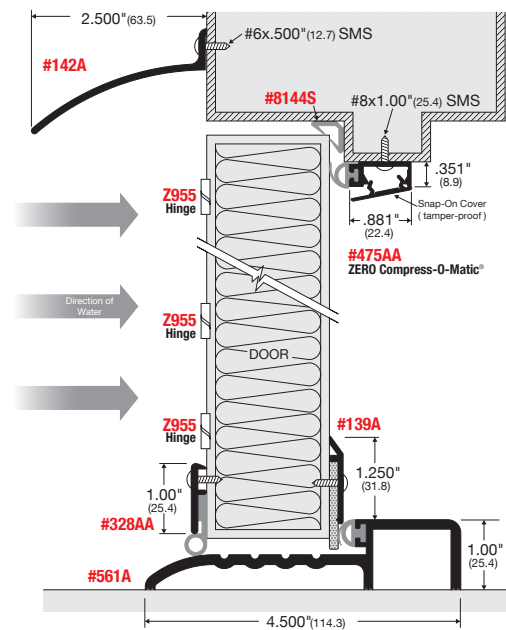
HURRICANE PROTECTION SEALS (DADE COUNTY)

Properties in Miami-Dade County, Florida are subjected to seasonal hurricane force winds and Zero offers a tried and tested set of seals for such situations. This is known as the "Dade County set". To maximise protection, doors should be designed to open out which means that strong winds will force the door against the seals. The Dade County Set has been tested under positive pressure to a wind velocity of 135 mph and protects against wind-driven water infiltration.

Seals in Dade County set:

Z955*	114mm stainless steel cam hinge
475AA	Frame seal (for head & jambs) (stock sizes 914mm, 1219mm, 2134mm)
8144S	Wing type PSA seal (for head & jambs) (stock size 2438mm strip)
142A	Rain drip (fitted above door)
328AA	Sill sweep (fitted externally)
139A	Sill sweep (fitted internally)
561A	Threshold (floor) (stock sizes 914mm, 1219mm, 1829mm)

If a frame seal with greater adjustment is required, 870AA frame seal can be used in place of 475AA as it has an identical gasket. 870AA is available in stock sizes of 914mm, 1219mm, 1829mm, 2134mm and 3048mm.



SAFE HAVEN SEALS

In response to heightened security requirements, Zero has introduced a set of "Safe Haven" room seals. To maximise protection, doors should be designed to open out of the safe haven and the seals should be fitted inside the safe haven. This means high pressure will push the door against the seals. This set is particularly effective against airborne diseases and spores.

The Safe Haven set has been tested under positive pressure to a wind velocity of 100 mph (1223 Pascals) and resulted in an air leakage of only 2.8 CMH/LMC (Cubic Metres per Hour / Linear Metre of frame Crack). The air leakage is much lower if the wind velocity is reduced.

Seals in Safe Haven set:

Z955*	114mm stainless steel cam hinge
475AA	Frame seal (for head & jambs) (stock sizes 914mm, 1219mm, 2134mm)
119WB	Bronze spring seal (to all four sides) (stock sizes 914mm, 2134mm)
321AA	Dropseal 762 & 914mm LH & RH (other sizes available to suit door width)
564A	Threshold (floor) (stock sizes 914mm, 1219mm, 1829mm)

If a frame seal with greater adjustment is required, 870AA frame seal can be used in place of 475AA as it has an identical gasket. 870AA is available in stock sizes of 914mm, 1219mm, 1829mm, 2134mm and 3048mm.

