

Fluid Sealing Association

STANDARD

FSA-HIPD-801-10
CALCULATED LEAKAGE VERIFICATION TEST



994 Old Eagle School Road, Suite 1019
Wayne, Pennsylvania 19087-1866
Phone: (610) 971-4850
Fax: (610) 971-4859
www.fluidsealing.com
Email: info@fluidsealing.com

For a complete list of FSA publications, please contact:

Fluid Sealing Association
994 Old Eagle School Road
Suite 1019
Wayne, PA 19087-1866
Phone: (610) 971-4850
Fax: (610) 971-4859
Email: info@fluidsealing.com
or visit our web site at: www.fluidsealing.com

Copyright 2010

No duplication without the written consent of the Fluid Sealing Association.

NEITHER THE FLUID SEALING ASSOCIATION NOR ANY OF ITS CONSTITUENT MEMBERS MAKES ANY GUARANTEES AS TO THE ACCURACY, RELEVANCY, APPROPRIATENESS, CURRENCY OR COMPLETENESS OF THE DATA AND INFORMATION CONTAINED HEREIN. IT IS SOLELY PROVIDED "AS IS". FURTHER, THE FLUID SEALING ASSOCIATION AND ITS CONSTITUENT MEMBERS EXCLUDE ALL DIRECT, INDIRECT, INCIDENTAL, CONSEQUENTIAL OR PUNITIVE DAMAGES WHETHER FORSEEABLE OR NOT AND WHETHER THEY KNEW OR NOT.

**FLUID SEALING ASSOCIATION STANDARD
FSA-HIPD-801-10**

CALCULATED LEAKAGE VERIFICATION TEST

A. Test Objective

The objective of the test is to determine the total amount of gap present between sealing surfaces of a damper. This test is intended to compare the conformance of the manufactured part to the calculated leakage specifications.

B. Equipment Setup

The damper is to be placed in a horizontal position with the specified closing force applied, if practical.

C. Test Equipment

Standard sets of “feeler” gauges are required. Recommended minimum gauge is to be 0.006 in.

D. Measurements to be Recorded

Measurements are to be taken of the gap dimensions.

E. Test Method

The damper should be placed in the fully closed position. Measurements should be taken at the gap between the blade(s) and the mating seal. The gap will be measured by the largest feeler gauge that can be inserted between the two mating surfaces without forcing them apart. The gap measurement and its length should be recorded for each location.

F. Test Evaluation

1) The following calculations are required:

a) Total gap area (sq ft) = sum of the product of each gap measurement (ft) x its length (ft)

b) Q = calculated leakage (cu ft/min)

$$Q = 1097 * A * ((P1 - P2)/\rho)^{0.5}$$

A = measured gap area (sq ft)

$P1 - P2$ = differential pressure across the damper (in of water)

ρ = density of leaking gas at design conditions (lbs/cu ft)

2) If the total calculated leakage is less than the specified amount, the damper has passed the test.

G. Test Report

Measurements and calculations should be recorded in the test report.